Appendix 1

Notice of Preparation and Comments Received on the Notice of Preparation

NOTICE OF PREPARATION – ENVIRONMENTAL IMPACT REPORT

CITY OF
MENLO PARK

Parkline Master Plan Project
333 Ravenswood Avenue
City of Menlo Park

December 2, 2022

To:	State Clearinghouse State responsible agencies State trustee agencies Other public agencies Interested organizations	From:	Corinna Sandmeier Acting Principal Planner City of Menlo Park 701 Laurel St. Menlo Park, CA 94025

Subject:	Notice of Preparation of the Environmental Impact Report for the Parkline Master Plan Project
Lead agency:	City of Menlo Park, Planning Division
Project title:	Parkline Master Plan Project
Project Address:	333 Ravenswood Avenue

Introduction

The City of Menlo Park (City) is the lead agency for the Parkline Master Plan Project (Proposed Project). Pursuant to the California Environmental Quality Act (CEQA), upon deciding to prepare an environmental impact report (EIR), the City, as lead agency, must issue a Notice of Preparation (NOP) to inform trustee and responsible agencies, as well as the public, of the decision to undertake preparation of an EIR. The purpose of this NOP is to describe the Proposed Project and its potential environmental effects to those who may wish to comment about the scope and content of the information to be considered in the EIR. Agencies should comment on such information as it relates to their statutory responsibilities in connection with the Proposed Project. Agencies and the public are invited to provide comments on the scope and content of the environmental review, the potential mitigation strategies, and the Project alternatives by 5 p.m., Monday, Jan. 9, 2023.

A description of the Proposed Project, including its location, and a discussion of the environmental factors that may be affected by development of the Proposed Project are provided below. The EIR will evaluate project-specific and cumulative impacts, identify feasible mitigation measures to reduce or avoid significant impacts, and identify a reasonable range of alternatives to the Proposed Project and their comparative environmental effects.

Scoping meeting

A public scoping session will be held as part of the Planning Commission meeting at 7 p.m., Monday, Dec. 12, 2022, or as near as possible thereafter. Consistent with Cal. Gov. Code §54953(e), and in light of the declared state of emergency, and to maximize public safety while still maintaining transparency and public access, members of the public can listen to the meeting and participate using the following methods:

- Access the live meeting in-person, at the City Council Chambers, 751 Laurel St., Menlo Park, CA 94025
- Access the meeting real-time online at:
  zoom.us/join – Meeting ID# 871 4022 8110
- Access the meeting real-time via telephone (listen only mode) at:
  (669) 900-6833
  Regular Meeting ID # 871 4022 8110
  Press *9 to raise hand to speak
- Submit a written comment online up to one hour before the meeting start time:
  PlanningDept@menlopark.org *
  Please include the agenda item number you are commenting on
  *Written comments are accepted up to one hour before the meeting start time. Written messages are provided to the Planning Commission at the appropriate time in their meeting.

To access the online meeting agenda, please visit menlopark.org/agendas. Trustee and responsible agencies, as well as members of the public, are invited to attend the meeting to learn more about the Proposed Project and provide input on the scope and content of the EIR through public comment. The scoping process is designed to enable the City to determine the scope and content of the EIR at an early stage.

Submitting comments

Comments regarding the appropriate scope of analysis and content for the EIR are invited from all interested parties. Please submit comments no later than 5 p.m., Monday, Jan. 9, 2023. However, we would appreciate your response at the earliest possible date. Please send your written comments to Corinna D. Sandmeier at the address shown below with "Parkline Master Plan Project EIR" as the subject. Emailed comments are preferred. Public agencies that provide comments are asked to include the name of a contact person for the agency.

Name:	Corinna Sandmeier
Title:	Acting Principal Planner
Department:	Community Development, City of Menlo Park
Mail:	701 Laurel St., Menlo Park, CA 94025
Email:	cdsandmeier@menlopark.org
Phone:	650-330-6726
City website:	menlopark.gov
Project website:	menlopark.gov/parkline

Project location and existing conditions

The 63.2-acre Project site is located at 333 Ravenswood Avenue (and includes 301 Ravenswood Avenue and 555 and 565 Middlefield Road) in the city of Menlo Park (as shown in Figure 1). The Project site is on Ravenswood Avenue between El Camino Real and Middlefield Road, near the Downtown Area and Menlo Park Caltrain station southwest of US 101. The Project site consists of five parcels (Assessor's Parcel Numbers 062-390-660; 062-390-670; 062-390-730; 062-390-760; 062-390-780).

The vicinity of the Project site generally consists of residential neighborhoods and public facilities. To the north[1] along Ravenswood Avenue are single-family and multifamily residences. To the east are Menlo-Atherton High School, single-family residences, and a mix of office buildings, including the United States Geological Survey federal offices, along Middlefield Road. To the south is a mix of offices, single-family residences and multifamily residential units in the Linfield Oaks neighborhood. Across Laurel Street to the west are City Hall, Burgess Park and a child care facility. To the northeast, along Ravenswood Avenue, the Project site surrounds on three sides an existing church at 201 Ravenswood Avenue. The closest residences are immediately adjacent to the southeastern portion of the Project site.

The Project site is designated Commercial under the General Plan. The Project site is zoned "C-1(X)" (Administrative and Professional District, Restrictive). The Project site is currently governed by a Conditional Development Permit (CDP) approved in 1975, and subsequently amended in 1978, 1997, and 2004. The CDP permits up to 1,494,774 square feet of gross floor area, a maximum building coverage of 40% of the total site, a 50-foot height limit, and a maximum employee count of 3,308, among other restrictions. The existing Project site buildout consists of approximately 1,380,332 square feet of gross floor area. The CDP and zoning do not currently authorize residential uses.

The Project site includes SRI International's research campus, which consists of 38 existing buildings totaling approximately 1.38 million gross square feet (gsf) of existing, mostly research and development (R&D) and supporting uses. Of the 38 existing buildings, one building (Building 302) is used exclusively to provide campus amenities, three buildings (Buildings R, U, W) are used exclusively for support functions, and the remaining buildings incorporate a mix of amenity, office, research and design (R&D), and supporting uses. Under current operations, the campus is not open to the public and is mostly surrounded by a security fence with limited access points. The Project site is currently improved with substantial impervious hardscape, including building roof areas, surface parking, streets and paths, which cover approximately 72% of the Project site. Many existing heritage trees are distributed across the Project site. Approximately 1,100 people are currently employed at the Project site.

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[1] For descriptive purposes, true northwest is Project North with El Camino Real running in a north-south direction and Ravenswood Avenue running in an east-west direction. Compass directions in this NOP use Middlefield Road in a north-south direction and Ravenswood Avenue in an east-west direction. All references are labeled accordingly.

Project description

The Proposed Project would redevelop SRI International's research campus by creating a new office/R&D, transit-oriented campus with no net increase in commercial square footage, up to 550 new rental housing units at a range of affordability levels, new bicycle and pedestrian connections, and 25 acres of publicly accessible open space.
The Proposed Project would demolish all existing buildings, excluding Buildings P, S and T, which would remain on-site and operational by SRI and its tenants. The Proposed Project would organize land uses generally into two land use districts within the Project site, including 1) an approximately 10-acre Residential District in the southwestern portion of the Project site; and 2) an approximately 53-acre Office/R&D District that would comprise the remainder of the Project site, which would include publicly accessible open space, recreational area and other public amenities.
In addition, the Proposed Project would establish a separate parcel of land that is proposed to be leased (under a long-term ground lease) to an affordable housing developer for the future construction of a 100% affordable housing or special needs project which would be separately rezoned as part of the Proposed Project for up to 100 residential units (in addition to the 450 residential units proposed within the Residential District, discussed below).

The Residential District would include 450 rental residential units in three multifamily residential buildings and townhomes with a floor area ratio (FAR) of approximately 119%. The multifamily buildings would be between three and six-stories tall. The townhomes would be two-stories tall. The Residential District would incorporate 15% of new units as income-restricted to low income households or an equivalent alternative, consistent with Menlo Park's Below Market Rate housing program. The Residential District would include up to 469 parking spaces for the units within podium parking structures and surface parking areas. Three access points using existing and/or relocated driveways would be provided for the Residential District in the following locations: one entry point along Ravenswood Avenue toward the northwestern portion of the Project site and two entry points along Laurel Street (one for the multifamily residential buildings and one for the townhomes) at the southwestern portion of the Project site.

The Office/R&D District would include: (1) five new office/R&D buildings (totaling approximately 1,093,602 gsf, which would replace the same amount of gsf that would be demolished as part of the Proposed Project), (2) the three existing buildings to be retained (Buildings P, S and T) totaling approximately 286,730 gsf), (3) an approximately 40,000 gsf office amenity building, and (4) an approximately 2,000 gsf community amenity building. Total building intensity would be approximately 60% FAR. The Office/R&D District would provide approximately 2,800 parking spaces within three above-grade parking structures, surface parking areas and underground parking. Four access points using existing and/or relocated driveways would be provided for the Office/R&D District in the following locations: two along Ravenswood Avenue (toward the center of the Project site) and two along Middlefield Road (one at Ringwood Avenue and one at Seminary Drive.) The proposed buildings would be designed to accommodate either office or R&D uses. Because future tenants have not been identified, the EIR will evaluate two scenarios: a 100% office scenario and a 100% R&D scenario. Each section in the EIR will evaluate the most intense scenario for the resource area being analyzed. This will ensure that the EIR evaluates the Proposed Project's maximum potential impact, and that any future tenant mix is within the scope of the EIR.

As part of the Proposed Project, the existing 6-megawatt natural gas power plant that generates power and steam energy for the existing SRI International campus would be demolished and the entire Project site would be converted to all-electric energy usage, with the exception of two of the existing buildings that would remain (Buildings P and T) and potential backup diesel generators, in compliance with the city Reach Code. (It is possible that limited exceptions may be requested to accommodate life science uses.)

In total, the Proposed Project would result in a total of approximately 1,898,931 gsf, including approximately 1,380,332 gsf of office/R&D uses (including existing buildings to be retained) and approximately 518,599 gsf of residential uses (including 450 rental residential units, and excluding the up to 100 affordable rental residential units, whose gsf will be determined at a later date), with a total FAR of approximately 69% (not including the proposed land dedication via a long-term ground lease for future affordable or special needs housing project on the Project site.) The Proposed Project would also include approximately 25 acres of open space areas and supporting amenities, including a network of publicly accessible pedestrian and bicycle trails, open spaces and active/passive recreational areas available to the public.

The Project site is not included on any list compiled pursuant to Cal. Gov. Code § 65962.5.

Project approvals

The following City discretionary approvals/actions[2] would be required before development at the Project site:

- General Plan Amendment (Text and Map)
- Zoning Ordinance Amendment
- Rezoning
- Conditional Development Permit
- Development Agreement
- Architectural Control (for future Design Review)
- Heritage Tree Removal Permits
- Vesting Tentative Map
- Below Market Rate Housing Agreement
- Environmental Review

The entitlement process would allow development of either the office or R&D scenario, or a hybrid of the two, up to the maximum intensity evaluated in the EIR. In addition, as part of the development review process conducted by the City, and not as part of the environmental review, a fiscal impact analysis would be prepared, and a Water Supply Assessment (WSA) and Housing Needs Assessment (HNA). Review of the Proposed Project by the City Planning Commission would be conducted as a part of the EIR review and entitlement process. The City Council would be the final decision-making body on the requested land use entitlements (with the potential exception of architectural control reviews by the Planning Commission and heritage tree removal permits issued by the City Arborist) and certification of the EIR.

Responsible and other Agencies

The agencies listed below are expected to review the draft EIR to evaluate the Proposed Project:

- Bay Area Air Quality Management District
- California Department of Transportation
- California Regional Water Quality Control Board, San Francisco Bay Region/San Mateo Countywide Water Pollution Prevention Program
- California Air Resources Board
- California Department of Toxic Substances Control
- California Public Utilities Commission
- City/County Association of Governments
- PG&E
- San Mateo County Transportation Authority
- Menlo Park Fire Protection District
- San Mateo County Environmental Health Division
- West Bay Sanitary District
- Native American Heritage Commission
- San Francisco Public Utilities Commission

Introduction to EIR

The purpose of an EIR is to inform decision-makers and the general public of the environmental effects of a proposed project. The EIR process is intended to provide environmental information sufficient to evaluate a proposed project and its potential to cause significant effects on the environment; examine methods of reducing adverse environmental impacts; and identify alternatives to the proposed project. The EIR for the Proposed Project will be prepared and processed in accordance with CEQA (Public Resources Code §§21000 et seq) and the State CEQA Guidelines. The EIR will include the following:

- Summary of the Proposed Project and its potential environmental effects;
- Description of the Proposed Project;
- Description of the existing environmental setting, potential environmental impacts of the Proposed Project, and feasible mitigation measures to reduce significant environmental effects of the Proposed Project;
- Variants to the Proposed Project;
- Alternatives to the Proposed Project;
- Cumulative impacts; and
- CEQA conclusions.

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[2] Determination of the final list of required discretionary approvals/actions would be based on the final development characteristics and site plans for the Proposed Project, which would be finalized prior to issuance of any permits or agreements.

Probable environmental effects

CEQA Guidelines §15128 states that “[a]n EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.” Accordingly, the EIR will include a section for impacts found to be less than significant, including the following areas: agricultural and forestry resources, mineral resources and wildfire.

The EIR will analyze whether the Proposed Project would have a significant environmental impact related to the following areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

Variants

Variants are variations of a project at the same project site, with the same objectives, background, and development controls but with additions and changes from a project, whose inclusion may or may not reduce environmental impacts. Thus, variants are distinct from “alternatives” (discussed below) insofar as CEQA requires the consideration of alternatives to avoid or lessen significant effects of a project. The EIR will include variants proposed by the Project Sponsor or the City and the description and analysis of the variants will be equal in detail to those of the Proposed Project. The EIR will describe and analyze the following variants:

- Emergency Reservoir Variant: This variant would be similar to the Proposed Project except it would also include an approximately 2 million gallon buried concrete water reservoir and associated facilities (including a pump station building, surge tank, well head) that would be aboveground and surrounded by a fence or screen. The area for the emergency reservoir and associated facilities would be leased by the City. The specific location of the emergency water reservoir and associated facilities within the Project site has not yet been determined, but would likely be located on the northeastern portion of the Project site.
- Increased Residential Variant: This variant would be similar to the Proposed Project except it would include up to 600 rental residential units, 50 more residential units than under the Proposed Project. The additional residential units would be located along Laurel Street within the Residential District. As a result, the proposed building height along Laurel Street would increase and additional subterranean parking may be required.

Alternatives

Based on the significance conclusions from the EIR, alternatives to the Proposed Project will be analyzed to reduce identified impacts. CEQA Guidelines §15126.6(e) requires evaluation of a no-project alternative. Other alternatives may be considered during preparation of the EIR. These will comply with the CEQA Guidelines, which call for a “range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.” The EIR will discuss the process by which alternatives are identified. This includes consideration of any feasible alternatives suggested during the scoping process.

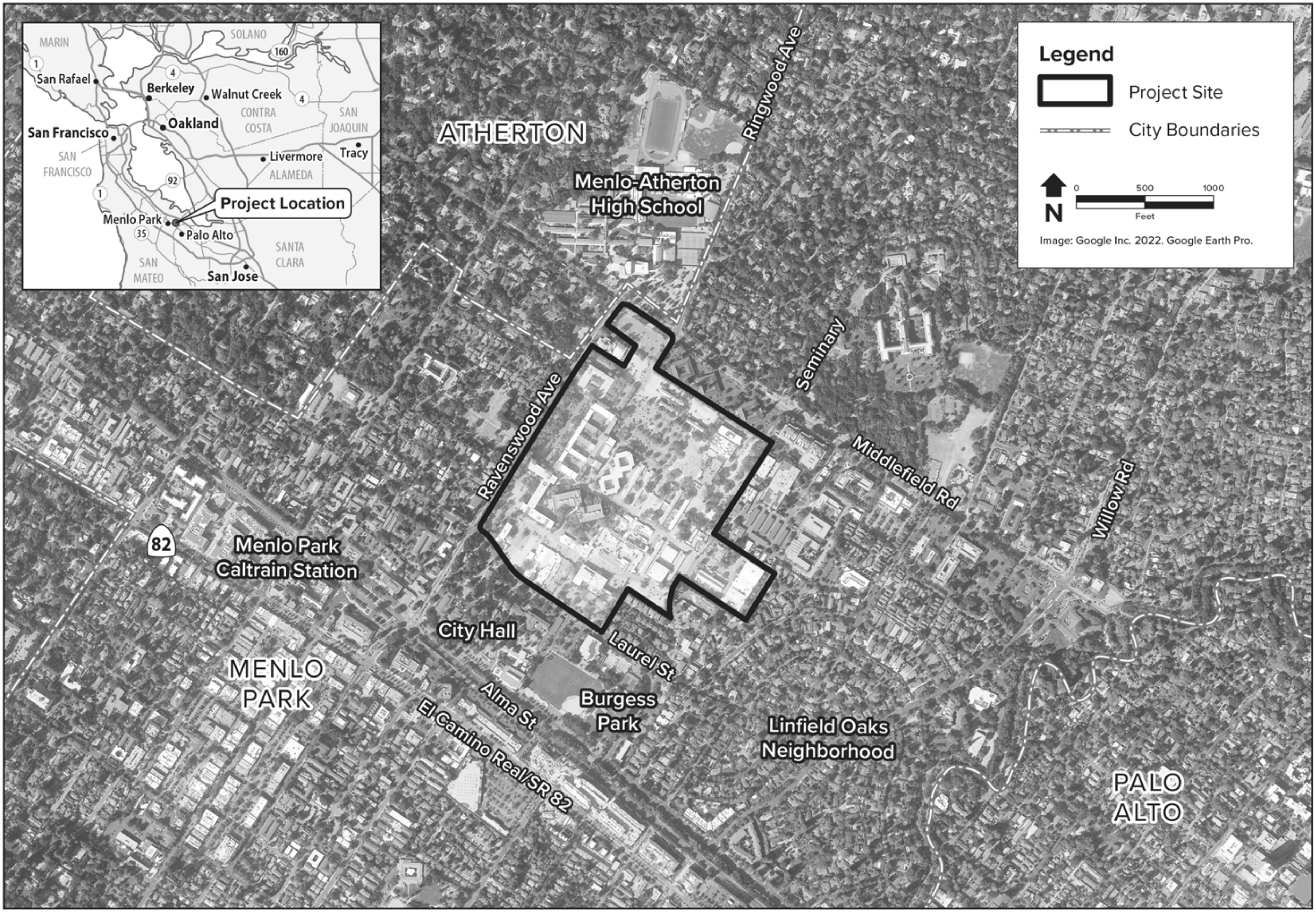
EIR PROCESS

Following the close of the NOP comment period, a draft EIR will be prepared that considers all NOP comments. In accordance with CEQA Guidelines §15105(a), the draft EIR will be released for public review and comment over a required 45-day review period. Following the close of the 45-day public review period, the City will prepare a final EIR, which will include responses to all substantive comments received on the draft EIR. The draft EIR, all public comments and recommendations, a list of all persons and organizations commenting on the draft EIR, all responses to comments prepared by the City, and any other information added by the City will compose the final EIR;

thereafter, the final EIR will be considered by the Planning Commission and City Council when making the decision whether to certify the final EIR and approve or deny the discretionary approvals needed for the Proposed Project.

Corinna Sandmeier

Corinna Sandmeier
City of Menlo Park
December 2, 2022



Graphics … Project Number T/K (11-17-2022) JC

Figure 1
Project Location
Parkline Master Plan Project

CITY OF MENLO PARK

Planning Commission

In re:

Parkline Project

CERTIFIED TRANSCRIPT

___________________________________/

REPORTER'S TRANSCRIPT OF PROCEEDINGS
AGENDA ITEM H1
MONDAY, DECEMBER 12, 2022

Reported by AMBER ABREU-PEIXOTO
(Via ZOOM Videoconference)
Certified Shorthand Reporter No. 13546
State of California

ATTENDEES

The Planning Commission:

Chris DeCardy - Chairperson
Cynthia Harris - Vice Chairperson
Jennifer Schindler
Andrew Barnes
Michele Tate
Linh Dan Do
Henry Riggs

SUPPORT STAFF:

Corinna Sandmeier, Acting Principal Planner
Matt Pruter, Associate Planner

PROJECT PRESENTERS:

Mark Murray, Lane Partners
Thomas Yee, STUDIOS Architecture
Jessica Viramontes, ICF

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BE IT REMEMBERED that, pursuant to Notice of the Meeting, and on December 12, 2022, via ZOOM Videoconference, before me, AMBER ABREU-PEIXOTO, CSR 13546, State of California, there commenced a Planning Commission meeting under the provisions of the City of Menlo Park.

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MEETING AGENDA

PAGE

Project Presenters:

Public Comment

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DECEMBER 12, 2022 10:28 p.m.

PROCEEDINGS

This is item H1 -- excuse me. H, Public Hearing 2. This is item H1. H1 and I1 are associated items with a single staff report.

H1, request for an Environmental Impact Report, an EIR, Scoping Session for the Parkline Master Plan project to comprehensively redevelop an approximately 63.2-acre site located at 301 and 333 Ravenswood Avenue, and 555 and 565 Middlefield Road. The proposed project would redevelop SRI International's research campus by creating a new office/research and development, transit-oriented campus with no net increase in commercial square footage, up to 550 new rental housing units (with a minimum of 15 percent of the units available for below market rate households), new bicycle and pedestrian connections, and approximately 25 acres of publicly-accessible open space. The proposed project would demolish all existing buildings, excluding Buildings P, S, and T, which remain onsite and operational by SRI and its tenants.

The proposed project would organize land uses generally in two land use districts within the project site including, 1, an approximately 10-acre Residential

District in the southwestern portion of the project site; and, 2, an approximately 53-acre Office/R&D -- that's Research and Development District -- that would comprise the remainder of the project site.

In total, the proposed project results in a total of approximately 1,898,931 square feet, including approximately 1,380,332 square feet of Office/R&D and approximately 518,599 square feet of residential uses (including up to 450 rental residential units).

In addition, the proposed project would establish a separate parcel of land that is proposed to be leased to an affordable housing developer for the future construction of a 100 percent affordable housing or special needs project, which would be separately rezoned as part of the proposed project for up to 100 residential units (in addition to the residential units proposed within the Residential District), and which is not included in the residential square footage calculations as the square footage has not been determined.

The EIR will study two potential project variants, one that includes an approximately 2-million gallon buried concrete water reservoir and associated facilities, and one that includes an additional 50 residential units for a total of up to 600 dwelling units, inclusive of the standard -- excuse me -- standalone affordable housing building.

The project site is zoned C-1(X) -- that's Administrative and Professional District, Restrictive -- and governed by a Conditional Development Permit (CDP) approved in 1975, subsequently amended in 1978, 1997, and 2004.

The proposed project is anticipated to include the following entitlements: The General Plan Amendment (Text and Map), Zoning Ordinance Amendment, Rezoning, Conditional Development Permit, Development Agreement, Architectural Control (for potential future Design Review) Heritage Tree Removal Permits, Vesting Tentative Map, Below Market Rate (BMR) Housing Agreement, and Environmental Review.

A Notice of Preparation (NOP) for the proposed project was released on Friday, December 2nd, 2022. The NOP provides a description of the proposed project the location of the proposed project and the probable environmental effects. The EIR will address potential physical environmental effects of the proposed project, as outlined in the California Environmental Quality Act. That's CEQA. An initial study was not completed as it is anticipated this will be a full EIR and no topic areas will be scoped out, with the exception of agriculture and forestry resources, mineral resources, and wildfire.

Those topic areas are not anticipated to require further analysis.

The project site is located within a "transit priority area," as defined, and thus pursuant to the Public Resources Code section 21099. Aesthetic and parking impacts are not considered significant impacts on the environment. Accordingly, the analysis in the EIR will reflect this statutory directive. Nevertheless, the City retains -- still retains authority to consider aesthetic impacts pursuant to its design review authority.

The City is requesting comments on the scope and content of this EIR. The project location does not contain a toxic site pursuant to Section 6596.2 of the Government Code. Comments on the scope and content of the EIR are due by 5:00 p.m., Monday, January 9th, 2023.

And with that, I will turn it over to staff.

MS. SANDMEIER: Yes. Good evening again, Chair DeCardy and Commissioners. So I have a small presentation -- or try to keep it short.

Vanh, can you pull that up?

So this is for the Parkline project. And we'll be focusing on the Environmental Impact Report Scoping Session tonight. Next slide.

So I'll just kind of focus on the EIR scoping session, since the -- sounds like the study session will be continued.

So the purpose of the scoping session is for input on the scope and content of the EIR. And no actions will be taken tonight. And the public comment on the Notice of Preparation ends on January 9th -- that should be 2023. That's a mistake there.

So City Council will consider certification of the Final EIR and most of the land use entitlements.

And next slide.

And this slide just shows the project location. So it's the existing SRI campus. It shows the proximity to downtown, the Caltrain Station, Burgess Park and El Camino Real.

Next slide, please.

So the existing site is approximately 63 acres in size. It contains 38 buildings. The existing land uses are office, R&D, and supporting uses. And there are approximately 1,100 employees there today.

So this is the most recent site plan for the proposed project. 35 of the existing buildings would be demolished. The proposal is for a mixed-use development. The building shown in yellow would be a residential district for approximately 450 residences, with 15 percent below market rate units.

And the applicant is also proposing a separate parcel to be dedicated to an affording housing developer. And that would be up to 100 units.

And then the remainder of the site would be a nonresidential, basically R&D and office district. And the project includes 25 acres of publicly-accessible open space.

So the recommended meeting format for the EIR scoping session is staff overview of the proposed project, presentation by the applicant, presentation by the City's EIR consultant, public comments on the EIR scope, commissioner questions on the scope, commissioner comments on the scope, and then the close of the scoping session public hearing.

Next slide, please.

And that concludes my presentation. And so next, we'll go to the applicant

CHAIR DECARDY: Any questions of Ms. Sandmeier from commissioners?

COMMISSIONER BARNES: I do.

CHAIR DECARDY: Commissioner Barnes.

COMMISSIONER BARNES: So I'm super appreciative of the bifurcation on what we are going to do this evening. Are we, in part two of this, going to hear a redux of the presentation by the applicant? Because depending on when this may come back, I may not be fresh again. And I'd love to -- although it's going to be repetitive, my mind only captures things for a certain period of time. So I'd love to hear a redux of it. And I wanted to check in on that.

MS. SANDMEIER: Yes. Through the Chair, that is the plan. It will need to come back next year, 2023. So there'll definitely be an overview again of the project.

CHAIR DECARDY: All right. Thank you, Commissioner Barnes. Good question.

Any other questions?

All right. To the applicant. Thank you for bearing with us this evening. Welcome. The floor is yours.

MR. MURRAY: Good evening, Chair DeCardy and members of the Commission, City staff, members of the public. I'm the app -- I represent the applicant, Mark Murray, with Lane Partners.

In the interest of time, I'm going to turn things over to Tom Yee, from STUDIOS Architecture, to talk a little bit more about the design, to try to move forward with the scoping session.

But, again, we'll be back, probably in a couple months to do the study session presentation, have a more robust presentation there. But, again, here to answer questions as well.

Thank you.

CHAIR DECARDY: Thanks very much. And appreciate you adjusting on the fly this evening. Thank you.

MR. YEE: My name is Thomas Yee. I'm with -- the Principal at STUDIOS Architecture. Thank you for having us this evening, Commissioner DeCardy, Vice Chair Harris.

So I'd like to go through the presentation very briefly. Corinna explained the project location and site.

Next slide, please.

These are some of the goals that we established for the site at the very beginning, over a year-and-a-half ago -- the residential sustainability issues, tree preservation. There are about 1,375 existing trees on the site. We're retaining over half of them through our site planning open space. As we mentioned, 25-acres of publicly-accessible open space because the current site is a fenced-off property. 63 acres, which we're transforming to publicly-accessible land and both programmed, active and passive, open spaces.

Next slide, please.

And on the Master Plan, as Corinna mentioned, the land uses here are fairly straightforward. A 63-acre site. Ravenswood on the top, Laurel on the left, Middlefield on the right. On the left, part of the site in yellow are three to four buildings of residential apartments in the R1, R2, and R3 buildings. This is all explained in the packet that you received -- and then townhouses to the south, just north of Burgess Park neighborhood -- Burgess Classics neighborhood. Those are two-story townhouses to, again, address the scale transition between Burgess Classics at the residential buildings that work up Laurel, up to Ravenswood.

SRI is retaining three existing buildings, as you see in blue there. Building P, S, and T. S and T are at the south portions of the site. Those will -- SRI is consolidating their operations into those three buildings, and -- for their operations in the future.

So the 35 remaining buildings to which will be removed will be transformed to office, R&D, and lab/life science uses. You can see, those are situated in the five buildings in light blue.

There will be an amenities building for the tenants to the left, above the parking garage No. 3, and a community building on the upper right, next to the church.

The open space is accessible. It's being programmed. We've got the active/passive uses. We're proposing a recreational field on the upper right, near Ravenswood and Middlefield.

And the other aspect of the property is circulation. We are very -- we've added and included major pedestrian pathways to the site -- north along Ravenswood through the site -- north and south, and diagonally across the site; improved access from the west on Laurel through the site toward the middle.

We have Class 1 bike lanes crossing the site along the loop road, which is a private road that you see circulating through the site, as well a consideration of a Class 4 bicycle lane along Laurel.

Through our outreach programs with the community, bike safety was a very big concern along -- along Laurel. So Class 4 is a separated bicycle pathway for -- especially for kids going up and down Laurel. And they have the opportunity to criss-cross the site over to Menlo Atherton.

Again, the idea is to make the open space active/passive, a criss-cross with pedestrian bicycle pathways to create better access through the site, create better safety for bicycle paths and pathways, and folks using those modes of transportation. Located near Caltrain. So taking advantage of the transportation-oriented design aspects.

And we're -- both Mark and I are open to any questions. But in the interest of keeping this going this evening, we can conclude here and address any questions you might have.

Thank you.

CHAIR DECARDY: Thank you very much. And, again, appreciate you adjusting for us on the fly this evening.

The next step will be, I believe, to our EIR consultant. Is that right, Ms. Sandmeier? But are there questions for the applicant, in advance of that, from any commissioners?

Commissioner Barnes.

COMMISSIONER BARNES: So I do have a couple questions on what they presented. But I want to be respectful to the process and the sequencing of how we're going to do this. I mean, I could ask some questions about the site plan -- does it contemplate certain things, and talk further about that.

But if we're going to come back to this, you tell me, Chair -- or Chair through staff, how we should progress this.

Should we not even go into it and go directly to the EIR? Should we be touching on some of these issues related to the project?

How do you want to do this?

CHAIR DECARDY: My suggestion, Commissioner Barnes, would go to the EIR. If, after the EIR consultant has spoken, that you've got comments germane to the EIR, where you would like to ask questions of the applicant, then perhaps they could -- you could come back to it at that point.

But I think any other questions of the applicant about the project is going to be under I -- what is currently item I1, which we're going to vote to continue until January. So, again, we'll get the full presentation at that point. We'll have the opportunity for full public comment, broad questioning of the applicant at that point.

COMMISSIONER BARNES: Okay. So I --

CHAIR DECARDY: Does that make sense?

COMMISSIONER BARNES: It does.

So in the context of clarifying questions, my clarifying questions would be unrelated at this point to the EIR because I haven't heard that yet. So by definition, I won't have anything. But thank you for that.

CHAIR DECARDY: All right. Ms. Sandmeier, so we're going to the EIR consultant; is that correct?

MS. SANDMEIER: Yes. That's right.

CHAIR DECARDY: Thank you.

MS. VIRAMONTES: Good evening, Commissioners and members of the public. Thank you for coming to the scoping session for the Parkline Master Plan project. My name is Jessica Viramontes, and I work for the environmental consulting firm, ICF. We will be preparing the environmental review component for the project, and I'm the project manager.

Should you have any questions after the presentation regarding the environmental review process, I will respond to them accordingly.

Next slide, please.

My presentation will cover the scoping process and the environmental review process. I will also explain how to submit comments on the scope of the EIR and describe the next steps.

Next slide, please.

The EIR team consists of the City of Menlo Park as the lead agency -- meaning, they have principal responsibility for carrying out the project. ICF will be the lead EIR consultant and will prepare all sections of the EIR, with assistance from Hexagon for the transportation analysis, KMA for the housing needs assessment, and West G. Yost for the water supply assessment.

Next slide, please.

The EIR is a tool for identifying physical environmental impacts by using the analysis conducted by our EIR team. The EIR is also used to inform the public and decisionmakers about a project prior to project approval, recommend ways to reduce impacts, and consider alternatives to lessen identified physical environmental impacts.

Next slide.

The EIR will summarize the environmental setting and regulatory setting, as well as evaluate potential environmental impacts. With respect to the two scenarios that will be evaluated in the EIR, which are the 100 percent office scenario, and the 100 percent R&D scenario, each section in the EIR will evaluate the most intense scenario for the issue being analyzed. This will ensure that the EIR evaluates the proposed project's maximum potential environmental impact and that any future tenant mix is within the scope of the evaluation in the EIR.

Variants are variations of a project at the same project site, with the same objectives, background and development controls, but with additions and changes from the project whose inclusion may or may not reduce environmental impacts.

As mentioned previously, the EIR will evaluate the variants, which are the emergency reservoir variant and the increased residential variant in detail, equal to that of the proposed project.

Next slide, please.

The EIR will analyze a proposed project -- will analyze whether the proposed project would have a significant environmental impact related to the issues shown on this slide. With respect to aesthetics, this issue will likely be exempt, but will also likely be analyzed in some capacity for informational purposes.

The EIR will also include a section for impacts found less -- found less -- found to be less than significant, including the following issues: Agriculture and forestry resources, mineral resources, and wildfire.

In addition, alternatives to the project will be analyzed to potentially reduce identified impacts. CEQA guidelines requires the evaluation of a no-project alternative. Other alternatives will also be considered and will comply with CEQA.

Next slide, please.

This slide shows the general steps involved with the CEQA process for this project. As most of you know, the NOP, which we'll discuss next, was released earlier this month, on December 2nd. The NOP comment period, which is the scoping period, ends on January 9th, 2023.

Following the close of the scoping period, we'll begin preparing the Draft EIR. When the Draft EIR is released for public review, a public hearing will be held to solicit comments on the adequacy of the EIR. Then a Final EIR will be prepared that will address all of the comments received during the Draft EIR review period. A certification hearing for the final EIR will be held before the Planning Commission and City Council.

After the EIR is certified, the project can then be approved. Following approval of the project, a Notice of Determination is issued.

Next slide.

As discussed previously, we are currently in the scoping phase of the project. This is the initial stage of the EIR process. The purpose of the scoping phase is to gather public input, identify key environmental issues, identify possible mitigation measures, and consider possible project alternatives.

I want to note that the intent of tonight's meeting, as well as the scoping phase, is not focused on comments on the project itself or its merits. Instead, comments should be focused on the potential environmental impacts of the project.

Next slide, please.

You can submit comments on the scope of the EIR via e-mail or via letter to Corinna Sandmeier, Acting Principal Planner with the City of Menlo Park. You can also speak tonight, and we will note your comments and consider them during the preparation of the Draft EIR.

All comments must be received by January 9th, 2023, at 5:00 p.m.

Thank you again for coming tonight, and we look forward to receiving your comments.

CHAIR DECARDY: Thank you, Ms. Viramontes.

Any clarifying questions before we turn to public comment? And then we'll have an opportunity to come back, as commissioners for questions, comments, and input into the EIR. But for right now, before we go to public comment, any clarifying questions?

All right. Let's open public comment. Mr. Turner.

MR. PRUTER: Thank you, Chair DeCardy. At this time, I see a couple of hands raised. So I'm happy to go through that, with your permission.

So we'll have -- looks like three commenters now have raised their hands. Let's start with -- I have someone by the name of Peter.

Peter, I'm going to let you un-mute yourself, and we will begin the timer. You will have three minutes to speak. If you could please provide your name and jurisdiction at the start of your comment, that will be greatly appreciated. You'll be able to speak at this time.

Thank you.

PETER CHOW: Hi, Planning Commission. My name is Peter Chow. I'm a resident here in Burgess community, adjacent to the site.

What I wanted to do is just express my continued concern for the number of housing units. The committee here has been very vocal about maintaining the original plan, which was 400 units. And we worked -- and, you know, with Lane Partners and expressing our concern, but now, this additional study is for an additional 50 units. That was not originally contemplated. And so I will be listening and paying attention closely to the impact report, Environment Impact Report, as well as the transportation demand management studies.

So want to continue to express my concerns and, you know, for not only the well-being of the local community here in the Burgess community, but all of Menlo Park because we do understand that the rate -- you know, along Ravenswood and Middlefield is a high impact traffic zone area.

Thanks.

CHAIR DECARDY: Thank you.

MR. PRUTER: Thank you for your comment.

Our next commenter is the name Jenny Michelle. I'm going to un-mute you. And, again, please provide your name and jurisdiction at this time.

Thank you very much. You have three minutes to speak.

JENNY MICHELLE: Good evening, Chair, Commissioners, members of the public, neighbors, staff. My name is Jenny Michelle, from the Commonplace Neighborhood blog. And I am very excited about this project.

But I want to -- actually, opposite of the previous speaker, want to encourage the applicant to be more aggressive with your housing and your specific approach to meeting and exceeding our residential housing obligations and needs for all residents of all income brackets. Right?

But how is the applicant being tied to the Fair Housing Development in this specific way? So I'm just trying to have the applicant and the commissioners and the public tie this together for all the residents who don't understand our obligations here.

I'm also interested in pressing the housing -- or I'm sorry. The parking mandates. I think we should reduce the minimums to include loading and ADA parking only.

We should encourage slow streets to address the safety concerns that we have with high traffic, with single-use vehicles.

And I think there should be robust public outreach, specifically addressing this delta where our population doesn't understand what is being required of us; to develop fair housing in all of our districts and neighborhoods, including the low density neighborhoods that are almost specifically using this vehicle traffic to get through to where the food is; right? So that's where the 10-minute neighborhood comes in.

So thank you for allowing me to speak again, and I appreciate your public service. Thank you.

CHAIR DECARDY: Thank you.

MR. PRUTER: Thank you for your comment.

Our next commenter's name is Sue Connelly. I'm going to un-mute you at this time. If you could please provide your name and jurisdiction. You'll have three minutes. Thank you.

SUE CONNELLY: Thank you. My name is Sue Connelly. And I, too, am a resident of Burgess Classics. And I grew up in the area here too. So I love Menlo Park.

And I'm very much in support of intelligent development, but I am genuinely concerned about the scope of the SRI project. And, again, we here at Burgess Classics, the 33 homes here, are actually a legacy of SRI property that they sold back in '99 to develop in order to raise funds.

So I want SRI to be successful. We really appreciate them. Yet, my concern is that there are many,

many outside advocacy groups that are pushing very hard to increase the amount of housing in this one lot. And this is also prior to the Stanford project, Middle Plaza opening up and the traffic and school impact, water, infrastructure costs, plus what Springline will be also adding to this very high concentrated area at 400, plus 50 to 100, affordable housing units over and above the BMR of 15 percent. It already is a monumental amount on an area that's already getting stressed already.

My chief concern is also the traffic safety, because Laurel Street is a primary artery, and it's a safe streets, safe bike lanes path. And there are still concerns about driveways for, you know, 450 units dumping right onto Laurel Street, which is already gridlocked and congested.

The other issues are that -- you know, the water. I'm really glad that they're planning on building a water reservoir, but just overall, and especially in view of the 123 Independent Drive -- Independence Drive earlier spoken about, we have a major drought continuing and probably prolonged for who knows how many decades further. And we keep adding more and more people and such high density.

So I think that rather than conceding to all the outside pressures for increasing the amount of housing, we need to reuse and rethink the other areas that we have available around Menlo Park and not make a completely deadlocked and gridlocked Ravenswood and Laurel area corridor.

Thank you very much, Planning Commissioners, for staying so late. And thank you for hearing us.

CHAIR DECARDY: Thank you.

MR. PRUTER: Thank you.

Our next speaker is named Brittani Baxter. I'm going to let you un-mute yourself. If you provide your name and jurisdiction. You may now speak. Thank you.

BRITTANI BAXTER: Hi. Good evening. I'm Brittani Baxter, District 3 resident. Try to be quick.

I think there are a lot of really great structural elements in this project that I hope can be studied in the EIR. So just wanted to ask about a couple of those.

Overall, I'm really excited by the project's potential to just kind of be a great example of kind of a future beyond cars. It's so central to downtown. It's so walkable. I think we all hate, you know, car traffic and kind of being stuck in traffic. But I think, with the walkable amenities around that location -- it's an area that I walk to often -- I think it's a really cool opportunity.

So having heard earlier in tonight's meeting that, you know, those existing -- kind of existing conditions factor heavily into the EIR. I know I'm personally able to meet a lot of my daily needs by just actually walking around the neighborhood, walking to downtown. So just hoping we can study those existing amenities to the fullest.

I also do like the idea of the increased residential variant. To me, it's really appealing because I think this is a once-in-a-multi-generational opportunity for this parcel to turn over. It's been, you know, since, I think, the '60's, when a lot of these buildings were built. And so as I think to the future with more people walking and biking and taking transit.

We're right by Caltrain. We're right by the schools. That is really fantastic, too, just to be able to locate those homes in a place that makes sense, again, for people to have other options, other than vehicles.

I also wanted to ask if there's an opportunity to study options that do have that reduced parking minimum, again, to sort of create those right conditions for people to ditch their cars, walk or bike around.

In terms of circulation impacts, I do really like that the site plan for this location opens up a lot of bike and ped routes that make it easier to kind of criss-cross by Menlo Park, by a lot of our schools; get to the train, get to downtown.

And so in terms of circulation benefits, I actually feel that that could be an improvement, especially as we think about, again, alternatives to cars.

And according to our housing element, I know that right now, 96 percent of people who work here in Menlo Park, who are already here every day, part of the community, are commuting in to the city from somewhere else. So, again, given that location next to the train, given that there is no net increase in office space, but that we are adding homes to the community, I do wonder if there's any way to kind of study that as well, given that we have people coming in to work, and at the end of the day, you know, maybe driving to an area that doesn't have great public transit. Just seeing if there's any way to kind of map that circulation plan a little bit better.

Overall, really excited to have this project in the neighborhood. Really appreciate the open dialogue and just excited to see what transpires.

Thank you so much.

CHAIR DECARDY: Thank you.

MR. PRUTER: Thank you. We have two hands raised that remain. The next is a person named Steve P. I'm going to un-mute you at this time. Provide your name and jurisdiction to start. You have three minutes.

Thank you.

STEVE PANG: Hi. Can you hear me?

CHAIR DECARDY: Yes.

MR. PRUTER: Yes.

STEVE PANG: Okay. Thanks.

Hi. My name is Steve Pang. I'm an owner of one of the Burgess Classic communities since it opened up in 1999. And couple quick comments.

So with regards to the Parkline project, I've been involved from the start and have attended most of the feedback sessions. And I have to say that most of us are sort of disappointed in Parkline -- that none of the real significant points that we've provided have been adopted and, basically, we feel neglected and ignored. Particularly like the number of units that we're talking about, the egress of the cars of all the units onto Laurel Street, instead of Ravenswood; the bicycle path connectivity behind Burgess Classic communities and the potential gathering of, say, un-homed people behind -- which is really a problem right now.

So it's funny. We -- I, at least, don't feel like any of our -- my comments have been addressed successfully by Parkline.

A couple quick points before I finish. With regards to reducing parking space, parking spaces in these developments, that, to me, seems like a non-starter because these units are rental properties, where people live there maybe two, three years. And, honestly, as a car owner, if I know I'm only going to live in a place only for two, three years, I'm not going to ditch a car and just have to -- just have to buy a new one back several years later. So anyone reasonably renting these place, to me, will seem like -- will hang on to their cars. And so there is the issue of a lot of cars -- you know, up to 600 new cars, maybe a thousand cars, in the neighborhood. And that's a real problem.

My final comments are with regards to the Environmental Impact Report. Exactly, there's potentially a thousand more cars in the neighborhood. And, you know, we'd like to know how that's going to be addressed. You know, is that going to be examined? Where is this traffic going to go to on Ravenswood and Laurel? And how is it going to impact our neighborhood, as well as adjoining neighbors?

And the last one -- my last comment was with regards to the habit -- the dedication of a certain part of land to a homeless organization or some other organization. So I heard what was happening with Independent Stride, Habitat for Humanity, with a nice plan. And something more definitive needs to be set down, before any approval comes into play. Thank you.

CHAIR DECARDY: Thank you.

MR. PRUTER: Thank you. And our last hand raised is a person named Gail Gorton. I'm going to let you un-mute yourself at this time. You'll have three minutes. Please provide your name and jurisdiction. Thank you.

GAIL GORTON: Good evening. I'm Gail Gorton, a Burgess Classic resident. Thank you for your time tonight.

What has been the primary focus of this project is the housing portion. People seem to have forgotten that there will be thousands of employees coming and going from the site five days a week. The additional congestion that this development is going to create is not limited to the housing portion.

Traffic light changes at the corner of Laurel and Ravenswood have not helped currently, and there are going to be track changes in the future, train track changes at Alma and Ravenswood. And I'm wondering if these are being taken into consideration in the EIR.

In terms of the EIR, it's my understanding it doesn't include the Burgess Classic neighborhood's request to study and include an alternative option of no vehicular access on Laurel Street to the large apartment complex. The fact this was not included, despite what was my understanding from Lane Developers saying it would be studied, is disconcerning.

The Parkline project has continued to increase in size. Yet, last month, Stanford's Hoover Institute released a new study, which I suspect you are aware of, stating that in 2021, California lost 152 corporate headquarters. More than double the totals for each of the three years, from 2018 to 2020.

I encourage the Planning Commission and the City Council to consider how their current decisions are impacting the future of Menlo Park. I understand you are trying to meet housing element numbers, but those numbers are going to be changing as the business climate changes here in California. With the USGS site opening up, there will be further opportunity to meet the numbers required.

I'm asking the Planning Commission to keep the original number of the apartment complex proposal at 400 units; not to increase it to 450. The increase in units seems to be driven by a goal to get to 68 units designated as low and moderate income households. 15 percent of 450 is 68. Parkline has agreed to this. However, if you increase 15 percent by a mere two points, to 17, and do the math, 17 percent of 400 also equals 68. Considering all that Lane Partners has to gain in this endeavor, I can't imagine they would say no.

I'm also asking the Planning Commission to require all apartment parking be underground. This large, three- to five-story apartment complex is not in any way congruent to the neighborhood where all current residences are one or two stories.

Lastly, I encourage the commission to emphasize active land use, not just pretty paths for our children and families. Burgess Park is already packed and cannot accommodate our new neighbors. The many individuals and families who will be living in this densely populated development need usable outdoor space for their mental and physical health.

Thank you for your consideration.

CHAIR DECARDY: Thank you.

MR. PRUTER: And, Chair DeCardy, through the Chair, there are no other hands raised at this time. If you'd like to feel free to close, or we could wait for public comment.

CHAIR DECARDY: Just give it a second.

All right. Still none?

MR. PRUTER: That is correct.

I apologize. We did not give an opportunity for the members of the public to come forward.

CHAIR DECARDY: By all means, please come forward.

PHILLIP BAHR: Thank you for having me tonight, Commissioners. And thank you for your presentation tonight. I feel like we've had a great education tonight.

I love the 123 Independence, and what they went over and how a housing project -- and how they brought the community together and how detailed it was. That was great.

And then we've been talking about this project with Parkline. I appreciate the Classics neighborhood, and I agree with most of the comments that have been made about the size of the project. I'm still a little unclear about the count. I think it's 450, plus 100, plus 50. So a total of 600. But if somebody has a better answer, let me know. But I just look at the documents, and that's what it comes up to.

I've commented on some of this before, but I'll just hit the highlights. And one is the traffic and the safety. Yes, it's a big deal about all the traffic coming out onto Laurel, but also onto Pine. Across from Pine Street, that's a disaster right there. Right now, you can't even turn right and turn left as it is. And so with that many more cars, it's never going to work. So they really need to just abort that entry.

And I don't have the answer for it. But maybe with some further study and the minds, they can come up with other suggestions because I don't want to say that it's not a great project, and we need the housing. I'm just saying the envisioning of it right now.

The second thing is the building setback. It would be good that it's not so close to the road. And I think, along with the building setback, it's the housing height and the number of stories.

During the pre-meetings that we had with Lane Partners and with the architect, we went over many things, but one of them was the height of the building along Ravenswood and Laurel and keeping with the neighborhood. One to two stories would be great. And then set back. And then, as you go -- so that you can have the residential character because that side has been on Menlo Park for 70 years. So that's about when those houses were built.

And then the final -- so I'm saying that the building height along those streets is just too tall. And I can see it, as an architect, that that is, like, a four-story building. Originally, it was one to two. Then it's three. Now it's four. And it blocks off all the sun in the morning coming onto that intersection at Laurel and Ravenswood.

And then the final thing is the site master planning and design of it. I think, get as much housing as you can, but I think, get it in a way that doesn't impact the neighborhood.

And also, in terms of a master plan for SRI, I look at it -- and I've done hundreds of master plans for large projects, like hospitals and research labs. And to me, either having an iconic building or something that has the labs with the spaces that are for collaboration. They just have a great opportunity.

And right now, they've turned it into a residential, and I'm not sure why. Maybe, if I understood the program better, I could speak better to that.

Thank you very much. And my name is Phillip Bahr, and I'm a resident of -- on Pine Street. Thank you.

CHAIR DECARDY: Thank you very much.

Any more public comment hands, Mr. Pruter?

MR. PRUTER: At this time, I see no more.

CHAIR DECARDY: All right. We'll go ahead and close public comment.

That brings it back to the dias. Again, we're not voting on anything. This is for commissioner feedback or questions relevant to the EIR this evening.

Who would like to begin?

Commissioner Riggs.

COMMISSIONER RIGGS: Thank you. Recognizing the time, I'll try to be brief.

I would like to know how we would phrase -- and I guess this would be through the Chair to staff -- how we will address the impacts relative to the current situation.

Are we addressing the proposal and their variance, compared with the square footage of SRI or of the actual average occupancy over the last several years? I ask this in the context, remembering that when we studied projects for El Camino Real, going back ten years, we realized we had to compare the impacts with recent usage, not with the fully occupied usage, since the projects had been very much underpopulated for many years.

CHAIR DECARDY: That's a question to staff?

COMMISSIONER RIGGS: That's a question to staff, yes.

Are we comparing with theoretical occupancy or actual occupancy over the last, say, three or four years?

MS. VIRAMONTES: Corinna, I can take this, if you'd like.

MS. SANDMEIER: Yeah. That would be great. Thank you.

MS. VIRAMONTES: Okay. Perfect.

So I just want to clarify. The project team, you know, including the City staff, are currently confirming the approach for the CEQA baseline, which will be, you know, what we use to measure the project impacts against -- or as well as the project variants. And so we're still working through those kind of questions. It will likely be the -- you know, the baseline of the timing that the NOP was released.

And I just also wanted to clarify that we will be studying an -- we will likely be studying an actual existing conditions at the site.

COMMISSIONER RIGGS: I apologize. Our audio has not been what it used to be. And the repetity of your speech, coupled with that, makes it a little bit hard to follow, frankly, what you just said.

But I think you ended by saying the baseline would be actual recent usage?

MS. VIRAMONTES: Correct.

COMMISSIONER RIGGS: All right. Thank you.

And then, in terms of the projected occupancy of the -- either office or R&D buildings, am I correct we're using, for office space, 250-square-foot per occupant?

MS. VIRAMONTES: I believe that we're still working through those questions as well. But we'll be sure that the generation rate for employees will be conservative enough so that the impacts identified in the EIR will capture the possible future tenant mix and employees that we'll generate by the project.

COMMISSIONER RIGGS: I appreciate that because my concern is, these are -- in a sense, these are spec office buildings. And they could just as well be occupied by startups and by other tech-oriented companies with relatively high density use of desks, as they could be by VCs, with very low use of desks.

And although we are hearing of companies that are only asking their employees to come in a certain number of days per week -- even, for example, my friend's company, they gather once per week. But on that one day, they all come in. So that would be relevant.

And then, of the -- for the project variant with increased housing, I probably read and forgot how much increased housing that would be. I mean, right now, we have 550 as the outside.

Would the variant be the 550, or is the variant going to be something like 700 to 800?

MS. VIRAMONTES: The variant would be 50 more residential units under the project. So it would be a total of 600 units.

COMMISSIONER RIGGS: All right. I would like to suggest that since it's a variant, for the sake of an environmental review, that the difference between the proposed and the variant be significantly different. And so I would suggest at least 150 additional units, if not

250, which, you know, to those listening, that does not in any way imply that I think the project should be larger. It does mean that we would like the information that would result from seeing additional housing here.

We still don't fully know, until the EIR comes out, whether having more housing here is actually a benefit to transportation, for example. Because if the vast majority of people who work here -- and the SRI campus, until recent years, was a significant draw for people. They've all been driving in.

If this changes to more transit-oriented development, sometimes the new housing onsite will have a back effect on those who commute in. And perhaps that's wishful thinking, but the EIR, I think, is more likely to tell us than my guessing or anyone else's.

And I'll leave it at that. Thank you.

CHAIR DECARDY: Other commissioners?

Vice Chair Harris?

VICE CHAIR HARRIS: Yes. Thank you so much for that introduction.

I would agree with my colleague, Commissioner Riggs, that to study just 50 more units is going to be less -- going to give us less information than studying at least 150 additional units. And I can't remember, but I don't think that that's coupled with reduced office.

But I'm wondering if it would be possible to do a variant where we are increasing the housing, coupled with reducing the office, as we struggle with our housing situation because as I was looking at the map, I was thinking that existing building F -- if, after the rest were done, they moved those folks to some of these newer offices, that would provide a nice extra area, right over in the residential zone, to build a lot more housing. So that's a thought.

And then the other was to think about reducing the parking. We talk about this about every time. But reducing the parking significantly. So that would be something else that I would want to see studied. Just some thoughts.

CHAIR DECARDY: Commissioner Do.

COMMISSIONER DO: I agree with the previous comments, and I want to add on to Vice Chair Harris' comment about drastically reducing parking.

I think later on in the staff report, I think some parking rates from the Bayfront area were cited. And I just wanted to add, this is an area much closer to transit than the Bayfront, with Caltrain and El Camino Real bus route. So I think even within a half mile.

So I just want to echo what Vice Chair Harris said.

CHAIR DECARDY: Commissioner Barnes.

COMMISSIONER BARNES: Question through the Chair to staff, in particular to the folks who are doing the legwork on the EIR. This is kind of a process question because I don't really understand how this works. And to the extent you can help me understand, it would be fantastic. And what it's specific to is to the question around parking. And more specifically to the extent to which the EIR can illuminate the various discussions around parking.

We -- to say more about that, we have a lot of discussions about reducing the number of spaces, and we have assumptions about reductions in greenhouse gases associated with that written reductions, and congestion associated with that.

And then we also make assumptions around reductions being doable, feasible; actually, in practice, working. And I don't have any background in this. I think the suppositions around reducing parking are good.

What I'd like to know is, is the EIR the mechanism that can illuminate, you know, a database approach to, you know, what happens when you reduce parking? What are the specific impacts of those? Has it, you know, borne out in other jurisdictions? What's the role of the EIR specific to parking and the discussions around parking? I'd love to hear a little bit more about that.

MS. VIRAMONTES: Sure. I can tackle that one, and others can add on as needed.

I do want to clarify that an EIR is not the mechanism for analyzing the impacts of reducing parking. Specifically, parking is not a topic that is required as an environmental issue that is required to be analyzed under CEQA.

And also I want to note that it's been found that generally, reductions of parking do not reduce environmental effects. But I know that my colleague, Kirsten Chapman on this call -- or at this meeting, might have a little bit more to add.

Kirsten, is there anything else you want to chime in on?

MS. CHAPMAN: Hi. I'm Kirsten Chapman. I'm with ICF. I'm helping Jessica with this EIR.

And we actually recently completed the EIR for the Willow Village project. And we did prepare a lengthy master response in the Final EIR that discussed how parking and environmental impacts are not actually correlated. And we explained why this is not a reason that we can use to reduce environmental impacts by reducing parking.

So without getting into those details, that is where we recently prepared the response. And, yeah. As Jessica mentioned, it's not a CEQA topic. Parking is not a CEQA topic. And so we generally do not discuss this.

But where we will have a robust discussion will be in the alternatives section, and we can discuss why a reduced parking alternative would not actually reduce the environmental impacts.

COMMISSIONER BARNES: And if you would just take a moment, define "environmental impacts" in the context with which you're using it, when you say, would not reduce environmental impacts. What's a practical or what's an example of that?

MS. CHAPMAN: Well, so transportation impacts like traffic impacts would result in greenhouse gas impacts, air quality impacts, noise impacts. But reducing the parking in and of itself would not reduce the amount of trips to a project site. It would likely result in people driving around neighborhoods, looking for parking. They still need places to park.

What is better, rather -- or not better, but what works generally more or what does work more than reducing parking is to have a TDM plan, which is required in the City of Menlo Park, to require the workers on the project site and the residents to take more public transportation or shuttles. That reduces trips.

But the reduction in parking generally does not reduce trips, which then has an environmental effect of putting out fewer greenhouse gases and fewer air quality emissions and noise.

COMMISSIONER BARNES: Thank you for that.

And I assure my fellow commissioners, I wasn't leading the witness on that. I didn't know how it was going to get answered. But I don't know. I always want to come back to testing our assumptions. And that was informative for me, because I didn't -- I didn't know the answer to that.

Okay. So I'll probably come back with another one, but thank you for -- for answering that. Appreciate that. And I'll come back with something else.

Back to you, Chair.

CHAIR DECARDY: Yeah. Sorry. That's red meat for me.

So, Ms. Chapman, I don't know if you were there for the Willow EIR, but that -- the answer then was entirely unsatisfactory. The reason is because of a lot of assumptions about leakage, that there's not alternative transportation; and so, therefore, people drive around neighborhoods. And we couldn't do a reduced parking because we've got parking minimums in Menlo Park, which is what we just talked about with the last EIR.

So I just -- I encourage you all when you do this EIR, to be as careful as possible when you're explaining why it doesn't have impacts because an answer without that is actually misleading. So that's first point.

And then, secondly, for me is an encouragement to find a way in the EIR that can actually tackle this question because it is the one that comes up again and again and again and again. And it just came up in multiples of the public comments with the concerns of the residents who live nearby right now.

So, again, I'm tired of EIRs that don't serve the public interest of our community. And I appreciate you all are doing your jobs, and I appreciate you're boxed in by a whole set of stuff. But somebody in this mix has got to do a better job for our community. This is a lot of money, and a lot of time spent on these things.

So perhaps the alternative is a massively-increased TDM plan. And I'm fine to do TDM over parking. If the -- if we have a massive TDM plan that says it has to be reduced by 40 or 50 or 60 percent, and then that's a way to be able to look if there's an environmental benefit.

And if they want to keep on building the parking garages, when there's going to be no cars in them, that would be a massive mistake. But that's fine, frankly, if that's the answer on this.

So I'll just go back to my frustration with just about every EIR I've seen in four years now. And this one is, I'm concerned, headed in that same direction. So I just -- I appreciate the presentation, and I appreciate and understand how -- the way that we have a community that does not have good alternative transportation and because we have parking minimums puts parameters for what you all can do on an EIR.

But I would really encourage you to find creative ways around that to actually give a document that would be useful to the community in understanding what those impacts are, and what the benefits might be, if we change those patterns and those behaviors. That would be a true benefit to the discussion of this potentially-fabulous project that is a once-in-a-lifetime opportunity -- that never again are we going to get 62 acres within a block of a train station. And we've got to begin looking at it right with the EIR, if we're going to continue to look at it right through the whole project.

So I appreciated Commissioner Barnes, your question. And I assume you knew it was headed toward me on that. But that is the one interest I had is when you do alternatives on this project, and if there's a "no project" alternative, again, I hope we don't come back with three alternatives that ends up with the Goldilocks porridge in the middle that's just warm enough because that's just not useful for us.

And I hope you can find ways that can make it useful for our community to use this information that you're going to come up with and your expertise to our benefit.

Other commissioner input on the EIR in this scoping session?

COMMISSIONER RIGGS: Yes.

CHAIR DECARDY: Commissioner Riggs?

COMMISSIONER RIGGS: Thank you. I have to admit, I had the same reaction as Chair DeCardy. I think anyone who has worked in Manhattan or, frankly, even San Francisco, yes, you can drive to your office at 6th and Market and then cruise around and look for a surface spot. But that gets really old. And, yes, 60 or 80 people might manage to find street parking spaces until it gets posted two-hour zones. But 600 are not going to. And I think it's quite counter-intuitive for us to hear that reducing -- eliminating places to park is not going to have an effect with how many cars come in to work.

And I think we realize that only so many people can take Caltrain because if you're coming in from

Hayward, Caltrain simply doesn't go there. And, frankly, if you come in from the Belmont Hills, Caltrain doesn't go there. But a whole lot of people come from San Francisco. A whole lot of people come from San Jose. And if we don't test the waters, as Mr. DeCardy has stressed, we won't have information that we can use. I do not think if it's true that we are not taking reduced parking seriously because of existing codes -- that that should stand in the way. And perhaps this body needs to clarify.

When a project comes before us, the result is a change in codes. And the change in codes may be buildable height, it may be density, it may be parking ratios applying to that site. So all items are in flux. And if we can benefit from further information, that would be extremely important.

And it may indeed turn out that in real life, if you take away all parking places and have 10,000 people report to work, they'll still drive, then we've learned a very surprising lesson. But I think we have to see it. Thank you.

CHAIR DECARDY: Other commissioner comments on any aspect of the scoping of the EIR for input at this time?

Commissioner Barnes.

COMMISSIONER BARNES: And I must apologize. I'm scrolling furiously back up and down in the staff report. And I'm looking for the specific alternatives. And I guess I don't see it laid out.

I'm going to ask this question in real time. Is there a specific matrix that talks to the different alternatives that are being discussed that will be underwritten in the EIR? What am I missing?

And I'll ask this question through staff. Thank you.

Excuse me. Through Chair.

MS. VIRAMONTES: Corinna, would you like me to go first?

MS. SANDMEIER: Sure.

MS. VIRAMONTES: Okay. I just want to clarify, we haven't yet determined the alternatives for this project. The typical process is to evaluate the project's impact and then develop alternatives that would reduce or avoid any significant environmental issues.

So to back up a little bit, you kind of see what the potential impacts of the project are. And then you develop alternatives to kind of help the public understand what alternatives to the project there would be that would reduce the project's environmental impacts.

But also to back up again, there are project variants under consideration; one being the emergency reservoir variant, and the other being the increased residential variant. And those will be analyzed throughout the EIR, to similar level of detail as the project. So there's variants, and then there's alternatives.

COMMISSIONER BARNES: Got it.

So the baseline EIR is based on the project applicant's project description, in terms of densities and intensity; is that right?

MS. VIRAMONTES: Exactly. Yes.

COMMISSIONER BARNES: Got it. Okay.

And I -- this is a -- this is a unique location in Menlo Park that brings together the live, work, play. So thank you for that. This is a commentary. This is a unique portion of Menlo Park that brings together the live, work, play aspect of our city. And I -- I think the commercial -- the office, the commercial pieces of this are very appropriate. And I wouldn't be inclined to see a reduction in that for the purposes just straight up from what the applicant has proposed.

I think, from a master plan perspective, it's a net neutral, in terms of space. And I think it's wholly appropriate for this area, for the mix of the different uses for this site and for what it brings to the city. And I wouldn't be inclined to be supportive of a reduction in that component of it. Thank you.

CHAIR DECARDY: Commissioner Riggs has left, for those that couldn't see.

Other commissioner comments on this item, which is H1, the scoping for the EIR?

To staff, have you received what you --

COMMISSIONER BARNES: I'm sorry. One more question.

CHAIR DECARDY: -- were after this evening?

I'm sorry. Commissioner Barnes, please.

COMMISSIONER BARNES: Thank you.

As it relates to the project itself as being contemplated in the EIR, when we saw the site plan earlier, it had a recreational field at the corner of Middlefield and Ravenswood, and then it seemed to carve out around the church.

So my question is, is the project scope contemplating the church site being part of the project or not part of the project?

And that's kind of a two-part question. One is, you've got that parking which abuts Ravenswood and Middlefield and another is the actual physical structure of the church itself and the parking that's behind it.

What's in the project scope?

CHAIR DECARDY: That is a question to the applicant or staff --

Ms. Sandmeier?

MS. SANDMEIER: Yes. Through the Chair, the church is not part of the project site. There is an agreement between SRI and the church to provide some surface parking to the church.

And I know that's -- I think that's influenced the site plan a little bit, that requirement to continue providing some parking there.

COMMISSIONER BARNES: Thank you for that.

So through the Chair, the -- so the project contemplates a wrap-around, in effect, where you've got -- and if we could look at the actual site plan itself, that might provide some quick clarity in this.

Can someone pull that up? I think it was on one of the slides in the project introduction.

MS. SANDMEIER: Yeah. Vanh, it was slide 5 on my presentation. If you can pull that up.

COMMISSIONER TATE: Excuse me. Chair DeCardy, I'm leaving the meeting.

CHAIR DECARDY: All right. Thank you, Commissioner Tate.

COMMISSIONER BARNES: Okay. So it -- so the proposed project encircles the improvements that are the church, in a sense.

MS. SANDMEIER: Yeah. That's right. The church is its own parcel.

COMMISSIONER BARNES: And the parking behind the church -- I'm sorry -- runs with the project or doesn't run with the project?

MS. SANDMEIER: That parking is part of the Parkline project. But there's an agreement where the SRI -- or Parkline is required to provide parking to the church. And maybe the applicant can speak to that a little bit more.

MR. MURRAY: Please. Sure. Just to add a little bit more detail.

So kind of that white carve-out on Ravenswood, that's the church-owned property. So there are two buildings there that are owned by the church, not part of the project scope. However, the surface parking around it is part of Parkline. It's owned by SRI.

But the church has an easement to 125 parking stalls adjacent to the church. So we're maintaining that in the -- in our project scope, as we're required.

COMMISSIONER BARNES: Got it. Thank you.

And thank you to our fellow commissioners here for your forebarence with that question.

That's all. Thank you.

CHAIR DECARDY: Ms. Sandmeier, have you had whatever you need from commissioners on scoping of the EIR this evening?

MS. SANDMEIER: Yes. If there's no more comments from commissioners, that's...

CHAIR DECARDY: All right. Any final comments or initial comments from any commissioners at this time?

All right. I'm going to go ahead and close Item H1 this evening. And thank you.

And thank you to the consultant for the presentation, for clearly laying out what's going to happen, and appreciate all the work you're going to be doing.

(Whereupon, Agenda Item H1 ended.)

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CERTIFICATE OF REPORTER

I, AMBER ABREU-PEIXOTO, hereby certify that the foregoing proceedings were taken in shorthand by me, a Certified Shorthand Reporter of the State of California, and was thereafter transcribed into typewriting, and that the foregoing transcript constitutes a full, true, and correct report of the proceedings which took place;

That I am a disinterested person to the said action.

IN WITNESS WHEREOF, I have hereunto set my hand this 27th day of January, 2023.

Amber Abreu-Peixoto

AMBER ABREU-PEIXOTO, CSR No. 13546

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

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December 5, 2022

Corinna D. Sandmeier
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

Re: 2022120058, Parkline Master Plan Project, San Mateo County

Dear Ms. Sandmeier:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. <u>Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:</u> Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. <u>Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report:</u> A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. <u>Mandatory Topics of Consultation If Requested by a Tribe:</u> The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. <u>Discretionary Topics of Consultation:</u> The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. <u>Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:</u> With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. <u>Discussion of Impacts to Tribal Cultural Resources in the Environmental Document:</u> If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

- **i.** Planning and construction to avoid the resources and protect the cultural and natural context.
- **ii.** Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

- **i.** Protecting the cultural character and integrity of the resource.
- **ii.** Protecting the traditional use of the resource.
- **iii.** Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation

DISTRICT 4
OFFICE OF REGIONAL AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

January 9, 2023

SCH #: 2022120058
GTS #: 04-SM-2022-00485
GTS ID: 28368
Co/Rt/Pm: SM/82/0.66

Corinna Sandmeier, Acting Principal Planner
City of Menlo Park
333 Ravenswood Ave
Menlo Park, CA, 94025

Re: Parkline Master Plan Project – Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR)

Dear Corinna Sandmeier,

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Parkline Master Plan Project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the December 2022 NOP.

Project Understanding

The proposed project would redevelop SRI International's research campus by creating a new office and research and development (R&D), transit-oriented campus with no net increase in commercial square footage, up to 550 new rental housing units at a range of affordability levels, new bicycle and pedestrian connections, and 25 acres of publicly accessible open space. It would result in a total of approximately 1,898,931 gross square feet (gsf), including approximately 1,380,332 gsf of office and R&D uses and approximately 518,599 gsf of residential uses. The proposed project is near State Route (SR) 82, or El Camino Real.

Travel Demand Analysis

With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide (*link*).

If the project meets the screening criteria established in the City's adopted Vehicle Miles Traveled (VMT) policy to be presumed to have a less-than-significant VMT impact and exempt from detailed VMT analysis, please provide justification to support the exempt status in alignment with the City's VMT policy. Projects that do not meet the screening criteria should include a detailed VMT analysis in the DEIR, which should include the following:

- VMT analysis pursuant to the City's guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City;

- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Potential traffic safety issues to the State Transportation Network (STN) may be assessed by Caltrans via the Interim Safety Guidance (*link*);

- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.

Lead Agency
As the Lead Agency, the City of Menlo Park is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, or for future notifications and requests for review of new projects, please email LDR-D4@dot.ca.gov.

Sincerely,

Mark Leong

MARK LEONG
District Branch Chief
Local Development Review

c: State Clearinghouse

Lozano Smith
ATTORNEYS AT LAW

Harold M. Freiman
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E-mail: hfreiman@lozanosmith.com

January 9, 2023

By Email and U.S. Mail: cdsandmeier@menlopark.org

Corinna Sandmeier
Acting Principal Planner
Community Development
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

Re: Response of Sequoia Union High School District to Notice of Preparation of the Environmental Impact Report for the Parkline Master Plan Project

Dear Ms. Sandmeier:

This office represents Sequoia Union High School District ("District"). The District appreciates the opportunity to provide comments and input regarding the Notice of Preparation of the Environmental Impact Report ("EIR") for the Parkline Master Plan Project ("Project").

As should by now be abundantly clear from the District's scoping and comment letters recently submitted to the City regarding other projects, the District is very concerned about the numerous large residential and commercial development projects proposed in the City. The District's Menlo-Atherton High School is located approximately half a mile west of the Project, while the District's TIDE Academy and Sequoia High School are located approximately four miles from the Project. These Project is anticipated to result in extensive impacts on student safety, among other impacts. **As in the District's prior letters, the District requests that all direct and indirect impacts related to the Project's proximity to District schools, especially Menlo-Atherton High School, be thoroughly reviewed, analyzed, and mitigated.**

The Project application was submitted by Lane Partners, LLC, on behalf of SRI International. The 63.2-acre Project site is proposed to be located at 333 Ravenswood Avenue, 301 Ravenswood Avenue, 555 Middlefield Road, and 565 Middlefield Road. The Project site currently includes SRI International's research campus. The proposed Project would redevelop the research campus by creating a new office/R&D, transit-oriented campus with no net increase in commercial square footage, up to 550 new rental housing units at a range of affordability levels, new bicycle and pedestrian connections, and 25 acres of publicly accessible open space. The Proposed Project would organize land uses generally into two land use districts within the Project site, including 1) an approximately 10-acre residential district in the southwestern portion of the Project site; and 2) an approximately 53-acre office/R&D district that would comprise the remainder of the Project site. The Proposed Project would also establish a separate parcel of land that is proposed to be leased to an affordable housing developer for the future construction of a 100% affordable housing or special needs project which would be separately rezoned as part of the proposed Project for up to 100 residential units. As explained further below, this Project has the potential to cause severe detriment to the District and its students.

The Notice of Preparation ("NOP") prepared for the Project concludes that the Project may have numerous impacts on the environment, including potential impacts on Public Services, Population and Housing, Transportation, Noise and Vibration, Air Quality and Utilities. The NOP thus correctly concludes that a subsequent full-scope EIR is required.

Preliminarily, the District notes that it is willing to participate in meetings or study sessions with City Staff and the applicant to discuss the proposed Project. The District is hopeful that opening the door to these discussions will yield solutions that benefit the District, the City, and the community as a whole.

The District requests that the following topics be analyzed and considered in the Draft EIR for the Project.

A. Transportation/Circulation/Traffic Analysis

1. **Describe the existing and the anticipated vehicular traffic and student pedestrian movement patterns to and from school sites, including movement patterns to and from Menlo-Atherton High School, TIDE Academy, and Sequoia High School, and including consideration of bus routes.**

2. **Assess the impact(s) of increased vehicular movement and volumes caused by the Project, including but not limited to potential conflicts with school pedestrian movement, school transportation, and busing activities to and from Menlo-Atherton High School, TIDE Academy, and Sequoia High School.**

3. **Estimate travel demand and trip generation, trip distribution, and trip assignment by including consideration of school sites and home-to-school travel.**

4. **Assess cumulative impacts on schools and the community in general resulting from increased vehicular movement and volumes expected from additional development already approved or pending in the City.**

5. **Discuss the direct, indirect, and cumulative impacts on the circulation, and traffic patterns in the community as a result of traffic generated by the transportation needs of students to and from the Project and schools throughout the District during and after the Project build-out.**

6. **Assess the impacts on the routes and safety of students traveling to school by vehicle, bus, walking, and bicycles.**

The District has significant concerns about the traffic, transportation, and circulation impacts that the Project may have on the District, including the District's staff, parents, and students that attend Menlo-Atherton High School. The foregoing categories of information are critical for determining the extent of those impacts.

(a) The City Must Consider All Traffic and Related Impacts, Including Impacts of Traffic on Student Safety, Caused by the Project.

Any environmental analysis related to the Project must address potential effects related to traffic, noise, air quality, and any other issues affecting schools. (Pub. Resources Code, §§ 21000, *et seq*.; Cal. Code Regs., tit. 14, §§ 15000, *et seq*.; *Chawanakee Unified School District v. County of Madera, et al.*, (2011) 196 Cal.App.4th 1016.) Additionally, specifically regarding traffic, there must be an analysis of safety issues related to traffic impacts, such as reduced pedestrian safety, particularly as to students walking or bicycling to and from Menlo-Atherton High School; potentially reduced response times for emergency services and first responders traveling to these schools; and increased potential for accidents due to gridlock during school drop-off and pick-up hours. (See, Journal of Planning Education and Research, "Planning for Safe Schools: Impacts of School Siting and Surrounding Environments on Traffic Safety," November 2015, Chia-Yuan Yu and Xuemei Zhu, pg. 8 [Study of traffic accidents near Austin, Texas schools found that "[a] higher percentage of commercial uses was associated with more motorist and pedestrian crashes" around schools].)

The State Office of Planning and Research has developed new CEQA Guidelines which set forth new criteria for the assessment of traffic impacts, and now encourages the use of metrics such as vehicle miles traveled ("VMT"), rather than level-of-service ("LOS"), to analyze project impacts on traffic. (14 Cal. Code Regs. § 15064.3.) However, local agencies may still consider impacts on traffic congestion at intersections where appropriate, and <u>must</u> do so where, as here, such traffic congestion will cause significant impacts on air quality, noise, and safety issues caused by traffic. (Pub. Res. Code § 21099(b)(3).)

The City has experienced a drastic increase in traffic over the last ten to fifteen years as the City has continued to approve newer corporate campuses and mixed biotechnology, commercial, office, and residential land uses. **The construction resulting from and traffic generated by the Project will severely exacerbate the already stifling traffic in the area, and the safety issues posed thereby. These impacts will severely inhibit the District's ability to operate its educational programs, including at Menlo-Atherton High School.**

The proposed Project is anticipated to impede circulation in the Project area, and clog the access roads to, from, and around the District's Menlo-Atherton High School, including along Middlefield Road. (See, 5 Cal. Code Regs. § 14010(k), which requires that school facilities be easily accessible from arterial roads.) The District's Menlo-Atherton High School is located approximately half a mile west of the Project. Both Menlo-Atherton High School and the proposed Project would be accessed by the same roads, including those mentioned above. In addition to drawing a large number of new residents to the area, the proposed Project will draw thousands of daily office commuters, visitors, and emergency access vehicles from around the Bay Area. The immediate roads surrounding Menlo-Atherton High School, will bear the burden of the increased traffic patterns. Such increases to traffic in the area will not only make it much more difficult for students and staff to travel to and from Menlo-Atherton High School, but will also **drastically increase the risk of vehicular accidents to District families, students, and staff traveling to and from school**.

In addition to increased risks of vehicular accidents, the traffic and parking impacts posed by the Project may severely impact the safety and convenience of Menlo-Atherton High School students who walk or bike to school. Title 5 of the California Code of Regulations requires that school sites be located within a proposed attendance area that encourages student walking and avoids extensive bussing. (5 Cal. Code Regs. § 14010(l).)

The EIR must analyze and mitigate all of the above traffic and related impacts, including those impacts related to student safety and ability to get to school, the District's ability to implement its transportation and safety mitigation measures for Menlo-Atherton High School, and the District's ability to promote alternative modes of transportation to and from Menlo-Atherton High School. It is important that these traffic impacts are not only assessed through a VMT analysis, but also through a LOS analysis, as traffic congestion surrounding the District's Menlo-Atherton High School caused by the proposed Project will in turn cause significant issues related to safety, noise, and air quality. It is anticipated that these impacts will extend far beyond the Project area. Rather, the District requests that all intersections that could be impacted by the Project, including those within and outside of the Project area, be analyzed for LOS and related safety impacts.

(b) City Must Consider Cumulative Traffic and Related Impacts.

Environmental impact reports must address cumulative impacts of a project when the project's effects on the environment, viewed in conjunction with impacts of other past, present, or reasonably foreseeable future projects, is cumulatively considerable. (14 CCR 15130(a).) (See *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 CA4th 713, 720, finding that piecemeal approval of several projects with related impacts could lead to severe environmental harm.) While a lead agency may incorporate information from previously-prepared program EIRs into the agency's analysis of a project's cumulative impacts, the lead agency must address all cumulative impacts that were not previously addressed in the program EIR. (Pub. Res. Code § 21083.3(c); 14 CCR 14183(b)(3).)

The Project's above- and below-discussed anticipated impacts on the District, combined with the anticipated impacts of the vast number of development projects that have recently been approved and are being considered for approval in the City are cumulatively considerable. All of these impacts are exacerbated by the volume of projects that the City is considering and approving, as the District will be unable to accommodate the influx of students through facilities, infrastructure, and related improvements. When considered together, the collective impacts on traffic, safety, and air quality in the neighborhood will be devastating. **These cumulative impacts on the District's Menlo-Atherton High School, TIDE Academy, and Sequoia High School must be analyzed and mitigated.**

B. Air Quality

7. **Identify and assess the direct and indirect air quality impacts of the Project on sensitive receptors, such as the District's Menlo-Atherton High School.**

8. **Identify and assess cumulative air quality impacts on schools and the community in general resulting from increased vehicular movement and volumes expected from additional development already approved or pending in the area.**

The Bay Area Air Quality Management District's ("BAAQMD") CEQA Guidelines (May 2017) impose numerous limitations on the exposure of "sensitive receptors," such as schools, to odors, toxics, and pollutants, including pollutants from vehicular exhaust.

It is anticipated that the Project will have a significant impact on the air quality of the neighborhood surrounding Menlo-Atherton High School due to extensive construction activities and increases in vehicular traffic. Even more pressing, the proposed Project is anticipated to result in significant impacts to sensitive receptors as an increased number of vehicles enter and exit the Project area, creating increased levels of air toxins and particulate matter that could negatively impact student health. These impacts, as they relate to the District's students at Menlo-Atherton High School, must be analyzed in the Draft EIR. This analysis also dovetails with the discussion above regarding the necessity of LOS analysis. Decreased levels of service at intersections generally mean lengthier amounts of time for cars to idle, including near schools, resulting in decreased air quality and the potential for substantial impacts on students.

C. Noise

9. **Identify any noise sources and volumes which may affect school facilities, classrooms and outdoor school areas.**

It is expected that noise from construction stemming from the implementation of the proposed Project will cause impacts on the District's educational programs at Menlo-Atherton High School. Request No. 9 is intended to clarify that the EIR's consideration of noise issues take into account all of the various ways in which noise may impact schools, including increases in noise levels in the immediate vicinity of Menlo-Atherton High School.

D. Population

10. **Describe historical, current, and future population projections for the District.**

11. **Assess the impacts of population growth within the District on the District's ability to provide its educational program.**

In addition to 450 anticipated residential units, it is anticipated that the proposed Project's 1,500,000 gsf of Office/R&D District will draw thousands of residents into the area on a permanent, or at least a daily basis. Using the District's previously identified student generation rate of 0.2, 450 anticipated residential units are likely to generate approximately 90 new high school students to the District. Menlo-Atherton High School is currently already over capacity.

The District, therefore, specifically demands that historic, current, and future population projections for the District be addressed in the EIR. Population growth or shrinkage is a primary consideration in determining the impact that development may have on a school district, as a booming population can directly impact the District and its provision of educational services, largely because of resulting school overcrowding, while a district with declining enrollment may depend on new development to avoid school closure or program cuts. Overcrowding can constitute a significant impact within the meaning of CEQA. (See, 14 Cal. Code Regs. §§15064(e).) This is particularly true where the overcrowding results in unsafe conditions, decreased quality of education, the need for new bus routes, and a need for new school construction. The same can hold true for potential school closures or program cuts resulting from a declining population.

E. <u>Housing</u>

12. **Describe the type and number of anticipated dwelling units indirectly resulting from the Project.**

13. **Describe the average square footage for anticipated dwelling units, broken down by type of unit, indirectly resulting from the Project.**

14. **Estimate the amount of development fees to be generated by development in accordance with implementation of the Project.**

The foregoing categories of information are critical for determining the extent of both physical and fiscal impacts on the District caused by increased population growth.

California school districts are dependent on developer fees authorized by the provisions of Government Code sections 65995, *et seq.*, and Education Code sections 17620, *et seq.*, for financing new school facilities and maintenance of existing facilities. The developer fees mandated by Section 65995 provide the District a significant portion of its local share of financing for facilities needs related to development.

The adequacy of the statutory development fees to offset the impact of new development on local school districts can be determined only if the types of housing and average square footage can be taken into consideration. For instance, larger homes often generate approximately the same number of students as smaller homes. At the same time, however, a larger home will generate a greater statutory development fee, better providing for facilities to house the student being generated. It is for these reasons that the Government Code now requires a school district to seek – and presumably to receive – such square footage information from local planning departments. (Gov. Code § 65995.5(c)(3).)

While the foregoing funding considerations raise fiscal issues, they also translate directly into physical, environmental impacts, in that inadequate funding for new school construction results in overcrowding of existing facilities. Without funding to build new facilities or land on which to expand, students may need to attend schools outside their attendance boundaries, creating significant traffic impacts, among others. Furthermore, fiscal and social considerations are relevant to an EIR, particularly when they either contribute to or result from physical impacts. (Pub. Resources Code § 21001(g); 14 Cal. Code Regs. §§ 15021(b), 15131(a)-(c), 15142 & 15382.)

Phasing of development is also a crucial consideration in determining the extent of impacts on schools, which is especially relevant considering the volume of development occurring in the downtown area. The timing of the development will determine when new students are expected to be generated, and therefore is an important consideration particularly when considering the cumulative impact of a project in conjunction with other approved or pending development.

F. <u>Public Services</u>

15. **Describe existing and future conditions within the District, on a school-by-school basis, including size, location and capacity of facilities.**

16. **Describe the adequacy of both existing infrastructure serving schools and anticipated infrastructure needed to serve future schools.**

17. **Describe the District's past and present enrollment trends.**

18. **Describe the District's current uses of its facilities.**

19. **Describe projected teacher/staffing requirements based on anticipated population growth and existing State and District policies.**

20. **Describe any impacts on curriculum as a result of anticipated population growth.**

21. **Identify the cost of providing capital facilities to properly accommodate students on a per-student basis, by the District (including land costs).**

22. **Identify the expected shortfall or excess between the estimated development fees to be generated by the Project and the cost for provision of capital facilities.**

23. **Assess the District's present and projected capital facility, operations, maintenance, and personnel costs.**

24. **Assess financing and funding sources available to the District, including but not limited to those mitigation measures set forth in section 65996 of the Government Code.**

25. **Identify any expected fiscal impacts on the District, including an assessment of projected cost of land acquisition, school construction, and other facilities needs.**

26. **Assess cumulative impacts on schools resulting from additional development already approved, pending, or anticipated.**

27. **Identify how the District will accommodate students from the Project who are not accommodated at current District schools, including the effects on the overall operation and administration of the District, the students and employees.**

CEQA Guidelines, Appendix G, states that a project may have public services impacts on schools if the project would “result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives” for the provision of school services.

There are a myriad of ways in which large residential and commercial development projects can impact a school district’s need for new or physically altered facilities in order to maintain performance objectives. The Draft EIR’s examination of the Project should analyze <u>all</u> potential impacts under this standard, including but not limited to: (1) whether the influx of students would require “physically altered” school facilities unrelated to the accommodation of additional enrollment; (2) whether other impacts of the Project, such as increased traffic, noise, or air pollutants in the neighborhood surrounding Menlo-Atherton High School, could impact the District’s need for new or physically altered school facilities; and (3) whether other impacts of the Project could otherwise interfere with the District’s ability to accomplish its own performance objectives. Consideration of the above-listed categories of information is essential to properly making these determinations.

Lead agencies often cite to SB 50 (specifically, Government Code sections 65995(h) and 65996(a)), for the proposition that the payment of school impact fees (commonly referred to as “developer fees”) excuses them from their obligations to analyze and mitigate impacts posed on school districts by development. This, however, is a misstatement of the law related to developer fees and CEQA. While SB 50 does declare that the payment of the developer fees authorized by Education Code section 17620 constitutes “full and complete mitigation of the impacts of any legislative or adjudicative act on the provision of adequate school facilities,” (Gov. Code § 65995(h)), SB 50 does not excuse lead agencies from analyzing such impacts on school facilities in the first place. Further, **California courts have since acknowledged that developer fees do <u>not</u> constitute full and complete mitigation for school-related impacts other than school overcrowding.** (*Chawanakee Unified Sch. Dist. v. County of Madera* (2011) 196 Cal.App.4th 1016.) Thus, the payment of fees does <u>not</u> constitute full mitigation for all impacts caused by development related to traffic, noise, biological, pedestrian safety, and all other types of impacts related to the District and its educational program. The District expects the City to analyze and mitigate all such impacts in the EIR for the Project.

Conclusion

The District does not oppose development within District boundaries, and recognizes the importance of housing on the health and welfare of the community. However, the District maintains that the community can only thrive if the District's educational program and its facilities are viable and sufficient, and District staff, families, and students are safe. Accordingly, the needs of the District must be appropriately considered in the environmental review process for all proposed new development that will impact the District, such as the very large project under consideration.

We request that all notices and copies of documentation with regard to the Project be mailed both to the District directly, and also to our attention as follows:

Crystal Leach, Associate Superintendent, Administrative Services
Sequoia Union High School District
480 James Avenue
Redwood City, CA 94062

Harold M. Freiman, Esq.
Lozano Smith
2001 North Main Street, Suite 500
Walnut Creek, CA 94596

Please feel free to contact us directly if we can be of any assistance in reviewing the above issues. Thank you.

Sincerely,

LOZANO SMITH

Harold M. Freiman

HMF/df

cc: Crystal Leach, Associate Superintendent, Administrative Services (cleach@seq.org)

From: Henry Riggs
To: Sandmeier, Corinna D
Cc: Perata, Kyle T; Taylor, Cecilia; Chris DeCardy
Subject: 333 Ravenswood, Ravenswood re-route
Date: Saturday, December 10, 2022 5:43:49 PM
Attachments: tight radius offset.pdf
F&P high speed offset.png

Hi Corinna,

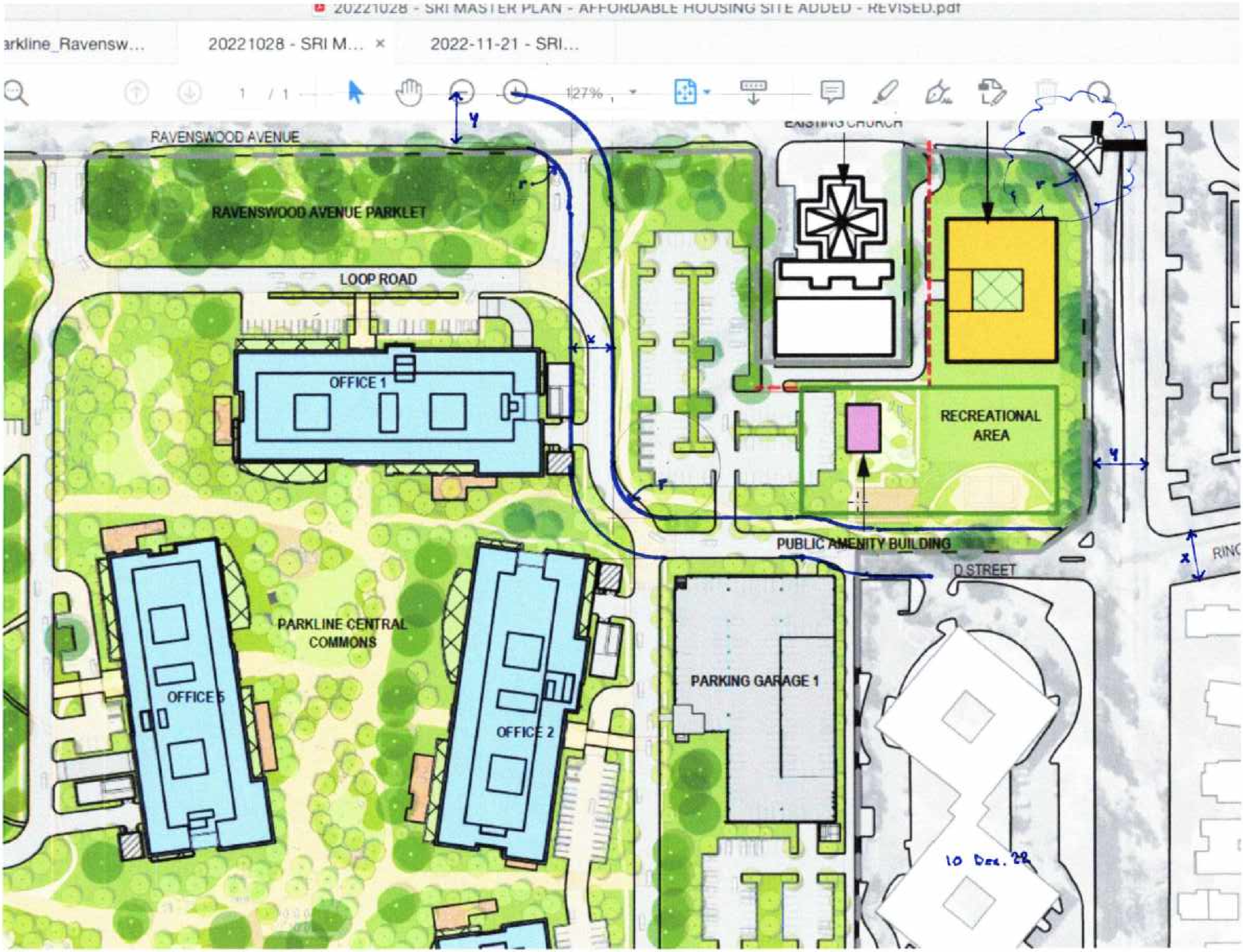
I had a glimpse of the street offset reportedly proposed by Fehr and Peers. It seems as if they feet our 30 mph roadway is comparable to Alpine Rd in terms of vehicle speed requirement. The site planning would be significantly impacted by such a path, and I for one would not support that.

Before we abandon the goal of re-alignment, I wonder if we should look at an offset using the existing curve radius of the right turn lane currently in use? While not a 30 mph curve, it is comfortable in use except for the current merge, which would go away.

Attached is an alternative alignment using that curve radius “r”, and Ringwood and Middlefield roadway widths “x” and “y” respectively, as noted. This is only a concept sketch of course, but I hope F&P can speak to a similar option on Monday.

Thanks,

Henry


20221028 - SRI MASTER PLAN - AFFORDABLE HOUSING SITE ADDED - REVISED.pdf
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10 Dec. 22

From:	Henry Riggs
To:	Sandmeier, Corinna D
Subject:	Re: 333 Ravenswood, Ravenswood re-route
Date:	Monday, December 12, 2022 12:27:50 PM
Attachments:	+50% radius alignment.pdf

Corinna

Having done one sketch, I did another, using a minor radius 50% larger than the referenced existing, in case it's helpful. Attached.

Henry

> On Dec 10, 2022, at 5:43 PM, Henry Riggs <hlriggs@comcast.net> wrote:
>
> Hi Corinna,
>
> I had a glimpse of the street offset reportedly proposed by Fehr and Peers. It seems as if they feet our 30 mph roadway is comparable to Alpine Rd in terms of vehicle speed requirement. The site planning would be significantly impacted by such a path, and I for one would not support that.
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>
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>
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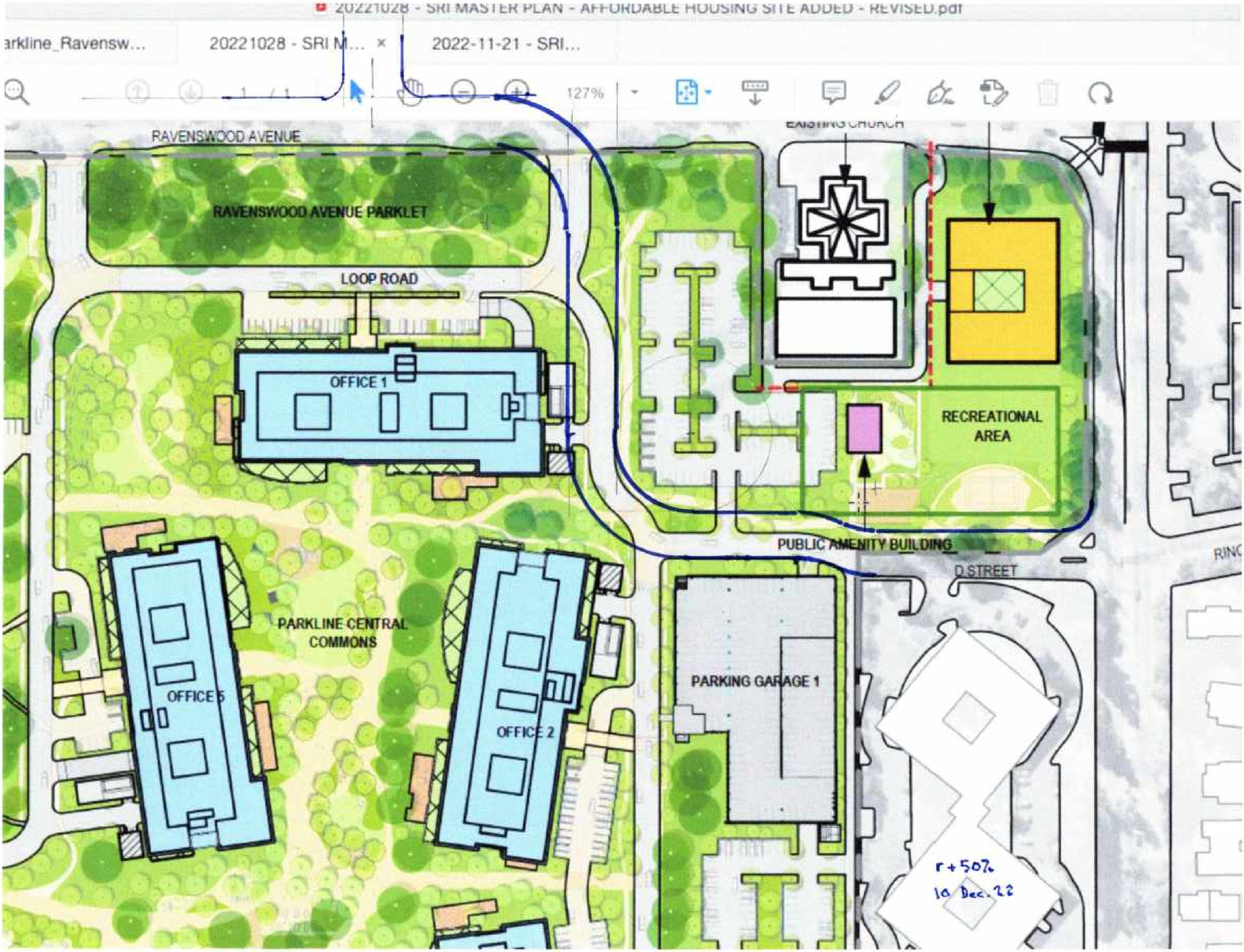
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10 Dec. 22

From: Verle Aebi
To: Sandmeier, Corinna D
Subject: Parkline/SRI project scoping study requests
Date: Monday, January 9, 2023 5:39:35 PM

Hi,

I am a resident of the Linfield Oaks neighborhood and I am writing to request that the EIR study traffic impacts in the entire Linfield Oaks neighborhood from the Parkline project. This would include Laurel Street from its intersection with Willow Road to Encinal Ave. It should also study Willow Road from Alma to Middlefield, Alma, Waverley, Linfield and Sherwood traffic impacts. The study should look at impacts based on number of housing units (200, 400, and 600 units) and square feet of commercial space. The study should also examine increase in congestion on Ravenswood and include in the study the upcoming increase in number of trains with electrification of Caltrain and increased gate down time at Ravenswood and Glenwood Ave.

The traffic study should also look at alternative vehicle entry points to the Parkline development. In particular it should examine the case where no vehicular entries (except for emergency vehicles) are on Laurel Street. In this case the impact of combining the traffic from the housing units with the traffic to the commercial areas of the development should be studied with access at one or more points on Ravenswood and Middlefield Road. Consideration should be given to aligning Ravenswood with Ringwood avenue to eliminate a traffic signal and reduce congestion on Middlefield Road.

Best Regards,
Verle Aebi

From: Judith Asher
To: Sandmeier, Corinna D
Cc: Sandmeier, Corinna D; Planning Commission
Subject: Request for studying a smaller scope option for the SRI/ParkLine EIR
Date: Monday, January 9, 2023 7:12:59 PM

Attention:
Corrina Sandmeier -- Acting Principal Planner
and the Menlo Park Planning Commission

Dear Corrina and Planning Commission,

As a resident of The Classics at Burgess, we are requesting a third level in the EIR scope to review a lower-impact, smaller development option -- especially since the proposed plan **INCREASES the affordable housing deficit.**

In this smaller-scope project, we request the EIR to measure the following:

1. The SRI/ParkLine project should net out to provide the state-mandated housing that the amount of office planned will require Menlo Park to build.
    - Reduce the amount of office to comply with the current C1 zoning.The planned office use will actually NEGATIVELY impact the affordable housing deficit and result in increasing the deficit due to the proposed office use. The risk of the projected lab use FAR being changed to higher employee densities per 1000 square feet will further increase the affordable housing deficit. In short, the office size and density is creating a bigger housing problem.
    - Keep the housing at 400 apartments, but have 25% of them be BMR (Below Market Rate) units, so the separate one-acre donation being considered for an affordable housing development will not be required.

2. Study the option of removing the apartment complex driveway onto Laurel to preserve bike safety for school children and pedestrians and to reduce the existing gridlock on Laurel Street. The smaller driveway for the townhome residents can remain as indicated in the current plan.

3. Measure the use of the (currently gated) SRI driveway onto Middlefield to redirect traffic flow as a viable alternative to the removal of the Laurel Street for the apartment buildings. The office traffic can be significantly reduced on the Ravenswood driveways if the Middlefield driveway opens (it will reduce Ravenswood gridlock to/from Middlefield and El Camino) and direct commuter traffic closer to Willow and Highway 101.

4. Increase parking for renters and employees since inadequate parking forces apartment renters, visitors and employees to clog residential streets with traffic while looking for parking and for taking up limited residential parking
   (Note: In the12/12 Planning Commission meeting on the SRI EIR, some commissioners wanted to reduce the proposed parking to force renters/employees to use public transit. But the representative from the firm that will conduct the EIR said that studies showed that reducing parking spaces did NOT reduce cars or numbers of car trips. It just pushed drivers to surrounding residential areas to take street parking, which added traffic as well. There were no reductions in Greenhouse Emissions or in number of car trips.)

5. Provide underground parking for the housing units and for the offices to reduce the overall height of the project (notably to reduce the height of the 3-story parking garage behind the Barron Street

homes) and the potential of five six-story apartment buildings if the project is approved for the 600 total housing unit option being reviewed.

6. Include the emergency water storage tank since there is no emergency water for residents and workers west of El Camino (per the latest water report) which said the emergency well in the city yard is not online yet. The risk of toxic contamination of the city yard emergency well makes it a problem since the city's gas tanks and city yard with other toxic substances (oil, pesticides, etc.) are above it could leak into the groundwater, especially in the expected large earthquake event at some point in the future.

Thank you for your help in getting this lower-impact option included in the EIR so we have a solid comparative analysis of the other two scenarios, especially the much larger scope option, that are being proposed in the EIR scope.

Judith S. Asher
530 Barron Street
Menlo Park, CA 94025

From: Paul Collacchi
To: _CCIN
Cc: _Planning Commission
Subject: Paul Collacchi Comments on SRI EIR scope
Date: Sunday, January 8, 2023 5:53:05 PM
Attachments: PJC SRI EIR comments v2.0.pdf
PJC SRI EIR Appendix 1 - 042500 - SRI task force final prioritized issues.pdf
PJC SRI EIR Appendix 2 - 021800issues - SRI task force1.pdf
PJC SRI EIR Appendix 3 - 022200tc- Revision of LUCS Task One Findings.pdf

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January 7, 2023

Council members, Planning Commissioners, and Staff,

Thank you for receiving these comments regarding the EIR for the Parkline masterplan ("SRI") project.

The comments append and incorporate historical city documents.

For historical perspective, these comments append and include two public documents created by the City for the 2000 SRI Task force, and a single public document from the 2000 Land Use and Circulation Study ("LUCS"). They include by reference any other existing SRI Task Force or LUCS document still in possession of the City, and any and all City documents associated with the 2013 SRI Campus Modernization project whose CEQA EIR NOP was submitted in July 2013.

- Appendix 1 -- Task Force recommendations for future use/mitigation of the SRI site.
- Appendix 2 -- A thorough regulatory history of SRI including a list of items the Task Force considered.
- Appendix 3 --A Staff Report for the LUCS project showing scope of future planning for the greater downtown Menlo Park area. It describes alternate futures for the SRI site used by the SRI Task Force.

Though the SRI Task Force documents do not appear on City letter head, to the best of my recollection that they are authentic and unaltered copies of public documents that existed at the time and were given to me by staff.

The LUCS and the 2000 SRI task force reviewed SRI alternatives

The LUCS studies coincided with the 2000 SRI Task force whose recommendations are included in the appended documents. The 2000 SRI Task force looked at several alternatives for the SRI site.

1. Proposed [2000] master plan development (1,545,000 s.f.).
2. Reduce development to currently allowed 30% FAR for zoning district.
3. Maintain existing development.
4. Maintain existing development or reduce development to currently allowed 30% or 25% FAR for zoning district, but allow residential development at a higher FAR.
5. Rezone to all residential.

Eliminating the existing Conditional Develop Permit employment caps and counting rules quadruples the site's net housing deficit.

The project proposes to eliminate the existing Conditional Development Permit ("CDP"). The impacts on the project's ability to increase the housing deficit is shown below. Without CDP restrictions the housing net deficit potential swells from 608 units to 2527 units. (table below)

CDP Employee

	Housing Demand		Limits	
	Area	Employees	Debited cap	2775
Office @4/1000 sf (250sf)	1,100,000	4400	Non-SRI @ 2:1	838
Retained lab @ (515) sf	287,000	557		
Total Project Employment		4957		
Existing Employment		1100	Existing SRI	1100
Net New Project Employment		3857	Total Site	1938

	Housing Supply		
	Du's	Employees* housed	
Luxury units w/BMR @1.9 emp/du*	600	1140	1140
Affordable units @ 1.9 emp/du*	100	190	190
Total Employees Housed		1330	1330

	Project (Demand-Supply)	Site (Demand-Supply)
Total project impact on Deficit	2527	608

There are superior project alternatives consistent with policy that should be reviewed.
In my view, several of the LUCS alternatives are clearly superior policy alternatives and should be studied as alternatives in the EIR. In particular they retain CDP employment caps but allow additional housing in place of office thereby increasing housing supply.

My comments are organized in four sections.

1.) Proposed alternatives to be studied
2.) Comments regarding EIR analysis
3.) Comments regarding the Housing Needs Assessment ("HNA")
4.) Comments regarding the Financial Impact Analysis. ("FIA")

Sincerely,

Paul Collacchi
Redwood City, CA

January 7, 2023

Council members, Planning Commissioners, and Staff,

Thank you for receiving these comments regarding the EIR for the Parkline masterplan ("SRI") project.

The comments append and incorporate historical city documents.

For historical perspective, these comments append and include two public documents created by the City for the 2000 SRI Task force, and a single public document from the 2000 Land Use and Circulation Study ("LUCS"). They include by reference any other existing SRI Task Force or LUCS document still in possession of the City, and any and all City documents associated with the 2013 SRI Campus Modernization project whose CEQA EIR NOP was submitted in July 2013.

- Appendix 1 -- Task Force recommendations for future use/mitigation of the SRI site.
- Appendix 2 -- A thorough regulatory history of SRI including a list of items the Task Force considered.
- Appendix 3 --A Staff Report for the LUCS project showing scope of future planning for the greater downtown Menlo Park area. It describes alternate futures for the SRI site used by the SRI Task Force.

Though the SRI Task Force documents do not appear on City letter head, to the best of my recollection that they are authentic and unaltered copies of public documents that existed at the time and were given to me by staff.

The LUCS and the 2000 SRI task force reviewed SRI alternatives

The LUCS studies coincided with the 2000 SRI Task force whose recommendations are included in the appended documents. The 2000 SRI Task force looked at several alternatives for the SRI site.

1. Proposed [2000] master plan development (1,545,000 s.f.).
2. Reduce development to currently allowed 30% FAR for zoning district.
3. Maintain existing development.
4. Maintain existing development or reduce development to currently allowed 30% or 25% FAR for zoning district, but allow residential development at a higher FAR.
5. Rezone to all residential.

Eliminating the existing Conditional Develop Permit employment caps and counting rules quadruples the project's net housing deficit.

The project proposes to eliminate the existing Conditional Development Permit ("CDP"). The impacts on the project's ability to impact the housing deficit is shown below. Without CDP restrictions the housing deficit potential swells from 608 units to 2527 units. (table below)

	Housing Demand		CDP Employee Limits	
	Area	Employees	Debited cap	2775
Office @4/1000 sf (250sf)	1,100,000	4400	Non-SRI @ 2:1	838
Retained lab @ (515) sf	287,000	557		
Total Project Employment		4957		
Existing Employment		1100	Existing SRI	1100
Net New Project Employment		3857	Total Site	1938
	Housing Supply			
	Du's	Employees* housed		
Luxury units w/BMR @1.9 emp/du*	600	1140		1140
Affordable units @ 1.9 emp/du*	100	190		190
Total Employees Housed		1330		1330
	Project (Demand-Supply)			
Total project impact on Deficit		2527		608

There are superior project alternatives consistent with policy that should be reviewed.
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Sincerely,

Paul Collacchi
1 Lake Ct
Redwood City, CA

Section 1.) SRI project alternative: LUCS # 4. C-1 FAR office alternative.

The EIR should study a "C-1 FAR" office alternative consistent with restrictions placed upon the site by the existing Conditional Development Permit in conjunction with the underlying C-1 zoning harmonized with the primary recommendation made by the 2000 SRI task force for the site; namely:

> "Any SRI project should not have any greater traffic impacts or impacts on sewer, water, or other municipal services than would a comparable office project developed in accordance with the underlying C-1 zoning regulations. The Floor Area Ratio (FAR) for the site shall be established as a baseline of 25% to 30% (as established for the C-1 zoning district as a result of the Land Use and Circulation Study prior to approval of the SRI proposal). Additional FAR may be allowed, if conditions are imposed to guarantee that traffic and other impacts won't exceed an office project complying with the C-1 zoning regulations, subject to the requirements that the number of parking spaces does not exceed 1,932 to 2,319 spaces and the number of on-site employees, contract workers, and non-SRI tenants (calculated at a ratio of 2 to 1) does not exceed 1,932 to 2,319 persons. The maximum FAR allowed for the property should be 35% to 45%. (Some members of the task force feel that the maximum FAR should be 35% while other members feel that 45% may be appropriate if it is demonstrated that the project will not exceed the impacts of an office project complying with the C-1 zoning regulations.

The alternative should be constructed in good faith by Staff, using one of several methods outlined below, but generally speaking the alternative would study non-lab (i.e office) buildings at C-1 densities (30% FAR). This option would leave proposed SRI lab and housing components untouched , but reduce the proposed office components by up to 50%.

Methods of Construction of the C-1 FAR Alternative

Suggested Construction Methods

a.) Consistent with the stated intent of the applicant to submit a tentative parcel map to aggregate SRI parcels and then sub-divide so that each office resides on a distinct parcel, the alternative would limit construction of each office on a separable parcel to C-1 densities (30% FAR).

b.) Consistent with existing CDP historical practices, employment caps, and counting rules, the method would compute SRI and non-SRI employment caps for the site and propose office adequate to meet the employment caps using proposed occupancy rules of thumb.

CDP rules and historical practices.

- Beginning with Classics of Menlo, the SRI site has been given an employment cap.
- Beginning with Classics of Menlo, the SRI site employment cap has been reduced proportionately when SRI land is subdivided and divested.
    - Under this practice the cap of 3308 would be further reduced to 2775 to reflect the divestment of the housing parcel.
    - Regardless of this rule, since 2000 SRI has twice asked for an employment cap of 3000.
- Non-Sri employees are counted as two employees ("2:1").
- Offices in the "Middlefield commercial corridor", including the McAndless building on divested SRI property, is zoned C-1 with 30% FAR. The only exception is the Federally owned USGS building which is exempt from local zoning.

SRI and non-SRI employment caps under the CDP rules

Given these rules and practices here is a range of SRI and non SRI employment for the site.

	"Low"	"Current"	"High"
Site Employment cap under the CDP	2775	2775	2775
SRI Employees	550	1100	1500
Non-SRI employees allowed under 2:1 CDP	1113	838	638
Total Site Employment under CDP	1662	1938	2138

Non-SRI Office needed for the CDP employment caps (1000's sf)

Here are computations of office required for non-SRI use on the site.

	"Low"	"Current"	"High"
Non-SRI office @ 4/1000 (250sf)	278	209	159
Non-SRI office @ 2.2/1000 (450sf)	501	377	287

Parking under the C-1 FAR alternative

Assuming that parking is proportionate to office space and employment density, then the C-1 FAR alternative would have a significantly reduced parking footprint, from 2800 spaces to at most 2100.

Observations from the reconstruction data

These limits are very consistent with those given the by SRI Task force as computed by staff in 2000. Under the CDP, the maximum allowable non-SRI office, would not exceed 500k sf, about half of what is being proposed. This is why the EIR should study a CDP/C1 conforming alternative.

Non-SRI use of the site varies inversely with SRI use of the site. If SRI employment increases then, under the CDP, there is no need for more than 287k sf of non-SRI office. The greatest amount of non-SRI ("office) occurs when SRI employment is at its lowest, 550 employees, half of what is reported as "current."

Possible footprint of the C-1 FAR alternative

The reduction in office space can be accomplished by reducing the number of floors in buildings and/or removing buildings. Similar logic applies to parking structures. Consistency with CDP height limits may require eliminating floors rather than entire buildings.

Regardless, for the purpose of the EIR, the C-1 FAR alternative can analyze the proposed footprint at reduced intensities by assuming fewer floors and/or buildings with lower or fewer parking structures.

Policy justification for the C-1 FAR alternative

- It is totally consistent with Menlo Park policy alternatives in the LUCS examined by the SRI Task force and preferred by the task force.
- It is totally consistent with 2000 CDP practices to restrict non-SRI and non-Lab uses of the site to C1 equivalent employment densities.
- It is consistent with the underlying C1 zoning.
- It has a superior jobs/housing ratio
- It is environmentally superior

It cannot be the goal of the project to "make as much money as possible from the site" and thereby declare all less intense alternatives as "unreasonable" or "infeasible" because they would generate less revenue.

Menlo Park has been fair and generous with SRI

Historically, SRI has enjoyed generosity and good will from the city of Menlo Park. SRI was allowed large amounts of low-intensity lab space. Since, then the intensity of the original campus has inflated as SRI divested land later redeveloped by 3rd parties such as McAndless and Classics, while keeping the same amount of lab space on an ever-decreasing core campus.

The CDP intended to protect Menlo Park and limit non-SRI office use of the campus.

In or about 2000, SRI's financial struggles led the non-profit to sell more land (Classics of Menlo) and rent its own internal office space to find new revenue streams. Menlo Park accommodated SRI but placed protections into the CDP that would limit SRI's ability to intensify the site with non-SRI uses and to inflate SRI intensity when divesting land. Hence the CDP created a site employment cap, debited the cap proportionately when parcels were divested, and counted non-SRI employees double. The first two measures mitigate site employment density inflation. The last measure served as proxy to insure that non-SRI office re-use of the campus did not exceed C-1 zoning intensities.

The Parkline project proposal skirts the CDP protections

It seems clear that the Parkline project seeks to circumvent these protections by converting generous amounts of grandfathered lab-space into office uses, apparently in place, but in a manner that allows SRI to divest parcels and offices at twice the density, 60% FAR, allowed elsewhere in the MIddlefield office corridor.

The project should be understood and analyzed as a conversion from SRI to a non-SRI office park

There is a clear difference between the physical configuration and description of the 2013 SRI Campus modernization project and the proposed 2022 Parkline project. This reflects different project goals and hence impacts alternatives.

Whether or not SRI intends to effectively or eventually abandon its MP research activities in favor of monetizing the site, under this proposal, there is good reason for Menlo Park to believe that the site is converting to one that could be used as a predominantly non- resesarch non-SRI office park, and whose buildings might be sold to 3rd parties.

It is therefore reasonable for the EIR to construct and study alternatives for SRI expansion of the "Middlefield Commercial Corridor" consistent with goal of selling or renting the majority of the physical plant and "use" of the campus and that are consistent with historical divestment practice used for McAndless, and that are consistent with long-standing policy for C1 zoning elsewhere in the neighborhood, and which would provide no more opportunity for non-SRI uses, on site with no divestment, than would otherwise be allowed under the existing CDP.

Other project alternatives.

In its build out scenarios the LUCS considered these alternatives for the site:

1. Proposed [2004] master plan development (1,545,000 s.f of lab.).
2. Reduce development to currently allowed 30% FAR for zoning district.
3. Maintain existing [2004] development.
4. Maintain existing development or reduce development to currently allowed 30% or 25% FAR for zoning district, but allow residential development at a higher FAR.
5. Rezone to all residential

Each of these scenarios have valid policy reasons to be included in the EIR as alternatives. For example, flavors of 1 & 3 will be studied as the no-project alternative.

The LUCS analysis has clearly shown that replacing office with housing rapidly reverses housing deficits and reverses commute profiles with beneficial traffic impacts.

Herein I request such an alternative. The EIR should study an alternative that replaces proposed office with housing. For the purposes of the EIR study, this might include, consistent with reducing office to 30% FAR, allow tall offices, but replace any or all of the amenity building, parking structure 3, and office buildings 3 & 4 in favor of additional housing at suitable densities. The remaining parking structures can be reduced appropriately.

This alternative would retain the proposed housing units, the retained SRI labs, office buildings 1, 2, & 3 and required parking in structures at requested heights, but replace vacated office and parking footprint on the south side of the site with housing at appropriate densities.

Reduced office and increased housing would have much more favorable jobs/housing numbers and reverse the commute profile from predominantly in-bound commute to a heavier outbound commute reducing peak hour traffic impacts.

Section 2.) Comments regarding the EIR analysis.

Employment Densities.

Describe SRI site historical employment clearly and accurately.

Menlo Park Staff Report 22-073-PC states that

> "The applicant indicates approximately 1,100 people are currently employed at the project site, although SRI's headcount has fluctuated between approximately 1,400 and 2,000 workers since 2003." (p3)

This count should be harmonized with Staff Report 13-097 which states

> Current employee count at the SRI Campus includes approximately 1,500 SRI employees and an additional approximately 280 people who are employed by unrelated tenants. .... Based upon the CDP requirement that non-SRI employee count be calculated at a 2:1 ratio, these 280 people would equate to 540 employees, for a total employee count of approximately 2,040 employees.

Staff Report 13-097 is clear. Staff Report 22-073-PC is not. Does the 22-027-PC 2000 "headcount" embed the CDP 2:1 counting rules? If so, then actual SRI employment on the site has never exceeded 1500 since 2003 and is currently 1100

Whenever historical employment counts are discussed in the EIR they should explicitly clarify between bodies and counts. The EIR should call out the actual number of on-site employees (bodies) vs the "employee count" or "headcount" as computed under the CDP 2:1 rule, and they should explode employee data explicitly into SRI and non-SRI employees.

The history of SRI use over the last twenty years suggests that SRI has never employed more than 1500 of its own employees on the site. This figure should be the maximum used for the planning horizon of the EIR. If not, the EIR should explain in detail why not.

Describe future employee counts similarly and provide SRI counts anticipated over the lifetime of the EIR.

The EIR needs to determine and publish intended SRI employment densities for the time horizon of the EIR as it did the 2013 project and with Meta in the Willow Village project. How many SRI employees currently occupy the site? How many SRI employees will occupy the site over time?

What facilities will be needed by SRI employees over the horizon of the EIR? How much lab space and how much office space will SRI initially occupy at the beginning and over the lifetime of the EIR?

From these, the EIR can determine SRI and non-SRI employment densities and footprint.

Remote Employment

The EIR needs to discuss whether or not it analyzed offsite employment, how much, and if not, how the potential future impact of remote employment at the site can be mitigated (precluded) through regulatory mechanisms. These mitigations could and should be included in the Developer's Agreement.

Visual Impacts

The project proposes buildings in excess of 100 ft with rooftop equipment. These are higher than most if not all buildings, visible from many places including single family homes. The EIR analysis of visual impacts should perform shadow analysis and list/show all locations from which buildings heights are visible.

Traffic: Extraordinary cumulative impacts: "secondary diversion"

According to information in the appended LUCS document, then (year 2000) future build outs of the LUCS study areas would result in extraordinary traffic impacts previously unimagined by Menlo Park staff members.

> Conventional wisdom in Menlo Park has been that regardless of land use development decisions in Menlo Park, future traffic related to regional growth would overwhelm major portions of the transportation system. The Land Use and Circulation Study forecast confirms that regional growth could have significant adverse effects on the circulation system in Menlo Park and consequent effects on the quality of life in the community. However, the forecasts also indicate a number of considerations that may not necessarily be consistent with prior conventional wisdom. These considerations include:
>
> - "Theoretical build-out" of the General Plan land uses in Menlo Park in itself could have impacts on the local circulation system comparable to those of regional growth.
> - The combined effect of "theoretical build-out" of the Menlo Park General Plan together with regional growth would be about the same as either regional growth or General Plan "theoretical build-out" taken alone. ***This suggests that under either scenario, traffic demand will be approaching or exceeding full saturation of capacity of the area street system.***
>
> - ***Under any of the scenarios tested, regional growth alone, "theoretical build-out" alone or regional growth plus "theoretical build-out combined, the most noteworthy traffic changes are not on major streets. Major streets like El Camino Real, Sand Hill Road, Santa Cruz Avenue near Sand Hill Road, and***

> ***Willow Road east of Middlefield Road are shown to experience some traffic increases but the increases are unremarkable. The streets that experience dramatic traffic changes are streets like Valpairiso, Glenwood, Encinal, Oak Grove, Ringwood and Middle. On such streets the effects of traffic changes are likely to be perceived as especially impactful. The increased concentration of traffic on such streets appears to be indicative of reaching a saturated condition on the major streets, such that locally knowledgeable drivers, particularly ones making short trips, will increasingly avoid the major streets in favor of secondary ones.***

Expand the EIR traffic study area to capture all primary and secondary diversion impacts.

In line with this known observation that "dramatic traffic changes" will happen on "non-commute" arterials by local and sub-regional drivers avoiding arterial congestion, the EIR should expand the study area to include all those streets listed above including others that might also be impacted. In particular, since the SRI site is central to the city, and commute traffic is likely to come from both I-280 and US 101, and the East Bay over the Dumbarton Bridge, the study area should probably include the entire city and not just a few blocks around the site.

Re-use the dynamic modeling analysis used in the LUCS to capture these effects.

It would be preferable if the traffic analysis was based on dynamic versus static modeling using modeling software rather than engineer speculation to show where secondary diversion of this type is most likely to occur.

Include Segment Counts and LOS changes

The LUCS language is stark. In describing today's (2020) traffic it uses phrases such as " adverse effects on the circulation system ... and consequent effects on the quality of life in the community", "overwhelm major portions of the transportation system", " full saturation of capacity of the area street system", "perceived as especially impactful", " saturated condition on the major streets."

Surely, since 2000, it cannot be the case that Menlo Park has adopted new community approved thresholds that allow and encourage overwhelming the local street system with traffic. To whatever degree Sacramento has tied the hands of local communities to accurately empower its residents to mitigate the true impacts of project traffic on its streets, the EIR has an obligation to describe catastrophic traffic conditions, so that residents can understand them.

Publish a traffic map visually locating Traffix or modeler site traffic egress and ingress assumptions, and visually depicting traffic assignment assumptions.

Traditional EIR analysis uses tools such as Traffix to locate and assign traffic to the project and local street system, but these assignments are never shown explicitly. Instead, derived impacts on VMT or intersection LOS or segment counts are shown in tables or maps, but the public never knows where the site traffic originated, how much and when. The EIR should publish such a map showing the location of Site destinations and commute origins and the volume of traffic assumed to originate or terminate at each such location on the SRI site. The EIR should also include a map with segment direction arrows showing trip assignment counts to and from these points so that lay members of the public can see traffic assignments on nearby roads and regional routes such as I-280 and US 101.

Publish a visual VMT map showing the assumptions made about those who will work at the site and where VMT analysis assumes they will live.

CEQA: Short term shocks to baseline counts on Cumulative Impact scenarios

Existing Menlo Park baseline traffic counts are impacted by two non-equilibrium shocks. The first is the pandemic, and the 2nd is the current and potential on-going slump/recession evidenced by large scale notices of tech layoffs in Silicon Valley and Meta.

Because of this, existing traffic baselines are likely to be lower than during pre-pandemic equilibrium and full employment. Though this should not impact that part of the CEQA analysis that considers project vs existing, it WILL impact cumulative scenarios that add project impacts to existing baselines, if existing baselines are depressed due to the shocks. This may also be true for other parts of the analysis besides traffic.

For the cumulative traffic impacts and other CEQA cumulative analysis for elements whose cumulative analysis is similar to traffic, the EIR should attempt to adjust existing baselines to eliminate shock effects and reproduce true equilibrium baseline conditions. It should be a good faith effort by staff and the preparer. Perhaps uses 2019 values, if they exist, with conditions updated to 2022.

Project Description: Open Space

Staff Reports (and the media) describe "25 acres of publicly accessible open space," but elsewhere, "Approximately 25 acres of landscaped, publicly-accessible open space, including a large central open space between the office/R&D buildings"

In the second description, buried deeper in the Staff Report, the two adjectives *landscaped*, and *publicly-accessible* now modify the noun "open space." Is "landscaped" open-space really open space? As we now say, is that even a thing? Can the public really walk into and on the privately owned landscaping? Is the large central open space between offices publicly accessible for active uses?

The EIR should clarify all references to "open space" in the project description including the meaning of "25 acres of publicly accessible open space.". Can the public really " access" the "landscaped" area to play frisbee or walk their dogs? Will all "publicly accessible" space, including the landscaped areas, be publicly dedicated through easements? What uses will be available on what portions of the site? The EIR project description should distinguish between areas of the site that are privately owned and publicly owned. It should detail areas that will be landscaped and not practically accessible or usable by the public It should detail areas that will be lawn, and describe public access and uses available on lawn space. It should detail hard pack and hard space areas. It should describe how "public access" will be dedicated and in which areas.

Basically, it would helpful to have a visual map and a table of non-impervious surface areas describing the size of the area, who owns it, if the public can use it, and how. A sample table is shown below.

The EIR should describe how the description of the areas in the table will be maintained when parcels of land are sold to 3rd parties.

Map Area	Size	Description	Ownership	Access	Uses Allowed	Dedication
1	5.2 acres	Landscaping	Private	Impractical	None	None
2	3 acres	playing field	????	Public	Active Uses	?????
3	4 acres	Hardpack	Private	????	Seating/eating	?????
4	5.3 acres	Paths	Private	Public	Bike/Walk	dedicated
5	2.6 acres	Lawn	Private	Public	Non-active access	????
6	1 acre	Playground	Private	Residents only	Active playground	private commons

The table is also needed to describe how public use can be made to persist across divestment of SRI parcels. The mechanisms for persisting "public accessibility" should be a part of the Developer's Agreement.

Project Description: Project Goals.

SRI is converting much of its campus from lab to office whose future occupancy is opaque, presumably because, unlike Meta, SRI does not intend to occupy its campus but rather intends to rent or sell much of the former land, to increase revenues, to remodel retained footprint or fund research activities. How much office SRI realistically needs for its own future use is material.

The public has a right to understand the true scope and intentions. They impact EIR alternative calculus. They help the EIR determine whether alternatives are "feasible" and "reasonable." Is a "reduced" office or increased housing alternative infeasible simply because the goal of the project is to maximize site revenue, and higher housing alternatives might not substantially attain that goal?

If the Staff and preparer have the authority to include "policy" alternatives as described in the Planning Commission report, then those alternatives studied by Menlo Park in the LUCS and by the SRI Task force and those recommended by the SRI Task force surely are "reasonable" candidates that reflect real public policy that is the product of staff and the public.

Project Description: Locate the "affordable housing" site.

Staff documentation has been ambiguous about the proposed location of the 100 units of affordable housing, and the Parkline document provided by developer does not show it.

- The EIR needs to explicitly locate where on the site the affordable units will be built.
- The requested egress/ingress map needs to show its traffic as an "origin" on the traffic assignment map.
- Its parking needs to be located.
- If the 100 affordable units are to replace the playing field the EIR should discuss this explicitly.
- If the EIR does not locate the 100 units, perhaps because the applicant opts for some kind of in-lieu alternative, the EIR should say so explicitly, because the applicant and staff reports have allowed the belief to persist in the minds of decision makers and the public.

EIR: Land Use Compatibility and Embedded Policy changes.

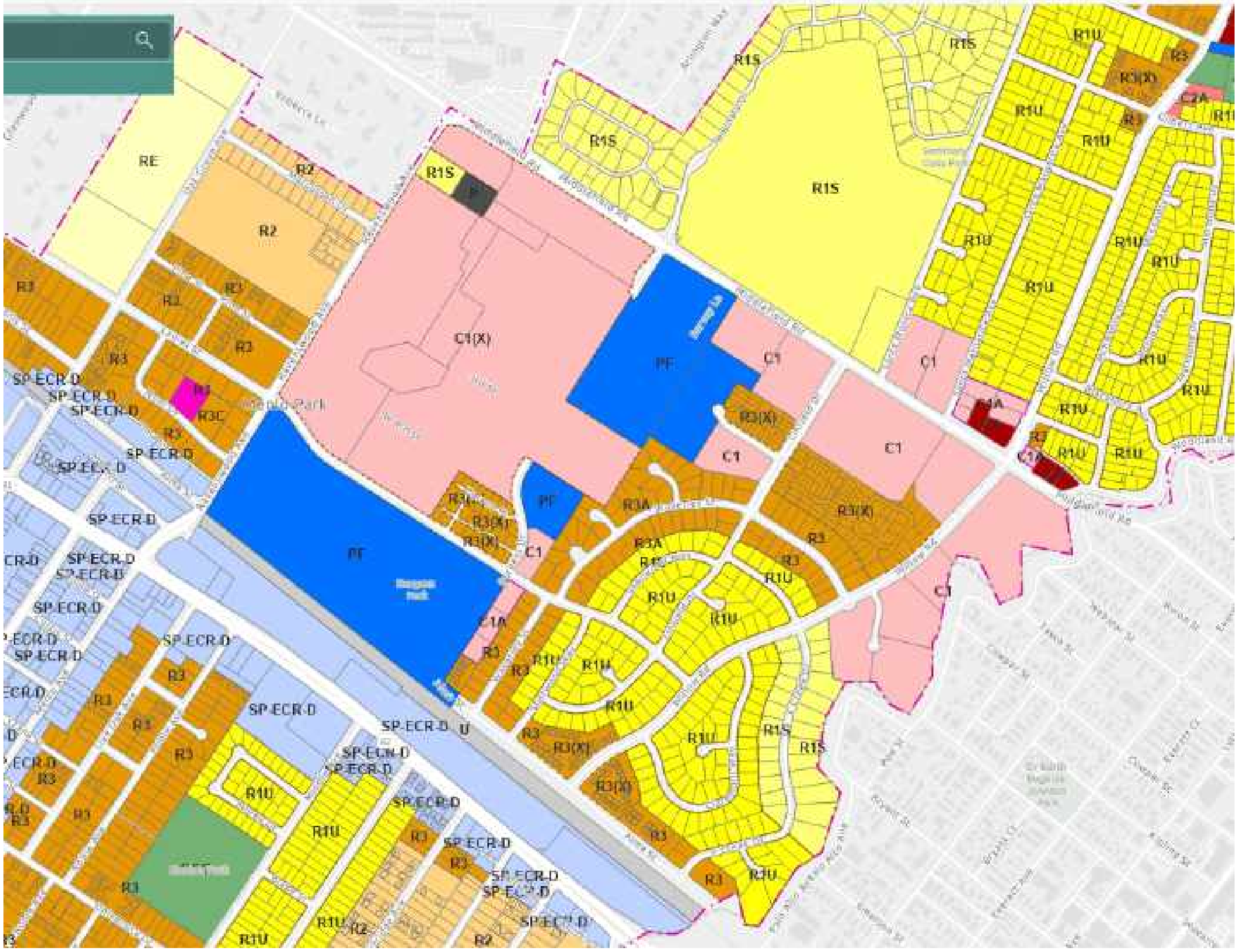
The zoning map below makes clear that commercial use of the SRI site is one of many commercial uses referred to in the LUCS as the "Middlefield Commercial Corridor." Together, SRI, the Linfield residential neighborhood, the Middlefield Commercial Corridor, USGS, and Burgess constitute the "internal" neighborhood which abuts additional uses outside the neighborhood.

The zoning map shows that all commercial sites in the corridor are zoned C1 (30% FAR), except the USGS site which is otherwise federally exempted from local zoning.

In its analysis, the EIR should describe the "neighborhood" by explicitly noting the prevalence of C1 commercial zoning everywhere else in the neighborhood.

Besides describing compatibility conflicts between the project and nearby uses, the EIR needs to discuss how the current CDP allows denser-than-C1 FAR, SRI lab buildings/uses but effectively precludes denser-than-C1 FAR, non-SRI office buildings/uses. If this is unclear, review the employee counts shown above in Section 1. There is no CDP-capped scenario in which non-SRI office uses require more than 500K sf of office footprint.

The proposed project is not consistent with either existing General Plan policy -- it requires a General Plan change-- or zoning conversion policy implicit in CDP employee caps and 2:1 counting rules, and policy as stated clearly and explicitly in the LUCS alternatives and SRI Task priority documents. To be clear: non-SRI office at 60% FAR is historically inconsistent with any policy future ever contemplated by the City of Menlo Park for the SRI campus. The EIR needs to discuss this.



Council may create new land-use policy for Menlo Park embedded in project approvals, but it does not have the power to alter the historical policy record used in the EIR analysis. If Menlo Park has conducted city-initiated policy outreach and process for the SRI site since the 2000 SRI Task force then the EIR should cite documents from that outreach as the policy base. But if there is no such public outreach specific to SRI futures, then the 2000 Task force documentation, the LUCS, the zoning, and the CDP constitute the policy documentation of record for compatibility analysis.

The EIR should describe the existing policy history and compare CDP-restricted non-SRI office intensities described by historical policy with new policies embedded in the project approvals.

The EIR should say explicitly whether or not more recently public policy documents pertaining to the SRI site exist since 2000 era modification of the CDP and the SRI Task force.

EIR: Removal of the CDP is growth inducing

In CEQA jargon, eliminating the CDP employment restrictions removes a regulatory obstacle to growth on the site and is therfore growth inducing.

While SRI and Staff Reports wish to say this project grandfathers existing commercial footprint, the project expands non-SRI site *use* beyond restrictions set in the CDP, and it allows the creation of office buildings on separable, alienable parcels at densities not previously allowed in the Middlefield corridor.

The project does not grandfather either building or employment *intensity*. By divesting land for housing, SRI is further intensifying lab FAR on the remaining site and it is intensifying the entire historical pre-project campus, as it did with McAndless and Classics of Menlo.

Density inflation of the remaining lab FAR is the policy equivalent of building more, particularly when that increased FAR is positioned for conversion and divestment. It is a form of site intensification that needs to be described.

By converting high density SRI lab to non-SRI office 1:1, the project is intensifying employment, particularly non-SRI employment to densities up to four times that allowed under the base C1 zoning and CDP. The EIR analysis should describe historical site lab FAR inflation and describe the use inflation that occurs when converting lab to office without the CDP.

Put succinctly, the site now employs 1100. 1M sf of office could add 4000 or more non-SRI employees in addition to those SRI employees sited in the remaining lab. *That would be an site employment intensification of more than 4:1, and an even greater intensification of non-SRI site employment.*

By converting from SRI lab to non-SRI office the project intensifies non-SRI office footprint to densities twice that that allowed under the base C1 zoning and CDP. The project would allow up to approximately .5M sf of non-SRI office effectively precluded by the existing CDP in the exact same location.

In recounting historical policy and evaluating project compatibility with nearby uses whose intensities have not changed, he EIR should also compare potential divesting practices of this project with the historical divestment practice used for McAndless office park. Divesting land first, and then rezoning results in C1 30% FAR, but converting lab to office, 1:1 on a reduced campus at an intensified 60% FAR, and *then* divesting allows 3rd party office at 60% FAR.

To be clear: the EIR discussion of growth inducing changes should include the removal of regulatory obstacles to growth, the CDP, and call out the change in historical precedent in allowing SRI to build and eventually divest offices whose FAR exceeds C1 FAR, in the face of all historical practice, policy documents, LUCS study alternatives, and public record to do otherwise.

Finally, although CEQA probably doesn't allow a discussion of impacts of project precedents on future projects, Menlo Park has a good history of proving that increased entitlements in one location create similar expectations nearby. In, particular the remaining offices and land values in the Middlefield Commercial Corridor are likely to reflect the expectation of similar future upzoning of office on those parcels.

EIR: Growth inducing impacts.

The project requires General Plan amendments and unprecedented height limits that may apply beyond the project site. These should be described. If these changes create precedents for growth inducement by removing regulatory obstacles elsewhere in the community they should also be described.

Section 3.) Housing needs assessment

The Housing Needs Assessment ("HNA") made for the Willow Village project, Appendix 3.13, *HOUSING NEEDS ASSESSMENT WILLOW VILLAGE MASTER PLAN PROJECT*, by Keysar Marston Associates Inc., dated April 2022 is a very useful document and I applaud its inclusion in the EIR process. Thank you, East Palo Alto. Shame on those who wrongly argue that CEQA lawsuits are abusive.

The SRI/Parkline HNA should duplicate that effort for this project.

In particular it should contain sections similar to 6 and 7 of the Keysar Marsten HNA describing project impact on (net) housing availability and displacement. It should compute the net housing deficit/surplus of the proposed project and local and regional displacement as did the Keysar Marsten HNA.

I would also recommend the following changes.

Update the market analysis to reflect downtown Menlo Park apartment and office rents.

Downtown ECR rents in Menlo Park as shown by the Springline (Greenheart) project are different and higher than those elsewhere in Menlo Park. The market analysis sections of the HNA should be updated to reflect this, and, if warranted, include Palo Alto rent comparables, not Redwood City rents in the market analysis sections.

Create a section that computes RHNA housing cycle impacts of the proposed projects using a current, globally harmonized counting method.

The HNA should include analysis of the impact of project alternatives on the City's RHNA housing obligation on relevant cycles current and future.

The analysis should harmonize the myriad of conflicting and incomprehensible land-bases found in the Housing Element, the ConnectMenlo SEIR, ABAG, etc. It should propose and deployed a trusted counting methodology which would answer the simple question, "If we approve this project (or alternative) what will the impact be on Menlo Park's RHNA obligation in every impacted housing cycle?"

How can decision makers possibly know how much housing they must build if the city does not keep a current running total of its housing obligation?

Section 4.) Financial Impact Analysis.

Besides describing the impact on city coffers the analysis should also describe the marginal impact on SRI coffers of the requested approvals. The project is a quid pro quo. What is the quid and what is the quo?

Relative to EIR alternatives, SRI/Lane will no doubt declare all reduced intensity alternatives as "infeasible" saying it needs maximal development to meet the "goals of the project" without telling us exactly what those goals are besides maximizing revenues/profit.

The FIA should compute and compare SRI land sale or rent revenues under the proposed project, here-proposed project alternatives, and the no-project alternative so that decision makers can judge for themselves. Revenue analysis should include the housing component as well.

Residents have a right to know how much revenue the approvals gift to SRI/Lane Partners, and whether the housing component is profitable on its own.

The methods should be clear so that citizens can deconstruct and re-use them to understand how they might apply to alternative site configurations not studied or analyzed.

SRI Task Force - List of Issues
April 25, 2000

1. Any SRI project should not have any greater traffic impacts or impacts on sewer, water, or other municipal services than would a comparable office project developed in accordance with the underlying C-1 zoning regulations. The Floor Area Ratio (FAR) for the site shall be established as a baseline of 25% to 30% (as established for the C-1 zoning district as a result of the Land Use and Circulation Study prior to approval of the SRI proposal). Additional FAR may be allowed, if conditions are imposed to guarantee that traffic and other impacts won't exceed an office project complying with the C-1 zoning regulations, subject to the requirements that the number of parking spaces does not exceed 1,932 to 2,319 spaces and the number of on-site employees, contract workers, and non-SRI tenants (calculated at a ratio of 2 to 1) does not exceed 1,932 to 2,319 persons. The maximum FAR allowed for the property should be 35% to 45%. (Some members of the task force feel that the maximum FAR should be 35% while other members feel that 45% may be appropriate if it is demonstrated that the project will not exceed the impacts of an office project complying with the C-1 zoning regulations.

2. Regulations shall be imposed that provide protections from potential conversion of building space to a higher worker density. If on-site employees, contract workers, and non-SRI tenants are used as a maximum limit for development, then , creative, effective and enforceable ways of monitoring and limiting the number of on-site employees, contract workers, and non-SRI tenants must be developed. SRI shall be responsible for all costs associated with the monitoring program.

3. Require the development of a Transportation Demand Management (TDM) Program for encouraging use of commute alternatives, including consequences for non-performance. The TDM program shall include provisions for bicycle and shuttle service for lunch time use, financial contribution to the City's shuttle program, on-site facilities such as a cafeteria, exercise facilities and showers that reduce trips, and other types of TDM measures.

4. Implement the widening of Ravenswood Avenue to four lanes from west of Alma Street to Middlefield Road. Require SRI to dedicate land adjacent to Ravenswood Avenue for the road widening. This may involve the relocation of the Gatehouse as well as changes to the church facilities located on Ravenswood Avenue. Any widening of Ravenswood Avenue must also include traffic realignment and other roadway improvements for improved safety and efficiency within the roadway segment formed by Middlefield Road, Ravenswood and Ringwood Avenues, including access to the high school. Require SRI to pay the costs associated with the widening of Ravenswood Avenue and to participate in the Ravenswood/Middlefield/Ringwood intersection modifications.

5. Require provisions for the review, analysis, regulation and monitoring of hazardous materials and waste on the property, including reporting all hazardous and biological materials and waste to the City and Menlo Park Fire Protection District (including non-regulated and non-reportable quantities). Prohibit bio-safety level (BSL) 4 (and possibly BSL 3 research per the request of some members). Develop emergency safety notice and evacuation plans for the surrounding area. Determine what level of hazardous materials use is appropriate.

6. Prohibit biological or chemical weapons and weapons detection research and testing.

7. Require detailed, comprehensive and cohesive architectural design.

8. Require SRI to develop methods to address the potential housing impacts related to an increase in the number of on-site employees, contract workers, and non-SRI tenants working at SRI. This may include rezoning a portion of the site for housing and provision of housing on-site, provision of housing offsite, and/or the payment of Below Market Rate (BMR) Program fees for the new employees. Impacts of new housing to city services, including but not limited to schools, recreation facilities, sanitary sewer service, etc., should be considered.

9. A maximum number of allowable trips to and from the site should be incorporated into the approval of the proposal. Creative, effective and enforceable methods of monitoring and limiting the number of trips should be developed. SRI shall be responsible for all costs associated with the monitoring program. Both peak period and twenty-four hour trips should be included.

10. Implement site and roadway designs and elements to minimize or eliminate cut-through traffic in the adjacent neighborhoods, specifically prohibiting SRI-related ingress and egress on Laurel Avenue and Burgess Drive. Other designs or elements may include the use of one-way streets or no-through traffic on certain streets and installation of features such as speed bumps, speed tables, and/or traffic circles in residential neighborhoods. Require SRI to pay the costs associated with site and/or roadway design changes.

11. Some members of the task force feel strongly that with the unknown impact of the Civic Center area redevelopment and possible closure of Alma Street to through traffic, the City Council should re-establish the Burgess plan line to preserve the City's ability to extend Burgess Drive if needed to relieve traffic. Other members feel that a successful design of the SRI site could be significantly impacted by the re-establishment of the plan line, see no benefit to the re-establishment of the plan line and feel the plan line should not be preserved.

12. Encourage the preservation and discourage the removal of the existing trees.

13. Require relocation of the trash and utility area adjacent to the Classic Communities development and replacement with quiet uses and activities. This should be completed as part of an early phase of the project development.

14. Require centralized underground parking to increase landscaping and open space on the site.

15. Development standards should be established that limits maximum lot coverage to encourage open space, that provides larger setbacks than the C-1 zoning district, and that allows maximum building heights to exceed 35 feet in the center of the site, but in no event shall building heights exceed 50 feet.

16. Require provisions for child care to be included in the project. Participation in the City's new child care center should be addressed, including an evaluation of non-resident participation in the program.

17. Require regulations to mitigate construction impacts on the surrounding neighborhoods. This should include requirements that all construction-related vehicles park on-site during construction and that travel routes for construction vehicles be limited to Middlefield Road and Ravenswood Avenue.

18. The task force supports the use of the property by SRI assuming that a mutually acceptable development can be achieved.

19. What benefits should Menlo Park be looking for if the proposal is approved?

20. Require provisions for monitoring, controlling, and mitigating the use of City facilities (swimming pool, gym, child care center) by SRI employees. Require facility use fees to support the expansion of hours, etc., to compensate the city for heavy use by SRI employees.

V/ltrmem/2000/aah/042500 - SRI task force final prioritized issues

CITY OF MENLO PARK

Public Meeting of the SRI Task Force
March 13, 2000

General Information and Draft List of Issues

Background Information for the SRI Campus

The SRI Campus is located in the center of Menlo Park and is bounded by Laurel Street to the west, Ravenswood Avenue to the north, and Middlefield Road to the east. The Campus is currently comprised of approximately 62 acres and houses a variety of office and research and development functions.

History of Planning Approvals

The City's earliest records of development activity on the SRI campus begin in 1959. From 1959 through 1975, the City processed approximately 30 requests for a variety of projects on the campus. The most substantial projects during this time were for several new buildings, including the construction of the International Building. During this time the campus was zoned C-1 (Administrative and Professional District, Restrictive) and C-1-B (Administrative and Professional District). (The City no longer has a C-1-B zoning designation.) Both of these districts allowed for the development of office and research uses subject to the granting of permits by the City. The only restriction on the maximum development potential was a 40% limit on lot coverage. At the time, this would have equated to approximately 1.35 million square feet of development that could have been developed on a first floor level. However, development of additional square footage on additional floors was not restricted.

Conditional Development Permit – 1975

In the early 1970s, SRI approached the City with a request to rezone the campus from the C-1 and C-1-B designations to a C-1-X designation and a request for approval of a Conditional Development Permit that would establish parameters for the future development of the campus. The rezoning and Conditional Development Permit allows for flexibility from the standard development regulations of the C-1- and C-1-B zoning regulations for purposes of developing a cohesive campus plan.

The rezoning, Conditional Development Permit and an EIR were approved by the City in 1975. The Conditional Development Permit states a campus size of 76 acres. The permit also specifies setbacks of 60 feet on all sides of the property, a maximum lot coverage of 40% (1.35 million square feet), and a maximum height of 50 feet. The Permit did not establish a maximum development potential, meaning the maximum amount of building square footage. The only reference to a development potential can be found in the EIR, which assumes a maximum of 3,500 employees.

Conditional Development Permit – 1978

In 1978, an amendment to the Conditional Development Permit was approved in order to remove approximately 10.3 acres from SRI's campus for the development of the McCandless office complex on Middlefield Road, near the corner of Ravenswood Avenue. The amended Conditional Development Permit established parameters for the McCandless buildings and, other than a reduction in the size of the SRI campus, did not alter the 1975 Conditional Development Permit.

Conditional Development Permit – 1997

In 1997, as a direct result of the Classic Communities development, SRI's Conditional Development Permit was again amended. The amendment included a further reduction in the size of the campus to reflect the property being sold to Classic Communities and to establish, for the first time, a maximum development potential. The 1997 Conditional Development Permit establishes the campus as 62.1 acres and limits the site to 1,494,774 square feet of building (equivalent to a Floor Area Ratio (FAR) of 55.3%) and 3,308 employees. For non-SRI uses, the allowable number of persons working on the site is calculated at a 2:1 ratio.

Existing SRI Development

The total amount of building square footage currently on the site is 1,321,189 square feet for an FAR of 48.8%. This is 173,585 square feet below the maximum building square footage allowed in the 1997 Conditional Development Permit.

As of January, 2000, SRI reports 1,432 SRI-related employees and 94 employees of non-related tenant organizations for a total of 1,526 employees. Using the employee equivalent methodology which counts SRI related staff at a 1:1 ratio and non-related staff at a 2:1 ratio under the provision of the 1997 Conditional Development Permit, the total number of employees on the site is 1,620 where 3,308 employees are currently allowed.

Proposed Master Site Plan

SRI has identified a need to modernize and rebuild its campus. SRI is currently proposing the redevelopment of the campus through a new master plan and a Development Agreement with the City of Menlo Park. The new master plan proposes the construction of nine new buildings and the demolition of twenty-nine old buildings, resulting in a total of 1,545,000 square feet of development (equivalent to an FAR of 57%). The proposal would also establish a maximum of 3,000 employees on the campus.

Comparison of Existing Site Development with Current C-1 Zoning Regulations, the 1997 Conditional development Permit and the Proposed Development

Although the 1997 Conditional Development Permit currently establishes the development parameters for the SRI campus, it is instructive to compare the parameters of the existing site with the underlying C-1 district regulations, the 1997 Conditional Development Permit and the proposed master plan development. The following table provides the comparison.

	C-1 District Regulations	**Existing Site**	**1997 Conditional Development Permit**	**Proposed Master Plan**
Minimum Lot Area	2 acres	62.1 acres	62.1 acres	62.1 acres
Minimum Lot Dimensions	150 feet width and depth	Irregular (approximately 2,000 feet width by 1,400 feet depth)	Irregular (approximately 2,000 feet width by 1,400 feet depth)	Irregular (approximately 2,000 feet width by 1,400 feet depth)
Minimum Setbacks	Front: 30 feet Rear: 20 feet Sides: 20 feet	Unknown	All sides: 60 feet	Unstated
Maximum Lot Coverage	40%	23%	40%	Unstated
Maximum Height	35 feet	Unknown	50 feet	Unstated
Maximum FAR	30% 811,523 sq. ft.	48.8% 1,316,289 sq. ft.	55.3% 1,494,774 sq. ft.	57% 1,545,000 sq. ft.
Maximum Employees	No regulation	1,526 employees	3,308 employees	3,000 employees
Employee Density*	Not Applicable	863 sq. ft. per employee	452 sq. ft. per employee	515 sq. ft. per employee
Parking	5 per 1,000 sq. ft. of building area (assuming full buildout – 4,058 spaces)	3,150 spaces	Not specified	Unstated

* Average employee density in recent office projects in the city is approximately 350 square feet per employee.

Draft List of Issues

Following is a draft list of issue that the SRI Task Force believes should be considered by the City when reviewing the proposal by SRI to redevelop its property. At this time, the task force welcomes all comments and questions from the public on the list of issues. In addition, the task force would appreciate any suggests for additions to the list of issues.

Use and Density of the Site

1. What is the best use of this land for the city? The task force supports the use of the property by SRI assuming that a mutually acceptable development can be achieved.

2. Should the Floor Area Ratio (FAR) for the site be reduced from or exceed the 30% maximum FAR of the underlying C-1 (Administrative and Professional, Restrictive) zoning district. If so, by how much?

3. Consider possible exclusion from the maximum allowed FAR of amenities such as private cafeterias, etc., that would serve to reduce trips. If a benefit such as an exception from the FAR for traffic-mitigating facilities is incorporated into the project, there needs to be documentation and consequences to ensure that the traffic mitigation for the project is effective.

4. Consider methods to address the potential housing and traffic impacts related to an increase in the number of employees working at SRI, i.e., rezoning of a portion of the site for housing and the provision of housing on site, provision of housing off site, telecommuting, and/or satellite offices. Impacts to city services, including but not limited to schools, recreation facilities, sanitary sewer service, etc., should be considered.

5. Given that the number of workers and visitors is a concern for the project's potential impacts, consider a maximum number of workers, visitors and/or issues related to the density of building space per worker. Regulations must be considered that provide protections from potential conversion of building space to a higher worker density. If workers and visitors are used as a maximum limit, creative, effective and enforceable ways of monitoring and limiting the number of workers and visitors must be developed.

Transportation

6. Given that the number of trips to the site is a concern for the project's potential impacts, consider a maximum number of allowable trips to and from the site. If trips are used as a maximum limit, creative, effective and enforceable ways of monitoring and limiting the number of trips must be developed. Both peak period and twenty-four hour trips should be included.

7. Consider site and roadway designs intended to minimize or eliminate cut-through traffic in the adjacent neighborhoods. Examples might include: (1) widening Ravenswood Avenue to four lanes from west of Alma Street to Middlefield Road, (2) prohibiting SRI's ingress and egress on Laurel Avenue and Burgess Drive, (3) prohibiting right turns onto Laurel Street from eastbound Ravenswood Avenue during peak pm commute periods, (4) consideration of one-way streets or no through traffic on certain streets, and (5) installation of features such as speed bumps, speed tables and/or traffic circles in residential neighborhoods.

8. Consider dedication of land adjacent to Ravenswood Avenue for future road widening. This may involve the relocation of the Gatehouse at the corner of Ravenswood Avenue and Laurel Avenue.

9. Consider the relocation of facilities and buildings as necessary for possible future extension of Burgess Drive through to Middlefield Road.

10. Consider the development of a Transportation Demand Management (TDM) Program for encouraging use of commute alternatives, including consequences for non-performance.

11. Consider possible traffic realignment and other roadway improvements for improved safety and efficiency within the roadway segment formed by Middlefield Road, Ravenswood Avenue and Ringwood Avenue, including access to the high school.

Site Design

12. Consider centralized underground parking to increase landscaping and open space on the site.

13. Encourage the preservation and discourage the removal of the existing trees.

14. Require relocation of the trash and utility area adjacent to the Classic Communities development and replacement with quiet uses and activities. Consider this relocation as part of an early phase of the project development.

15. Should the development standards of the underlying C-1 zoning district, including a maximum lot coverage of 40%, minimum setbacks of 30 feet in the front and 20 feet in the rear and on the sides, and the maximum height of 35 feet be exceeded and, if so, by how much? (See comparison chart on page 3)

16. Consider a comprehensive and cohesive architectural design.

Facility Operations

17. Consider provisions for the review, analysis, regulation and monitoring of hazardous materials and waste on the property. Develop emergency safety notice and evacuation plans for the surrounding area. Determine what level of hazardous materials use is appropriate.

18. Consider provisions for monitoring and/or controlling the use of City facilities (swimming pool, gym, child care center) by SRI employees. Consider facility use fees to support of expansion of hours, etc., to compensate the city for heavy use by non-city residents.

19. Consider provision for child care to be included in the project. Participation in the City's new child care center should be addressed, including an evaluation of non-resident participation in the program.

Construction-related Impacts

20. Consider regulations to mitigate construction impacts on the surrounding neighborhoods. This should include requirements that all construction-related vehicles park on-site during construction and that travel routes for construction vehicles be limited to Middlefield Road and Ravenswood Avenue.

Other Considerations

21. What benefits should Menlo Park be looking for if the proposal is approved?

DEVELOPMENT SERVICES
PLANNING DIVISION
STAFF REPORT

AGENDA ITEM # E-1

City Council Meeting of
February 22, 2000

TO:	**Mayor & City Council**
FROM:	**Department of Development Services, Planning and Transportation Divisions**
AGENDA ITEM:	**REGULAR BUSINESS: Review of Additional Information of Task One-Existing Development and Theoretical Build-Out Analysis of the Land Use and Circulation Study; Direction on Alternative Development Scenarios for Study Areas.**

ISSUE

Planning staff and the transportation consultants have prepared additional information on the impact of existing development and theoretical build out scenarios for City Council review of Task One of the Land Use and Circulation Study. The City Council should give direction to staff and the consultants to refine the alternative development scenarios for the three study areas: North El Camino Real, Middlefield Commercial Corridor, and SRI International Campus for completion of two and three.

BACKGROUND

Planning staff and the transportation consultants presented the preliminary findings of Task One of the Land Use and Circulation Study to City Council on January 25, 2000. At that meeting, the City Council requested additional traffic information and clarification of land use data. The revisions to the land use data and the additional traffic information have significantly changed the traffic impacts in several areas, particularly residential areas, of Menlo Park. A detailed description and explanation of the changes to the traffic impacts are found in a memo from Michael Aronson, CCS Planning and Engineering, Inc. to Tracy Cramer, Associate Planner (Attachment A).

Land Use Data Revisions and Clarifications

The City Council requested several clarifications to the theoretical build out data that was presented in the January 25, 2000 Staff Report. In addition, staff and the consultants identified other clarifications and revisions to the land use data for further refinement, addition of omitted information, and corrections. The following indicates the changes that have been forwarded to the transportation consultant for use in the traffic model.

Existing Land Use Data: After the results of the traffic model were reported for the January 25, 2000 City Council staff report, the transportation consultant and planning staff identified several areas where the reported traffic impacts did not appear to meet anticipated or known traffic conditions. As a result, staff identified changes to the inventory of existing land use data that were reported incorrectly or omitted in the preliminary report of the findings of the traffic model. The majority of the changes in the inventory are concentrated in the M-2 area of the City. The changes to the land use inventory are reported in Attachment B.

Housing Numbers: The housing numbers have been changed to reflect several projects that were overlooked in the January 25 , 2000 staff report to the City Council. The revised total number of housing units produced between 1988 and 1999 is 316 units; the revised total number of existing residential units (1999) is 12,329 units (Table 1). The majority of the units produced since 1988 are single family (195 units). However the bulk of theses units are large single family housing developments such as the Vintage Oaks project (145 units) and the Classic Communities (33 units). There were 121 multiple family units produced since 1988 (Attachment C).

Theoretical Maximum Build Out: Based on the assumptions initially developed for theoretical maximum build out, the number calculated for the Middlefield Commercial Corridor Study Area was lower than the existing development reported in the inventory. This was because the assumption was based on the current FAR for the area, but many of the properties were developed before the current FAR's were adopted. The City Council felt that this was not an effective measurement for potential future traffic impacts. The revised theoretical maximum build out assumes that existing structures in the Middlefield Corridor that are developed at or above the allowable FAR, will remain, and that parcels where the existing development is lower than allowed will be developed as the current maximum allows. This new theoretical build out number for the Middlefield corridor study area added 776,000 square feet of development to the 709,000 square feet reported earlier. The total theoretical maximum development in the Middlefield corridor is 1,485,000 square feet. (Attachments D and E).

Table 1. Revised Total Commercial (in Square Feet) and Residential (in Units) Development

	Gross *Commercial Development*	*Office Development*	*Retail Development*	*Industrial Development*	*Warehouse Development*	*Single Family*	*Multiple Family*
1988	*12,570,938*	*6,103,703*	*1,232,598*	*2,044,218*	*2,816,266*	*6,508*	*5,505*
1997	*14,635,936*	*7,812,021*	*1,244,733*	*2,246,574*	*2,869,197*	*6,698*	*5,608*
1999	*15,139,846*	*8,321,538*	*1,244,480*	*2,100,929*	*3,018,860*	*6,703*	*5,626*

Transportation Revisions and Clarifications

The revised traffic forecast model findings for existing development and the theoretical maximum build out scenario are included in a supplement to the report from CCS Engineering and Planning, Inc. that appeared as an attachment to the January 25, 2000 staff report (Attachment F). The revised traffic forecast model findings are appended herewith as Attachment A.

The principal differences in the supplemental traffic forecast relates to changes in existing and theoretical maximum land use scenarios as described above. In addition, minor refinements have been made to the representation of the street system in the model. Moreover, traffic volumes have been reported for additional indicator locations as requested by the Council at the January 25, 2000 meeting (including Middlefield Road between Marsh Avenue and Glenwood Avenue, Valpariso Avenue, Ringwood Avenue, Middle Avenue between Olive Street and University Avenue).

Planning staff received a letter from Elza Keet on February 3, 2000 (Attachment G) regarding the data reported on the Daily Traffic Volume map in the January 25, 2000 staff report. Ms. Keet questioned whether the Daily Traffic Volume map was a cumulative representation of citywide traffic volumes. The Daily Traffic Volumes map only shows the traffic volumes at specific roadway segments. It is not possible to literally add up the cumulative traffic impact from this graphic to represent citywide traffic volumes for two reasons. First, the graphic is a representation of traffic that passes certain selected indicator points in the network and is not the total traffic on all street segments. Second, the differences between the scenarios represents less than the totality of new trips added because trips that are added often displace some existing traffic. Therefore, the comparison of the sum of the differences between the scenarios and the changes to trip generation is not one that should be expected to yield an equivalence.

In addition, Ms. Keet's letter asks for more information on the impact of traffic on El Camino Real and Valpariso Avenue. Following the discussion with City Council on January 25, 2000, staff and the consultant were directed to revise the traffic model to reflect several assumptions that are critical to traffic impacts in Menlo Park, particularly at Sand Hill Road/Santa Cruz Avenue and along El Camino Real. In response to Ms. Keet's letter, the revisions to the model described in this staff report and Attachment A reflect changes to the volumes of traffic along local streets as Sand Hill Road and El Camino Real reach maximum capacity.

Conventional wisdom in Menlo Park has been that regardless of land use development decisions in Menlo Park, future traffic related to regional growth would overwhelm major portions of the transportation system. The Land Use and Circulation Study forecast confirms that regional growth could have significant adverse effects on the circulation system in Menlo Park and consequent effects on the quality of life in the community. However, the forecasts also indicate a number of considerations that may not necessarily be consistent with prior conventional wisdom. These considerations include:

- "Theoretical build-out" of the General Plan land uses in Menlo Park in itself could have impacts on the local circulation system comparable to those of regional growth.
- The combined effect of "theoretical build-out" of the Menlo Park General Plan together with regional growth would be about the same as either regional growth or General Plan "theoretical build-out" taken alone. This suggests that under either scenario, traffic demand will be approaching or exceeding full saturation of capacity of the area street system.
- Under any of the scenarios tested, regional growth alone, "theoretical build-out" alone or regional growth plus "theoretical build-out combined, the most noteworthy traffic changes are not on major streets. Major streets like El Camino Real, Sand Hill Road, Santa Cruz Avenue near Sand Hill Road, and Willow Road east of Middlefield Road are shown to experience some traffic increases but the increases are unremarkable. The streets that experience dramatic traffic changes are streets like Valpairiso, Glenwood, Encinal, Oak Grove, Ringwood and Middle. On such streets the effects of traffic changes are likely to be perceived as especially impactful. The increased concentration of traffic on such streets appears to be indicative of reaching a saturated condition on the major streets, such that locally knowledgeable drivers, particularly ones making short trips, will increasingly avoid the major streets in favor of secondary ones.

The above findings suggest the need to develop a combination of planning responses that could include:

- Focusing land use development on mixes, densities and locational patterns of uses that maintain community vitality and character while limiting local development's impacts on the Menlo Park circulation system.
- Engaging in a dialogue with other cities for consideration of the reduction of development potential in their communities to effect a regional decrease in congestion.
- Considering traffic improvements that draw and hold the traffic that will be in the community onto the major roadways without making these roadways so attractive that additional regional traffic will be drawn to them.
- Considering street and highway improvements that divert regional traffic around, rather than through, the Menlo Park street system.
- Improving transit services in ways that decrease local and regional traffic pressure.

- Continuing to make improvements that enhance Menlo Park as a walkable and bikeable community.

CITY COUNCIL DISCUSSION

In order to advance to the next tasks in the Land Use and Circulation Study, City Council must determine the desired alternative development scenarios for staff and the transportation consultants to analyze. At least three alternative development scenarios are expected to be prepared for each study area, for a total of nine development scenarios.

Land Use Alternative Development Scenarios
As City Council considers alternative development densities for the study areas, one area in Menlo Park that may serve as a starting point for discussion is Sand Hill Road. Sand Hill Road is zoned C-1-C, Administrative, Professional and Research District. The maximum allowable Floor Area Ratio (FAR) for office development in this district is 25%. This is the lowest commercial FAR in the Menlo Park Zoning Ordinance.

The following are suggestions for City Council consideration of alternative development scenarios:

A. **North El Camino Real**: The current FAR is 75% with approval of a use permit. Office development is limited to 40% of the total development of the site. This study area has the potential to see significant redevelopment of older structures that are not fully developed to the current allowable FAR. Because of this the following alternatives could be explored:
   1. Assume existing allowable maximum FAR for general commercial uses and residential uses; Reduce the allowable FAR for office development to 25% FAR in zoning districts that allow office as a permitted or conditional use;
   2. Reduce the maximum allowable FAR for all development by 10% or more; Reduce allowable FAR for office development to 25% FAR in zoning districts that allow office as a permitted or conditional use; and
   3. Eliminate office as a permitted or conditional use; maximize residential development (assume multiple family residential development).

B. **Middlefield Commercial Corridor**: The current allowable FAR in the Middlefield corridor ranges from 30% FAR for the C-1, Administrative and Professional Districts, and 40% FAR for C-4, General Commercial Districts (other than El Camino Real). In general, many parcels in the Middlefield corridor are built out. It is also less likely that there will be substantial redevelopment activity because the building stock is relatively new and in good condition. However, because of this area's proximity to downtown and to transit alternatives, it may be a good location for new housing. And, because the development in this area is maximized, a reduction of FAR for future redevelopment may be considered. Because of this, the following alternatives could be explored:
   1. Eliminate new office uses; Allow sites that are not developed to maximum FAR to be developed with infill residential (compare impact of multiple family and single family); and
   2. Reduce the allowable FAR for office development to 25% FAR in the study area that allow office as a permitted or conditional use.

C. **SRI**: The SRI International Campus has been developed through an approved conditional development permit. The 1997 approved Conditional Development permit limits development of this site to 1,494,774 square feet, or 55% FAR. The existing development of the site is 50% FAR, with the recent approval of an addition to Building B. The alternative scenarios for discussion could be:
  1. Proposed master plan development (1,545,000 s.f.).
  2. Reduce development to currently allowed 30% FAR for zoning district.
  3. Maintain existing development.
  4. Maintain existing development or reduce development to currently allowed 30% or 25% FAR for zoning district, but allow residential development at a higher FAR.
  5. Rezone to all residential.

<u>Circulation Scenarios</u>
Circulation scenarios that could be considered by the Council for testing in subsequent rounds of evaluation include:

1. The six traffic mitigation improvements that were identified in the Menlo Park General Plan but not committed for implementation.
2. Examining the consequences of allowing direct movements between Sand Hill Road and Alma Street.
3. Examining the consequences of providing a direct connection between West Campus Drive and Alpine Road in the immediate vicinity of its interchange with I-280.
4. Examine the consequences of a direct connection between the Dumbarton Bridge and U.S. 101 to the south (southern extension of Bayfront Expressway).
5. Examining the consequences of other possible modifications or mitigations to the street network within Menlo Park that the Council would like considered.

NEXT STEPS IN THE WORK PLAN

Once alternative development scenarios have been identified by the City Council, City staff will prepare the land use data based on the scenarios and provide information to CCS for a transportation analysis (Tasks Two and Three). These tasks are anticipated to be completed by April/May, 2000. A working paper will be prepared to report the findings of the transportation analysis on the scenarios.

Following the completion of Tasks One to Three of the Work Plan, a final summary report on the results of the Future Land Use and Circulation Study will be completed by staff, CCS, and Dan Smith. A City Council public meeting will be scheduled in May/June, 2000, to report the results. At this meeting, City Council should direct staff to develop recommendations for changes to the Zoning Ordinance and General Plan amendments (if required). A final report recommending zoning changes and general plan amendments (if required) will be complete by June 30, 2000.

CITY COUNCIL REVIEW PROCEDURE

1. Brief presentation by staff and Michael Aronson, Principal, CCS Planning and Engineering, Inc..

2. Receive public comments.

3. City Council discussion and direction to staff.

Tracy Cramer	Arlinda Heineck
Associate Planner	Chief Planner

Report Author

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Dan Smith
Transportation Consultant
Report Author

PUBLIC NOTICE

Public notification was achieved by posting the agenda, at least 72 hours prior to the meeting, with this agenda item being listed. In addition, flyers were sent to property owners and tenants of properties in the study areas identified in the report.

ATTACHMENTS

A. Memorandum from Michael Aronson to Tracy Cramer, dated February 16, 2000, Summary of Transportation Analysis
B. Revised Land Use Inventory
C. Revised Housing Inventory
D. Revised Summary of Theoretical Maximum Build Out (assuming maximum office development)
E. Revised Comparison of Projected Commercial Development and Existing Commercial Development in Study Areas
F. Staff Report to City Council, January 25, 2000, Review of Task One of Land Use and Circulation Study.
G. Correspondence:
- Elza Keet, Letter dated February 3, 2000
- John Beltramo, Letter dated January 26, 2000
- Letter from Housing Commission to City Council, dated February 17, 2000.
- Louwilla L. Gounas, dated February 16, 2000

H. SRI International -Site Plan and Inventory of Development
I. Middlefield Commerical Corridor Study Area- Existing Development and FAR
J. North El Camino Real Study Area- Existing Development and FAR

From: Sue Connelly
To: Sandmeier, Corinna D
Cc: _Planning Commission
Subject: Request for studying a smaller scope option for the SRI/ParkLine EIR
Date: Tuesday, January 10, 2023 8:58:48 AM

Attention:
Corrina Sandmeier -- Acting Principal Planner
and the Menlo Park Planning Commission

Dear Corrina and Planning Commission,

As a resident and HOA boardmember of The Classics at Burgess, we are requesting a third level in the EIR scope to review a lower-impact, smaller development option -- especially since the proposed plan **INCREASES the affordable housing deficit.**

In this smaller-scope project, we request the EIR to measure the following:

1. The SRI/ParkLine project should net out to provide the state-mandated housing that the amount of office planned will require Menlo Park to build.
   - Reduce the amount of office to comply with the current C1 zoning.The planned office use will actually NEGATIVELY impact the affordable housing deficit and result in increasing the deficit due to the proposed office use. The risk of the projected lab use FAR being changed to higher employee densities per 1000 square feet will further increase the affordable housing deficit. In short, the office size and density is creating a bigger housing problem.
   - Keep the housing at 400 apartments, but have 25% of them be BMR (Below Market Rate) units, so the separate one-acre donation being considered for an affordable housing development will not be required.

2. Study the option of removing the apartment complex driveway onto Laurel to preserve bike safety for school children and pedestrians and to reduce the existing gridlock on Laurel Street. The smaller driveway for the townhome residents can remain as indicated in the current plan.

3. Measure the use of the (currently gated) SRI driveway onto Middlefield to redirect traffic flow as a viable alternative to the removal of the Laurel Street for the apartment buildings. The office traffic can be significantly reduced on the Ravenswood driveways if the Middlefield driveway opens (it will reduce Ravenswood gridlock to/from Middlefield and El Camino) and direct commuter traffic closer to Willow and Highway 101.

4. Increase parking for renters and employees since inadequate parking forces apartment renters, visitors and employees to clog residential streets with traffic while looking for parking and for taking up limited residential parking
   (Note: In the12/12 Planning Commission meeting on the SRI EIR, some commissioners wanted to reduce the proposed parking to force renters/employees to use public transit. But the representative from the firm that will conduct the EIR said that studies showed that reducing parking spaces did NOT reduce cars or numbers of car trips. It just pushed drivers to surrounding residential areas to take street parking, which added traffic as well. There were no reductions in Greenhouse Emissions or in number of car trips.)

5. Provide underground parking for the housing units and for the offices to reduce the overall height of the project (notably to reduce the height of the 3-story parking garage behind the Barron Street

homes) and the potential of five six-story apartment buildings if the project is approved for the 600 total housing unit option being reviewed.

6. Include the emergency water storage tank since there is no emergency water for residents and workers west of El Camino (per the latest water report) which said the emergency well in the city yard is not online yet. The risk of toxic contamination of the city yard emergency well makes it a problem since the city's gas tanks and city yard with other toxic substances (oil, pesticides, etc.) are above it could leak into the groundwater, especially in the expected large earthquake event at some point in the future.

Thank you for your help in getting this lower-impact option included in the EIR so we have a solid comparative analysis of the other two scenarios, especially the much larger scope option, that are being proposed in the EIR scope.

Sue Connelly
Boardmember
The Classics at Burgess Homeowners Association

From: Brooke Cotter
To: Sandmeier, Corinna D
Subject: Parkline/SRI project scoping study requests
Date: Sunday, January 8, 2023 5:36:43 PM

Hi,

I am writing in regards to the proposed project at SRI and the impending EIR. I have been told that this is also the time the city will be including the metrics to study for their overall scoping of the proposed project. As such, I am requesting the following items be studied as part of the evaluation of this project:

- Traffic flow and congestion at all intersections and streets within a 1 mile radius of the project, at the proposed building size of 400 housing units, 600 units, and also at a lower density of 200 units for comparison. We are asking that you study the traffic impact (congestion, number of cars, pedestrian safety etc) at a variety of different office space densities as well.

- We are asking for a study of traffic impact of a project design that DOES NOT HAVE a vehicular entrance on Laurel Street to the apartment complexes. We request that you study the traffic impact on all streets and intersections within 1 mile of the project when there is an entrance on Laurel (as currently proposed) and without one (as asked for by the local community). Study this difference (no entrance versus an entrance at Laurel) at a size of 200, 400, and 600 units. Specifically including, but not limited to, car trips on Laurel St, Waverley, WIllow, and Linfield.

- study the feasibility of pedestrian safe crossing on Laurel

- Project impact on local public facilities: fields (including sports programming), gymnasium, pool, and library. We are asking that you study this at the proposed building size of 400 units, 600 units, and also at a lower density of 200 units for comparison.

- Impact of construction and longer term effects of underground parking (as suggested by community) versus above ground (as planned)

Thank you for your time,
Brooke Cotter

From: David Fencl
To: Sandmeier, Corinna D
Subject: Parkline
Date: Tuesday, December 6, 2022 2:24:23 PM

I was looking at the map of the proposed Parkline development…the map was very small but there was green at the corner of Ravenswood and Middlefield…between the church and Middlefield…if that is a park, my experience with the police department would predict a big problem with kids hanging around even during school days and other kids hanging out waiting for the HS kids…
Dominick (650) 269-6279

Sent from Mail for Windows

From: Pam Fernandes
To: Sandmeier, Corinna D
Subject: SRI Development
Date: Wednesday, December 28, 2022 10:57:12 AM

Hi Corrina,

I wanted to send some input regarding the SRI redevelopment project. My family and I live in Burgess Classics (536 Hopkins) and like to use the amenities across the street - pool, playground, library, rec center, etc. We also often cut through the Burgess Park area to walk downtown, etc.

My main concern is having an exit from the housing complex onto Laurel. (I know it can't be avoided for the townhomes.)

Currently, there are times during the day when it becomes difficult to cross Laurel to get to Burgess Park because of the vehicle traffic. Also at times it feels unsafe for the kids biking to/from school along Laurel. With the stated intention of encouraging people from the new SRI Development to cross Laurel to use the city facilities and access transportation and downtown, it seems like having an additional entrance/exit to the complex is inconsistent with that intention.

No matter how things are configured there will be additional traffic on Laurel but preventing an additional entrance/exit would make it more manageable and safer for residents to cross.

Thanks for your consideration.

Sincerely,
Pam Fernandes

From: Patti Fry
To: _Planning Commission
Cc: _CCIN
Subject: SRI site EIR Scoping Discussion
Date: Saturday, December 10, 2022 2:40:15 PM

Planning Commissioners -
Recommendations related to the EIR -
1. include a Jobs/Housing Balanced Alternative to be studied in the EIR - This would examine a scenario in which the maximum number of workers can be no greater than twice the number of housing units provided in the project or funded in Menlo Park by the project
Rationale: Menlo Park's jobs/housing ratio has been increasing further away from its projections of improved balance. The city now is under pressure to add considerably more housing because it has added a large number of jobs in recent years, and approved projects bringing in thousands more jobs without commensurate increases in housing. This project represents an opportunity to improve the jobs/housing balance. As proposed, the project would worsen the imbalance. This should be an environmentally superior Alternative, reducing potential car commuters and reducing impacts on city infrastructure.

2. In the analysis of impacts, assume that the project would involve more intense 'packing" of workers in the space than assumed in the staff report. The staff report states an intention of using a aratio of 250 SF/office worker and 350 to 425 SF/ per life sciences worker. The analysis should instead utilize the 150 SF/office worker ratio utilized in Facebook expansion EIRs, typical of Silicon Valley business practices. It also should utilize no more than 300 SF/Life Sciences worker unless the overwhelming majority of Life Sciences space is dedicated to wet labs. In our city and area, Life Sciences companies utilize space similarly to office spaces so the occupancy analysis should utilize more workers by type of space than described in the staff report..
Rationale: using these higher occupancy rates, the EIR would better reflect local practices, thereby avoiding the undercounting and underestimating of the real impacts of the project.

3. In the analysis of impacts, compare net new workers against the current level of occupancy not against the 1975 cap. The staff report states that the occupancy has ranged from the current 1,100 workers to a high of 2,000 in the period since 2003. The current amount or average of the recent range should be used as the baseline occupancy

Last, in site planning, please keep massing and vehicular circulation away from existing and new housing as much as possible, with transitions of lower facade heights, building heights as well as greater setbacks and lines of sight that are protective of privacy and solar access.

Thank you for your service,
Patti Fry
former Menlo Park Planning Commissioner

From: Gail Gorton
To: Sandmeier, Corinna D
Subject: EIR Regarding Parkline/SRI Project
Date: Monday, January 9, 2023 3:42:12 PM

Dear Corrina,

As a Menlo Park resident, I’m requesting that a third option be included in the EIR scope of the Parkline/SRI project. I think it is important for the city to consider the impact of a smaller scale option with the following:

- Maintain the original 400 housing units with 20% of them at BMR units
- No driveway access onto Laurel for the apartment complex in order to protect bike safety for school children and pedestrians, and to avoid gridlock on Laurel.
- Add an access driveway on Middlefield near Ringwood
- Study traffic flow/congestion within a **one-mile radius** of the project
- Include the impact of CalTrains raising train-tracks at Alma and Ravenswood
- Reduce the amount of office space to comply with the current C1zoning
- Increase parking for renters and employees since inadequate parking forces apartment renters, visitors and employees to clog residential streets with traffic while looking for parking and taking up limited residential parking
- Include underground parking for ALL of the apartment complex, and a portion of office building
- Include impact on use of already limited facilities at Burgess Park

Thank you for your attention to this matter.
Gail Gorton

From: Michael Hart
To: Sandmeier, Corinna D
Cc: Jessica Hart
Subject: Parkline Notice of Preparation comments
Date: Sunday, January 8, 2023 11:22:12 PM

Hi Corinna - I am writing to submit feedback regarding the Notice of Preparation for the EIR study of the proposed redevelopment project at 333 Ravenswood Ave. For context, I live in the Burgess Classics community adjacent to the SRI campus with my wife Jess (cc'd).

While we understand from speaking with Jen Wolosin that the review process for this project is a complex, multi-step endeavor, we are concerned that limiting the EIR to the two project variants proposed will not provide enough information about how certain specific decisions will affect the overall impact this project has on our community.

Specifically, we would like to request that SRI and Lane Partners include in the study a project variant that has different entrances and exits for vehicle traffic to the office and apartment campuses. We (and many of our neighbors) have concerns about how this overall project will affect traffic congestion in the area, but without the benefit of an objective study comparing different alternative entrance and exit locations, we are left merely speculating and hoping for the best. If the traffic impacts (and alternatives) are a matter that will be studied outside of this EIR proposal, we would greatly appreciate transparency into when that study will be conducted and where the results will be published.

Thank you very much

Michael Hart

From: winterstorm@ymail.com
To: Sandmeier, Corinna D
Subject: Comments for the Parkline Project
Date: Sunday, January 8, 2023 4:52:40 PM

Greetings:
My concerns for the project are centered around the safety of the community on Laurel Street and the surrounding neighborhoods.

It is imperative that no further entrances or exits are planned for vehicles on Laurel. The road is already a busy route for the children of the community to travel to school (whether by foot or bike). It will be a tragedy of epic proportions if an increase in congestion causes an accident. Minimizing further entry and exit will minimize this occurrence and should be a prime topic for any environmental impact study.

Additionally, with such a large project, there must be some benefit to the community in the immediate area whether it be playground structures, athletic fields or courts, and parks or gardens for the members of the community.

Many of us feel that increase from 400 to 600 and now 650 units is not justified. The initial plan for 400 units was a shock and now the increase appears to be an attempt to maximize the amount of housing to no end. More importantly, it seems that the projected pricing of the monthly rent for the units in comparison to newly built units in the community already make it financially impossible for those many groups to live there. Perhaps increasing the percentage of units for lower income groups should be increased.

Michael M Kim, MD

From: Denis Kourakin
To: Sandmeier, Corinna D
Subject: SRI project - environmental report
Date: Monday, January 9, 2023 3:45:13 PM

Dear Ms Sandmeier,

I am writing to you to provide my input into the SRI Parkline development project currently reviewed by the city.

I firmly believe that in the current scope the project would significantly overdevelop the SRI land plot, overburden existing city infrastructure - traffic, schools, parks, etc and will decrease the quality of life for the current residents.

I encourage the city to study the environmental impact of the project in the reduced scope - with lower number of residential units and/or office space.

Furthermore, I would encourage the planning commission to study the full housing impact of the proposed project - with the currently proposed significant new office construction it would require the city to build even more below market rate housing in the future. With that said, I would encourage the city to request a proposal from the developer that would consist of only housing development - i.e. no new office construction.

Kind regards,

Denis Kourakin,
Menlo Park resident since 2009

From: Kenneth Everett Mah
To: Sandmeier, Corinna D
Subject: Parkline Master Plan Project EIR & NOP - Written comment
Date: Sunday, January 8, 2023 10:43:27 PM

Dear Ms. Sandmeier, Planning Commission, and City Council of Menlo Park,

My wife and I are writing to express our concerns about the project overall and EIR, and request additional items be added to the scope and be studied/changed. We, along with our 4.5yo daughter and 6mo son, bought our home in the Burgess Classic neighborhood ~1 year ago (November 2021) and live directly on Laurel St across from Burgess Pool. I am faculty at Stanford School of Medicine. We have lived on Laurel St for now 6+ years total.

Generally, we are concerned about the impact of the size of the residential and commercial development on local safety and resources. Specifically, traffic on Laurel St, safety of biking and walking on Laurel street especially for children since it's a safe route to school, and utilization of Burgess Park amenities.

- Entrances/exits on Laurel St
    - These should all be removed. All traffic, both residential and commercial, should be routed to Middlefield and Ravenswood. There is an opportunity to create an additional network of roads within SRI to either offload current traffic or at a minimum keep new traffic that will be added by this project off Laurel St, which is residential. We requested this in writing and verbally to both the City Council/Planning Commission and Lane Partners, but continue to be ignored and have not received any explanations on why they want to direct the new residential traffic onto Laurel as opposed to the internal SRI roads or Ravenswood. Furthermore, not having driveways onto Laurel would encourage new residents to use alternative modes of transportation rather than drive.
        - Request: Please remove all entrances/exits on Laurel St, or study the impact on traffic on Laurel St and demonstrate there will be no difference from the current state. Also, study the impact at the different variations of housing density.
- Safety on Laurel St
    - Laurel St is a residential street that is designated a safe route to school. Any increase in car traffic or driveway use (the current SRI driveways on Laurel have minimal traffic to no traffic) will compromise the safety of children. Walking and biking will be more dangerous due to traffic and more intersections. We have verbally requested Lane Partners extend truly protected (by physical barriers such as curb, and not just paint) bike lanes in both directions on Laurel from Ravenswood to Burgess, and they verbally agreed, but we don't see it on the proposal.
        - Request: Please remove all entrances/exits on Laurel St, or study the impact on traffic on Laurel St and demonstrate that traffic accidents (car vs car, car vs bike, car vs pedestrian) will not increase, and the impact of at the different variations of housing density.
        - Request: Install truly protected (by physical barrier such as curb or immobile ballard) bike lanes in both directions on Laurel St from

        Ravenswood to Burgess.
    - Request: Install truly protected (by physical barrier such as curb or immobile ballard) bike lanes in both directions on Burgess Drive from Laurel St to SRI/Menlo Park Corporation Yard (since this will be open to bike/pedestrian traffic).
        - Also, would like protected bike lanes the full length of Burgess between Alma and SRI whether as part of this Parkline Project or the Middle Tunnel.
- Utilization of Burgess Park amenities
    - Adding 400+ units and commercial space will severely overcrowd the amenities at Burgess Park, and decrease how current residents can use them. These include the pool, tennis courts, playground, library, gymnastics center, etc. and the associated classes with them, such as gymnastic and dance classes, swim lessons, etc.
        - Request: Study the impact on Burgess amenities by specific amenities, not generally, and class/course offerings at each amenity, and demonstrate there will be no difference than current state. Also, study the impact at the different variations of housing density.
        - Request: Give Burgess Classics residents priority and discounted/free access to Burgess Park amenities if the Parkline development will impact access in any way.
- Menlo Park Corporation Yard Parking lot
    - This parking lot is primarily used by MP staff during the day, and Burgess Classics residents at night. We are currently not allowed to get annual overnight parking passes despite our limited street parking, but we can use the lot and tennis court. We are concerned that Parkline residents and workers will use the lot, as will other people who come to use the public space and amenities in Parkline as it is the closest parking lot to SRI/Parkline.
        - Request: Study the impact of the development on use of the Corporation Yard parking lot during the day, evening, and overnight, and demonstrate there will be no impact.
        - Request: If there is an impact, make lot not accessible to Parkline residents or workers nor the public, and give Burgess Classic residents access to overnight annual parking permits for free so we can park on the streets of Burgess Classics (Thurlow, Hopkins, and Barron) and the Corporation Yard parking lot.

Please let me know if you have questions or need clarification about these concerns or requests. Also, can you confirm receipt and that these requests will be included?
Thank you for your time and consideration,
Kenneth

From: Peter C
To: Sandmeier, Corinna D
Subject: Why more Units at SRI?
Date: Sunday, January 8, 2023 4:36:39 PM

To the City Planning Department and City Council,

The proposed scope of the EIR is the antithesis of what we here at the Burgess Classics community had supported.

1) The increased 50 units up to 650 units is 63% higher than the original 400 units proposed. This will negatively impact the community along Laurel Street where we advocated less traffic flow.

2) The project does not seem to get to a net positive impact on the housing needs. This encourages office use but does not resolve the housing, which means overall it won't make a dent in our housing needs.

3) The higher density housing does not conform to the surrounding uses, which is 1-2 story housing in mostly SFRs or townhouses or garden style multifamily.

The scope should also include a downsized study on reduced office and consequently fewer units.

I was initially supportive of the original plans, but as the Planning department and City Council steered towards more units this raises even more concern about the quality of the neighborhood and the increased traffic.

Please address these concerns. Thank you

Peter C

From: Jeff Staudinger
To: Sandmeier, Corinna D
Subject: Comments on SRI/Parkline EIR Scoping
Date: Monday, January 9, 2023 1:18:42 PM

Dear Ms. Sandmeier:

In regards to the EIR that is to be prepared for the proposed Parkline/SRI Re-Development project, I wish to see the following two "variants" added to the list of project Alternatives that will be considered under the EIR:

1) The developer's original proposal (400 units, 15% BMR, etc.) as submitted to the city back in October of 2021. That was a reasonable proposal which had been presented to the city council as well as vetted with local residents before being formally submitted to the city. As such, and given its significantly lower environmental impacts, it is certainly worthy of further consideration as an Alternative to the current project proposal.

2) A lower-impact option now being floated which modifies the current proposal as follows:
-- Reduce housing back down to 400 units (as per the original project proposal), but raise the BMR % requirement from 15% to 25%.
-- Reduce the amount of office space to comply with current C1 zoning requirements.
-- Eliminate the driveway onto Laurel Street from the apartment buildings to preserve bike safety for school children and pedestrians and to avoid gridlock on Laurel.
-- Increase parking for both renters and employees since inadequate parking forces those folks to clog residential streets with traffic while looking for parking and then take up limited residential neighborhood parking
-- Include underground parking for both the housing units and the offices to reduce the overall height of the project (most notably to reduce the height of the 3-story parking garage proposed behind existing Barron Street homes)
-- Include the proposed emergency water storage tank as part of the project (as a "community benefit").

Additionally, I wish to comment that for a project this size - with many impacts and many unknowns - a comprehensive Fiscal Impact Analysis (FIA), as was performed in the case of the Menlo Gateway Project, should also be prepared and presented along with the EIR for consideration by City Council in making their final decision on the proposed project.

Thank you.

Respectfully submitted,

Jeff Staudinger
Menlo Park Resident

From: Brittani Baxter
To: Planning Commission
Subject: Support of Parkline, item G1
Date: Monday, January 23, 2023 6:48:11 PM

Dear Planning Commission,

Thank you for all of your long hours of service to the community during this recent busy season that's included reviews for the Housing Element and many more projects!

Unfortunately I won't be able to attend tonight's meeting, but wanted to voice my support for the Parkline project and share why I'm so excited for it.

A parcel this large turning over represents a once in a multi-generational opportunity to think ahead to what our community could and should be for the future. I think the homes in general represent an opportunity for our community to remain resilient and vibrant by creating homes at a mix of income and affordability levels, and I encourage us collectively (as a community) to think about all the factors impacting commutes and circulation in our city.

I remain very excited for the increased walkability and bikeability that the redesign will bring to the neighborhood. Not just for people like myself who are already here, walking or biking — but also for the new residents. Who, I suspect, will choose to live near downtown for exactly the same reason I did — its easy access to what I need for much of my daily activities without getting in a car.

In viewing and attending past meetings about this project and others, I hear a strong desire from all sides of the discussion to reduce the traffic impact of new homes. I'm writing because I very much share the desire to reduce traffic — our community is safer, healthier, and friendlier without gridlocked streets. I personally believe that a great way to get people out of cars is to just make it appealing (and as a first step, simply possible) to use other methods of getting around. And therefore, I believe this project represents a gem of an opportunity to do just that — by creating homes in an especially great location that's steps away from existing jobs, schools, and transit. Let's make the most of it!

Our housing element cites a stat saying that, I think (going from memory), 96% of our workforce commutes in. I wish we had good location data on where the individual commuters are coming from, but anecdotally the traffic patterns that I see when out and about seem to indicate lots of cross-bay commutes — i.e. drives from pretty far away. I hope and expect that this project will reduce overall traffic by allowing more community members to live near their work.

I wanted to close by sharing a recent finding published by Arlington, VA's government that I found fascinating. **Despite adding to their population in recent decades, they found that car traffic has steadily declined to 1980s levels.** This seems to be due to their emphasis on fostering walkable communities and clustering of homes near Metro stops — otherwise known as transit-oriented development, just like Parkline. Here's the report:

https://www.arlingtonva.us/files/sharedassets/public/Projects/Documents/Historic-Traffic-Counts.pdf

This project is a great opportunity to build in this same direction of vibrancy and energy, with a community focused around seeing each other when out for a walk, rather than being stuck behind the wheel of a car.

Thank you again,

Brittani Baxter
District 3 resident
(Apologies for any typos, writing from mobile)

From: Nick
To: Planning Commission
Subject: Comments Proposed SRI/Parkline Project expansion
Date: Monday, January 23, 2023 5:57:15 PM

Dear Menlo Park Planning Commission,

I have recently learned that in this evening's meeting (Jan 23, 2023), a proposed expansion of the SRI/Parkline development project will be discussed.

As a resident of Linfield Oaks, I am concerned that increasing the number of units from 400 to approximately 600 will place an unsustainable burden and impact on the neighborhood and the community.

We all recognize that we are in a housing crisis, but the project does not address the impact on our local services (schools, transportation, traffic). As a parent and a resident, I am worried about the impact that a project of this size will place on the school infrastructures and on their accessibility: access to the schools (Encinal, Hill View) will become much harder because of the increased traffic on Laurel, Ravenswood and presumably Willow Rd.

I was initially pleased by the community outreach by SRI and Parkline and by their willingness to work with the residents and neighbors to include their feedback; this 11th hour change in plans seems however motivated by other reasons, and I would like for the Planning Commission to encourage SRI/Parkline to resume the work on the previous project that was discussed in 2022.

Best Regards,

Nicola Diolaiti

From: Jonathan Hahn
To: PlanningDept; _CCIN
Cc: Wolosin, Jen
Subject: [Sent to Planning]SRI/Parkline
Date: Monday, January 23, 2023 6:40:32 PM

I have just become informed about the situation with the SRI project under consideration. The state mandates that office development results in creation of housing that the city is having trouble meeting. The burden ends up falling on existing residents in many forms. Why doesn't the city manage and limit office development to manage this mandate? I think the residents deserve to know. Other cities do.

Also, when I saw that the SRI project has two driveways on Laurel, it's clear that's going to generate a lot of cut-through traffic through Linfield Oaks rather than direct it to Ravenswood and Middlefield which are intended for this purpose. Cars cutting through neighborhoods do so at unsafe speeds because all they care about is saving time and avoiding traffic. Traffic that's made significantly worse by these projects! It's just one of the many ways existing residents are burdened by these projects and the city should do more to protect the existing residents and neighborhoods.

Jonathan Hahn
340 Sherwood Way
Menlo Park

From: Stephen Pang
To: Planning Commission
Cc: Sue Connelly
Subject: SRI project feedback
Date: Monday, January 23, 2023 5:59:21 PM

Dear Planning Commission,

As an owner in The Classics at Burgess, I with other Classics residences that call for a lower-impact, smaller development for the SRI property.

1. The percentage of units designated as BMR should be increased from 10% to 25%, to address the City's primary concerns for the development. If Parkline is truly attempting to address the housing affordability problem itself, it should understand and accept such an increase. In this way, the number of BMR units will increase and the number of total units, currently 400, can be maintained.
2. Any approval of the SRI project should not even be considered until the "dedication" of one acre to a homeless, transitional shelter, or the like is fully planned. Listening to the discussions regarding the Independence Drive project, I was struck by how well thought-out and planned was the "dedication" of units / land to Habitat for Humanity. It seems to be a mature project that seems to have been fully planned at the same time as the Independence Drive project. In contrast, here in the SRI project, there is a nebulous "donation" to an organization that has not been selected, for a development that has not even been imagined. Any approval for the SRI project should be performed with full knowledge and consent of the commission.
3. The driveways for the SRI project should be maintained on Middlefield road. This road already has a stop light and is a major access to the SRI project. One of Parkline's major talking points is the opening of the SRI campus as a park. Integrating traffic for residents through the campus and onto Middlefield will serve to unify this feeling for residents. Contrary to this, as currently designed, residents are actively funneled away from the campus and onto Laurel street. As previously stated by others, this additional traffic onto Laurel street causes serious safety problems at the Laurel Ravenswood intersection. Additionally, cut-through traffic will greatly increase through Linfield Oaks.

Thank you for your continued attention.

Steve Pang

From: Marlene Santoyo
To: Planning Commission
Subject: Agenda G1
Date: Monday, January 23, 2023 4:57:53 PM
Attachments: M2G Letter - Agenda G1.pdf

Members of the Menlo Park Planning Commission,

38 members of your community have signed the following letter about the SRI proposal you will be studying tonight. In addition, twelve neighbors have written a personal note, which I encourage you to read. You will find the full letter and notes attached below.

Please consider the input from these residents who support the increased number of homes and increased affordability of the current proposal and ask you to go even further towards planning for housing equity and sustainability in Menlo Park.

Thank you for your consideration,
Marlene Santoyo
--
Marlene Santoyo | Organizer | (she/hers)
Menlo Together
510-945-7490
https://menlotogether.org

From: M. ADHAM
To: PlanningDept
Subject: [Sent to Planning]SRI/Parkline Plan Review
Date: Monday, January 23, 2023 1:39:45 PM

Dear Planning commission members:

We have been residents of Linfield Oaks for 30 years, and raised our family here. Please do not approve the proposed changes in the density and size of the SRI/Parkline development as it is unfair for our neighborhood to disproportionately bear the impact of the initial 400 units, not to mention increasing it to 600 units. It's also not fair as we have taken on the additional housing of the Morgan Lane Development that was completed in 2008.
Taking the already extremely large total housing number from 400 units of the SRI Development to 600 jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and increased traffic congestion in this area. Further:

- The apartment complex and townhome driveway should be removed from residential streets.
- Use the currently gated SRI driveway onto Middlefield to redirect traffic flow so Residential streets leading to the new development are not used The office traffic can be significantly reduced if Middlefield driveway opens, providing more egress options, and directing traffic closer to their destinations of Middlefield and 101 access.
- Increase parking commensurate with office worker numbers and apartment dwellers. Fewer parking spaces pushes traffic into nearby neighborhoods, as the research recounted to the Commission during the 12/12/22 meeting indicated.
- Provide underground parking for both offices and housing units, reducing the need for car parking to take up valuable above ground space in the form of an above ground parking garage.
- Include the emergency water storage tank , because 1) there

is no options for workers west of El Camino and 2) the city yard emergency well is in danger of possible contamination during an earthquake from existing onsite gas storage and toxic substances in the ground.

Thank you for your consideration regarding rejecting this enlarged and negatively impactful proposal for this development.

Omar and Mary Adham
157 Linfield Dr
Menlo Park, CA. 94025

Sent from my iPhone

From: larry anderson
To: PlanningDept
Subject: [Sent to Planning]
Date: Monday, January 23, 2023 1:08:49 AM

Planning commission members:

I am in full agreement with my neighbor Sue Connelly regarding proposed changes in the density and size of the development. Taking the already extremely large total housing number from 400 units to 600 units, is a 50% increase! At 400 units the density of this development far outstrips anything in the adjoining neighborhoods, and jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area.

Larry Anderson
321 Linfield Place

From: Anna Hall
To: PlanningDept
Subject: [Sent to Planning]SRI/Parkline Plan
Date: Monday, January 23, 2023 3:12:24 PM

Planning Commission Members

Adding 400 housing unit in Menlo Park was intended by the State for more housing for people who need to live and work in Menlo Park. On the other hand, adding 200 additional units is questionable, especially if many of those units are earmarked for Office Space. Most people living near SRI know that 400 new units will seriously impact traffic, parking, infrastructure, and quality of life. It will have deleterious effects on students, teachers, and staff who work at Menlo-Atherton high school. Thus, plans to build numerous units so close to M-A should include input by school administration.

Most important, the Planning Commission must not ignore or minimize the impact that tens of thousands of recent job cuts in the Computer Sector in this area will create less need, if any, for more Office Space. Looking around Downtown Palo Alto, or El Camino Blvd., one sees countless signs for empty Office Space.

A responsible Planning Commission will need to go back to the drawing board and re-evaluate the SRI/Parkline Plan before proceeding any further. Failure to do so would indicate that members of the Planning Commission are not beholden to the residents of Menlo Park, but to Real Estate Developers.

Anna Hall
212 Gilbert Avenue
Menlo Park, CA 94025

From: Judith Asher
To: Planning Commission
Subject: SRI/Parkline Plan Review - requested changes
Date: Monday, January 23, 2023 7:56:03 AM

Planning commission members:

I am in full agreement with my next door neighbor Sue Connelly regarding proposed changes in the density and size of the development. Taking the already extremely large total housing number from 400 units to 600 units, is a 50% increase! At 400 units the density of this development far outstrips anything in the adjoining neighborhoods, and jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area .

- The **project should net out to provide the state-mandated housing number of 400,** in the amount required by Menlo Park for the developers planned amount of office space. Keep 400 apartments according to the original plan, but create a BMR (Below Market Rate) number of 25% of those 400 housing units, so no separate acreage for affordable housing will be required.
- Reduce the amount of office to comply with current C1 zoning. Do NOT increase the jobs-housing imbalance by adding any more office space to this proposal. We need to bring jobs and housing in balance, not keep widening the gap between them.
- The apartment complex driveway on Laurel St, should be removed to reduce traffic on Laurel St., and to preserve bike and pedestrian safety, such as it is, on Laurel St. The smaller driveway for townhome residents would be less problematic and can remain as is in the current plan.
- Use the currently gated SRI driveway onto Middlefield to redirect traffic flow so Laurel St is not used by the apartment residents (see above point) . The office traffic can be significantly reduced on the Ravenswood driveways if

Middlefield driveway opens, providing more egress options, and directing traffic closer to their destinations of Middlefield and 101 access.

- Increase parking commensurate with office worker numbers and apartment dwellers. Fewer parking spaces onsite only pushes traffic into nearby neighborhoods, as the research recounted to the Commission during the 12/12/22 meeting indicated. Fewer parking spots than the number of workers' and residents' cars do NOT encourage use of public transit, but to using neighborhood streets for parking.
- Provide underground parking for both offices and housing units, reducing the need for car parking to take up valuable above ground space in the form of an above ground parking garage .
- Include the emergency water storage tank , because 1) there is no options for workers west of El Camino and 2) the city yard emergency well is in danger of possible contamination during an earthquake from existing onsite gas storage and toxic substances in the ground.

Quoting from my next door neighbor, Sue Connelly:

" SRI/ParkLine will have highly profitable housing and office revenue annually, but the costs will be borne by the taxpayers.
Based on current Menlo Park office rates, the office project stands to generate $50M per year. This doesn't include ANY of the apartment rentals, for which most will be at very high rents (see the current rents for the new SpringLine apartments!). There will be some city revenue, but since SRI is a non-profit, this massive development will not offset many of the costs residents must pay for infrastructure (schools, police, fire, water and roads). Yet it will create a significant reduction in our quality of life (and possibly home values), bike/pedestrian safety for school children and residents, and increasing the state-mandated affordable housing units even more.

We need to require that any new office development provides/includes the affordable housing that the office spaces

and employee densities will be required to be built in Menlo Park."

Thank you for your consideration regarding rejecting this enlarged and negatively impactful proposal for this development .

Judith Saltzman Asher
530 Barron Street
Menlo Park, CA 94025

From: Christopher Baldwin
To: PlanningDept
Subject: [Sent to Planning]Planning commission meeting Jan 23, 2023 for the SRI/ParkLane Plan Study Session
Date: Monday, January 23, 2023 3:14:09 PM

Dear commission,

As a resident of Menlo Park, I am providing my comments regarding the **SRI/ParkLine Plan Study Session** which is being held tonight to be captured in the public record.

1. **The SRI/ParkLine project should net out to provide the state-mandated housing**.
2. **Reduce the amount of office to comply with the current C1 zoning.**
3. **Remove the apartment complex driveway on Laurel Street to protect bike safety for school children and pedestrians**.
4. **Use the (currently gated) SRI driveway onto Middlefield.**
5. **Increase parking for renters and employees**.
6. **Provide underground parking for the housing units and for the offices**.
7. **Include the emergency water storage tank**.

Thank you.

Christopher Baldwin
345 Claremont Way, Menlo Park, Ca 94025

From: Susan Bryan
To: Planning Commission
Subject: Parkline Study session Jan 23, 2023
Date: Monday, January 23, 2023 10:58:10 AM

Planning Commissioners: I am writing to remind you that members of Trinity Church, Menlo Park are neighbors of the new Parkline Development. Last year, we submitted the signature of some 30 church members asking for the maximum amount of affordable market rate housing to be included in the developer’s plans. That means we would be in favor of the extra 50 units being proposed at the study session tonight.

Thank you - Susan Bryan, church member, Trinity Church, 330 Ravenswood Avenue, Menlo Park

From: Daryl Camarillo
To: PlanningDept
Subject: [Sent to Planning]SRI/ParkLine project request
Date: Monday, January 23, 2023 7:48:54 AM

Dear Corrina and Planning Commission,

As a resident of The Classics at Burgess, we are requesting a third level in the EIR scope to review a lower-impact, smaller development option -- especially since the proposed plan **INCREASES the affordable housing deficit.**

In this smaller-scope project, we request the EIR to measure the following:

1. The SRI/ParkLine project should net out to provide the state-mandated housing that the amount of office planned will require Menlo Park to build.
   - Reduce the amount of office to comply with the current C1 zoning.The planned office use will actually NEGATIVELY impact the affordable housing deficit and result in increasing the deficit due to the proposed office use. The risk of the projected lab use FAR being changed to higher employee densities per 1000 square feet will further increase the affordable housing deficit. In short, the office size and density is creating a bigger housing problem.
   - Keep the housing at 400 apartments, but have 25% of them be BMR (Below Market Rate) units, so the separate one-acre donation being considered for an affordable housing development will not be required.

2. Study the option of removing the apartment complex driveway onto Laurel to preserve bike safety for school children and pedestrians and to reduce the existing gridlock on Laurel Street. The smaller driveway for the townhome residents can remain as indicated in the current plan.

3. Measure the use of the (currently gated) SRI driveway onto Middlefield to redirect traffic flow as a viable alternative to the removal of the Laurel Street for the apartment buildings. The office traffic can be significantly reduced on the Ravenswood driveways if the Middlefield driveway opens (it will reduce Ravenswood gridlock to/from Middlefield and El Camino) and direct commuter traffic closer to Willow and Highway 101.

4. Increase parking for renters and employees since inadequate parking forces apartment renters, visitors and employees to clog residential streets with traffic while looking for parking and for taking up limited residential parking
   (Note: In the12/12 Planning Commission meeting on the SRI EIR, some commissioners wanted to reduce the proposed parking to force renters/employees to use public transit. But the representative from the firm that will conduct the EIR said that studies showed that reducing parking spaces did NOT reduce cars or numbers of car trips. It just pushed drivers to surrounding residential areas to take street parking, which added traffic as well. There were no reductions in Greenhouse Emissions or in number of car trips.)

5. Provide underground parking for the housing units and for the offices to reduce the overall height of the project (notably to reduce the height of the 3-story parking garage behind the Barron Street homes) and the potential of five six-story apartment

buildings if the project is approved for the 600 total housing unit option being reviewed.

6. Include the emergency water storage tank since there is no emergency water for residents and workers west of El Camino (per the latest water report) which said the emergency well in the city yard is not online yet. The risk of toxic contamination of the city yard emergency well makes it a problem since the city's gas tanks and city yard with other toxic substances (oil, pesticides, etc.) are above it could leak into the groundwater, especially in the expected large earthquake event at some point in the future.

Thank you for your help in getting this lower-impact option included in the EIR so we have a solid comparative analysis of the other two scenarios, especially the much larger scope option, that are being proposed in the EIR scope.

Daryl Camarillo/ Yolanda Font
525 Barron Street
Menlo Park, CA 94025
650-269-1493

From: Angel Chen
To: PlanningDept
Subject: [Sent to Planning]SRI/ParkLine Building Project - Impact on Classics of Burgess Neighborhood
Date: Monday, January 23, 2023 1:01:26 PM

Attention:
Corrina Sandmeier -- Acting Principal Planner
and the Menlo Park Planning Commission

Dear Corrina and Planning Commission,

As a resident of The Classics at Burgess, we are requesting a **lower-impact, smaller development** -- especially since the proposed plan actually **INCREASES the affordable housing deficit.**

In this smaller-scale project, we request the following:

1. **The SRI/ParkLine project should net out to provide the state-mandated housing** that the amount of office planned will require Menlo Park to build.
    - **Reduce the amount of office to comply with the current C1 zoning.**The planned office use will actually NEGATIVELY impact the affordable housing deficit and result in increasing the deficit due to the proposed office use. The risk of the projected lab use FAR being changed to higher employee densities per 1000 square feet will further increase the affordable housing deficit. In short, the office size and density is creating a bigger housing problem.
    - **Keep the housing at 400 apartments**, but have 25% of them be BMR (Below Market Rate) units, so the separate one-acre donation being considered for an affordable housing development will not be required.

2. **Remove the apartment complex driveway onto Laurel** to preserve bike safety for school children and pedestrians and to reduce the existing gridlock on Laurel Street. The smaller driveway for the townhome residents can remain as indicated in the current plan.

3. Instead of the Laurel Street driveway, **use the (currently gated) SRI driveway onto Middlefield to redirect traffic flow** as a viable alternative to the removal of the Laurel Street for the apartment buildings. The office traffic can be significantly reduced on the Ravenswood driveways if the Middlefield driveway opens (it will reduce Ravenswood gridlock to/from Middlefield and El Camino) and direct commuter traffic closer to Willow and Highway 101.

4. **Increase parking for renters and employees** since inadequate parking forces apartment renters, visitors and employees to clog residential streets with traffic while looking for parking and for taking up limited residential parking.
   (Note: In the12/12 Planning Commission meeting on the SRI EIR, some commissioners wanted to reduce the proposed parking to force renters/employees to use public transit. But the representative from the firm that will conduct the EIR said that studies showed that reducing parking spaces did NOT reduce cars or numbers of car trips. It just pushed drivers to surrounding residential areas to take street parking, which added traffic as well. There were no

reductions in Greenhouse Emissions or in number of car trips.)

5. **Provide underground parking for the housing units and for the offices** to reduce the overall height of the project (notably to reduce the height of the 3-story parking garage behind the Barron Street homes) and the potential of five six-story apartment buildings if the project is approved for the 600 total housing unit option being considered.

6. **Include the emergency water storage tank** since there is no emergency water for residents and workers west of El Camino (per the latest water report) which stated that the emergency well in the City Yard is not online yet. The risk of toxic contamination of the City Yard emergency well makes it a problem since the city's gas tanks and city yard with other toxic substances (oil, pesticides, etc.) are above it and risk leaking into the groundwater, especially in the expected large earthquake event at some point in the future.

Thank you for your help in seriously considering this lower-impact development solution.

Best,
Angel Chen

From: Sue Connelly
To: Planning Commission; PlanningDept; Sandmeier, Corinna D
Subject: [Sent to Planning]Request to reduce the office and housing for SRI/ParkLine
Date: Monday, January 23, 2023 4:45:58 PM

Dear Ms. Sandmeier and Planning Commissioners,

I'm a Board Member and resident of The Classics at Burgess HOA. I would like to reiterate the requests I submitted for the EIR scoping deadline on January 9th regarding concerns about the massive size of the SRI/ParkLine development.

We are requesting a smaller development that reduces the negative impact of a development of this large scale -- especially since the plan **INCREASES the affordable housing deficit with the quantity of office space and density proposed.**

In this smaller-scale project, the following is requested:

1. **The SRI/ParkLine project should net out** to provide the affordable housing that the amount of offices and workers that the State mandates Menlo Park to build to accommade the number of new workers.

    ○ **Reduce the amount of office space** to comply with the current C1 zoning since the planned office use will actually ***NEGATIVELY impact the affordable housing shortage*** and result in increasing the number of affordable housing units that will need to be met by yet another development project. The risk of the projected lab use FAR being changed to higher employee densities per 1000 square feet will further increase the affordable housing deficit. Currently, it appears SRI has 1,000 employees on the Menlo Park campus. Even at the lab and biotech use of 4 employees per 1,000 sqare feet raises the number of workers on the site to 4,000. In short, the office size and density is creating a bigger housing problem. If the office FAR changes to even denser use for start ups and high tech companies, the density of workers per 1,000 square feet will go up significantly, and drive the deficit even deeper.

    ○ **Keep the housing at 400 units**, but have 25% of them be BMR (Below Market Rate) units, so the separate one-acre donation considered for an affordable housing development will not be required and the community open space for a soccer field or other public use will be preserved. Also, with a reduction in office space, the housing can be reduced in height and density and spread out more on the SRI campus.With the possibility of five 6-story apartment buildings, in addition to the five 3-story buildings, this height will be 300% higher than any of the surrounding apartments and homes.Also, the apartment complex does not currently have a play area or community area, or pool. Burgess Park across the street is already overbooked an unavailable to soccer and baseball teams. How will we accommodate so many new residents who are in high-density housing without an open space?

2. **Remove the apartment complex driveway onto Laurel** to preserve bike safety for school children and pedestrians and to reduce the existing gridlock on Laurel Street. The smaller driveway for the townhome residents can remain as indicated in the current plan.

3. **Use the currently gated SRI driveway onto Middlefield** to redirect traffic flow as a viable alternative to the removal of the Laurel Street for the apartment buildings. The office traffic can be significantly reduced on the SRI/ParkLine office and apartment driveways on Ravenswood if the Middlefield driveway opens. It will reduce Ravenswood gridlock to/from Middlefield and El Camino and direct commuter traffic more efficiently to Willow Road and Highway 101.

4. **Increase parking for renters and employees** since inadequate parking forces apartment renters, visitors and employees to clog residential streets with traffic while looking for parking and for taking up limited residential parking.
(Note: In the12/12 Planning Commission meeting on the SRI EIR, some commissioners wanted to reduce the proposed parking to force renters/employees to use public transit. But the representative from the firm that will conduct the EIR said that studies showed that reducing parking spaces did NOT reduce cars or numbers of car trips. It just pushed drivers to surrounding residential areas to take street parking, which added traffic as well. There were no reductions in Greenhouse Emissions or in number of car trips.)

5. **Provide underground parking** for the apartment buildings and for the offices to reduce the overall height of the project (especially to reduce the height of the 3-story parking garage behind the Barron Street homes facing bedrooms and private living spaces on both floors of the homes) and the potential of five six-story apartment buildings if the project is approved for the 600 total housing unit option being considered. Although developers say underground parking is costly, based on current Menlo Park office rental pricing, the one million square feet of office can command an estimated $50M per year. Considering the negative impact on the surrounding areas of this project, the cost of undergound parking for the benefit of the community will be offset by the profits from just the office space alone. The apartment rental income will be another large annual revenue generator since most of the units will be at high market-rate pricing (e.g. SpringLine's rental pricing).

6. **Include an emergency water storage tank** since there is no emergency water for residents and workers west of El Camino (per the latest Menlo Park Municipl Water Report that was mailed to residents) which stated that the emergency well in the City Yard is not online yet. The risk of toxic contamination of the City Yard emergency well makes it a problem since the city's gas tanks and city yard with other toxic substances (oil, pesticides, etc.) are above it and risk leaking into the groundwater, especially in the expected large earthquake event at some point in the future.

Thank you for your serous consideration of a lower-impact development solution,

Sue Connelly

.

From: Dr. Harvey Fishman
To: PlanningDept
Subject: [Sent to Planning]New development comments
Date: Monday, January 23, 2023 4:52:11 AM

Planning commission members:

I am in full agreement with my neighbor Sue Connelly regarding proposed changes in the density and size of the development. Taking the already extremely large total housing number from 400 units to 600 units, is a 50% increase! At 400 units the density of this development far outstrips anything in the adjoining neighborhoods, and jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area .

- The project should net out to provide the state-mandated housing number of 400, in the amount required by Menlo Park for the developers planned amount of office space. Keep 400 apartments according to the original plan, but create a BMR (Below Market Rate) number of 25% of those 400 housing units, so no separate acreage for affordable housing will be required.
- Reduce the amount of office to comply with current C1 zoning. Do NOT increase the jobs-housing imbalance by adding any more office space to this proposal. We need to bring jobs and housing in balance, not keep widening the gap between them.
- The apartment complex driveway on Laurel St, should be removed to reduce traffic on Laurel St., and to preserve bike and pedestrian safety, such as it is, on Laurel St. The smaller driveway for townhome residents would be less problematic and can remain as is in the current plan.
- Use the currently gated SRI driveway onto Middlefield to redirect traffic flow so Laurel St is not used by the apartment residents (see above point) . The office traffic can be significantly reduced on the Ravenswood driveways if

Middlefield driveway opens, providing more egress options, and directing traffic closer to their destinations of Middlefield and 101 access.

- Increase parking commensurate with office worker numbers and apartment dwellers. Fewer parking spaces onsite only pushes traffic into nearby neighborhoods, as the research recounted to the Commission during the 12/12/22 meeting indicated. Fewer parking spots than the number of workers' and residents' cars do NOT encourage use of public transit, but to using neighborhood streets for parking.
- Provide underground parking for both offices and housing units, reducing the need for car parking to take up valuable above ground space in the form of an above ground parking garage .
- Include the emergency water storage tank , because 1) there is no options for workers west of El Camino and 2) the city yard emergency well is in danger of possible contamination during an earthquake from existing onsite gas storage and toxic substances in the ground.

Sent from my iPhone.

Best Harvey
650-387-8481 cell

From: Patti Fry
To: _Planning Commission
Cc: _CCIN
Subject: SRI Parkline project
Date: Monday, January 23, 2023 8:22:39 AM

Planning Commissioners --
Please be sure that the project is modified so it improves rather than worsens the jobs/housing imbalance in Menlo Park.

There are decades of precedent with SRI to manage the number of allowed workers on site, well-documented by a submission in the public record by former Council Member Paul Collacchi, The current proposed project blows out prior precedent, including when land was spun off for housing. Managing the number of workers continues to be an important lever.

The proposed EIR scope continues to include worker density metrics that likely would greatly underestimate the potential number of workers and related negative impacts. The staff report describes office worker density assumptions of 250 SF/worker whereas tech companies have allocated 50-150 SF/worker, 66% to 400% more. Be sure that the metrics used will measure realistic impacts. Fix the metrics to be used in the analysis.

Patti Fry, former Menlo Park Planning Commissioner

From: JoAnne Goldberg
To: PlanningDept
Cc: _CCIN
Subject: [Sent to Planning]Planning commission meeting January 23: item G1, Parkliine Study Session
Date: Monday, January 23, 2023 11:55:13 AM

Planning Commissioners and Staff:

Thank you for accepting comments on this important project.

First, I want to endorse the information and analysis that former council member Paul Collacchi sent the Council and Planning Commission two weeks ago, asking for a big picture EIR analysis of the entire project, including the longer-term impact on housing requirements. His analysis points out that the overall project will increase the new housing obligation by over 2,000 units. Long-term consequences always need to be a consideration.

Meanwhile, tonight's study session focuses on the addition of 400-600 housing units in high-rise apartment buildings with few (if any) amenities offered to those new residents, or to current residents of the city. Burgess Park is across the street, but as the only city park with diverse facilities designed to meet the needs of a large segment of the population, it is already fully utilized (until this year, I scheduled practices and games for our local non-profit, all-volunteer youth soccer organization, AYSO. Space all over town is severely limited, especially at Burgess. We don't have enough room for our kids to play as is).

Next, proposals for this housing project specify that it be massively underparked, with (paid) housing advocates suggesting even less housing, holding up visions of a utopian community in which everyone -- no matter their age, physical health, or work/family obligations -- can bike or walk everywhere. In reality, the residents are going to have cars, which will either have to be parked at Burgess or in adjacent neighborhoods.

In the past, the city Planning Commission has rejected projects that did not meet parking requirements. I urge you to continue that tradition with this project.

Although most people in Menlo Park seem unaware of the Parkline project, it will impact almost all neighborhoods and have a deleterious effect on east-west connectivity. I second's Paul's request to expand the EIR to encompass most of the city, with particular note to the fact that Ravenswood and Laurel Street are heavily used by children bicycling to school.

I ask that you consider the needs of all residents and take a long-term approach to this proposal. Once the project has been approved, the change will be irrevocable.

JoAnne Goldberg

From: Kathy Goodell
To: PlanningDept
Subject: [Sent to Planning]SRI/Springline Project Requests
Date: Monday, January 23, 2023 6:30:08 AM

For the SRI/Springline project I respectfully request that you not exceed the 400-residential unit plan and keep office at the current C1 level, have the apartment complex not exit onto Laurel, and provide additional (not less) parking --including underground parking for offices and renters.

For those wishing to go west on Ravenswood (to connect to downtown and El Camino) our only street exit from Linfield Oaks is at the Laurel/Ravenswood intersection and in case of emergency and everyday travel (and for vehicles coming from the police station on Laurel) it's important to not have huge traffic bottlenecks at the Laurel/Ravenswood intersection. Opening up the Middlefield gate for the SRI/Springline folks would seem a logical alternative to reroute and help alleviate traffic pressure at Laurel/Ravenswood.

Thank you for your consideration of my requests.

Sincerely,

KATHY

Katherine L. "Kathy" Goodell
21 Willow Road
Menlo Park

From: Tom Hall
To: PlanningDept
Subject: [Sent to Planning]SRI Property
Date: Monday, January 23, 2023 8:49:28 AM

> I am in full agreement with my neighbor Sue Connelly regarding proposed changes in the density and size of the development. Taking the already extremely large total housing number from 400 units to 600 units, is a 50% increase! At 400 units the density of this development far outstrips anything in the adjoining neighborhoods, and jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area.
>
> Tom Hall
> 212 Gilbert Ave.
> Menlo Park

From: Betsy Henze
To: PlanningDept
Subject: [Sent to Planning]SRI/Parkline
Date: Monday, January 23, 2023 10:46:57 AM

Planning commission members:

I am in full agreement with my neighbor Sue Connelly regarding proposed changes in the density and size of the development. Taking the already extremely large total housing number from 400 units to 600 units, is a 50% increase! At 400 units the density of this development far outstrips anything in the adjoining neighborhoods, and jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area .

- The **project should net out to provide the state-mandated housing number of 400,** in the amount required by Menlo Park for the developers planned amount of office space. Keep 400 apartments according to the original plan, but create a BMR (Below Market Rate) number of 25% of those 400 housing units, so no separate acreage for affordable housing will be required.
- Reduce the amount of office to comply with current C1 zoning. Do NOT increase the jobs-housing imbalance by adding any more office space to this proposal. We need to bring jobs and housing in balance, not keep widening the gap between them.
- The apartment complex driveway on Laurel St, should be removed to reduce traffic on Laurel St., and to preserve bike and pedestrian safety, such as it is, on Laurel St. The smaller driveway for townhome residents would be less problematic and can remain as is in the current plan.
- Use the currently gated SRI driveway onto Middlefield to redirect traffic flow so Laurel St is not used by the apartment residents (see above point) . The office traffic can be significantly reduced on the Ravenswood driveways if

Middlefield driveway opens, providing more egress options, and directing traffic closer to their destinations of Middlefield and 101 access.

- Increase parking commensurate with office worker numbers and apartment dwellers. Fewer parking spaces onsite only pushes traffic into nearby neighborhoods, as the research recounted to the Commission during the 12/12/22 meeting indicated. Fewer parking spots than the number of workers' and residents' cars do NOT encourage use of public transit, but to using neighborhood streets for parking.
- Provide underground parking for both offices and housing units, reducing the need for car parking to take up valuable above ground space in the form of an above ground parking garage .
- Include the emergency water storage tank , because 1) there is no options for workers west of El Camino and 2) the city yard emergency well is in danger of possible contamination during an earthquake from existing onsite gas storage and toxic substances in the ground.

Quoting from my neighbor, Sue Connelly, who says it far better than I **:**

" SRI/ParkLine will have highly profitable housing and office revenue annually, but the costs will be borne by the taxpayers.

Based on current Menlo Park office rates, the office project stands to generate $50M per year. This doesn't include ANY of the apartment rentals, for which most will be at very high rents (see the current rents for the new SpringLine apartments!). There will be some city revenue, but since SRI is a non-profit, this massive development will not offset many of the costs residents must pay for infrastructure (schools, police, fire, water and roads). Yet it will create a significant reduction in our quality of life (and possibly home values), bike/pedestrian safety for school children and residents, and increasing the state-mandated affordable housing units even more.

We need to require that any new office development provides/includes the affordable housing that the office spaces

and employee densities will be required to be built in Menlo Park."

Thank you for your consideration regarding rejecting this enlarged and negatively impactful proposal for this development .

Betsy Henze
320 Sherwood Way
Menlo Park

From: Nancy Hosay
To: PlanningDept
Subject: [Sent to Planning]SRI/Parkline Plan Review - requested changes
Date: Sunday, January 22, 2023 11:22:12 PM

Planning commission members:

I am in full agreement with my neighbor Sue Connelly regarding proposed changes in the density and size of the development. Taking the already extremely large total housing number from 400 units to 600 units, is a 50% increase! At 400 units the density of this development far outstrips anything in the adjoining neighborhoods, and jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area .

- The **project should net out to provide the state-mandated housing number of 400,** in the amount required by Menlo Park for the developers planned amount of office space. Keep 400 apartments according to the original plan, but create a BMR (Below Market Rate) number of 25% of those 400 housing units, so no separate acreage for affordable housing will be required.
- Reduce the amount of office to comply with current C1 zoning. Do NOT increase the jobs-housing imbalance by adding any more office space to this proposal. We need to bring jobs and housing in balance, not keep widening the gap between them.
- The apartment complex driveway on Laurel St, should be removed to reduce traffic on Laurel St., and to preserve bike and pedestrian safety, such as it is, on Laurel St. The smaller driveway for townhome residents would be less problematic and can remain as is in the current plan.
- Use the currently gated SRI driveway onto Middlefield to redirect traffic flow so Laurel St is not used by the apartment residents (see above point) . The office traffic can be significantly reduced on the Ravenswood driveways if

Middlefield driveway opens, providing more egress options, and directing traffic closer to their destinations of Middlefield and 101 access.

- Increase parking commensurate with office worker numbers and apartment dwellers. Fewer parking spaces onsite only pushes traffic into nearby neighborhoods, as the research recounted to the Commission during the 12/12/22 meeting indicated. Fewer parking spots than the number of workers' and residents' cars do NOT encourage use of public transit, but to using neighborhood streets for parking.
- Provide underground parking for both offices and housing units, reducing the need for car parking to take up valuable above ground space in the form of an above ground parking garage .
- Include the emergency water storage tank , because 1) there is no options for workers west of El Camino and 2) the city yard emergency well is in danger of possible contamination during an earthquake from existing onsite gas storage and toxic substances in the ground.

Quoting from my neighbor, Sue Connelly, who says it far better than I **:**

" SRI/ParkLine will have highly profitable housing and office revenue annually, but the costs will be borne by the taxpayers.

Based on current Menlo Park office rates, the office project stands to generate $50M per year. This doesn't include ANY of the apartment rentals, for which most will be at very high rents (see the current rents for the new SpringLine apartments!). There will be some city revenue, but since SRI is a non-profit, this massive development will not offset many of the costs residents must pay for infrastructure (schools, police, fire, water and roads). Yet it will create a significant reduction in our quality of life (and possibly home values), bike/pedestrian safety for school children and residents, and increasing the state-mandated affordable housing units even more.

We need to require that any new office development provides/includes the affordable housing that the office spaces

and employee densities will be required to be built in Menlo Park."

Thank you for your consideration regarding rejecting this enlarged and negatively impactful proposal for this development .

Nancy Hosay
325 Linfield Place
Menlo Park

From: John Henze
To: PlanningDept
Subject: [Sent to Planning]SRI/Parkline Plan Review - Requested Changes
Date: Monday, January 23, 2023 3:11:59 PM

Planning commission members:

I am in full agreement with my neighbors regarding proposed changes in the density and size of the development. Taking the already extremely large total housing number from 400 units to 600 units, is a 50% increase! At 400 units the density of this development far outstrips anything in the adjoining neighborhoods, and jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area .

- The **project should net out to provide the state-mandated housing number of 400,** in the amount required by Menlo Park for the developers planned amount of office space. Keep 400 apartments according to the original plan, but create a BMR (Below Market Rate) number of 25% of those 400 housing units, so no separate acreage for affordable housing will be required.
- Reduce the amount of office to comply with current C1 zoning. Do NOT increase the jobs-housing imbalance by adding any more office space to this proposal. We need to bring jobs and housing in balance, not keep widening the gap between them.
- The apartment complex driveway on Laurel St, should be removed to reduce traffic on Laurel St., and to preserve bike and pedestrian safety, such as it is, on Laurel St. The smaller driveway for townhome residents would be less problematic and can remain as is in the current plan.
- Use the currently gated SRI driveway onto Middlefield to redirect traffic flow so Laurel St is not used by the apartment residents (see above point) . The office traffic can be

significantly reduced on the Ravenswood driveways if Middlefield driveway opens, providing more egress options, and directing traffic closer to their destinations of Middlefield and 101 access.

- Increase parking commensurate with office worker numbers and apartment dwellers. Fewer parking spaces onsite only pushes traffic into nearby neighborhoods, as the research recounted to the Commission during the 12/12/22 meeting indicated. Fewer parking spots than the number of workers' and residents' cars do NOT encourage use of public transit, but to using neighborhood streets for parking.
- Provide underground parking for both offices and housing units, reducing the need for car parking to take up valuable above ground space in the form of an above ground parking garage .
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" SRI/ParkLine will have highly profitable housing and office revenue annually, but the costs will be borne by the taxpayers.

Based on current Menlo Park office rates, the office project stands to generate $50M per year. This doesn't include ANY of the apartment rentals, for which most will be at very high rents (see the current rents for the new SpringLine apartments!). There will be some city revenue, but since SRI is a non-profit, this massive development will not offset many of the costs residents must pay for infrastructure (schools, police, fire, water and roads). Yet it will create a significant reduction in our quality of life (and possibly home values), bike/pedestrian safety for school children and residents, and increasing the state-mandated affordable housing units even more.

We need to require that any new office development provides/includes the affordable housing that the office spaces and employee densities will be required to be built in Menlo Park."

Please don’t forget about all of the long-time Menlo Park residents that value the quality of life that Menlo Park has long afforded. Thank you for your consideration regarding rejecting this enlarged and negatively impactful proposal for this development.

Thanks,

John Henze

31 year Menlo Park resident
320 Sherwood Way

From: Lauren John
To: PlanningDept
Subject: [Sent to Planning]
Date: Monday, January 23, 2023 9:50:19 AM

Planning commission members:

I am in full agreement with my neighbor Sue Connelly regarding proposed changes in the density and size of the development. Taking the already extremely large total housing number from 400 units to 600 units, is a 50% increase! At 400 units the density of this development far outstrips anything in the adjoining neighborhoods, and jeopardizes basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area .

- The **project should net out to provide the state-mandated housing number of 400,** in the amount required by Menlo Park for the developers planned amount of office space. Keep 400 apartments according to the original plan, <u>but create a BMR (Below Market Rate) number of 25%</u> of those 400 housing units, so no separate acreage for affordable housing will be required.
- <u>Reduce the amount of office to comply with current C1 zoning. Do NOT increase the jobs-housing imbalance by adding any more office space to this proposal.</u> We need to bring jobs and housing in balance, not keep widening the gap between them.
- The <u>apartment complex driveway on Laurel St, should be removed</u> to reduce traffic on Laurel St., and to preserve bike and pedestrian safety, such as it is, on Laurel St. The smaller driveway for townhome residents would be less problematic and can remain as is in the current plan.
- <u>Use the currently gated SRI driveway onto Middlefield to redirect traffic flow so Laurel St is not used by the apartment residents (see above point) .</u> The office traffic can be significantly reduced on

the Ravenswood driveways if Middlefield driveway opens, providing more egress options, and directing traffic closer to their destinations of Middlefield and 101 access.

- Increase parking commensurate with office worker numbers and apartment dwellers. Fewer parking spaces onsite only pushes traffic into nearby neighborhoods, as the research recounted to the Commission during the 12/12/22 meeting indicated. Fewer parking spots than the number of workers' and residents' cars do NOT encourage use of public transit, but to using neighborhood streets for parking.
- Provide underground parking for both offices and housing units, reducing the need for car parking to take up valuable above ground space in the form of an above ground parking garage .
- Include the emergency water storage tank , because 1) there is no options for workers west of El Camino and 2) the city yard emergency well is in danger of possible contamination during an earthquake from existing onsite gas storage and toxic substances in the ground.

Quoting from my neighbor, Sue Connelly, who says it far better than I **:**
" SRI/ParkLine will have highly profitable housing and office revenue annually, but the costs will be borne by the taxpayers.
Based on current Menlo Park office rates, the office project stands to generate $50M per year. This doesn't include ANY of the apartment rentals, for which most will be at very high rents (see the current rents for the new SpringLine apartments!). There will be some city revenue, but since SRI is a non-profit, this massive development will not offset many of the costs residents must pay for infrastructure (schools, police, fire, water and roads). Yet it will create a significant reduction in our quality of life (and possibly home values), bike/pedestrian safety for school children and residents, and increasing the state-mandated affordable housing units even more.

We need to require that any new office development provides/includes the affordable housing that the office spaces and employee densities will be required to be built in Menlo Park."

Thank you for your consideration regarding rejecting this enlarged and negatively impactful proposal for this development .

George and Lauren John
331 Laurel Street
Menlo Park 94025

From: John Kadvany
To: _Planning Commission
Cc: _CCIN
Subject: Parkline/SRI proposal comments
Date: Monday, January 23, 2023 11:11:08 AM

Dear Planning Commissioners:

Following are comments on the land use policies implied by the Parkline/SRI redevelopment proposal, followed by recommendations.

– This project presents as a large office park with some housing included. The parking including three multi-story parking garages is significantly out of scale for a transit-oriented proposal. There is a commercial-to-housing ratio of about 2:1 or 3:1 (including old buildings) by square footage. Given that the Specific Plan major developments (Stanford, 1300 ECR) are about 50:50 residential compared to office + retail, for square footage, that amount of commercial space is out of step with recent transit-oriented development.

– Given the scarcity of housing in the Bay Area, this proposed office-residential ratio should not be encouraged by the PC or the city. A better use of this site would be to include more housing and less commercial and parking space. I do not know of city policy or resident preferences for this projected level of commercial space, especially given over-built office capacity today.

– The current proposal is not that of a 'neighborhood' or 'mixed-use' as stated in the Master Plan. This is principally an office park. While pedestrian and bicycle circulation through the project is good, the site space is dominated by the commercial and parking buildings. The two amenity buildings do not create a mixed-use plan. (That’s not to suggest significant retail should be included, so the ‘mixed-use’ goal needs clarification. Certainly the office + residential design is not 'mixed-use'.) The 'open space' is numerically generous, and the designated use areas are good, but the overall layout is not that of an inviting public space. The plan does provide desirable benefits including the planned affordable housing area and the playing field.

- The current configuration of commercial buildings and parking garages, while apparently (and gratefully) not designed as ‘secure’ areas, are not oriented to encourage interaction with the community, or even the planned residences. The busy scenes full of pedestrians or office workers shown enjoying walkways in the project slides will not likely materialize.

– The rezoning and General Plan amendments options are open-ended. I do not agree with changes which would allow the development as proposed. It’s a poor use of this site, more appropriate to urban planning now several decades past. I would not want amendments or zoning allowing new or existing buildings to be sold off to others, at least for significant periods of time. Plans for existing buildings including ‘P’, 'T' and 'S', and options for the affordable housing plan area, should be clarified.

- I understand the applicant is assuming that existing commercial entitlements, based on square footage, justify the proposed commercial space and parking. Instead, the applicant should acknowledge the very low intensity uses SRI has enjoyed in Menlo Park for decades. The applicant, PC and CC should use past site use intensities as a point of comparison for overall benefit-cost comparisons. A smaller total commercial use target should be considered.

RECOMMENDATIONS:

- The plan needs a different balance of residential-commercial use of the site, and reduction of multi-story parking. For that, the site perimeter and large site size are sufficient to accommodate higher buildings for the site interior, keeping in mind existing streets and neighborhoods. For comparison, San Mateo and Palo Alto have several higher and older residential buildings mixed in smaller scale neighborhoods or downtowns. Consideration should be given where relevant to additional height for residential and commercial buildings to add floor area. Affordable housing plans could be integrated with these changes.

- Given fewer and possibly taller buildings, the remaining open space can be consolidated into a larger space shared by commercial and residence buildings. Such an approach could create a genuine shared open space, and a distinctive neighborhood less isolated from the adjoining residences, streets and neighborhoods.

Sincerely,
John Kadvany / College Avenue

From: Kenneth Everett Mah
To: PlanningDept
Subject: [Sent to Planning]SRI/ParkLine Study Session with Planning Commission public comment
Date: Monday, January 23, 2023 4:33:26 PM

Dear Menlo Park Planning Commission and Planning Department,
My wife and I are writing to express our concerns about the project overall and EIR, and request additional items be added to the scope and be studied/changed. We, along with our 4.5yo daughter and 7mo son, bought our home in the Burgess Classic neighborhood ~1 year ago (November 2021) and live directly on Laurel St across from Burgess Pool. We have lived on Laurel St for now 6+ years total.
Generally, we are concerned about the impact of the size of the residential and commercial development on local safety and resources. Specifically, traffic on Laurel St, safety of biking and walking on Laurel street especially for children since it's a safe route to school, and utilization of Burgess Park amenities.

- Entrances/exits on Laurel St
    - These should all be removed. All traffic, both residential and commercial, should be routed to Middlefield and Ravenswood. There is an opportunity to create an additional network of roads within SRI to either offload current traffic or at a minimum keep new traffic that will be added by this project off Laurel St, which is residential. We requested this in writing and verbally to both the City Council/Planning Commission and Lane Partners, but continue to be ignored and have not received any explanations on why they want to direct the new residential traffic onto Laurel as opposed to the internal SRI roads or Ravenswood. Furthermore, not having driveways onto Laurel would encourage new residents to use alternative modes of transportation rather than drive.
        - Request: Please remove all entrances/exits on Laurel St, or study the impact on traffic on Laurel St and demonstrate there will be no difference from the current state. Also, study the impact at the different variations of housing density.
- Safety on Laurel St
    - Laurel St is a residential street that is designated a safe route to school. Any increase in car traffic or driveway use (the current SRI driveways on Laurel have minimal traffic to no traffic) will compromise the safety of children. Walking and biking will be more dangerous due to traffic and more intersections. We have verbally requested Lane Partners extend truly protected (by physical barriers such as curb, and not just paint) bike lanes in both directions on Laurel from Ravenswood to Burgess, and they verbally agreed, but we don't see it on the proposal.
        - Request: Please remove all entrances/exits on Laurel St, or study the impact on traffic on Laurel St and demonstrate that traffic accidents (car vs car, car vs bike, car vs pedestrian) will not increase, and the impact of at the different variations of housing density.
        - Request: Install truly protected (by physical barrier such as curb or

immobile ballard) bike lanes in both directions on Laurel St from Ravenswood to Burgess.
        - Request: Install truly protected (by physical barrier such as curb or immobile ballard) bike lanes in both directions on Burgess Drive from Laurel St to SRI/Menlo Park Corporation Yard (since this will be open to bike/pedestrian traffic).
            - Also, would like protected bike lanes the full length of Burgess between Alma and SRI whether as part of this Parkline Project or the Middle Tunnel.
- Utilization of Burgess Park amenities
    - Adding 400+ units and commercial space will severely overcrowd the amenities at Burgess Park, and decrease how current residents can use them. These include the pool, tennis courts, playground, library, gymnastics center, etc. and the associated classes with them, such as gymnastic and dance classes, swim lessons, etc.
        - Request: Study the impact on Burgess amenities by specific amenities, not generally, and class/course offerings at each amenity, and demonstrate there will be no difference than current state. Also, study the impact at the different variations of housing density.
        - Request: Give Burgess Classics residents priority and discounted/free access to Burgess Park amenities if the Parkline development will impact access in any way.
- Menlo Park Corporation Yard Parking lot
    - This parking lot is primarily used by MP staff during the day, and Burgess Classics residents at night. We are currently not allowed to get annual overnight parking passes despite our limited street parking, but we can use the lot and tennis court. We are concerned that Parkline residents and workers will use the lot, as will other people who come to use the public space and amenities in Parkline as it is the closest parking lot to SRI/Parkline.
        - Request: Study the impact of the development on use of the Corporation Yard parking lot during the day, evening, and overnight, and demonstrate there will be no impact.
        - Request: If there is an impact, make lot not accessible to Parkline residents or workers nor the public, and give Burgess Classic residents access to overnight annual parking permits for free so we can park on the streets of Burgess Classics (Thurlow, Hopkins, and Barron) and the Corporation Yard parking lot.

Please let me know if you have questions or need clarification about these concerns or requests.

Thank you for your time and consideration,
Kenneth Mah

From: Rob McCool
To: PlanningDept
Subject: [Sent to Planning]please reconsider SRI/ParkLine site specifics
Date: Monday, January 23, 2023 4:24:44 PM

Dear Menlo Park City Council,

Reducing housing to office space imbalance by increasing housing should be a priority for us all. Increasing the housing to 600 units at this site, from 400, while still allowing 4000 more employees into the site, does nothing to relieve this imbalance.

I am also disappointed to see that parking is being reduced in an attempt to reduce car traffic. Our peninsula cities are simply not correctly set up for this to be realistic at this time, meaning that anyone living in these new properties will absolutely have a car, as will many of the employees commuting into the site each day. I urge the council to be realistic as to how people will get around our city from this new development, which is going to remain car-based due to the last mile problem associated with caltrain.

Finally I would also urge the council to consider Laurel Street, and not include a driveway onto Laurel from this complex. Middlefield is far more well set up to handle this increased traffic, and would be the more appropriate way to direct traffic. Our police frequently use Laurel Street to get to and from various parts of town and introducing more traffic blockage on Laurel is not going to be positive.

Thanks, Rob McCool 360 Sherwood Way

From: Peter C
To: PlanningDept
Subject: [Sent to Planning]Traffic at SRI
Date: Sunday, January 22, 2023 5:07:35 PM

Dear Planning Department,

It is apparent that the Planning Department and City Council are acting counter to the concerns of the Burgess Classics neighbors. Yes, we have a housing deficit in the Bay Area, but replacing it with this project does not solve the area's housing problem.

My concerns are as follows:

1) Major traffic along Laurel, Ravenswood and Middlefield. We need to make sure the trip caps are low enough to manage this large project.
2) This project will create an imbalance to jobs to housing units, further exacerbating the region's housing crisis. Let's not use tax receipt collections as a smoke screen to endorse the project. We need to ensure it does not impact schools and our local infrastructure.
3) 600-unit mid-rises don't conform to the area's existing uses.

I'm generally supportive, but let's go back to 400 units the original proposal by the developer.

Thank you

Peter C (District 3 resident)

From: Susan Stimson
To: PlanningDept; _CCIN
Subject: [Sent to Planning]SRI/Parkline Plan Review - requested changes
Date: Monday, January 23, 2023 3:50:22 PM

City Council and Planning Commission Members,

As a 14 year resident of Menlo Park, I urge you to curtail the scope of the Parkline housing project to protect safety and accessibility in Menlo Park.

As you know from past examination of the railroad crossings, the crossing at Ravenswood is especially tenuous during high traffic hours which surround both business hours AND very importantly school hours.

In addition, the accessibility to and from Highway 101 via Willow road has deteriorated. Of course, there was respite amidst the pandemic, however, the existing two lane road is insufficient to accommodate future growth.

The city has expressed interest in forward and future thinking which I think is apt. Preparing for additional housing is an important part of that for certain.

That said, the plans must be coupled with forward thinking and planning regarding infrastructure to accommodate additional neighbors such as above/below grade railroad crossings and additional routes to access highways 101 and 280. Not doing so puts current and future neighbors at risk and lacks prudence.

The Parkline project is scoped to add over twice as many units as the 2 large developments yet to be inhabited (Springline is open but not at capacity and the Stanford project is still under construction). Despite how the city chooses to draw district lines, all properties are adjacent to downtown. While convenience to public transit is a benefit, it is not realistic or fair to assume that new residents will give up their freedom of owning and using an automobile. People have lives off of El Camino... kids sports activities, jobs off highways vs downtown, jobs like sales or construction that require daily driving, hiking in the hills, volunteering on the coast for example.

While I understand that speculative models have been generated regarding the potential effects to traffic and safety, I urge the city to "digest" the new additions from other downtown adjacent developments before adding extensively to them.

I am fully supportive of adding new housing on the SRI campus and the campus development overall. I also support stipulating that a higher percentage become affordable housing.

My asks:

- Perform a traffic and safety assessment subsequent to the large developments on El Camino being inhabited. That will be possible very soon if the need for housing near downtown is dire.
- Perform a survey of those new neighbors to see how they in fact are commuting and using / not using public transit.
- Ensure city of the future planning includes near term investments in infrastructure to improve access to highways 101 and 280 and also above or below grade RR track crossings

Thank you for your consideration regarding rejecting this enlarged and negatively impactful proposal for this development.

Susan Stimson

From: Karen Wang
To: PlanningDept
Subject: [Sent to Planning]SRI/Parkline Plan Review - requested changes
Date: Monday, January 23, 2023 4:29:25 PM

Dear Planning Commission and City Council members:

I object to proposed changes in the density and size of the SRI/Parkline development for the following reasons.

- At even 400 housing units, never mind 600, the density of this development far outstrips anything in the adjoining neighborhoods and will negatively impact basic quality of life issues including resultant lack of parking, crowding, school and infrastructure impacts and traffic in this area.
- We should not increase the jobs-housing imbalance by adding any more office space to this proposal. We need to stop big office development until we meet the affordable housing deficit for the offices already built and others already approved in the pipeline. We need to bring jobs and housing in balance, not keep widening the gap between them.
- It is fantasy to believe workers and residents will exclusively use public transit and not have cars. The traffic and parking impact on the surrounding neighborhoods will be terrible.

I hope you reject this enlarged and negatively impactful proposal for this development. Thank you for your consideration.

Karen Wang
29 Willow Road
Menlo Park

MEMO

To: Planning Department (PlanningDept@menlopark.gov), Corrina Sandmeier, Jen Wolosin

From: Phillip Bahr

Date: 2/06/2023

Re: SRI Comments 2/06/2023, 5/10/2022 and various dates. Staff Report #22-073-PC and #22-091-CC Item G.

We applaud SRI and their efforts toward proposing a project that offers Menlo Park well-being, green design and sustainability goals.

C-1. HOUSING FOR OUR CHILDREN, LAW ENFORCEMENT, TEACHERS, ETC. The proposed project does not meet the needs of those residents and want-to-be residents who are in the income middle. What I hear and am told is that we need affordable two and three bedroom homes to buy not just more apartments. FACT, a couple with two children, working a job in law enforcement and a healthcare provider, can't afford a home here. The middle class is priced out of Menlo Park. We want this group to be able to get started in the housing market. How can we be assured by the City of Menlo Park, SRI and the Developer that our own Menlo Park children and residents will have housing priority?

C-2. TRAFFIC/SAFETY. Study the option of removing the apartment complex driveway on Ravenswood (across from Pine Street). The vehicular access from the proposed Parkline housing along Ravenswood and Laurel is aligned with Pine Street. The proposed street intersection of Ravenswood/Pine Street is not acceptable for several reasons.

A. There is already a traffic problem with traffic exiting from SRI onto Ravenswood.
B. The Pine/Ravenswood intersection is too close to the intersection of Laurel/Ravenswood.
C. There is major traffic congestion at commute hours now in the vicinity of Ravenswood/Laurel now. Imagine how this will be once the project is complete and all other traffic returns to Menlo Park.

If vehicles and delivery trucks originating from the Parkline housing units enter and exit from the proposed housing units and cross across Ravenswood to Pine Street *this* will create a disastrous and deadly situation to the pedestrians and vehicles. Also, Pine Street can only accommodate one lane of traffic with parking on one side. For example, the existing traffic situation is unsafe and does not allow police or fire truck access. This point must be addressed by the City of Menlo Park now. Furthermore, to install traffic barriers on Ravenswood to prevent exiting from the Parkline project will not work. Currently the Springline project used this solution and I have personally observed cars simply going around the barriers and going straight across Oak Grove.

> BACKGROUND: We have a bigger and yet connected problem on Pine Street. Safety and Accessibility. Pine Street is approximately 23’-10” in width. This width does not comply with current transportation standards. Cars and trucks oftentimes park illegally on our sidewalks and California Water Service meter covers. I’ve been told that the reason folks park on our sidewalk is to avoid getting their vehicles damaged. They’ve damaged our sidewalks, street tree planting areas and utility covers.
>
> Vehicles also use our street as a short cut (as depicted on the Waze app and google maps) I have witnessed cars darting across Ravenswood and Oak Grove onto Pine Street as they leave from a local business and school.

Of most concern, fire trucks and ambulances are unable to drive down our street in an emergency if cars are parked on both sides of the street. This is a hazardous condition and the City was notified by me in writing on February 13, 2019.

C-3. SITE PLAN The proposed site plan adds over 1,000,000 sf of new office space. This adds to our housing deficit! The additional office/commercial sf adds to the existing traffic, parking and all other environmental impacts. Ironically, should SRI continue at their current level of employees and services, then the additional sf impacts will be additive and potentially put this area in gridlock. The ensuing gridlock will cut off access into and out of Menlo Park Downtown from 101. Generally, the access and flow of the site master plan does not respond to traffic conditions. For example, access points to site are from Laurel and Ravenswood. Study a site plan that has access from Middlefield Road or close to Menlo Atherton High School.

C-4. BUILDING DESIGN AND SETBACK The proposed building design in a mission style is not reflective of good design. A six-story mission style building? The proposed setback for the residential location is too close to Ravenswood and Laurel streets. The housing should be set back at least the same distance as the existing SRI building on Ravenswood.

C-5. HOUSING LOCATION AND BUILDING HEIGHT. The height of the residential buildings was depicted by the Architect and Developer not to exceed two stories on Laurel or Ravenswood, not three to six stories as stated during tonight’s presentation. The density of residential building massing does not reflect the surrounding neighborhoods of Pine, Laurel, etc. I am not saying that it’s not desired to have taller buildings, but don’t place them at the corner of Ravenswood and Laurel. Keep the building close to the street at the originally discussed one and two stories.

C-6. TRAFFIC COMMENT The traffic congestion on El Camino/Ravenswood/Laurel/Middlefield is already a problem. The HEU Update Draft SEIR depicts a population increase of over 30% for Menlo Park. The baseline used is traffic from 2021. This is not an apples-to-apples comparison as our traffic was down from 2020 through 2022 and continues to be low. Also, the newly approved or constructed projects, i.e. Parkline, are not fully occupied and some not constructed.

The assumption of the distance to mass transit will reduce traffic is not viable in our case. Until the public transit system is improved to go to more destinations, with more connections it will not entice patrons to ride the bus or train.

C-7. PARKING COMMENT: The Park assumes that many of their residents will be enticed to take public transportation. All housing units need to provide enough parking garage or parking grade level parking to accommodate the Parkline's additional cars. The residential streets do not have the capacity to absorb all of the Parkline's additional parking. For example, Pine Street does not have parking capacity to allow additional parking from Menlo Atherton High School, businesses and nearby projects. Pine Street in front of our house is less than 23'-10" wide with parking on both sides of the street. This street is much too narrow to provide the health and safety necessary to the residents and visitors. The additional traffic from the Parkline/SRI project as well as traffic short cuts will increase traffic flow on Pine Street.

All of these comments have been made in writing by me and others previously as well as some other comments. It appears that SRI and their Developer & Architect have not addressed these community comments made during the outreach process.

Respectfully Submitted,

Phillip Bahr
Menlo Park, CA 94025

Menlo Park City Council, Staff Report #22-091-CC Item G1.

SRI comments on Staff Report. Tuesday 5/10/2022

We applaud SRI and their community involvement and sustainability efforts. Also, we are supportive of the SRI housing proposal.

1. HOUSING FOR OUR CHILDREN, LAW ENFORCEMENT, TEACHERS, ETC. **How can we be assured by the City of Menlo Park, SRI and the Developer that our own children, residents will have housing priority?** Middle class is priced out of Menlo Park.
2. TRAFFIC/SAFETY. Vehicular access from the proposed housing along Ravenswood appears to be aligned with Pine Street. The proposed street intersection of Ravenswood/Pine Street is not acceptable for several reasons.
   A. There is already a traffic problem with traffic exiting from SRI onto Ravenswood. The Pine/Ravenswood intersection is too close to the intersection of Laurel/Ravenswood. There is gridlock now. Imagine how this will be once the project is complete and all other traffic returns to Menlo Park.
   B. If cars are permitted to exit from the proposed housing and cross across Ravenswood to Pine Street *this* will create a disastrous and deadly situation to the residents and vehicles. Also, Pine Street can only accommodate one lane of traffic with parking on one side. For example, the existing traffic situation is unsafe and does not allow police or fire truck access. **This point must be addressed by the City of Menlo Park now.**
3. BUILDING SETBACK. Proposed setback for the residential location is too close to Ravenswood and Laurel streets. The housing should be set back at least the same distance as the existing SRI building on Ravenswood.
4. HOUSING LOCATION AND BUILDING HEIGHT. The height of the residential buildings was promised not to exceed two stories on Laurel or Ravenswood, not three to six stories as stated during tonight's presentation. The compact housing development is not in keeping with the surrounding neighborhoods. The density of residential building massing does not reflect the surrounding neighborhoods of Pine, Laurel, etc.
5. PARKING. One space per residential unit is inadequate. **What is the City's residential parking requirement?** No SRI parking can go on to neighborhood streets.

All of these comments have been made by me and others previously as well as some other comments. It appears that SRI and their Developer & Architect have not addressed these community comments made during the outreach process. **Will this change going forward?**

Respectfully Submitted, Phillip Bahr, Menlo Park Resident

From: Sarah Brophy
To: Planning Commission
Subject: Support jobs-housing balance and deeper affordability at SRI Parkline
Date: Monday, February 6, 2023 4:28:37 PM

Dear council members,

I'm writing to support this development. There is a huge need for housing at all income levels in Menlo Park. I have lived in this community with my family for 12 years. In that time many friends and their families have left the Bay Area because of housing affordability, mostly high income professionals who were unable to afford to buy a home and who grew tired of the precariousness of renting with no tenant protections. The situation for low income workers is more dire, with rising housing costs leading to longer commutes and worsening quality of life for them. This also has environmental costs for all. This development is a first step in changing the unsustainable and unfair housing conditions in Menlo Park and I urge you to vote in favor.
Sincerely,

Sarah Brophy
1376 Johnson Street
Menlo Park

From: Katherine Dumont
To: Planning Commission
Subject: Support jobs-housing balance and deeper affordability at SRI Parkline
Date: Sunday, February 5, 2023 11:16:10 PM

Menlo Park Planning Commission Menlo Park Planning Commission,

Dear Planning Commissioners,
I live in Linfield Oaks, and I support more housing--and more deeply affordable housing--at SRI Parkline because:
1) This development will help Menlo Park to achieve its climate goal of reducing greenhouse gases. It's better for the environment to create more housing closer to where people work. This is especially true here in Menlo Park, where over 90% of workers commute in from elsewhere.
2) Because SRI-Parkline will be located close to transit and downtown amenities, we have the opportunity to both add housing AND manage traffic impacts. It is an ideal location for reduced parking minimums and other measures to minimize car trips and manage traffic congestion.
3) I walk and ride my bike for errands. But many people I know won't ride bikes because they don't feel it is safe. I really appreciate that the developers have planned for walkways and bikeways within the site, and we should take these ideas as inspiration to prioritize the creation of safe routes to school and work on the streets around this project, including Ravenswood, Willow, Alma, Burgess, and Middlefield.
4) Creating more housing--especially deeply affordable housing and housing for a range of needs and abilities--on the west side of 101 AND close to transit and services will help the city achieve its goal of affirmatively furthering fair housing.

Thank you,
Katherine

Katherine Dumont
khdumont@gmail.com
225 Waverley St Apt 3
Menlo Park, California 94025

From: Cliff Fitzgerald
To: Sandmeier, Corinna D
Subject: Parkline Off-site Plan / Traffic Mitigation
Date: Friday, January 27, 2023 11:44:08 AM

Hello Corinna,

I am a MP resident living on Marcussen Drive, which is situated across from the main SRI entrance on Ravenswood. Marcussen Drive is a narrow residential street that unfortunately is used by "short cutters" from both directions to avoid traffic signals on Middlefield. Short cutters too often drive too fast, so there is already a concern on our street about unnecessary traffic, even before the advent of the Parkline Project.

I do not see in the Parkline Master Plan (link below) any mention of traffic impact mitigation regarding surrounding residential zones. Can you please let me know when and how public comment will be solicited for this aspect? Is the city planning to measure traffic baselines before the Parkline Project gets underway? Is there someone I can talk to who would be interested in and responsible for these concerns?

Thank you,

Cliff Fitzgerald
1128 Marcussen Drive
Menlo Park
650.380.3179

From: Karen Grove
To: Planning Commission
Subject: SRI - Jobs-Housing fit and balance, getting out of our cars and building community
Date: Sunday, February 5, 2023 3:07:35 PM

Menlo Park Planning Commission Menlo Park Planning Commission,

Dear Planning Commission,

Thank you for your tireless volunteer service, and thank you for your support of jobs/housing balance and jobs/housing fit in your discussions of the SRI Parkline project to date.

I am writing to emphasize the value and importance of the proposed land donation and partnership with an affordable housing developer to build homes for people of all abilities, people with very and extremely low incomes, and households of all sizes in this high resource location. This is paramount. This proposal includes 80-100 lower-income housing for people with unmet housing needs. Can we do more? Doing so would help to reduce our decades-in-the-making deficit in this category of housing need.

At the same time, if we do not build enough homes for the new workers this project brings into the community, we create pressure on community members who rent older units, because increased housing demand leads to redevelopment and displacement.

There is no site in Menlo Park more amenable to alternatives to driving than this one. A robust Transportation Demand Management program can reduce local traffic. Encouraging active transportation and getting people outdoors where they can meet their neighbors will also increase quality of life and build community.

I ask that you work towards the maximum housing possible (to avoid displacement pressures), the greatest possible number of deeply affordable homes (to meet our most urgent unmet housing needs), and a very high level of transportation demand management (to reduce traffic congestion); and please move the project forward.

Regards,
Karen Grove

Karen Grove
karenfgrove@gmail.com
3826 Alameda de las Pulgas
Menlo Park, California 94025

From: Lorri Holzberg
To: _Planning Commission
Subject: Support jobs-housing balance and deeper affordability at SRI Parkline
Date: Sunday, February 5, 2023 8:05:44 AM

Menlo Park Planning Commission Menlo Park Planning Commission,

I have been fortunate to have been a resident and home owner in Menlo Park since 1978. I am in complete support of more housing at the SRI site and support affordable housing for workers in Menlo Park. We need to have more balance in our housing.

Lorri Holzberg
lorriholzberg@gmail.com

Menlo Park, California 94025

From: Sandmeier, Corinna D
To: Sandmeier, Corinna D
Subject: FW: Do not Approve Zoning Changes for SRI Project
Date: Monday, February 6, 2023 12:55:57 PM
Attachments: CMP_Email_Logo_100dpi_05d92d5b-e8e3-498f-93a6-d0da509bd602111111111.png
CMP_Email_Logo_100dpi_05d92d5b-e8e3-498f-93a6-d0da509bd602111111111.png

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Corinna D. Sandmeier
Principal Planner
City Hall - 1st Floor
701 Laurel St.
tel 650-330-6726
menlopark.gov
*Note our emails have changed to @menlopark.gov

From: Brad Hoo [mailto:bradshoo@gmail.com]
Sent: Thursday, January 26, 2023 11:38 AM
To: _CCIN <city.council@menlopark.gov>
Subject: Do not Approve Zoning Changes for SRI Project

Dear City Council members, Why are we approving zoning changes which increase the Menlo Park housing deficit? Obviously this is not about making housing more affordable in Menlo Park. What benefit will the residents of Menlo Park enjoy from more office development and a larger housing imbalance? The State has already rejected recent plans to develop more housing for Menlo Park as "unrealistic", and yet you move to increase the housing deficit. SRI will benefit, who else? In approving this project you undermine the moral authority of our representative city government. Whom do you serve?

Brad Hoo
26 Year Resident of Menlo Park

From: Dennis Irwin
To: Planning Commission
Subject: Support jobs-housing balance and deeper affordability at SRI Parkline
Date: Sunday, February 5, 2023 10:23:16 PM

Menlo Park Planning Commission Menlo Park Planning Commission,

Most people living in Menlo Park aren’t even close to being able buy a house at market-rate around here, and that includes me and my wife. I believe our city would benefit greatly by increasing its diversity. That will only be possible if more affordable homes are made available, and SRI Parkline is a perfect opportunity to make that happen. For that reason I support incorporating as many affordable units as possible into this project.

— Dennis Irwin

Dennis Irwin
hairpoosh@yahoo.com

Menlo Park, California 94025

Public Comments - Planning Commission Meeting 02.06.2023 7pm - Item F1

Dear Chair, Vice Chair, Commissioners, Staff, Neighbors and Members of the Public,

I'm Jenny Michel from the Coleman Place Neighborhood Block, a recovering homeless teacher, by trade a commercial property manager representing LL interests, and a former luxury real estate agent in Menlo Park.

Item F1: Personal Comments

While we wait for HCD to review our housing element for substantial compliance, the SRI development project is our opportunity to affirmatively further fair housing in action.

I made a mistake that I need to correct. Although I applauded the applicant for adding additional housing units, I failed to tie our environmental justice element. This project is larger than the Willow Village, by several acres of land.

Because of the proximity to mass transit, downtown, grocery, medical, and educational services, we have the exciting opportunity to increase the density to a comparable level, exceeding the 1730 units that Willow Village is approved for.

As many neighbors have mentioned the once in a generation opportunity for resilient growth on this land, I ask the applicant and this body to consider up to 1850 units of housing, at least 30% being affordable.

53 acres of land dedicated to office/life science/R&D product is a massive development. I appreciate that the applicant, SRI, has engaged a local for profit stakeholder, Lane Partners, I ask all of you:

Where are your children going to live when they grow up? When they graduate high school, where are they going to live? Why do we mandate that our kids must move away from their native land? Why not keep our invested stakeholders, our youth, here continually invested in and enriching our City with their families?

Drive this further, Where are the day porters, security guards, admins, technicians, aides, butchers, hair stylists, and day care providers living? What are you doing to ensure that those of us living off of entry level wages can live and work on this campus? Does the 53 acres solve for this need? We know it is solving for the high yield spread demanded by investors, but that is now an antiquated model. The new hotness is a 10 min City abandoning the single use vehicle for those of us interested. Office products are failing as we watch more and more sublease product flood the market and more than likely will need to be converted to housing across this region. Let's get the allocation right from the get go. Please reconsider your approach and increase the density of housing to the same allocation as WIllow Village.
Thank you for your time.

From: G. Karmarkar
To: PlanningDept; _CCIN
Cc: G. Karmar
Subject: [Sent to Planning]SRI Expansion and housing deficit for Menlo Park
Date: Wednesday, January 25, 2023 6:10:54 PM

To the Planning Commission and City Council members of Menlo Park

As a resident of Linfield Oaks I have learned to my dismay that the city and Parkline propose to expand the housing available at the SRI location from 400 to 600 units. A project of this size will add countless cars on the streets when it is already difficult to navigate the neighborhood and traffic to/from the freeway and downtown Menlo Park. Traffic will increase exponentially. It's already a nightmare. 400 units = 400+ cars.

Good luck getting to the hospital if you need care. It has taken me up to 3 light changes just to make it across Ravenswood during 'rush hour' (which now begins at 3:30 and lasts until 6:30) The train tracks also hold up traffic as they run more frequently during those times . Nt to mention that the lights are badly timed as well. It just adds to the overall frustration.

I am not sure why the city feels the need to add more units and more office space. The added office space simply adds to Menlo Parks housing deficit. We already have more than one large housing/office space development on El Camino. Do we really need 200 more units here?

Who benefits from this? The existing residents certainly do not. If this is simply to raise the coffers I have bad news. Large developments bring change that requires more investment in policing, fire and infrastructure which Menlo Park will soon need to address. Who will pay for these costs? The residents?

I urge you to think carefully about where Menlo Park adds more housing. Palo Alto for instance has added multiple large housing developments away from downtown and high traffic areas, and in areas where roads and infrastructure can accommodate more cars and residents. That's called city planning.

Sincerely

Geeta Karmarkar

From: Joy Kosobayashi
To: Planning Commission
Subject: Support more housing at SRI Parkline
Date: Sunday, February 5, 2023 3:08:00 PM

Menlo Park Planning Commission Menlo Park Planning Commission,

In reading about the comparison of housing planned for Meta's Willow project vs SRI--I can't understand why there is such an imbalance. I doubt there would be many future opportunities that could potentially provide as much housing as the SRI site. I support an even larger increase to the housing component.

Joy Kosobayashi
gj.koso@gmail.com

Menlo Park, California 94025

From: Margarita Mendez
To: _Planning Commission
Subject: Support jobs-housing balance and deeper affordability at SRI Parkline
Date: Sunday, February 5, 2023 8:18:42 AM

Menlo Park Planning Commission Menlo Park Planning Commission,

Dear commissioners:

I am an 18 year resident of MP and was active in the campaign to defeat measure V. Over and over again my neighbors in Suburban Park stated they wanted housing in high resource areas. While I do believe our neighbor is in a high resource area, SRI Parkline is much closer to transit than Lorelei or Suburban Park. Having housing in that location and reducing the amount of parking needed to make the project viable would help relieve the traffic concerns.

I bike to work in Palo Alto every day and would appreciate the bike lanes through this development so that I could avoid the Middlefield and Ravenswood. I do believe we have to imagine a world where more and more of us are getting out of our cars, biking and walking to downtown and to work.

Margarita Mï¿½ndez

Margarita Mendez
mlmendez@me.com

Menlo Park, California 94025

MENLO
TOGETHER

February 6, 2022

Dear Menlo Park Planning Commissioners and Staff,

We, the Menlo Park residents and nearby neighbors who work, worship, and shop in Menlo Park, believe that our city can and must build more homes across all levels of affordability, especially near transit and downtown services, for a variety of household sizes and for people of all abilities.

We are glad to see that the Parkline proposal has increased the number of homes to 550, including a much needed 100 deeply affordable homes for people of all abilities. We encourage even more housing! We also appreciate the proposal's commitment to including recreational and passive open space, improved bike and pedestrian connectivity through the site, and heritage tree preservation.

We appreciate and echo the numerous public and commissioner comments at the January 23rd meeting:

- Encouraging more housing at this high resource location in Menlo Park (that is walking distance from downtown services, transit, recreation, and schools) to affirmatively further fair housing and to build enough new homes to balance the number of new jobs at the site.
- Encouraging and appreciating the donation of land for 100% affordable housing within the development to meet our most pressing needs: deeply affordable housing for families and people of all abilities.
- Requesting to locate the donated land for 100% affordable homes with the other residential buildings.
- Asking to significantly increase investment in alternatives to driving (the technical term for this is "Transportation Demand Management" or TDM) to reduce driving to and from the site.
- Asking to reduce parking to the minimum viable parking to further reduce traffic congestion, and to leave more space for community-enhancing amenities.

A sufficient and diverse housing supply is required for a sustainable, welcoming, and thriving community. Additionally, state law requires that we meet our fair share and affirmatively further fair housing by planning for affordable homes in high resource areas. The State will make sure that we achieve our goals - willingly through our own planning, or unwillingly through by-right development.

No matter where you begin in life, success starts at home for all ages and all people. When we have safe, secure places to live, parents earn more, kids learn better, health and wellbeing improve, and our community is strengthened because it now has the building blocks needed to thrive.

We have a golden opportunity to build such a community with this project. We look forward to the outcome.

Sincerely,

1. **Alex Dersh** (*ZIP code: 95126)*
2. **Amy Hinckley** (*ZIP code: 94025)*
3. **Ann Banchoff** (*ZIP code: 94025)*
4. **Andrew Slater** (*ZIP code: 94025)*

   Please approve this project to allow working class people to live in Menlo Park!
5. **Michal Bortnik** (*ZIP code: 94025)*
6. **Celeste Chapman** (*ZIP code:)*

   Dear Menlo Park Planning Commission, I am writing to support this excellent proposal - great to locate housing in an area within walking distance of the train, the library, schools, parks and downtown.

   Thank you!

   Celeste Chapman
7. **Elidia Tafoya** (*ZIP code: 94025)*

   I am a current employee at the SRI site where Parkline will be built. I love the idea of more houses, but I propose the low to moderate income homes be below market value without a nonprofit handling a portion of the land. It should be among the mixed used housing similar to the Hamilton Park homes since the homes are integrated in the community and ownership is far beneficial to advance prosperity in Bay Area.
8. **Estee Greif** (*ZIP code: 94305)*
9. **Molly Finn** (*ZIP code: 94025)*
10. **Joy Kosobayashi** (*ZIP code: 94025)*

This is a perfect opportunity to build more housing. Why are the proposed number of units here so much smaller than the project Meta has backed?

11. **Carolyn Shepard** (*ZIP code:)*

    I am supporting this opportunity to include housing for those with special needs. I represent a group of aging parents in San Mateo County who are supporting their adult children who have mental health challenges and cognitive issues. These adult children are at risk of becoming homeless once the parents pass away. They need supportive housing that is located near transit, shopping and is safe. Thank you.

    Carolyn Shepard

    President

    Solutions for Supportive Homes

12. **John Contreras** (*ZIP code: 94025)*

    Yes.

13. **Jennifer DiBrienza** (*ZIP code:)*
14. **jp garcia** (*ZIP code: 94025)*
15. **Judith Holiber** (*ZIP code: 94025)*
16. **Julian Pedro Garcia-Mendez** (*ZIP code: 94025)*
17. **Karen Grove** (*ZIP code: 94025)*
18. **Katie Behroozi** (*ZIP code: 94025)*
19. **Kirk Gould** (*ZIP code: 94025)*

    We need more affordable housing in Menlo Park. This development/location is ideal and should be improved by adding more affordable housing.

20. **Kristin Howell** (*ZIP code: 94025)*
21. **Kendra Armer** (*ZIP code:)*

    I grew up in Menlo Park, and now live in San Carlos. I know how deeply needed affordable housing is in the area! Thank you for your consideration.

22. **Lesley Feldman** (*ZIP code: 94025)*
23. **Liz Simons** (*ZIP code:)*

    Affordable housing allows us to be part of a more equitable society.

24. **Lydia Lee** (*ZIP code: 94025)*
25. **Nancy Goodban** (*ZIP code:)*

I live in Redwood City but of course am often in Menlo Park - new housing near downtown and transit will reduce the traffic burden for those who live in Menlo park as well as those of use who drive to/through. Thank you!

26. **Dianne Otterby** (*ZIP code: 94025)*

    Over Due and so needed

    Dianne Otterby

27. **Pam Jones** (*ZIP code: 94025)*
28. **Renee Kee** (*ZIP code: 94025)*

    As a teacher, I know how important it is to have affordable housing near our schools. We have lost so many good teachers due to our high housing costs. Please create affordable housing so we can all live here and build our community.

29. **Robert Cronin** (*ZIP code: 94025)*
30. **Rebecca Barfknecht** (*ZIP code: 94025)*
31. **Sarah Kahle** (*ZIP code:)*
32. **Sarah Zollweg** (*ZIP code: 94025)*
33. **Shelly Masur** (*ZIP code:)*
34. **Gloria Stofan** (*ZIP code:)*

    It is so important to provide housing for those who are struggling to just keep a roof over their heads. Please consider SRI Parkline Housing for those who need job housing and deeper affordability at this site especially for those who are of special needs.

35. **Tracey Bobrowicz** (*ZIP code:)*

    It is so important for teachers to be able to live in the county they work in. So many young people I work with in Education have to travel great distances for work and it is really sad that our communities have not done anything at all to make sure we have housing for service providers.

36. **Timi Most** (*ZIP code: 94025)*

    Affordable housing is the right thing to do. It is good for our community and morally the right thing to do.

37. **Vlada Bortnik** (*ZIP code: 94025)*
38. **Yvonne Murray** (*ZIP code: 94025)*

NEW since last submission:

39. **Keyko Pintz** (*ZIP code: 94025)*

40. **Andrea Reyna** (*ZIP code: 94025)*

41. **Sarah Brophy** *(ZIP code: 94025)*

I have lived here for 12 years. In that time so many of the friends I have made have left the Bay Area, primarily because of housing affordability. The current housing situation is not sustainable.

From: Jennifer Michel
To: _Planning Commission
Subject: Support jobs-housing balance and deeper affordability at SRI Parkline
Date: Monday, February 6, 2023 4:59:57 PM

Menlo Park Planning Commission Menlo Park Planning Commission,

Dear Applicant and Commission,

Please be comparable to the Willow Village housing density of 1,730.

Thank you

Jennifer Michel
restorativeeco@gmail.com
565 Willow Rd Apt 9
Menlo Park, California 94025

From: Henry Riggs
To: Sandmeier, Corinna D
Cc: Cynthia Harris; Wolosin, Jen
Subject: Parkline EIR
Date: Tuesday, January 24, 2023 3:57:19 PM

Hi Corinna

I think it became clear after last night’s PC meeting, as we continued our December 21 meeting re Parkline, that the EIR scope needs to include an alternative with a housing unit count similar to Willow Village. It’s also my reading of the commission that the non-residential component should not exceed the trip count of the existing use permit, rather than turning the existing square footage that is low-intensity R&D use into the higher office space intensity.

Please confirm that these options can be an alternative or alternatives to the applicant’s scope in the EIR.

Thanks as always,

Henry

From: Sarah Zollweg
To: _Planning Commission
Subject: Support jobs-housing balance and deeper affordability at SRI Parkline
Date: Sunday, February 5, 2023 11:22:09 AM

Menlo Park Planning Commission Menlo Park Planning Commission,

Dear Menlo Park Planning Commission,
I'm writing to express my very strong support for maximizing affordable housing at SRI Parkline and placing the affordable housing adjacent to the other residential buildings for better downtown accessibility, inclusivity, and overall design. I also strongly support reducing the parking to the absolute minimum that's viable and investing in driving alternatives.

We have an extreme affordable housing shortage in our area and it's hurting our community -- in addition to the horrific impact of housing insecurity on individuals and families who experience it, even those who can afford housing are negatively impacted. For example, if low wage earners can't afford to live where they work, this means more commute traffic in our community. By increasing affordable housing in a highly resourced location, we help alleviate such problems by making downtown more accessible and decreasing traffic and congestion. This could also give our sleepy downtown the chance to bounce back. We need more investment in affordable housing and driving alternatives if we want a thriving community.

On a personal note, I support more housing and design strategies to reduce driving because I share a car with my partner, so I don't have access to a car during the day or when they're on work trips. Many of my neighbors are in similar situations, whether due to an intentional choice to be "greener," to save money, or both. Our typical modes of transportation are walking and biking, and this would be much safer and more livable to have a direct and protected route rather than unprotected busy streets.

Maximum affordable housing at SRI Parkline (adjacent to other residential buildings), reducing parking to the minimum viable, and investment in driving alternatives will contribute to a thriving community and set Menlo Park up for a better future.

Thank you so very much for your consideration,

Sarah Zollweg
818 Fremont St
Menlo Park, CA 94025

Sarah Zollweg
sarahzollweg@gmail.com

818 Fremont St
Menlo Park, California 94025

Appendix 3.1-1

Aesthetics and Shadow Evaluation

Memorandum

To:	Corinna Sandmeier, Principal Planner, City of Menlo Park
From:	Kirsten Chapman, Senior Environmental Planner, ICF
Cc:	Heidi Mekkelson, Project Director, ICF Jessica Viramontes, Project Manager, ICF
Date:	June 12, 2024
Re:	**Parkline – Aesthetics and Shadow Evaluation**

Introduction

This memorandum includes an evaluation of the potential aesthetics and shadow impacts of the Parkline (Proposed Project) for informational purposes. This memorandum describes the existing aesthetic resources and visual characteristics associated with the Project Site as well as areas in the immediate vicinity. It also describes existing plans and policies relevant to visual resource issues within Menlo Park. This memorandum evaluates the potential effect on visual resources associated with implementation of the Proposed Project based on a review of photographs, visual simulations, site reconnaissance materials, and Project data. In addition, this memorandum evaluates the Proposed Project's potential to change the visual quality and character of the area and create new sources of light and glare.

Issues identified in response to the notice of preparation (Appendix 1 of the Environmental Impact Report [EIR] prepared for the Proposed Project) were considered during preparation of this evaluation. Comments noted that the EIR should consider views of the Project Site from residential areas and visual impacts due to rooftop equipment, building heights, setbacks, and transitions. In addition, one comment requested an analysis of shadow impacts, which is not a topic under the California Environmental Quality Act (CEQA) but is included in this memorandum for informational purposes.

Senate Bill 743 and Transit Priority Areas

In accordance with Senate Bill (SB) 743, aesthetics and parking impacts shall not be considered in determining if a project has the potential to result in significant environmental effects, provided the project meets the following criteria under Public Resources Code Section 21099, *Modernization of Transportation Analysis for Transit-Oriented Projects*:

- The project is on an infill site,
- The project is in a Transit Priority Area (TPA), and
- The project is a residential, mixed-use residential, or employment-center project.

An infill site is a lot located within an urban area that has been previously developed, or on a vacant site where at least 75 percent of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from parcels that are developed with qualified urban uses (Public Resources Code Section 21099[a][4]). A TPA is defined as an area within 0.5 mile of an existing or planned major transit stop, such as a rail transit station, ferry terminal served by transit, or the intersection of two or more major bus routes (Public Resources Code Section 21099[a][7]).

The Project Site is a qualifying infill site that is currently developed with a mix of research-and-development (R&D), office, amenity, and supporting uses. The entire perimeter of the Project Site adjoins urban uses or public rights-of-way. The Metropolitan Transportation Commission (MTC) has identified locations of TPAs within the Bay Area.[1] The Project Site is within a TPA due to its proximity to the Menlo Park Caltrain station, San Mateo County Transit District (SamTrans) bus stops, and Menlo Park shuttle stops. The Proposed Project meets the above criteria as a qualifying mixed-use residential project as the Project would demolish all existing uses on the Project Site, except for existing Buildings P, S, and T, and would construct approximately 1,768,802 square feet (sf) of mixed-use development, including approximately 1,093,602 sf of office/R&D uses and approximately 675,200 sf of residential uses. Because the Proposed Project meets the three criteria above, the environmental impact report (EIR) prepared for the Proposed Project does not consider aesthetics or vehicular parking impacts in determining the significance of impacts under CEQA. The foregoing notwithstanding, a discussion of the potential aesthetics changes as a result of the Proposed Project and Project Variant is provided in this memorandum for informational purposes.

Project Location and Description

The 63.2-acre Project Site is located at 333 Ravenswood Avenue[2] in the city of Menlo Park (city). The Project Site is between El Camino Real and Middlefield Road, near the downtown area and Menlo Park Caltrain station. The Project Site consists of five parcels (Assessor's Parcel Numbers 062-390-660, 062-390-670, 062-390-730, 062-390-760, and 062-390-780).

Lane Partners (Project Sponsor) is proposing to redevelop SRI International's existing research campus adjacent to city hall and near Menlo Park's downtown and Caltrain station (Project Site). The Proposed Project would include a new office/research and development (R&D) campus with no increase in office/R&D square footage; up to 550 new rental dwelling units at a range of affordability levels, including 450 multi-family units and townhomes and a proposed land dedication to an affordable housing developer that could accommodate up to 100 affordable units; new bicycle and pedestrian connections; approximately 26.4 acres of open space on the Project Site; the removal of 708 existing trees, including 198 heritage trees, and the planting of 873 new trees; and decommissioning of a 6-megawatt natural gas cogeneration plant. In total, the Proposed Project would result in approximately 1,768,802 square feet (sf) of mixed-use

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[1] Metropolitan Transportation Commission. 2021. *Transit Priority Areas*. Available: https://opendata.mtc.ca.gov/datasets/MTC::transit-priority-areas-2021-1/explore. Accessed: September 28, 2023.

[2] The Project Site also includes the addresses 301 Ravenswood Avenue and 555 and 565 Middlefield Road.

development, with approximately 1,093,602 sf of office/R&D uses, within five separate buildings and approximately 675,200 sf of residential uses. The Proposed Project would demolish all buildings on SRI International's Campus, excluding Buildings P, S, and T, which would remain onsite and continue to be operated by SRI International.

Project Variant

In addition to the Proposed Project, this memorandum evaluates the Increased Development Variant (Project Variant). The Project Variant is a variation of the Proposed Project at the same Project Site (although the Project Site would be slightly expanded to include 201 Ravenswood Avenue), generally with the same objectives, background, and development controls but with the following differences:

1) The site for the Project Variant would include the Project Site and the parcel at 201 Ravenswood Avenue, creating a continuous Project frontage area along Ravenswood Avenue and increasing the overall Project Site by approximately 43,762 sf (approximately 1.0 acre), for a total of approximately 64.2 acres;
2) The Project Variant would include up to 250 additional residential rental dwelling units compared to the Proposed Project (an increase from 550 to 800 units, inclusive of the up to 154 units that would be developed by an affordable housing developer);
3) The Project Variant would reduce the underground parking footprint within the site, both by removing underground parking from the multi-family residential buildings in the residential area and removing the underground parking connection between office/R&D Building O1 and Building O5. As a result, the height and square footage of Parking Garage (PG) 1 and PG2 would increase compared to the Proposed Project and the number of structured spaces would increase by 400 but with no change in the total number of parking spaces proposed for the office/R&D buildings; and
4) The Project Variant would include a 2- to 3-million-gallon emergency water reservoir that would be buried below grade in the northeast area of the Project Site, in addition to a small pump station, an emergency well, and related improvements that would be built at grade (i.e., emergency generator, disinfection system, surge tank) (referred to as "reservoir" throughout this document). It would be built and operated by the city of Menlo Park.

The basic characteristics of the Project Variant would not differ from many of the basic characteristics of the Proposed Project, particularly with respect to the commercial component. For example, total office/R&D development would remain the same as under the Proposed Project. Certain residential uses, including the affordable housing units and a limited number of townhomes, would shift to the corner of the site near the intersection of Middlefield Road and Ravenswood Avenue. In addition, the existing buildings associated with First Church of Christ, Scientist and Alpha Kids Academy at 201 Ravenswood Avenue would be demolished.

The Project Variant would be available for selection by the Project Sponsor and decision-makers as part of an approval action. The city could approve a modified version of the Project Variant with either or both of these components (i.e., additional dwelling units and no emergency water reservoir, emergency water reservoir and no additional dwelling units, or additional dwelling units and emergency water reservoir). Therefore, an analysis of both the Proposed Project and the Project Variant is included in this memorandum for informational purposes.

Existing Conditions

Environmental Setting

Regional Context

The city of Menlo Park is a 19-square-mile municipality on the San Francisco Peninsula (Peninsula), approximately 30 miles south of San Francisco and 20 miles north of San José. Located east of the San Andreas Fault Zone, Menlo Park is one of more than a dozen cities on the flatter portions of the western margin of San Francisco Bay (Bay). The city is bounded by Redwood City to the northwest, Atherton to the west, Palo Alto and Stanford University to the southwest, and East Palo Alto to the east. The Bay is north of the city.

Urban development within the area is concentrated primarily between the Bay and the Interstate 280 (I-280) corridor. In general, the Peninsula is developed with low-density uses within distinct neighborhoods that include commercial, retail, and residential uses. Larger-scale development, such as office parks and industrial uses, are between the Bay and U.S. 101. High-rise office developments, multi-family housing units, and hospital buildings are concentrated along the U.S. 101 and El Camino Real corridors.

The Bay and its natural features are key visual components in the eastern and northern portions of the city. The Santa Cruz Mountains, which form a barrier between the Pacific Ocean and the Bay, are visible throughout Menlo Park and adjacent cities, especially in areas north and east of U.S. 101. The visible portion of the mountain range is Skyline Ridge, which rises to more than 2,400 feet; the ridge is approximately 15 miles south of the Project Site.

Vicinity of the Project Site

Developed uses in the immediate vicinity of the Project Site include residential neighborhoods, parks, civic uses, and offices. The mix of these uses influences the visual and urban design character of the Project Site, which is part of a suburban, largely built-out portion of the city that is characterized by free-standing buildings. No scenic resources, such as rock outcroppings, cliffs, or knolls, are present in the vicinity of the Project site, although mature trees are prevalent throughout the area.

The relatively flat vicinity of the Project site lacks long-range views, mainly because mature trees and vegetation block any views of the surroundings. The large trees and intervening structures provide visual separation and screening between buildings, surrounding roadways, and adjacent neighborhoods. Visual resources to the east, such as the Bay, are not visible from the vicinity of the Project site. However, channelized views of the Santa Cruz Mountains are visible to the west between mature vegetation and buildings.

To the north, beyond Ravenswood Avenue, is a mix of residential neighborhoods and churches. This Menlo Park neighborhood consists of single- and multi-family dwellings. Most of the residences are one or two stories in height and located on medium-size landscaped properties. The area includes buildings with a diversity of architectural styles and a diversity of ages. Sidewalks and mature trees line both sides of the street, as do utility poles with cobra-style street lights. Trinity Church is within this neighborhood, along Ravenswood Avenue. Although Corpus Christi Monastery is situated on a large parcel in the area, because of its high concrete walls, dense vegetation, and building setbacks, the monastery is not visible from public areas. Northeast of the Project Site, across Ravenswood Avenue, is a single-family residential neighborhood in Atherton. These homes are located on large parcels and set back from the street; dense vegetation blocks most views to and from these properties.

Directly north, east, and west of the Project Site is the Alpha Kids Academy and First Church of Christ, Scientist. The property consists of an architecturally distinct one-story building with a peaked roof and steeple; behind the main church building is a one-story structure of similar architectural style. The church is surrounded by mature trees and surface parking lots off Ravenswood Avenue. Also directly adjacent to the Project Site, to the east, is a small office park with three buildings along Middlefield Road. These buildings are two stories in height and set back from the street by paved surface parking lots, which are interspersed with vegetation. Across Middlefield Road, to the east, is the Menlo-Atherton High School parking lot in Atherton and the Vintage Oaks neighborhood in Menlo Park. This single-family residential neighborhood features newer one- or two-story homes with highly manicured front yards and sidewalks but no overhead wires.

The Project Site is bordered on the south by a variety of uses, including office complexes along Middlefield Road; also present are U.S. Geological Survey (USGS) offices, the Linfield Oaks neighborhood, and the Menlo Park Corporation Yard. The USGS research center includes several large buildings of varying ages and architectural styles. The buildings are approximately two stories in height and surrounded by surface parking, lawns, and landscaped medians. Because of the similar research-related uses on the site, such as laboratories and associated infrastructure, the USGS campus is visually consistent with the Project Site. South of the Project Site is the Linfield Oaks neighborhood, which consists of a mix of single- and multi-family residential units. The properties immediately adjacent to the southern portion of the Project Site include mainly two-story, multi-family residential buildings with carports. These parcels are located along cul-de-sacs with medium setbacks from the street. The front yards consist of lawns, landscaping, and a limited number of trees, although the mature trees planted in the backyards of the properties create a partial visual barrier between the residences and the Project Site. The Menlo Park Corporation Yard is directly south of the Project Site, consisting of one-story buildings, chain-link fences, and parking areas for maintenance vehicles.

Laurel Street and the Classics of Burgess Park neighborhood are immediately adjacent to the Project Site on the west. The Classics of Burgess Park neighborhood consists of two-story, detached single-family residential units on small parcels located off private-access driveways. The modern residential buildings consist of wood-frame structures with wood and stucco exteriors. The residences are surrounded by street trees, accent trees, shrubs, lawns, and groundcover.

West of the Project Site, across Laurel Street, is Burgess Park, the Menlo Park Civic Center (Civic Center), and a day-care center. As with the Project Site, Burgess Park was originally part of the Dibble Hospital Facility. However, this 9.3-acre park at 701 Laurel Street is currently owned and operated by the city. The park includes a baseball/softball diamond, a Little League baseball field, open play fields, playgrounds, soccer fields, and tennis courts. Adjacent to Burgess Park is the Civic Center, including the Burgess Pool, Arrillaga Family Recreation Center, Burgess Sports Center, Burgess Skate Park, Arrillaga Family Gymnasium, Menlo Park Police Department headquarters, Menlo Park Library, and City Hall. The Civic Center buildings are up to two stories in height and set back from Laurel Street by ample vegetation, mature trees, and surface parking lots. The Menlo Children's Center is across from the Project Site on Laurel Street. It consists of one-story buildings and a playground surrounded by a wrought-iron fence.

Existing Site Characteristics

The Project Site is immediately bordered by Ravenswood Avenue to the north; office uses and Middlefield Road to the east; the USGS campus, the Linfield Oaks residential neighborhood, and the Menlo Park Corporation Yard to the south; and the Classics of Burgess Park neighborhood and Laurel

Street to the west. The existing buildings at the Project Site are set back significantly from Ravenswood Avenue and Middlefield Road and screened by dense vegetation and office buildings, which are not located on the Project Site. Because of these features, the Project Site is visually isolated from the surrounding areas. However, onsite buildings and fencing directly abut Laurel Street and are highly visible.

Visual Character

The Project Site is developed with 38 buildings, totaling approximately 1.38 million sf. The buildings range in height from approximately 12 to 48 feet above the finished grade. The existing Project Site is constructed largely on a grid, with internal roadways running between buildings, surface parking scattered throughout, and long pedestrian travel distances.

A visual relationship between existing buildings on the Project Site is limited because construction occurred over an extended period of time. Several of the buildings were constructed in the 1940s as military hospital buildings, which were built to support needs associated with World War II. Since then, 15 additional buildings have been constructed, all with different architectural styles, heights, and massing. Therefore, the buildings range from historic two-story army hospital buildings (Buildings 100, 108, and 110) to modern three-story office buildings (Building P). In addition, the buildings were constructed for variety of uses (e.g., offices, laboratories, warehouses, storage, amenities), resulting in an incoherent building design aesthetic. However, because of the sprawling nature of the Project Site, there is no vantage point from which all buildings are visible.

The buildings on the Project Site are surrounded by parking lots, gardens, paved and unpaved research test areas, test equipment, pedestrian paths, and fencing. The southern portion of the Project Site includes an open space for employees with maintained landscaping, benches, picnic tables, trash receptacles, and a beach volleyball court. The Project Site is relatively flat; paved areas are generally graded toward onsite drainage facilities.

The Project Site also includes a cogeneration plant that serves the SRI International Campus.

Vegetation

The existing landscaping on the Project Site consists of an assortment of planted areas and hardscape. Although lush landscaping surrounds parts of the SRI International Campus exterior (mainly along Ravenswood Avenue), the landscaped interior spaces are not interconnected. There are relatively few areas of common, usable green space, and surface parking areas contain few canopy trees. Landscaping and other pervious materials currently cover 25.7 percent (643,045 square feet) of the Project Site, which includes native oaks and redwoods as well as adapted non-native species such as eucalyptus and magnolias. Many of the trees are located along the property line on Ravenswood Avenue and Laurel Street, thereby delineating the edge of the Project Site. These trees create a visual buffer between the Project Site and adjacent uses. Most trees on the site have been maintained consistently by a professional arborist and are in good health. There are approximately 1,340 trees on the Project Site, including 547 heritage trees, which are distributed across the site.

Visibility

Within the interior of the Project Site, views are limited because of distance, flat topography, onsite buildings, and perimeter fencing and vegetation. Foreground views in the center of the site include the visually inconsistent buildings and surface parking areas. Looking north, views consist of dense perimeter landscaping and Ravenswood Avenue, with the neighboring one- or two-story single-family residential dwellings. However, these views are largely screened by mature vegetation, fencing, and surface parking lots. Facing east, views outside of the Project Site are restricted to the two-story office buildings and surface parking lots along Middlefield Road. Because of distance and the intervening structures, Middlefield Road is visible only in certain areas. However, the northeast corner of the Project Site, which currently has a surface parking lot, provides views of Middlefield Road and Menlo-Atherton High School.

Views facing south encompass portions of the USGS campus and the Menlo Park Corporation Yard. Large onsite buildings in the southernmost portion of the Project Site block views of the Linfield Oaks neighborhood; however, the upper levels of the single-family residences in the Classics of Burgess Park neighborhood are visible to the southwest. Background views from certain locations on the Project Site, looking west, include mainly obstructed and channelized views of the Santa Cruz Mountains. In addition, portions of Burgess Park and the Civic Center are partially visible, particularly the structures in these areas.

Public View Corridors

Although portions of the Project Site are visible from public streets, the Project Site is not visible in its entirety from a single ground-level vantage point because of its size, the flat topography, and surrounding low-rise buildings and vegetation. However, there are several public vantage points with views toward the Project Site, as discussed below.

Ravenswood Avenue

As shown in Figures 1a, 1b, and 1c in Attachment A, the Project Site is visible from both sides of Ravenswood Avenue, a one-lane arterial street running in an east–west direction. However, the Project Site is visible only briefly between the vegetated perimeter, dense trees and shrubs, and fencing. Buildings are removed from the street and buffered by large setbacks and vegetation. Consequently, the buildings along Ravenswood Avenue (Buildings 412, E, A, and I) are visible only through intermittent breaks in the vegetation and are not prominent features. Portions of the buildings at the Project Site are visible from the residential neighborhood north of Ravenswood Avenue when looking south down Marcussen Drive and Pine Street (Figure 1b in Attachment A).

Middlefield Road

Middlefield Road is a two-lane arterial street that runs in a north–south alignment east of the Project Site. Views from Middlefield Road are depicted in Figures 1d and 2a in Attachment A. Because of the small office park that separates the majority of Middlefield Road from the Project Site, views are limited. However, the surface parking lot at the northeast corner of the Project Site is visible through mature trees from Middlefield Road and Menlo Atherton High School (Figure 1d in Attachment A). Buildings are barely visible from Middlefield Road, blocked from view by trees and offsite structures. From the intersection of Middlefield Road and Seminary Drive (Figure 2a in Attachment A), Building L is visible behind buildings that are not on the Project Site.

Linfield Oaks Neighborhood

The Linfield Oaks neighborhood is directly adjacent to the southernmost portion of the Project Site, near Buildings S, T, and U. Currently, ground-level views of the Project Site are blocked by dense foreground and middleground vegetation and residential development. However, Building T may be visible from the private backyards of the multi-family residential units immediately adjacent to the Project Site along Kent Place and Waverly Court. Nonetheless, because of the surrounding residential units and flat topography, no background views of the Project Site are available from publicly accessible streets and sidewalks.

Classics of Burgess Park Neighborhood

The Classics of Burgess Park neighborhood is southwest of the Project Site. Views of existing development on the Project Site are blocked in the majority of this neighborhood because of intervening structures, mature trees, and fencing. However, Building G is visible from Barron Street when facing north (Figure 2b in Attachment A). Portions of Buildings 301–307, 309, and R are very likely visible from the private backyards of the units along the east side of Barron Street; however, high walls and mature vegetation separate the yards from the Project Site.

Burgess Park/Civic Center and Laurel Street

Laurel Street, a north–south road with one lane in each direction, runs parallel to Burgess Park and the Civic Center. Buildings G and 404–409, the cogeneration plant, and several of the multi-story buildings in the interior of the Project Site are highly visible from Laurel Street, the day-care center, the easternmost portion of the Civic Center (Figure 2c in Attachment A), and Burgess Park, particularly in the surface parking lots and the vegetated setbacks. However, toward the center of these facilities, views of the Project Site are mostly obstructed by mature trees and structures (Figure 2d in Attachment A).

Viewer Perspective and Sensitivity

Viewer sensitivity, which refers to a viewer's reaction to landscape change, is affected by viewer activity, awareness, and expectations in combination with the number of viewers and the duration of the view. Visual sensitivity is generally higher for people who are driving for pleasure or engaging in recreational activities, such as biking, walking, or hiking; residents of an area; or people who are engaged in work activities or commuting. For purposes of this analysis, sensitive viewers include individuals with a direct view of the Project Site from a public vantage point. These include employees and individuals traveling on public roadways, riding in bike lanes, or walking on sidewalks, along with those at nearby recreational facilities, such as Burgess Park and the Arrillaga Family Recreation Center.

Light and Glare

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass or spill on adjacent sensitive receptors, sky glow, and over-lighting. Views of the night sky are an important part of the natural environment. Excessive light and glare can be visually disruptive to humans and nocturnal animal species. Light pollution in most of the city is minimal and restricted primarily to areas with lighting along major streets and freeways or areas with nighttime illumination within commercial and industrial areas.

The existing exterior lighting systems use a variety of light sources to illuminate roadways, parking lots, and pedestrian pathways throughout the Project Site. The types of exterior light sources used range from high- and low-pressure sodium units to light-emitting diodes (LEDs) as well as compact fluorescent, linear fluorescent, and metal halide sources. Many non-cutoff and unshielded sources are used, contributing to light pollution and light trespass beyond the property line. Sources of daytime glare on the Project Site include reflected sunlight from windows on buildings, glass doors, and parked vehicles. Sources of nighttime glare include vehicle headlights and street lighting. However, interior building lights, daytime glare, and onsite vehicle headlights are generally not visible from surrounding areas because of the heights of the buildings, setbacks from the property line, and intervening structures and vegetation. In particular, dense vegetation and fencing on the Project Site aid in minimizing light trespass to surrounding sensitive viewers.

Aesthetics Evaluation

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant effect if it would result in any of the conditions listed below. However, this evaluation is provided for informational purposes and does not include any conclusions regarding the level of significance of the potential impacts of the Proposed Project.

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway.
- In an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

Methodology

The analysis of visual quality within an area is based on the physical appearance and characteristics of the built environment, the proximity of man-made structures to open space or landscaping, and views of public open space or more distant landscape features such as hills, water bodies, or built landmarks. These elements help define a sense of place as well as the physical orientation in a larger visual setting. Visual conditions within the vicinity of the Project Site are defined by a mix of regional roadways and office, recreational, institutional, residential, church, and commercial developments. The interplay of these elements in the visual setting varies, depending on viewer location.

To illustrate the general appearance of the development proposed at the Project Site, photomontages (i.e., massing studies) from eight vantage points were prepared, as shown in Figure 3 in Attachment A. A *photomontage* is a photograph of existing conditions with an image of proposed buildings superimposed over the photograph using computer imaging techniques. The photomontages have been constructed in a photo-realistic fashion to show how the proposed development would look at completion. The photomontages also provide a reasonable representation of the buildings' general massing, scale, and height upon completion and include landscaping features. Because façade articulations and architectural designs have not yet been developed, these features are not included in the photomontages. The photomontages, included in Figures 4 through 11 in Attachment A, depict views of the Proposed Project from the following locations:

- Viewpoint 1: Project Site facing southeast from Ravenswood Avenue and Laurel Street.
- Viewpoint 2: Project Site facing south from Ravenswood Avenue and Pine Street.
- Viewpoint 3: Project Site facing southwest from Ravenswood Avenue at First Church of Christ, Scientist.
- Viewpoint 4: Project Site facing southwest from Middlefield Road at Menlo-Atherton High School.
- Viewpoint 5: Project Site facing west from Middlefield Road and Seminary Drive.

- Viewpoint 6: Project Site facing north from the Classics of Burgess Park neighborhood.
- Viewpoint 7: Project Site facing southeast from Civic Center near Laurel Street.
- Viewpoint 8: Project Site facing east from Burgess Park.

Prior to preparing the photomontages, field investigations were conducted to determine those locations that would offer maximum visual exposure of the Project Site from ground-level public vantage points. Bird's-eye renderings and private views are not included in this evaluation. The photomontages for each public view include views for "existing" (i.e., without the Proposed Project) and "proposed" (i.e., at Project completion) conditions.

Attachment B includes a discussion of the regulatory setting related to aesthetics and shadow applicable to the Proposed Project.

Buildout Scenario Evaluated

The Proposed Project could be occupied by office tenants, research and development (R&D) tenants, or a combination of the two. Because future tenants have not been identified, two scenarios have been identified for purposes of the EIR analysis: a 100 percent office scenario and a 100 percent R&D scenario. Each impact analysis in the EIR evaluates the "worst-case" scenario for the impact being analyzed. The "worst-case" scenario is the scenario with the greatest potential to result in significant environmental impacts. This approach ensures that the EIR evaluates the Proposed Project's maximum potential impact and that any future tenant mix is within the scope of the EIR. The "worst-case" scenario can vary by resource topic and by impact. In some cases, both scenarios would result in the same level of impact; in those cases, the analysis does not identify a "worst-case" scenario.

Building heights, building layouts, lighting plans, and building materials would be the same under either the 100 percent R&D scenario or the 100 percent office scenario. Therefore, impacts would be the same regardless of the scenario for the purposes of this discussion.

Evaluation of the Proposed Project

This evaluation is provided for informational purposes.

Scenic Vistas

For the purposes of this evaluation, a *scenic vista* is defined as a vantage point with a broad and expansive view of a significant landscape feature (e.g., a mountain range, lake, coastline) or a significant historic or architectural feature (e.g., a historic tower). A scenic vista is a location that offers a high-quality, harmonious, and visually interesting view. The city does not have any officially designated scenic views or vistas; however, scenic vistas could include views of scenic water areas, such as the Bay and creeks, and open space areas.

The Proposed Project would result in additional height, bulk, and massing from the proposed buildings and associated mechanical screening, which would interrupt partially blocked existing views of the Santa Cruz Mountains. However, no areas that are considered scenic vistas would be affected by the proposed development. Because of distance as well as intervening structures and vegetation, the proposed buildings, as seen from scenic vistas, would blend with their surroundings and would not be visible.

Scenic Resources along a State Scenic Highway

The Proposed Project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway.[3] The Project Site is not visible from a freeway or state route that has been designated as a State Scenic Highway by Caltrans. The closest designated State Scenic Highway is I-280,[4] which is more than 3.4 miles southwest from the Project Site. No views of the Project Site are available from any portion of I-280. Therefore, although the Proposed Project would remove trees, the Project Site is not within a State Scenic Highway corridor.

Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality

For purposes of this evaluation, a conflict with applicable zoning and other regulations governing scenic quality would occur if the Proposed Project were to introduce a new visible element that would be inconsistent with regulations governing the overall scenic quality, scale, and character of surrounding development. The new element would need to be consistent with the city zoning ordinance, Menlo Park Municipal Code, and city General Plan policies. This analysis considers consistency with city General Plan policies, zoning, the land use designation, and municipal code regulations governing scenic quality.

Project Construction

Project construction would involve demolition and removal of all but three structures on the Project Site (i.e., Buildings P, S, and T) and the removal of 708 existing trees, including 198 heritage trees, and the planting of 873 new trees. The Proposed Project is anticipated to be constructed in one phase, with site preparation occurring over the course of 12 to 15 months and buildout of site infrastructure and vertical improvements occurring afterward over the course of 30 to 36 months. Assuming the Proposed Project is constructed in one phase, construction is expected to occur over a total of approximately 51 months, or 4.2 years. However, the ultimate delivery dates may vary because of market conditions, the availability of financing, and tenancy requirements. Therefore, it is possible that the Proposed Project would be constructed in three phases. Assuming the Proposed Project is constructed in three phases, construction could begin as early as mid-2025 and end in late 2031, a period of approximately 6.5 years. All staging of construction equipment is expected to occur onsite. Construction fencing and existing landscaping would provide visual screening and be required to comply with Menlo Park Municipal Code Chapter 16.64, which establishes standards for fences. Although construction equipment would be visible from public view corridors, visual degradation associated with construction would be relatively short term and temporary and would not conflict with applicable regulations governing scenic quality.

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[3] The California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), protects State Scenic Highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. A highway's designation of "scenic" depends on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view.

[4] California Department of Transportation. 2023. *California State Scenic Highways*. Available: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed: August 23, 2023.

Project Operation – Design

The four multi-family residential buildings in the residential area would be between three and six stories tall (i.e., approximately 45 to 85 feet). Private second-floor open spaces would be distributed throughout the market-rate housing buildings and include landscaping, special paving, and trellises. The first floors would open to private patios; above-grade dwelling units would have private balconies. The townhouse buildings would be two stories tall (i.e., approximately 25 feet), providing a scaled transition from the new multi-family buildings to the existing single-family residences in the Classics of Burgess Park neighborhood. The new multi-family buildings would be set back from Laurel Street and Ravenswood Avenue to preserve existing heritage trees and incorporate bicycle and pedestrian connections. The exterior design of buildings within the residential area would be Mission-style architecture, which is drawn from key precedents in Menlo Park. Primary exterior materials would consist of light-tone cement plaster; wood trellises and other detailed features; dark-frame, metal-sash windows; and Spanish-style tile roofs. Rooftop equipment would be screened from view by enclosures and set back from the roofline, resulting in limited visibility from the street level of public view corridors.

The five new buildings in the office/R&D area would range from three to five stories (i.e., approximately 60 to 92 feet). The floor-to-floor heights (i.e., an average of 16 feet per floor) would provide vertical flexibility for office, R&D, and life science tenants. The maximum building height would be 110 feet, inclusive of mechanical screens and equipment, and main entrances would be clearly defined. Open spaces for first-floor tenants could be used for informal meetings. Above-grade decks would be integrated into the building design to create human-scale elements, reduce massing, and integrate indoor/outdoor workspaces. The exterior design would incorporate horizontal elements to provide shade, energy-efficient wall and glazing systems, and sustainable materials. The primary exterior building materials would complement the existing site context. Exterior cladding systems would include terracotta rainscreens, glass-fiber-reinforced concrete, metal panels, and stone and other natural materials.

The parking garages in the office/R&D area would be sited to maximize the retention of existing heritage trees and provide convenient access to the buildings. These structures would be three or four stories (i.e., approximately 31 to 44 feet), yielding four or five levels of parking. Architecturally, the parking garages would be designed to be compatible with the buildings in the office/R&D area. Exterior cladding would consist of cementitious or metal panels. Metal trellises, panels, or similar devices would be used to visually screen the view to the garage interior. Elevator, lobby, and stair elements would be emphasized for clear wayfinding. Landscaping and other treatments would be incorporated to screen the parking garages from view. Garage façades would be composed of materials that would be compatible with the overall architecture of the Project Site. The amenity buildings would be one or two stories (i.e., approximately 20 to 30 feet high). It is anticipated that either all or a portion of the two-story commercial amenity building would be constructed out of mass timber, with exterior patios on the first floor and exterior decks on the second floor. The building's exterior would also include glass panels to emphasize views and indoor/outdoor connectivity. The one-story community amenity building would contain amenity functions and support facilities, some portion of which would be available to the public. Exterior materials would consist of wood or cementitious cladding.

The current land use and zoning designations for the Project Site cannot accommodate the range of uses and intensities that would be appropriate for a modern mixed-use development. Therefore, applicable policies and land use controls would be reflected in a new city General Plan land use and zoning designation that would apply to the entire site. Furthermore, the new city General Plan land use and zoning designation would be required for the range of land uses under the Proposed Project, including multi-family residences and public and quasi-public office, R&D, and other compatible uses. Upon development of the new city General Plan land use and zoning designations for the Project Site, the Proposed Project would be consistent with the intent of the amendments and rezoning. In addition, the Proposed Project would be subject to the city's architectural control (i.e., design review) process, as set forth in Sections 16.82.050 through 16.82.100 of the Menlo Park Municipal Code. Through a project-level development permit (such as a CDP), subsequent architectural control applications would be required to demonstrate consistency with the Menlo Park Municipal Code, including compliance with city zoning ordinance development regulations and design standards, as developed.

Section 16.68.020 of the Menlo Park Municipal Code establishes the requirements for architectural control approval, which would be required for the Proposed Project's architectural elements. This entitlement is anticipated to occur after the other entitlements are approved. Each application for a permit for construction of a building must be accompanied by architectural drawings showing elevations, landscaping or other ground treatments, and the design of parking facilities, including access points. The architectural control process would evaluate the specifics of each building's architectural design and configuration. Upon review of the architectural drawings prepared for the Proposed Project, the Planning Commission or City Council, as applicable, would make findings regarding neighborhood character, orderly growth, and neighborhood desirability. Therefore, development on the Project Site would be required to comply with requirements set forth for the designated zoning districts.

Project Operation – Landscaping

The proposed land use program, which includes site orientation, was developed to ensure that existing and new trees would be distributed throughout the Project Site, which currently has approximately 1,340 trees. In total, the Proposed Project would remove approximately 708 trees, including 198 heritage trees, and plant approximately 873 new trees, resulting in a total of 1,505 trees on the Project Site, an overall increase in the number of trees compared to existing conditions. Heritage tree replacements would meet the city's replacement-value requirements, which are based on a valuation of the existing heritage trees proposed for removal. Therefore, the Proposed Project would comply with requirements set forth in Chapter 13.24 of the Menlo Park Municipal Code and the goals of city General Plan Policy OSC1.15, which protect heritage trees. In addition, consistent with Policy LU-6.8, the Proposed Project's landscape plan would include replacement trees and water-efficient varieties of plants.

The Proposed Project would also include approximately 26.4 acres of open space and supporting amenities that would be available to the public. Open space features, which are discussed in more detail in Chapter 2, *Project Description*, of the EIR would include the Ravenswood Avenue Parklet, Parkline Central Commons, and Parkline Recreational Area, among others. Consistent with city General Plan Policy LU-6.2, which directs the city to require development projects to provide ample open space, the Proposed Project would provide publicly accessible open space.

Project Operation – Public Views

As discussed above, the Project Site is visible from surrounding public streets, neighborhoods, public facilities, and public open space. The city's General Plan includes several goals and policies to protect the visual character and quality of these public areas. Goal LU-1 and Policy LU-1.1 promote orderly development patterns in Menlo Park. Goal LU-2 and Policy LU-2.1 strive to maintain or enhance the character of existing residential neighborhoods and ensure that new development is compatible with the scale, look, and feel of the surrounding neighborhoods. Goal LU-6 seeks to protect the scenic qualities of open spaces, while Policies LU-6.2 and LU-6.8 require new development projects to include open space and extensive landscaping as part of the overall design. Adhering to these goals and policies in the city General Plan would ensure that public views of the Project Site from surrounding areas would be protected and enhanced. Changes to these public viewpoints—Ravenswood Avenue, Middlefield Road, Linfield Oaks neighborhood, Classics of Burgess Park neighborhood, Burgess Park and Civic Center, and Laurel Street—are discussed below.

Ravenswood Avenue (Viewpoints 1, 2, and 3)

As discussed above, the Project Site is visible from both sides of Ravenswood Avenue; however, the Project Site is only briefly visible between the vegetated perimeter, dense trees and shrubs, and fencing. Buildings are removed from the street and buffered by large setbacks and vegetation. The majority of the existing perimeter trees and vegetation would remain with implementation of the Proposed Project, and additional landscaping would be planted. Buildings 412, E, A, and I are visible from Ravenswood Avenue. Construction of the Proposed Project would include demolition of these buildings and replacement with residential units in the residential area and office/R&D buildings, a surface parking lot, and a recreational field in the office/R&D area. Although the proposed buildings would be taller than the existing buildings, they would be set back from Ravenswood Avenue and visible only through intermittent breaks in the vegetated and landscaped buffers. Therefore, the Proposed Project would not significantly alter views seen from the surrounding area.

As shown in Figure 4a (Viewpoint 1) in Attachment A, views of the buildings at the Project Site on the corner of Ravenswood Avenue and Laurel Street are predominantly blocked from Ravenswood Avenue by dense clusters of perimeter vegetation. No background views are available. Upon Project completion (Figure 4b in Attachment A), the ground floors of the multi-family residential buildings would appear between existing and proposed trees, which would soften the Proposed Project's appearance and reduce its visual contrast with the immediate landscape. Views of the rooftops and higher levels of the multi-family residential buildings (up to 85 feet) would be mainly blocked by the mature trees.

As depicted in Figure 5a (Viewpoint 2) in Attachment A, the Project Site is visible when facing south along Ravenswood Avenue and in the residential neighborhood along Pine Street. However, the majority of the buildings are blocked by perimeter trees and vegetation, along with large setbacks. Under the Proposed Project, Buildings E and 412, which are currently visible from this viewshed, would be demolished and replaced by multi-family residential buildings, ranging in height from three to six stories (i.e., 45 to 85 feet). As shown in Figure 5b in Attachment A, the interior street on the Project Site, which would be between two of the multi-family residential buildings, would be aligned with the existing north–south grid along Pine Street. Although this street would be used by residents and guests to access the proposed parking garages, the garages would be flanked with residential units, thereby screening most of the parking area from external views. In addition, existing perimeter vegetation would remain, blocking the majority of buildings from view, and additional landscaping would be planted.

Along Ravenswood Avenue, adjacent to First Church of Christ, Scientist, the Project Site is visible when facing southwest. As shown in Figure 6a (Viewpoint 3) in Attachment A, small portions of Building I are visible between the existing dense vegetation. Under the Proposed Project, Building I would be demolished and replaced with a surface parking lot. As shown in Figure 6b in Attachment A, the one-story community amenity building would be visible from Ravenswood Avenue, including a public restroom, bicycle repair station, and a juice bar. However, as with the current view of Building I, this building would be mainly blocked from view by existing vegetation. In addition, although the buildings in the office/R&D area would be up to five stories (i.e., 92 feet) in height, because of the large setback and flat topography, the buildings would not be visible from Ravenswood Avenue.

Ravenswood Avenue is not a designated scenic route. Motorists have only fleeting views of the Project Site because of the permitted speeds. In addition, motorists typically direct their attention to the road ahead rather than views. Therefore, views of the Project Site from Ravenswood Avenue do not constitute sensitive views, and development of the Project Site would not significantly alter the visual character of the area. Although the Project Site would be visible from a few residential properties, which are considered sensitive viewers, that front onto Ravenswood Avenue and face the Project Site, views would not be significantly altered because of the existing mature trees that would remain, the proposed new landscaping, and the building setbacks. Therefore, no substantial adverse changes are anticipated.

Middlefield Road (Viewpoints 4 and 5)

Because of the small offsite office park and surface parking lots that separate Middlefield Road and the Project Site, existing views of buildings at the Project Site from Middlefield Road are limited, as depicted in Figures 7a (Viewpoint 4) and 8a (Viewpoint 5) in Attachment A. The surface parking lot at the northeast corner of the Project Site is visible from the parking lot at Menlo-Atherton High School through mature trees. The existing buildings are barely visible, predominately blocked from view by trees and offsite structures, including First Church of Christ, Scientist. The surface parking lot would be demolished and developed as a recreational area that would be open to the public. As shown in Figure 7b in Attachment A, the community amenity building would be slightly visible between existing and proposed vegetation, beyond the recreational field at the corner of Ravenswood Avenue and Middlefield Road.

As shown in Figure 8b in Attachment A, west-facing views from Middlefield Road/Seminary Drive would have channelized view corridors to the upper levels of the proposed parking garages. The parking garages, at four stories, would be visible beyond existing and proposed vegetation as well as a small offsite office park. However, all parking garages would be sited to maximize the retention of existing heritage trees. In addition, new landscaping and other treatments would be incorporated to screen the parking garages from view. The garage façades would comprise materials that would be compatible with the overall architectural language of the Project Site.

Views of the proposed buildings would be only fleeting as motorists pass the Project Site. Therefore, views of the Project Site from Middlefield Road would not constitute sensitive views, and development of the Project Site would not significantly alter the visual character of the area. Although a residential neighborhood is located east of Middlefield Road, because of distance and flat topography, views would be blocked by an intermediate office park. Therefore, no substantial adverse changes are anticipated.

Linfield Oaks Neighborhood

Views of the Project Site from the Linfield Oaks neighborhood are limited, with only potential views of Building T from private backyards; no public views are available. The Proposed Project would not alter existing conditions in the southernmost portion of the Project Site, immediately adjacent to the Lindfield Oaks neighborhood. Buildings S and T would remain as is, and no new buildings would be constructed. Therefore, views of the Project Site, as seen from the Linfield Oaks neighborhood, facing north, would not be expected to change with implementation of the Proposed Project.

Classics of Burgess Park Neighborhood (Viewpoint 6)

As shown in Figure 9a (Viewpoint 6) in Attachment A, Building G, which has a limited setback from the property line, is visible from Barron Street, facing north. In addition, portions of Buildings 301–307, 309, and R are very likely visible from the private backyards of the units along the east side of Barron Street; however, high walls and mature vegetation separate the yards from the Project Site. The Proposed Project would demolish these buildings and construct new townhomes directly to the north. However, the townhomes would be two stories (i.e., 25 feet) in height and significantly lower than the existing Building G. As depicted in Figure 9b in Attachment A, with an existing wall separating the Classics of Burgess Park neighborhood from the Project Site, along with existing vegetation, the proposed townhomes would be less visible than the existing Building G. In addition, the buildings in the office/R&D area would be significantly set back from the Classics of Burgess Park neighborhood by a landscape buffer; these buildings would not be visible from public streets in the neighborhood. Therefore, because of proposed heights and setbacks, buildings would not be visible from the majority of the neighborhood, including public streets. In addition, existing mature trees would remain and new trees would be planted to further block the views of the buildings.

Although the buildings would be visible to residents, they would not substantially alter the existing visual character of the Classics of Burgess Park neighborhood. Furthermore, although the distance between residential units and the proposed townhomes would be relatively small, views of the buildings would be limited, consisting of mainly blocked background views; therefore, the buildings would not be a dominant feature in the area. In addition, because there are no significant background views (e.g., views of the Santa Cruz Mountains) from this area, the buildings would not obstruct any valued view corridors. The perception of privacy in the rear yards of the residential units is not expected to change because there would be screening provided by distance, existing vegetation, and fencing between the residential properties and the Project Site. Therefore, no substantial adverse changes are anticipated.

Burgess Park/Civic Center and Laurel Street (Viewpoints 7 and 8)

As discussed above, the Project Site is currently highly visible from the easternmost portions of Burgess Park/Civic Center complex and Laurel Street. As shown in Figure 10a (Vantage Point 7) in Attachment A, Buildings 404–409 and the substation front directly onto Laurel Street, separated only by a sidewalk; Building G is removed from the street by a surface parking lot but still visible. In addition, because of height, several of the multi-story buildings in the interior of the Project Site are visible from these areas.

The Proposed Project would demolish most existing buildings and construct multi-family residential buildings with three to six stories (i.e., 45 to 85 feet in height) that would front directly onto Laurel Street. The new buildings would be highly visible from Laurel Street and the Civic Center. As shown in Figure 10b in Attachment A, foreground views would remain the same, but middleground views would be altered. However, the majority of the buildings would be screened from view by existing vegetation, with only some portions visible between the ground-level hedges and tree branches. Although the proposed buildings would be taller than buildings under existing conditions, the proposed buildings would be generally compatible with surrounding development. Furthermore, given that scenic vistas are not available in the background, no substantial adverse changes are anticipated.

As shown in Figure 11a (Vantage Point 8) in Attachment A, the existing Building G is visible from Burgess Park through the mature trees along Laurel Street and within the Burgess Park parking lot. With implementation of the Proposed Project (Figure 11b in Attachment A), the proposed multi-family residential buildings and townhomes would be visible from the park. However, none of the existing trees in the park would be removed as a result of the Proposed Project; therefore, views of the proposed buildings would be obstructed, and only a channelized view would be available from Burgess Park. although the proposed buildings would increase mass and scale compared to the existing visual setting, the Proposed Project would be generally consistent with the development pattern of the area.

Summary

The city General Plan includes policies that were adopted to minimize impacts on aesthetic resources and preserve scenic quality. Consistent with city General Plan Goal LU-2 and Policy LU-2.1, the Proposed Project would promote orderly development and land use patterns in Menlo Park. Consistent with city General Plan Policy LU-2.3, which directs the city to allow mixed-use projects with residential units, the Proposed Project would provide approximately 1,093,602 sf of office/R&D uses and approximately 675,200 sf of residential uses (i.e., 550 units). Although the Proposed Project would increase the density and scale of development at the Project Site and generally alter visual conditions, the residential and office/R&D uses would be consistent with surrounding community uses. In addition, the Proposed Project would be consistent with Policy LU-3.1 by encouraging underutilized properties in and near existing shopping districts (i.e., downtown) to be redeveloped with attractively designed mixed-use developments that complement existing uses and support pedestrian and bicycle access.

Consistent with city General Plan Policy LU-6.2, which directs the city to require development projects to provide ample open space, the Proposed Project would provide 26.4 acres of publicly accessible open space. Consistent with Policy LU-6.8, the Proposed Project's landscape plan calls for replacement trees and water-efficient varieties of plants. The Project Site would include well-designed bicycle and pedestrian facilities, consistent with Policy OSC1.12. As noted previously, the Proposed Project would comply with Chapter 13.24 of the Menlo Park Municipal Code, consistent with Policy OSC1.15. Therefore, the Proposed Project would comply with city General Plan policies adopted to minimize impacts on aesthetic resources and preserve scenic quality.

The Proposed Project would comply with applicable zoning code regulations and design standards, as developed for the Proposed Project's zoning and land use designations. The Proposed Project would undergo the city's architectural control process to ensure that final designs comply with applicable development and design standards, as outlined in the city zoning ordinance and the project-level development permit, such as a CDP. The proposed landscape plan would replace heritage trees in accordance with Chapter 13.24 of the Menlo Park Municipal Code. In addition, compliance with city General Plan policies, as listed above, would minimize potential adverse impacts on aesthetic resources. Therefore, the Proposed Project would not conflict with applicable zoning and other regulations governing scenic quality.

New Sources of Light and Glare

Construction

During Project construction, glare would be produced from sources such as reflective surfaces on construction vehicles. However, these sources would be present only temporarily (i.e., during construction). Glare would depend on the time of day. It would also be transient and distributed as vehicles move through the Project Site. Work conducted during evenings and on weekends would be limited to reduce potential disruptions within the broader neighborhood. Low-level safety lighting may be needed for construction site security. However, the safety lighting would be temporary. Furthermore, the lighting would be low to the ground and, therefore, shielded from nearby development.

Operation

Lighting would comply with the California Green Building Standards Code (Part 11, Title 24, California Code of Regulations), known as CALGreen, and city lighting guidelines. All fixtures would be energy efficient and designed to reduce glare and unnecessary light spillage. Under CALGreen, proposed lighting would be characterized as part of an "urban cluster" lighting zone (Level 2). Therefore, the lighting strategy would comply with Level 2 "moderate lighting" standards. To the maximum extent feasible, up-lighting (i.e., lighting that projects upward above a fixture) would be avoided. All lighting would be fully shielded to prevent illumination from shining upward above the fixture. Occupancy controls for non-emergency lighting as well as wayfinding and safety lighting for vehicles and pedestrians would be provided in accordance with Title 24. Nighttime lighting for safety and wayfinding would be provided along the perimeter of the site and on internal circulation routes for bicyclists, pedestrians, and vehicles. All buildings would include safety lighting along pathways and near entrances. All exterior fixtures would be energy efficient, color balanced, and shielded to prevent illumination from shining outward toward adjacent neighboring uses. The fixtures would reduce glare and unnecessary light spillage while providing safe routes of travel for vehicles and pedestrians.[5]

Lighting in parking structures would be screened and controlled so as not to disturb surrounding properties while ensuring adequate public security. The specifics regarding each building's architectural design and configuration within the Project Site would be determined through the city's architectural control (i.e., design review) process, as set forth in the Proposed Project's entitlements. In connection with this review, the city will assess whether the final design and configuration comply with Proposed Project entitlements and whether they are within the scope of the EIR.

Because of the urbanized nature of the surrounding area and existing development at the Project Site, a significant amount of ambient nighttime lighting currently exists, affecting views of the nighttime sky. Since the Project Site is already developed with an R&D campus, the Proposed Project would not add a significant amount of lighting in the area. Although some of the proposed buildings would be visible from surrounding areas due to increased height and mass, most buildings would be set back from the property line and would not result in a significant new source of light. In addition, the lighting performance standards set by Leadership in Energy and Environmental Design (LEED) would be followed through adherence to lighting specifications, shielding techniques, automatic lighting controls, and light pollution considerations.

Glare is caused by light reflected from pavement, vehicles, and building materials, such as reflective glass and polished surfaces. During the daytime, the amount of glare depends on the intensity and direction of the sunlight. Daytime glare can create hazards for individuals traveling along Ravenswood Avenue, Middlefield Road, and Laurel Street, along with residences and recreationists in Burgess Park. The exact materials that would be included in building façades are not known at this time. However, the Proposed Project would need to comply with the development standards set forth in the zoning ordinance amendment, including the city's typical bird-friendly design standards, which would reduce glare. In addition, city General Plan Policy LU-2.3 directs the city to allow mixed-use projects with residential units if the design addresses potential compatibility issues, such as light spillover.

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[5] LUMA Lighting Design. 2023. *Parkline Site Lighting: Draft EIR Lighting Report*. July 7, 2023.

Cumulative Evaluation

Cumulative impacts are addressed only for those thresholds that would result in a Project-related impact. If the Proposed Project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. Therefore, no analysis is required.

The approach to cumulative impacts is discussed under "Approach to Cumulative Impacts" in Chapter 3, *Environmental Impact Analysis*, of the EIR. The geographic context for cumulative assessment of visual character or quality of the existing neighborhood impacts includes past, present, and reasonably foreseeable future projects in the immediate vicinity of the Project Site. As explained in more detail below, no cumulative projects would combine with the Proposed Project to degrade visual character or quality.

The public view corridors identified under *Environmental Setting* include Ravenswood Avenue, Middlefield Road, the Linfield Oaks neighborhood, the Classics of Burgess Park neighborhood, Burgess Park/Civic Center, and Laurel Street. Within the geographic context described above, the majority of the cumulative projects would not be visible from the Project Site because of the low intensity of the proposed developments, flat terrain, intervening vegetation and structures, and distance. The only cumulative project visible from the Project Site would be the tenant improvements associated with Buildings P, S, and T. However, these buildings would not be visible from offsite locations and, therefore, would not result in cumulative impact in combination with the Proposed Project. In addition, all projects in the city, including the proposed tenant improvements, would be required to undergo architectural review pursuant to Section 16.68.020 of the Menlo Park Municipal Code. Any proposal for a new structure, addition to an existing structure, or change to the exterior of a structure that requires a building permit, with the exception of single-family dwellings, duplexes, and accessory buildings, requires the Planning Commission to conduct an architectural control review to ensure that the general appearance of the structures is in keeping with the character of the neighborhood. Therefore, the Proposed Project would not contribute to substantial degradation of the visual character or quality of the surroundings in combination with other cumulative development.

Development in the area would not include direct illumination of Project structures, features, and/or walkways and could increase ambient nighttime lighting levels in the Project area. None of the other proposed projects in the area are large enough to contribute to a cumulative lighting or glare impact that would extend to the Project Site. The tenant improvements associated with Buildings P, S, and T would very likely include new exterior lighting. However, the lighting for this cumulative project would be required to comply with CALGreen and city lighting guidelines, as discussed above. Therefore, the Proposed Project would not contribute to substantial changes in light and glare in combination with other cumulative development.

Evaluation of the Project Variant

This evaluation is provided for informational purposes.

The site plan for the Project Variant would be expanded to include the parcel at 201 Ravenswood Avenue to create a continuous Project frontage area along Ravenswood Avenue and increase the overall Project Site by approximately 43,762 sf. The increase of building area would accommodate up to 250 additional residential rental dwelling units compared to the Proposed Project, for a total of 800 residential units. The Project Variant would not change other basic characteristics of the Proposed Project. For example, total office/R&D development would remain the same as under the Proposed Project. Certain residential uses, including the affordable housing units and a limited number of townhomes, would shift to the corner of the site near the intersection of Middlefield Road and Ravenswood Avenue. The existing building at 201 Ravenswood Avenue would be demolished.

The additional dwelling units would be located in the western and northeastern portions of the Project Site. In the western portion of the site, Buildings R1, R2, and R3 would be replaced with two multi-family buildings (Buildings R1 and R2), which would have 300 units, for a total of 600 multi-family rental units. The 19 townhomes along Laurel Street included in the Proposed Project would be maintained (referred to as TH1). In the northeastern portion of the Project Site, a six-story multi-family building with up to 154 units (referred to as Building R3) would be located at the corner of Ravenswood Avenue and Middlefield Road. In addition, 27 attached townhomes would be located immediately south of Building R3 (referred to as TH2).

Under the Project Variant, the maximum building heights for the office/R&D buildings would be the same as under the Proposed Project (approximately 110 feet), whereas the maximum heights for the residential buildings would increase slightly to approximately 90 feet (compared to 85 feet under the Proposed Project). The commercial parking garages (PG1 and PG2) would increase by one level (i.e., to five stories and approximately 75 feet compared to four stories and 55 feet under the Proposed Project). Under the Project Variant, site access, as well as vehicular, bicycle, and pedestrian circulation, would be similar to that of the Proposed Project.

The Project Variant would also include a 2- to 3-million-gallon emergency water reservoir that would be buried below grade at the northeast corner of the Project Site, in an area that would be devoted to recreational use near the intersection of Ravenswood Avenue and Middlefield Road, west of Building R3. Facilities associated with the emergency water reservoir would include a pump station, an emergency well, and related improvements that would be built at grade (i.e., emergency generator, disinfection system, surge tank). These facilities would be located above ground, and all would be surrounded by a fence or screen.

Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality

Figures 12 through 19 (Attachment A) depict the visual differences between existing conditions and the Project Variant at Viewpoints 1 through 8. Visual impacts associated with Viewpoint 5, depicted in Figure 16, would be the same as under the Proposed Project because the Project Variant would not alter the buildings in the office/R&D area. In addition, views from Viewpoint 6, which is facing north from the Classics of Burgess Park neighborhood, would not change compared to the Proposed Project because both the Project Variant and the Proposed Project would result in the construction of townhouses of the same height immediately adjacent to this neighborhood. Therefore, Viewpoints 5 and 6 are not discussed further below.

The residential area would be most visible from Ravenswood Avenue (Viewpoints 1 and 2 in Figures 12 and 13) and Laurel Street, including the Civic Center and Burgess Park (Viewpoints 7 and 8 in Figures 18 and 19). With respect to the design and height of the proposed buildings under the Project Variant, Buildings R1 and R2 would differ in massing and height compared to the Proposed Project to accommodate additional units within the two buildings as well as an aboveground parking podium and a "wrapped" construction typology. Under the Project Variant, the portions of Buildings R1 and R2 fronting Laurel Street would be three or four stories, with a portion of Building R1 along Ravenswood Avenue having five stories. In addition, small interior portions of Buildings R1 and R2 would include a sixth story to accommodate a rooftop amenity space for residents. The detached TH1 townhomes along Laurel Street would be two stories. From these locations, the ground floors and aboveground parking podiums of the multi-family residential buildings under the Project Variant would appear between existing and proposed trees, which would soften the Project Variant's appearance and reduce its visual contrast within the immediate landscape. Even with increased scale and massing of the Project Variant, the rooftops and higher levels of the multi-family residential buildings would be mainly blocked by the existing mature trees.

The Project Variant's incorporation of the parcel at 201 Ravenswood Avenue would allow additional residential units at the northeast corner of the Project Site, along with development of a large recreational area and emergency water reservoir. Therefore, the visual appearance of the northeastern portion of the Project Site, at the corner of Ravenswood Avenue and Middlefield Road, would be substantially altered compared to existing conditions. In this area, multi-family residential Building R3 would be six stories and the TH2 townhomes along Middlefield Road would be three stories. As shown in Viewpoint 3 (Figure 14), Building R3 would be visible when facing southeast on Ravenswood Avenue.[6] From the intersection of Middlefield Road and Ringwood Avenue, facing northwest, the lower levels of the proposed townhouses (TH1) would be visible through the vegetation. This view is depicted as Viewpoint 4 (Figure 15).[7] The distance between sensitive viewer locations (e.g., adjacent neighborhoods and Menlo-Atherton High School) and the proposed residential units at the northeast corner of the site would be relatively small; however, views of the buildings would be limited, consisting of mainly blocked background views. Therefore, the buildings would not be a dominant feature in the area. In addition, because there are no significant background views (e.g., views of the Santa Cruz Mountains) from this area, the buildings would not obstruct any valued view corridors. Therefore, no substantial adverse changes are anticipated.

The aboveground facilities associated with the emergency water reservoir would include a pump station, surge tank, and a well head; however, these would not be visible from public viewpoints because of distance, intervening structures, and landscaping. Under the Project Variant, the commercial parking garages (PG1 and PG2) would be five stories and approximately 75 feet high. However, the parking garages would not be visible from nearby public viewpoints because the garages would be located toward the center of the Project Site and set back from the streets.

Ravenswood Avenue, Laurel Street, and Middlefield Road are not designated scenic routes. Motorists have only fleeting views of the Project Site because of the permitted speeds. In addition, motorists typically direct their attention to the road ahead rather than views. Therefore, views of the Project Site from Ravenswood Avenue, Laurel Street, and Middlefield Road do not constitute sensitive views, and development of the Project Site would not significantly alter the visual character of the area. The Project Site would be visible from a few residential properties along Ravenswood Avenue and from Burgess Park along Laurel Street, both of which are considered sensitive viewers; however, views would not be significantly altered due to the existing mature trees that would remain, the proposed new landscaping, and the building setbacks. Furthermore, given that scenic vistas are not available in the background, no substantial adverse changes are anticipated. Therefore, no substantial adverse changes are anticipated under the Project Variant.

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[6] Note that Viewpoint 3 under the Project Variant is slightly different from Viewpoint 3 under the Proposed Project. Although both are on Ravenswood Avenue, they have been adjusted to show the maximum impacts for their respective site plans.

[7] Note that Viewpoint 4 under the Project Variant is slightly different from Viewpoint 4 under the Proposed Project. Although both are on Middlefield Road, they have been adjusted to show the maximum impacts for their respective site plans.

The city General Plan includes policies that were adopted to minimize impacts on aesthetic resources and preserve scenic quality. The Project Variant would be consistent with General Plan Goal LU-2, Policy LU-2.1, Policy LU-2.3, Policy LU-3.1, Policy OSC1.12, and Policy OSC1.15. General Plan Policy LU-6.2 directs the city to require development projects to provide ample open space. The Project Variant would include approximately 29.3 acres of at-grade open space areas and supporting amenities. Therefore, the Project Variant would increase the amount of open space compared to existing conditions. The Project Variant would also result in the removal of approximately 768 trees. Consistent with Policy LU-6.8, the Project Variant's landscape plan would include replacement trees and water-efficient varieties of plants. Therefore, the Project Variant would comply with city General Plan policies adopted to minimize impacts on aesthetic resources and preserve scenic quality.

The Project Variant would comply with applicable zoning code regulations and design standards, as developed for the Project Variant's zoning and land use designations. The Project Variant would undergo the city's architectural control process to ensure that final designs comply with applicable development and design standards, as outlined in the city zoning ordinance and the project-level development permit, such as a CDP. The proposed landscape plan would replace heritage trees in accordance with Chapter 13.24 of the Menlo Park Municipal Code. In addition, compliance with city General Plan policies, as listed above, would minimize potential adverse impacts on aesthetic resources. Therefore, the Project Variant would not conflict with applicable zoning and other regulations governing scenic quality.

New Sources of Light and Glare

Lighting for the Project Variant would comply with CALGreen standards and city lighting guidelines. All fixtures would be energy efficient and designed to reduce glare and unnecessary light spillage. The specifics regarding each building's architectural design and configuration within the Project Site would be determined through the city's architectural control (i.e., design review) process, as set forth in the entitlements. The buildings within the residential area would have greater massing and scale than under existing conditions, resulting in more visible light and glare impacts. In addition, residential buildings (R3 and TH2) would be located at the corner of Ravenswood Avenue and Middlefield Road, an area currently with no structures and only limited lighting for an existing surface parking lot. Regardless, because of the urbanized nature of the surrounding area and existing development at the Project Site, a significant amount of ambient nighttime lighting currently exists, affecting views of the nighttime sky. Because the Project Site is already developed with an R&D campus, the Project Variant would not add a significant amount of lighting in the area. Although some of the proposed buildings would be visible from surrounding areas due to increased height and mass, compared to existing conditions, most buildings would be set back from the property line and would not result in a significant new source of light. In addition, the lighting performance standards set by LEED would be followed through adherence to lighting specifications, shielding techniques, automatic lighting controls, and light pollution considerations. Furthermore, city General Plan Policy LU-2.3 directs the city to allow mixed-use projects with residential units if the design addresses potential compatibility issues, such as light spillover.

Shadow Evaluation

Although a shadow analysis is not required under CEQA, it is included here for informational purposes. Significant shading of public open spaces could be considered an impact if new shadows were to change the usability or comfort of a space. Recreational fields, pathways, plazas, and courtyards that are open to the public could be affected by new shadows. Within the vicinity of the Project site, Burgess Park and the Civic Center, which are west of the Project Site, across Laurel Street, are the closest public areas that could be affected by shadows.

Shadow simulations have been created for critical periods of the day to depict the maximum and minimum shadows cast by Project buildings:

- March 21 (spring equinox),
- June 21 (summer solstice),
- September 21 (fall equinox), and
- December 21 (winter solstice).

Because shadow impacts are the most noticeable during the day between 9:00 a.m. and 5:00 p.m., the simulations include times with the most impact throughout the year, as presented in Figures 20 through 23 in Attachment A. The simulations depict both the Proposed Project and the Project Variant to show the differences in the shadow impacts. As shown, because the Project Site is east of Burgess Park and the Civic Center, no shadows from the Proposed Project or Project Variant buildings would be cast in these publicly accessible areas. Most shadows would be cast directly onto the Project Site and would not spill onto offsite locations. During the equinoxes and winter solstice, in the early morning and late afternoon hours, shadows would be cast offsite to the north, east, and south. However, none of these locations are public areas, except for sidewalks and streets along Ravenswood Avenue and Middlefield Road. Sensitive users along these sidewalk and street segments would include bicyclists and pedestrians, but they would be shaded only briefly as they pass through. Therefore, the Proposed Project and Project Variant would not substantially alter shadow conditions in the area.

Attachment A. Figures

1a Facing Southeast from Ravenswood Avenue and Laurel Street

1b Facing South from Ravenswood Avneue and Pine Street

1c Facing Southwest from Ravenswood Avenue

1d Facing Southwest from Middlefield Road

Graphics ...104631 (08-25-2023) JC

Figure 1
Existing Conditions
Parkline

2a Facing West from Middlefield Road and Seminary Drive

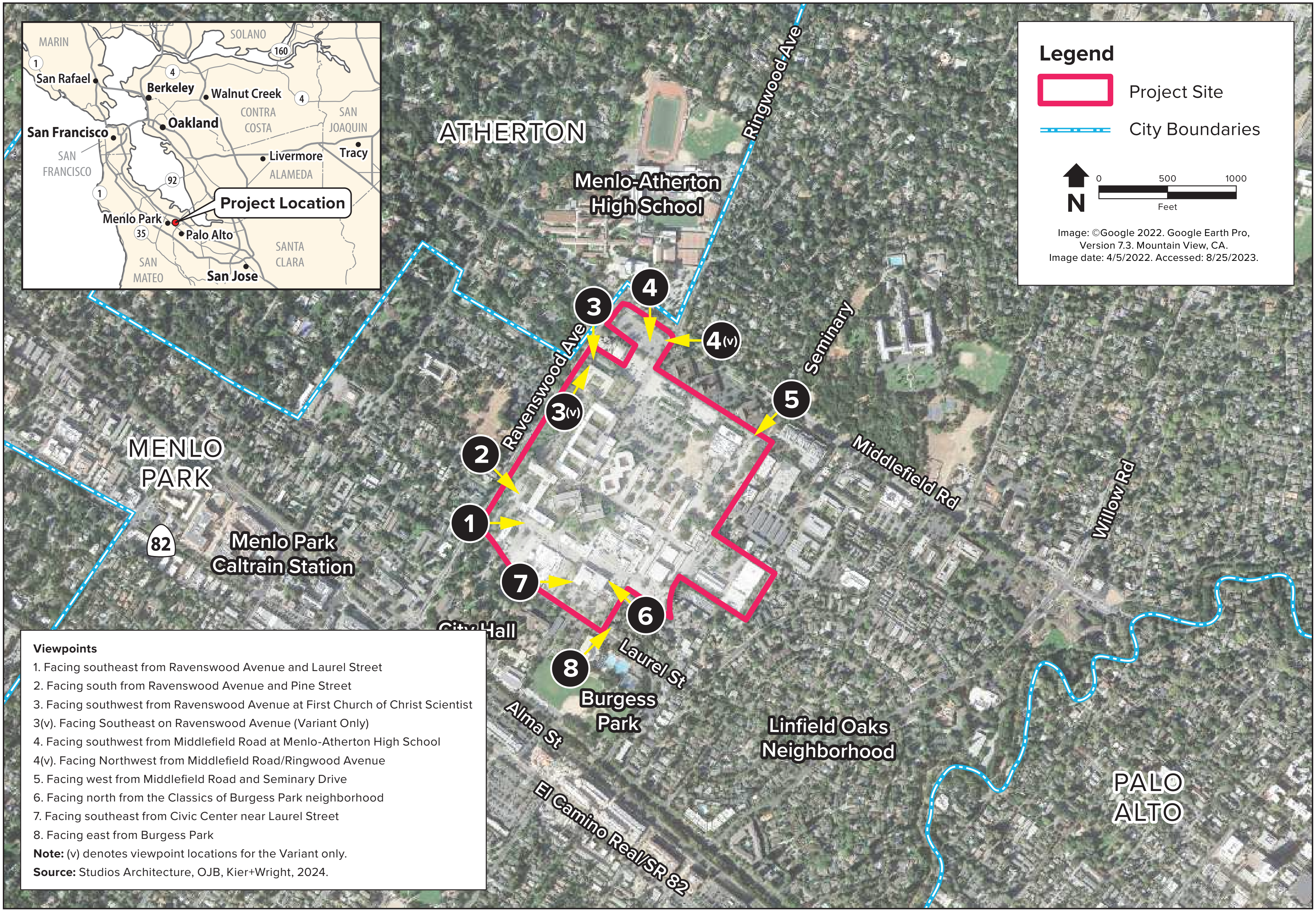
2b Facing North from Classics of Burgess Park Neighborhood

2c Facing Southeast from Civic Center Near Laurel Street

2d Facing East from Burgess Park

Graphics ...104631 (08-25-2023) JC

Figure 2
Existing Conditions
Parkline



Viewpoints

1. Facing southeast from Ravenswood Avenue and Laurel Street
2. Facing south from Ravenswood Avenue and Pine Street
3. Facing southwest from Ravenswood Avenue at First Church of Christ Scientist
3(v). Facing Southeast on Ravenswood Avenue (Variant Only)
4. Facing southwest from Middlefield Road at Menlo-Atherton High School
4(v). Facing Northwest from Middlefield Road/Ringwood Avenue
5. Facing west from Middlefield Road and Seminary Drive
6. Facing north from the Classics of Burgess Park neighborhood
7. Facing southeast from Civic Center near Laurel Street
8. Facing east from Burgess Park

Note: (v) denotes viewpoint locations for the Variant only.

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ... 104631 (03-28-2024) JC

Figure 3
Viewpoint Locations
Parkline

a. Existing

b. Proposed

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 4
Viewpoint 1: Facing southeast from Ravenswood Avenue and Laurel Street
Parkline

a. Existing

b. Proposed

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 5
Viewpoint 2: Facing south from Ravenswood Avenue and Pine Street
Parkline

a. Existing

b. Proposed

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 6
Viewpoint 3: Facing southwest from Ravenswood Avenue at First Church of Christ Scientist
Parkline

a. Existing

b. Proposed

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 7
Viewpoint 4: Facing southwest from Middlefield Road at Menlo-Atherton High School

a. Existing

b. Proposed

Graphics ...104631 (03-28-2024) JC

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Figure 8
Viewpoint 5 Facing west from Middlefield Road and Seminary Drive
Parkline

a. Existing

b. Proposed

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 9
Viewpoint 6: Facing north from the Classics of Burgess Park neighborhood
Parkline

a. Existing

b. Proposed

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 10

Viewpoint 7: Facing southeast from Civic Center near Laurel Street

Parkline

a. Existing

b. Proposed

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 11
Viewpoint 8: Facing east from Burgess Park
Parkline

a. Existing

b. Variant

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 12

Viewpoint 1: Facing southeast from Ravenswood Avenue and Laurel Street (Variant)

Parkline

a. Existing

b. Variant

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 13
Viewpoint 2: Facing south from Ravenswood Avenue and Pine Street (Variant)
Parkline

a. Existing

b. Variant

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 14
Viewpoint 3(v): Facing Southeast on Ravenswood Avenue (Variant)
Parkline

a. Existing

b. Variant

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 15
Viewpoint 4(v): Facing Northwest from Middlefield Road/Ringwood Avenue (Variant)
Parkline

a. Existing

b. Variant

Graphics ...104631 (03-28-2024) JC

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Figure 16
Viewpoint 5: Facing West from Middlefield Road and Seminary Drive (Variant)
Parkline

a. Existing

b. Variant

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 17
Viewpoint 6: Facing north from the Classics of Burgess Park neighborhood (Variant)
Parkline

a. Existing

b. Variant

Graphics ...104631 (03-28-2024) JC

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Figure 18
Viewpoint 7: Facing southeast from Civic Center near Laurel Street (Variant)
Parkline

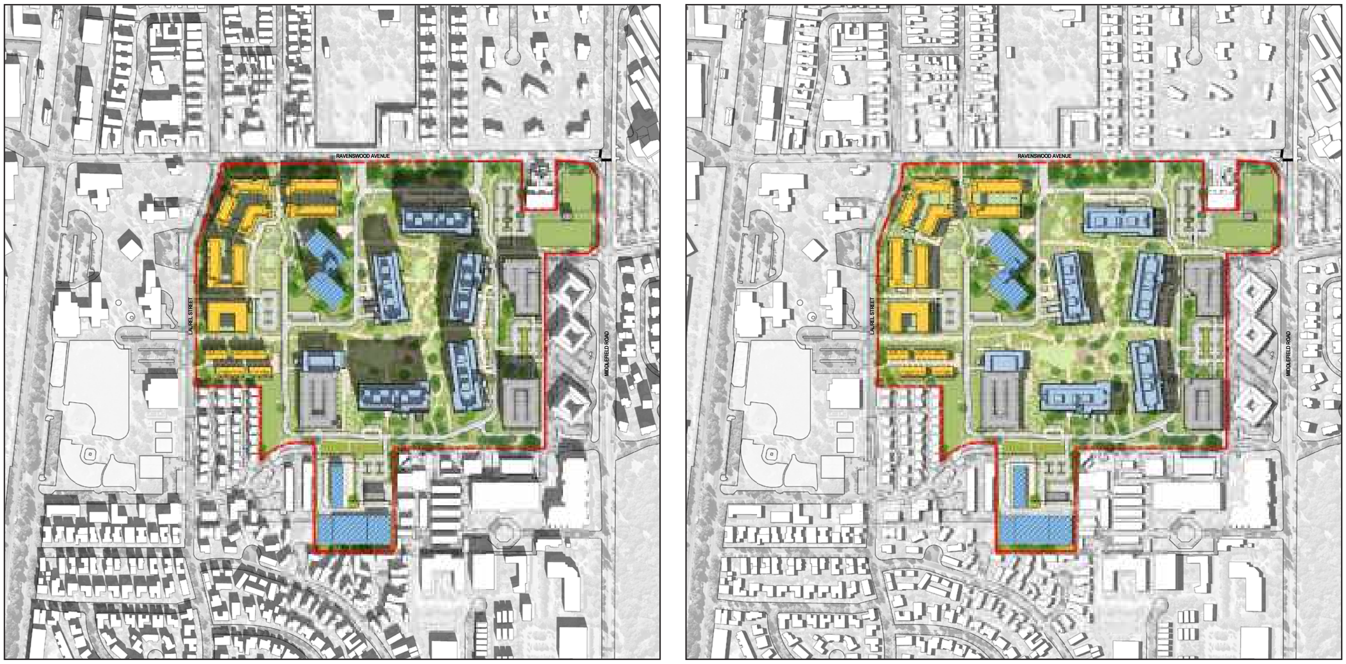
a. Existing

b. Variant

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Graphics ...104631 (03-28-2024) JC

Figure 19
Viewpoint 8: Facing East from Burgess Park (Variant)
Parkline



a. Proposed Project, 9 a.m.

b. Proposed Project, 3 p.m.

c. Variant, 9 a.m.

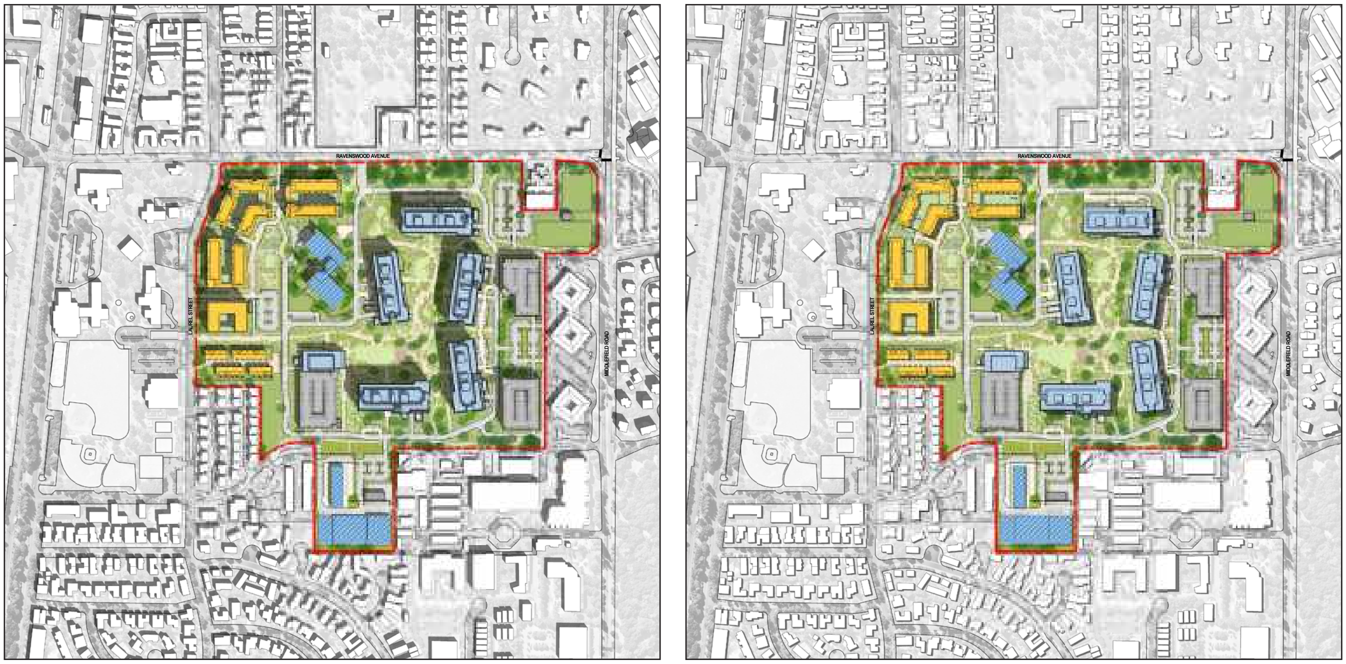
d. Variant, 3 p.m.

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Scale: 1" = 160' -0"

Graphics ...104631 (03-28-2024) JC

Figure 20
Shadows on March 21 (Spring Equinox)
Parkline



a. Proposed Project, 9 a.m.

b. Proposed Project, 3 p.m.

c. Variant, 9 a.m.

d. Variant, 3 p.m.

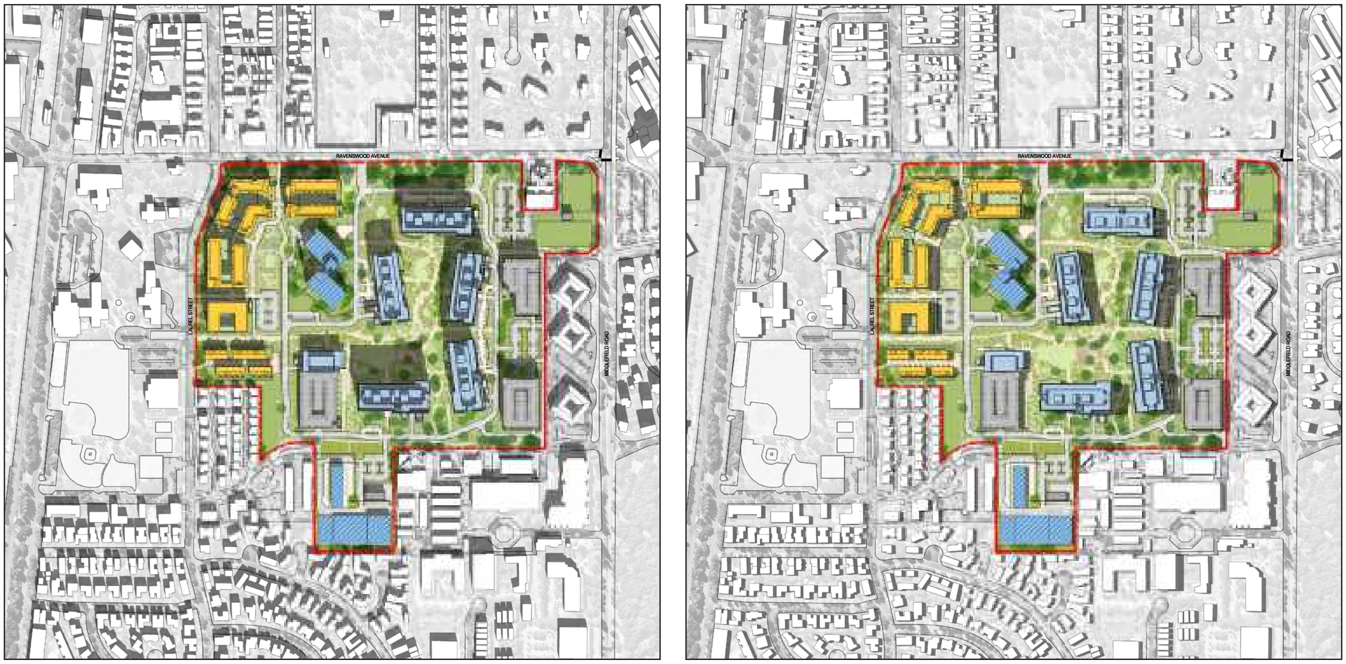
Graphics ...104631 (03-28-2024) JC

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Scale: 1" = 160' -0"

N

Figure 21
Shadows on June 21 (Summer Solstice)
Parkline



a. Proposed Project, 9 a.m.

b. Proposed Project, 3 p.m.

c. Variant, 9 a.m.

d. Variant, 3 p.m.

Source: Studios Architecture, OJB, Kier+Wright, 2024.

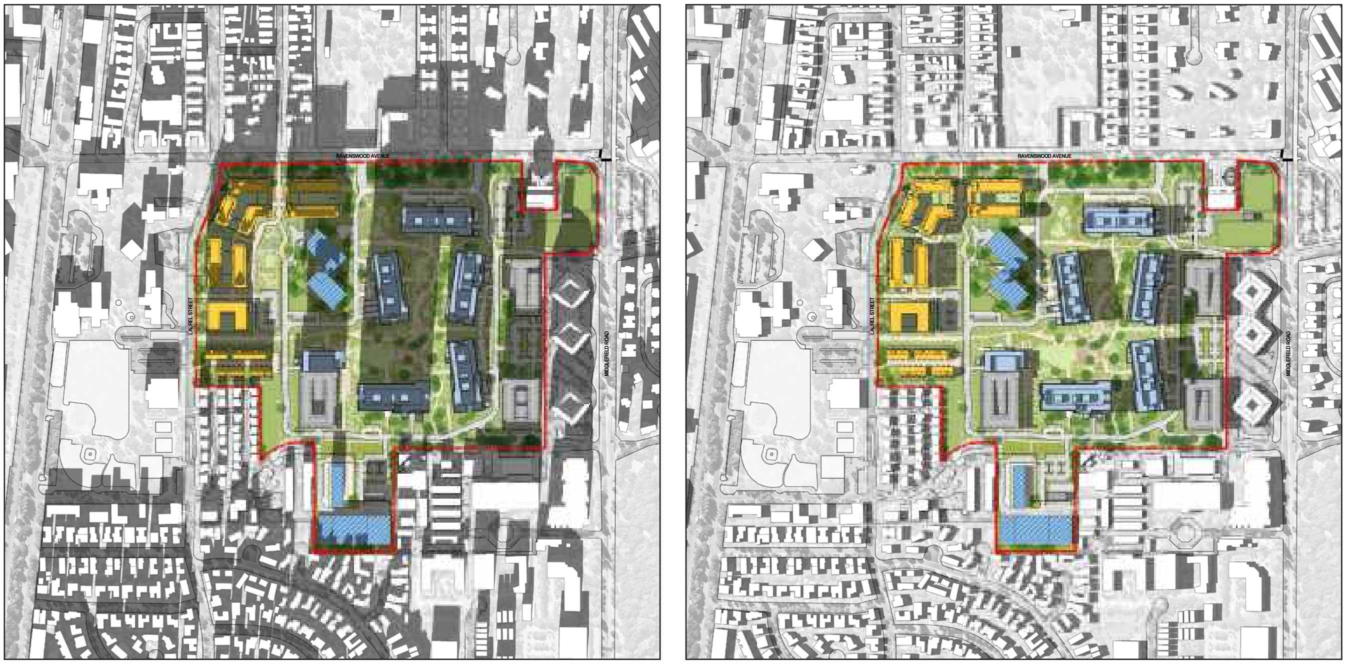
Scale: 1" = 160' -0"

Graphics ...104631 (03-28-2024) JC

Figure 22

Shadows on September 21 (Fall Equinox)

Parkline



a. Proposed Project, 9 a.m.

b. Proposed Project, 3 p.m.

c. Variant, 9 a.m.

d. Variant, 3 p.m.

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Scale: 1" = 160' -0"

N

Graphics ...104631 (03-28-2024) JC

Figure 23
Shadows on December 21 (Winter Solstice)
Parkline

Attachment B. Regulatory Setting

State

California Scenic Highway Program

The California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), protects State Scenic Highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. A highway's designation of "scenic" depends on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view. The segment of I-280 that runs from the Santa Clara county line to the San Bruno city limit, southwest of the Project Site, is designated as a State Scenic Highway by Caltrans.

California Code of Regulations, Title 24

The 2022 Building Energy Efficiency Standards outlined in the California Code of Regulations (Title 24, Parts 1 and 6) contain energy and water efficiency requirements for new construction. These standards are intended to improve the quality of outdoor lighting and reduce the impacts of from light pollution, light trespass, and glare. Specifically, non-residential developments, high-rise residential developments, and hotel developments must comply with standards to regulate lighting characteristics, such as the standards pertaining to maximum power and brightness, shielding, and sensor controls outlined in Sections 130.2(a) through 130.2(c).

Local

Menlo Park General Plan

The city's General Plan was updated in November 2016 when the city adopted ConnectMenlo, which contained the city's new Land Use Element and new Circulation Element. Other recent revisions to the city's General Plan took place in 2013, including updated Open Space and Conservation, Noise, and Safety Elements. The 2023–2031 Housing Element was adopted in January 2023, with associated amendments to the Land Use Element and a further amendment in January 2024 to incorporate revisions required by the California Department of Housing and Community Development. The city also continues to work on an update to its Safety Element and preparation of its first Environmental Justice Element. The following policies from the Land Use Element, which pertain to the Proposed Project, were adopted to avoid or mitigate environmental impacts:

Goal LU-1: Promote the orderly development of Menlo Park and its surrounding area.

> **Policy LU-1.1: Land Use Patterns.** Cooperate with the appropriate agencies to help ensure a coordinated land use pattern in Menlo Park and the surrounding area.

Goal LU-2: Maintain and enhance the character, variety, and stability of Menlo Park's residential neighborhoods.

> **Policy LU-2.1: Neighborhood Compatibility.** Ensure that new residential development possesses a high-quality design that is compatible with the scale, look, and feel of the surrounding neighborhood and respects the city's residential character.
>
> **Policy LU-2.2: Open Space.** Require accessible, attractive open space that is well maintained and use sustainable practices and materials in all new multiple-dwelling and mixed-use development.

Policy LU-2.3: Mixed-Use Design. Allow mixed-use projects with residential units if project design addresses potential compatibility issues such as traffic, parking, light spillover, dust, odors, and transport and use of potentially hazardous materials.

Policy LU-2.6: Underground Utilities. Require all electric and communications lines that serve new development to be placed underground.

Policy LU-2.8 Property Maintenance. Require property owners to maintain buildings, yards, and parking lots in a clean and attractive condition.

Goal LU-3: Retain and enhance existing and encourage new neighborhood-serving commercial uses, particularly retail services, to create vibrant commercial corridors.

Policy LU-3.1: Underutilized Properties. Encourage underutilized properties in and near existing shopping districts to redevelop with attractively designed commercial, residential, or mixed-use development that complements existing uses and supports pedestrian and bicycle access.

Goal LU-4: Promote and encourage existing and new business to be successful and attract entrepreneurship and emerging technologies for providing goods, services amenities, local job opportunities, and tax revenue for the community while avoiding or minimizing potential environmental and traffic impacts.

Policy LU-4.3: Mixed-Use and Non-residential Development. Limit parking, traffic, and other impacts of mixed-use and non-residential development on adjacent uses, and promote high-quality architectural designs and effective transportation options.

Goal LU-6: Preserve open space lands for recreation; protect natural resources and air and water quality; and protect and enhance scenic qualities.

Policy LU-6.2: Open Space in New Development. Require new non-residential, mixed-use, and multiple dwelling development of a certain minimum scale to provide ample open space in the form of plazas, greens, community gardens, and parks whose frequent use is encouraged through thoughtful placement and design.

Policy LU-6.8: Landscaping in Development. Encourage extensive and appropriate landscaping in public and private development to maintain the city's tree canopy and to promote sustainability and healthy living, particularly through increased trees and water-efficient landscaping in large parking areas and in the public right-of-way.

The following policies from the Open Space and Conservation Element were adopted to avoid or minimize environmental impacts:

Policy OSC1.12: Landscaping and Plazas. Include landscaping and plazas on public and private lands and well-designed bicycle and pedestrian facilities in areas of intensive non-vehicular activity. Require landscaping for shade and surface runoff or to obscure parked cars in extensive parking areas.

Policy OSC1.15: Heritage Trees. Protect heritage trees, including during construction activities, through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Menlo Park Municipal Code).

Menlo Park Municipal Code

Chapter 13.24, Heritage Trees

Chapter 13.24 of the Menlo Park Municipal Code regulates the removal and replacement of heritage trees, promotes additional heritage tree planting, and supports public education about the planting, maintenance, and preservation of healthy heritage trees. Pursuant to Section 13.24.050, a permit issued by the public works director is required to remove or conduct major pruning of a heritage tree. Heritage trees include:

- All trees other than oaks that have a trunk with a circumference of 47.1 inches (diameter of 15 inches) or more, as measured 54 inches above the natural grade.
- An oak tree (Quercus) that is native to California and has a trunk with a circumference of 31.4 inches (diameter of 10 inches) or more, as measured 54 inches above the natural grade.
- A tree or group of trees of historical significance, special character, or community benefit, as specifically designated by resolution of the City Council.

Chapter 16.64, Fences, Walls, Trees, and Hedges

Chapter 16.64 of the Menlo Park Municipal Code establishes standards for fences, walls, trees, and hedges in non-residential and residential areas. In non-residential areas, fences, walls, hedges, and similar structures between the building and front lot line are required to obtain written approval from the community development director. The following features must be considered when obtaining approval: structural stability; aesthetics; the general health, safety, and welfare of the community; clear lines of sight for vehicular and pedestrian traffic; and other safety factors.

Chapter 16.82, Permits

Sections 16.82.050 through 16.82.100 of the Menlo Park Municipal Code establish criteria for the issuance of conditional development permits (CDPs). A CDP may be issued to allow adjustments to zoning district requirements and secure special benefits through comprehensive planning for large developments. A CDP would be required for the Proposed Project to permit a master-planned project with bonus-level development, define any adjustments to city zoning ordinance development standards, identify Project conditions and requirements, and create mechanisms for the city to use to process any revisions to the Proposed Project that might arise over the build-out period. Section 16.82.060 requires each CDP application to be accompanied by architectural drawings and plot plans that clearly identify elevations, locations for proposed buildings, landscaping, parking, and other physical features. Section 16.68.020 of the Menlo Park Municipal Code establishes requirements for architectural control approval. Each application for a building permit for construction or alternation of a building must be accompanied by architectural drawings showing elevations, landscaping or other ground treatments, and the design of parking facilities, including access points.

The City Council is the final decision-making body for the CDP; however, subsequent architectural control permits would be reviewed and acted upon, perhaps concurrently, by the Planning Commission. The Planning Commission would consider the items outlined below when conducting architectural control review of the Proposed Project.:

1. The general appearance of the structures is in keeping with the character of the neighborhood.
2. The development will not be detrimental to the harmonious and orderly growth of the city.

3. The development will not affect the desirability of investment or occupation in the neighborhood.
4. The development provides adequate parking, as required in all applicable city ordinances, and has made adequate provisions for access to such parking.

Appendix 3.4-1

Project Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report

Prepared for
Lane Partners

Prepared by
Ramboll Americas Engineering Solutions, Inc.
San Francisco, California

Project Number
1690028543

Date
February 2024

CEQA AIR QUALITY, GREENHOUSE GAS AND HEALTH RISK ASSESSMENT TECHNICAL REPORT

PARKLINE

MENLO PARK, CALIFORNIA

CONTENTS

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Acronyms and Abbreviations

A/C	Air Conditioning
ACC	Advanced Clean Cars
ADJ_U*	Adjust U* option
AERMIC	American Meteorological Society/USEPA Regulatory Model Improvement Committee
AERMET	USEPA's meteorological data preprocessor
AERMOD	USEPA's atmospheric dispersion modeling system
AERSURFACE	USEPA's land cover data processing tool
APCO	Air Pollution Control Officer
AQTR	Air Quality Technical Report
ARB	(California) Air Resources Board
aREL	Acute Reference Exposure Level
ASOS	Automated Surface Observing System
ATCM	Airborne Toxic Control Measures
ASF	Age Sensitivity Factor
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practices
BPIP PRIME	Building Profile Input Program, PRIME
Cal/EPA	California Environmental Protection Agency
CalEEMod®	California Emissions Estimator Model
CalGreen	California Green Building Standards Code
CAP	Criteria Air Pollutant

CATEF	California Air Toxics Emission Factor
CCR	California Code of Regulation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	Methane
City	City of Menlo Park, California
CMP	Congestion Management Program
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
cREL	Chronic Reference exposure level
CPF	Cancer Potency Factor
DPF	Diesel Particulate Filter
DPM	Diesel Particulate Matter
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EMFAC	ARB's Mobile EMission FACtors model
EMISFACT	variable emission factor
GHG	Greenhouse Gas
g/hr	gram per hour
g/mile	gram per mile
g/trip	gram per trip
g/s	gram per second
HI	Hazard Index
HHDT	Heavy heavy-duty Diesel Truck
HQ	Hazard Quotient
HRA	Health Risk Analysis

kg	kilogram
KOAK	Oakland International Airport
KPAO	Palo Alto Airport
KSOL	San Carlos Airport
L	liter
lbs	pounds
LRDP	Long Range Development Plan
m	meter
MAF	Modeling adjustment factor
MEIR	Maximally Exposed Individual Receptor
mg	milligram
MRR	Mandatory Greenhouse Gas Reporting Regulation
N_2O	nitrous oxide
NO_X	oxides of nitrogen
OEHHA	Office of Environmental Health Hazard Assessment
OFFROAD2017	(ARB) In-Use Off-Road Equipment model
PG&E	Pacific Gas & Electric
PM	Fine Particulate Matter
$PM_{2.5}$	Fine Particulate Matter Less than 2.5 Micrometers in Aerodynamic Diameter
PM_{10}	Particulate Matter Less than 10 Micrometers in Aerodynamic Diameter
PV	Photovoltaic
Ramboll	Ramboll US Consulting, Inc.
ROG	Reactive organic gases
R&D	Research and development
SB	Senate Bill
TAC	Toxic Air Contaminant
TDM	Transportation Demand Management
TOG	Total organic gases
tpy	tons per year
u*	friction velocity
$\mu g/m^3$	microgram per cubic meter
USEPA	United States Environmental Protection Agency
VMT	Vehicle miles traveled
VOC	Volatile organic compound
χ/Q	chi over q

EXECUTIVE SUMMARY

This report provides an inventory of criteria air pollutant (CAP) and greenhouse gas (GHG) emissions that would result from the construction and operation of the Parkline Project (the "Project" or "Parkline"). This report also includes a health risk assessment of the construction and operational impacts of the Project on on-site and off-site sensitive receptors, as well as an analysis of odor impacts and carbon monoxide (CO) impacts. Finally, this report also provides qualitative analysis of the Project's consistency with the applicable air quality plan and the applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions, which is presented in **Appendix A**.

Methodology

Project emissions and impacts were compared against thresholds set forth in the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) Guidelines released in 2023.[1] As shown in **Table ES-1**, the relevant thresholds for the Project are for:

- Average daily CAP construction and operational emissions;
- Annual CAP emissions;
- Excess lifetime cancer risk, chronic and acute hazard index, and fine particulate matter (PM2.5) concentration from the Project on on-site receptors;
- Excess lifetime cancer risk, chronic and acute hazard index, and PM2.5 concentration from the Project on off-site receptors; and
- Cumulative excess lifetime cancer risk, chronic and acute hazard index, and $PM_{2.5}$ concentration.

Project emissions and health impacts were calculated consistent with guidance in BAAQMD's 2023 CEQA guidelines. Project construction and operational emissions were calculated using methodologies consistent with the California Emission Estimator Model (CalEEMod). Consistent with BAAQMD guidance, health impacts are based on emissions of toxic air contaminants (TACs). Concentrations of these TACs were estimated using AERMOD, a Gaussian air dispersion model recommended by United States Environmental Protection Agency (USEPA), Air Resources Board, and BAAQMD for use in preparing environmental documentation for stationary or construction sources. Health impacts were calculated using the TAC concentrations and TAC toxicities and exposure assessments consistent with BAAQMD guidance. Health impacts from off-site sources were obtained from BAAQMD screening tools.

This report presents a conservative analysis of potential Project air quality and GHG impacts for both construction and operational impacts. In evaluating project construction emissions, this report conservatively assumes that the buildings constructed in each phase of the construction program would be occupied and fully operational upon the completion of their construction phase. This is conservative because occupancy and operation of each phase would likely ramp up over time after construction of the building is completed.

To provide a conservative assessment of Project operational emissions, this report evaluated which land use scenario (i.e., either the 100% office or 100% R&D) would result in higher emissions for each emissions category. Both land use scenarios would result in similar emissions for landscaping, architectural coatings and consumer products emissions categories. The 100% R&D land use scenario

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[1] BAAQMD, 2023. 2022 CEQA Air Quality Guidelines. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. April 2023.

would result in higher emissions for on-road mobile, stationary sources, and laboratories based on activity data provided. Therefore, the emissions are based on the 100% R&D scenario. This scenario represents a conservative estimate since the Project would likely incorporate a mix of office and R&D land uses when built out.

Throughout the report, reasonably conservative assumptions were utilized regarding Project construction and operations details. For example, the report assumes the maximum possible square footage of wet laboratory space; laboratory chemical use similar to college laboratories; painting application rate of 10% every year; consumer products are used uniformly across office and residential land uses; all landscape emissions are fossil fueled in the unmitigated case; all impervious surfaces are assumed to be paved with asphalt; and health risks from existing laboratories that would be removed due to Project demolition activities were not subtracted from the Project's health risk impacts. This report also accounts for the additional energy demand from PG&E for Buildings P, S, and T that results from decommissioning of the existing cogeneration facility that provides the primary source of energy for those buildings under existing conditions.

In evaluating potential Project impacts, Ramboll evaluated two modeled scenarios for emissions from operations: an unmitigated and mitigated scenario. The mitigated scenario evaluated specific mitigation measures that would be applied to the Project construction and operations, as discussed further below.

Conclusions

In summary, with implementation of mitigation, the Project would not result in an exceedance of any CAP or GHG thresholds; the Project would not result in any significant health risk impacts; and the Project is consistent with applicable air quality and GHG plans and policies. As described in Section 2.5, the report identifies three emission mitigation measures that would be applicable to address Project construction and operational emissions.

The emission mitigation measures incorporated into the Project are commitments to use (1) all-electric landscaping equipment (eliminating all CAP emissions related to landscaping) and (2) super-compliant architectural coatings during construction and operation for all buildings (reduces VOC content). To reduce potential fugitive dust impacts associated with construction, a mitigation measure would be imposed to ensure implementation of all BAAQMD basic Best Management Practices (BMPs) during all construction activities within the Project area.

Table ES-1 shows the Project emissions and impacts compared against thresholds.

Table ES-1 Summary of Project Emissions and Impacts

	Units	Project	Threshold	Exceed Threshold?
Construction Emissions				
ROG	lb/day	36	54	No
NO_x		13	54	No
PM_{10}		0.64	82	No
$PM_{2.5}$		0.31	54	No
GHG	MT/year	1,417	--	--

	Units	Project		Threshold	Exceed Threshold?
Unmitigated Operational Emissions[2]					
ROG	tons/year	10.3		10	Yes
NO$_x$		-19		10	No
PM$_{10}$		3.0		15	No
PM$_{2.5}$		-0.64		10	No
ROG	lb/day	56.2		54	Yes
NO$_x$		-105		54	No
PM$_{10}$		16		82	No
PM$_{2.5}$		-3.5		54	No
Mitigated Operational Emissions					
ROG	tons/year	6.6		10	No
NO$_x$		-19		10	No
PM$_{10}$		2.9		15	No
PM$_{2.5}$		-0.67		10	No
ROG	lb/day	36		54	No
NO$_x$		-106		54	No
PM$_{10}$		16		82	No
PM$_{2.5}$		-3.7		54	No
Project Health Risk Results Impacts					
		On-site	Off-site		
Excess Lifetime Cancer Risk	in a million	6.0	4.1	10	No
Chronic Hazard Index	Unitless	0.017	0.0087	1	No
PM$_{2.5}$ Concentration	µg/m^3	0.076	0.15	0.3	No
Mitigated PM$_{2.5}$ Concentration	µg/m^3	0.076	0.066	0.3	No
Acute Hazard Index	Unitless	0.078	0.058	1	No
Cumulative Risks and Hazards					
		On-site	Off-site		
Excess Lifetime Cancer Risk	in a million	43	40	100	No
Chronic Hazard Index	Unitless	0.039	0.042	10	No
PM$_{2.5}$ Concentration	µg/m^3	0.22	0.25	0.8	No

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[2] The unmitigated emissions, including for ROG, do not take into account the mitigation measures for low VOC architectural coatings or all-electric landscaping equipment. Both are mitigation measures that are incorporated into the mitigated operational emissions results.

The Project design would be consistent with the requirements in BAAQMD's proposed GHG thresholds of significance. The Project would not include natural gas in new construction; the Project would result in a net decrease in energy consumption; and the Project would incorporate the appropriate electric vehicle charging infrastructure. A separate transportation evaluation for the project will analyze the consistency of the Project's VMT with the City's reduction thresholds.

CO emissions from traffic are expected to be below significance levels because the screening criteria with respect to hourly traffic volumes and congestion management are met. CO emissions from generators are also expected to be below significance levels due to compliance with local, state and federal emissions standards.

A project impact related to odor is not expected to be significant because the Project is a mixed-use commercial and residential development and does not propose any odor-generating facilities identified by the BAAQMD. The Project would also be in compliance with BAAQMD Regulation 7 for Odorous Substances, as needed. The Project is also not expected to create objectionable odors affecting a substantial number of sensitive receptors and thus, would not create compatibility issues related to odor in the Menlo Park General Plan.

1. INTRODUCTION

Ramboll US Consulting, Inc. (“Ramboll”) conducted an air quality and greenhouse gas (GHG) assessment for the construction and operation of the proposed mixed-use development (the “Project” or “Parkline”) located at 333 Ravenswood Avenue in the City of Menlo Park (the “City”) for Lane Partners (the “Project Applicant”). The scope and methods used in this assessment are consistent with recommended analyses for environmental review of projects under the California Environmental Quality Act (CEQA). The CEQA analysis includes the analysis of criteria air pollutants (CAPs) and precursors, GHGs and local air quality and health impacts associated with the Project construction and operation at on-site and adjacent off-site sensitive receptors. The analysis in this report will be independently reviewed by the City and peer reviewed by the City’s CEQA consultant, ICF, for incorporation into the Environmental Impact Report (EIR) for the Project.

This report includes the scope and methodology for evaluation of air quality, GHG, and health impacts from construction sources, operational sources, and cumulative off-site sources at on-site and adjacent off-site sensitive receptors. The scope and methodology have previously been reviewed and approved by the City of Menlo Park.[3] This document also describes the thresholds of significance that were used to evaluate the Project impacts, which are consistent with the 2022 Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines, and compares the results of the analysis to those thresholds.

1.1 Project Description

1.1.1 Existing Conditions

The Project site is currently SRI International’s research and development (R&D) campus, consisting of 38 buildings totaling approximately 1.4 million gross square feet of office, R&D, amenity, and support land uses. Support facilities for the existing Project site include a natural gas cogeneration power plant facility and an accessory back-up boiler, emergency diesel generators, and other support equipment. The area surrounding the Project site consists of residential neighborhoods, offices, and public and institutional facilities. Across Laurel Street to the west are City Hall, Burgess Park, and a childcare facility. To the north are single-family residences, multi-family residential units, and a church along Ravenswood Avenue. To the east are Menlo-Atherton High School, single-family residences, and office buildings along Middlefield Road. To the south of the site are a mix of offices, single-family residences, and multi-family residential units in the Linfield Oaks neighborhood. The site is located within a short walking distance of the Menlo Park Caltrain station, which is located off Ravenswood Avenue, between Alma Street and El Camino Real. **Figure 1** shows the Project boundary and the vicinity of the Project.

1.1.2 Proposed Project

The Proposed Project would include a new office/R&D campus with no increase in office/R&D square footage and up to 550 new rental dwelling units at a range of affordability levels. The Proposed Project would organize land uses generally within two land use districts on the Project Site, including an approximately 10-acre Residential District in the southwestern portion of the Project site and an approximately 53-acre Office/R&D District that would

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[3] Memorandum titled “RE: Parkline – ICF Peer Review of CEQA Air Quality, Greenhouse Gas, and Health Risk Assessment Methodology (July 2023)” from ICF to City of Menlo Park. August 28, 2023.

comprise the remainder of the Project site. In addition, the Project would also include approximately 25 acres of open space areas and supporting amenities, including a network of publicly accessible pedestrian and bicycle trails, open spaces and active/passive recreational areas.

The Office/R&D District would include five new office/R&D buildings totaling approximately 1.05 million square feet, a commercial amenity building of approximately 40,000 square feet, and a community amenity building of 2,000 square feet. Approximately 2,800 parking spaces would be provided within three above-grade parking structures, surface parking areas, and underground parking areas.

The Residential District would include 450 new rental housing units of approximately 518,600 square feet on site, in a mix of multifamily buildings between three and six stories tall and two-story townhomes. The Residential District would include up to 469 parking spaces for the units within podium parking structures and surface parking areas. In addition to the 450 market-rate rental housing units, the Project would include up to 100 affordable housing units within the Residential District, which will likely be constructed separately by an affordable housing developer. This affordable housing building would contain an additional 50 parking spaces for the units within podium parking structures.

Existing Buildings P, S, and T, totaling approximately 287,000 square feet, would remain on site and occupied by SRI International and its tenants. The Project would demolish the remaining 35 existing structures and decommission the existing natural gas cogeneration power plant facility.

During construction, site preparation of the entire site would occur first. Demolition of the entire site would last 9 months. Then site preparation, grading, and utility installation, over the course of approximately 11 months. Subsequent construction would occur in three phases which encompass specific areas of the site. Phase 1 of the Project would construct all on-site residential structures except for the dedicated affordable housing units, plus 2 office/R&D buildings, a parking garage, and surface parking areas associated with the residential and office/R&D structures. Phase 2 would construct the remaining office/R&D buildings and parking garages and would finish site improvements. Phase 3 would construct the 100-unit affordable housing structure. Project construction would start as early as June 2025 and continue through the last quarter of 2031. Phases 2 and 3 may include a small amount of demolition that was not addressed in the initial demolition phase. Construction of Phases 1, 2, and 3 would last approximately 32 months, 25 months, and 22 months, respectively, for building construction, architectural coating and paving phases. There would be approximately 3 months of overlapping construction between the site preparation phase and Phase 1. There would be no overlapping construction between Phase 1 and Phase 2, and about 18 months of overlapping construction between Phase 2 and Phase 3.

Land uses for the existing conditions and the Project are shown in **Table 1**.

1.1.3 Project Variant

Variants are variations of a project at the same project site, with the same project objectives, background, and development controls, but with additions and changes to the project, the inclusion of which may or may not change environmental impacts. The Project Variant will be analyzed in a separate memorandum.

1.2 Objective and Methodology

The purpose of the air quality and GHG analysis is to assess potential criteria air pollutant and GHG emissions, as well as health risks and hazards that would result from the construction and operation of the Proposed Project, consistent with guidelines and methodologies from air quality regulatory agencies, specifically, the BAAQMD, the California Air Resources Board (ARB), the California Office of Environmental Health Hazard Assessment (OEHHA), and the US Environmental Protection Agency (USEPA).

The Project would accommodate either office or R&D uses or a combination of both in the Office/R&D District. Office and R&D land uses have different impacts for air quality and GHG impact categories. Therefore, to capture maximum possible impacts from the Project's operations, Ramboll evaluated the 100% R&D land use scenario, as it would result in higher impacts across all air quality and GHG impact categories.

The 100% office and 100% R&D scenario would require virtually the same construction activity, so a distinction between the two scenarios was not required for construction impacts.

This analysis followed the BAAQMD's 2022 CEQA Guidelines.[4] In addition to the evaluation of an individual project, the BAAQMD's CEQA Guidelines recommend a cumulative evaluation of a project that has other air emissions sources within a 1,000-foot "zone of influence" surrounding the project. This report evaluates the risks and hazards associated with Project construction and operational activities on on-site receptors, off-site receptors and the cumulative impact to both on-site and off-site sensitive receptors from the Project and surrounding sources within the zone of influence.

1.3 Thresholds for Evaluation

1.3.1 Criteria Pollutants and Precursors

Project construction and operational emissions of CAPs and precursors were evaluated and compared with the BAAQMD's 2022 CEQA Guidelines thresholds of significance. Project operational emissions at full buildout were compared to the annual and daily operational thresholds of 54 pounds (lbs) per day and 10 tons per year (tpy) of Reactive Organic Gases (ROG), oxides of nitrogen (NO_X), and fine particulate matter less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$) and 82 lbs per day and 15 tpy of particulate matter less than 10 micrometers in aerodynamic diameter (PM_{10}). Project construction emissions were compared to the average daily construction thresholds of 54 lbs per day of ROG, NO_X, and $PM_{2.5}$ and 82 lbs per day of PM_{10}. BAAQMD thresholds of significance for construction-related PM_{10} and $PM_{2.5}$ mass emissions apply to exhaust emissions only and do not include fugitive dust emissions. Similarly, emissions of CAPs and precursors were also evaluated for the existing conditions on the Project site. Because this is a phased project, emissions during construction were combined with the net operational emissions that are expected to occur during a given calendar year and then compared to the BAAQMD's operational thresholds.

The BAAQMD threshold for fugitive dust during construction is whether or not a project would implement BAAQMD's basic Best Management Practices.

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[4] BAAQMD, 2023. 2022 CEQA Air Quality Guidelines. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. April 2023.

1.3.2 Health Risks and Hazards

The Health Risk Analysis (HRA) evaluated the estimated cancer risk, non-cancer chronic and acute hazard index (HI), and $PM_{2.5}$ concentration associated with construction and operation of the Project. The HRA also evaluated the health risk impacts associated with the existing conditions. The cumulative analysis estimated the total excess lifetime cancer risks, non-cancer HI, and $PM_{2.5}$ concentrations that are attributable to off-site rail, mobile, stationary sources, and nearby projects within the 1,000-foot "zone of influence" identified by the City in addition to effects from the construction and operation of the Project.

The HRA evaluated health risk impacts at potential sensitive receptor locations within 1,000 feet of the Project. Receptors are defined in BAAQMD's 2023 CEQA Guidelines as "people—children, adults, and seniors—occupying or residing in:

- Residential dwellings, including apartments, houses, condominiums, single-room occupancy units, and residential hotels;
- Places of business;
- Schools, colleges, and universities;
- Daycare centers;
- Hospitals;
- Temporary housing, shelters, or encampments;
- Detention centers or correctional facilities and
- Senior-care facilities."5
- To meet these objectives, this HRA was conducted consistent with the following guidance:
- Air Toxics Hot Spots Program Risk Assessment Guidelines6
- 2022 BAAQMD CEQA Guidelines7
- BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards (2023)[8]

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[5] BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines, Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. April. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

[6] Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[7] BAAQMD. 2023. 2022 California Environmental Quality Act Air Quality Guidelines. April. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

[8] BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines, Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. April. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

- BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards (2011)[9]

  The net results of the construction and operational health risk analyses were compared with the BAAQMD 2022 CEQA significance thresholds. Multiple exposure scenarios were evaluated to determine the maximum impacts, as discussed in more detail below. Then the maximum scenario for the combined construction and operational impacts was combined with the impacts of off-site sources of toxic air contaminants (TACs) and compared against the BAAQMD 2022 CEQA cumulative thresholds. The thresholds are:

Single Source Impacts:

- An excess lifetime cancer risk level of more than 10 in one million;
- Non-cancer chronic and acute HIs greater than 1.0; and
- An incremental increase in the annual average $PM_{2.5}$ of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$).

Cumulative Impacts:

- An excess lifetime cancer risk level of more than 100 in one million;
- A chronic non-cancer HI greater than 10.0; and
- An incremental increase in the annual average $PM_{2.5}$ concentration of greater than 0.8 $\mu g/m^3$.

As discussed in detail in **Section 3**, health impacts are based on emissions of TACs from combustion as well as on-site laboratory sources. Diesel particulate matter (DPM) does not have an acute non-cancer toxicity value, so an acute HI from diesel exhaust was not estimated. BAAQMD does not estimate acute HI from roadways in its Roadway Screening Analysis Calculator since impacts from all roadways were well below thresholds.[10] Therefore, acute HI from Project traffic was also not estimated. However, an acute HI was estimated from the laboratory sources as the emitted chemicals would include TACs with acute reference exposure levels.

1.3.3 Greenhouse Gases

BAAQMD adopted CEQA thresholds for evaluating the significance of climate impacts from land use projects and plans on April 20, 2022.[11] The updated GHG thresholds of significance provide two thresholds for land use projects, based on either 1) specific project design elements or 2) consistency with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b). Although the City adopted the updated 2030 Climate Action Plan in April 2021, the Climate Action Plan is only intended to serve as a

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[9] BAAQMD. 2011. Recommended Methods for Screening and Modeling Local Risks and Hazards. Table 14 and 15. May. Available at: https://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx

[10] BAAQMD. 2023. Roadway Screening Maps. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling. Last updated on December 8, 2022.

[11] BAAQMD. 2022. Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en. Accessed August 2022.

policy framework for future actions, and the approval of the Climate Action Plan was exempt from the preparation of a CEQA document under Section 15262 of the CEQA Guidelines. Therefore, the Climate Action Plan does not satisfy the tiering requirement established in Section 15183.5. The Project would need to demonstrate less-than-significant climate impacts through the implementations of specific project design elements, discussed below.

Per BAAQMD's CEQA guidelines, land use development projects must include, at a minimum, the following project design elements:

1. Buildings
   a. The Project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
   b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
2. Transportation
   a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill (SB) 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
      - Residential projects: 15 percent below the existing VMT per capita
   b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of California Green Building Standards Code (CALGreen) Tier 2.

The BAAQMD's CEQA Guidelines do not require the quantification of a project's operational GHG emissions, nor does it recommend a numerical GHG emission threshold. However, the BAAQMD CEQA Guidelines state that lead agencies should quantify and disclose GHG emissions that would occur during construction. This Air Quality Technical Report (AQTR) estimates and discloses the Project's construction, interim and full buildout operational emissions of GHGs, as well as GHG emissions from the existing conditions on the Project site.

1.3.4 Odor

The Project is a mixed use commercial and residential development, and therefore is not anticipated to be a potential odor source. However, to evaluate the impact, the discussion of the Project's odor-related impacts is qualitative and involves implementation of BAAQMD's odor screening approach and compliance with BAAQMD Regulation 7. The Project's consistency with the goals and policies in the Menlo Park General Plan related to odors were evaluated. Lastly, applicability of BAAQMD Regulation 7 and the Project's consistency with Regulation 7 were reviewed.

1.3.5 Consistency with Air Quality and GHG Plans

A qualitative analysis on the Project's consistency with the applicable air quality plan and the applicable plans, policies, regulations adopted for the purpose of reducing GHG emissions was prepared and is presented in **Appendix A**. The applicable air quality plan for this analysis is the BAAQMD's 2017 Clean Air Plan.

For GHG consistency, Ramboll evaluated the Project against the State's GHG reduction strategies related to energy, mobile, water, and solid waste. Ramboll also evaluated the Project's consistency with local GHG reduction strategies, presented in **Appendix A**.

1.4 Document Organization

This scope of work is divided into seven sections as follows:

Section 1.0 – Introduction: describes the purpose and scope of the air quality analysis, the objectives and methodology that was used, and outlines the document organization.

Section 2.0 – Emission Estimates: describes the methods used to estimate CAP, GHG and TAC emissions from the Project, and includes the Project CAP and GHG emissions results and comparison to the applicable thresholds of significance.

Section 3.0 – Estimated Air Concentrations: discusses the air dispersion modeling, the selection of the dispersion models, the data used in the dispersion models (*e.g.*, terrain, meteorology, source characterization), and the identification of receptor locations evaluated in the HRA. Also includes an evaluation of carbon monoxide concentration.

Section 4.0 – Risk Characterization Methods: provides an overview of the methodology for conducting the HRA, and includes the Project HRA results and comparison to the BAAQMD thresholds of significance.

Section 5.0 – Cumulative Analysis: summarizes the approach used in the HRA cumulative analysis, and includes the Project cumulative impact results and comparison to BAAQMD thresholds of significance.

Section 6.0 – Odor Analysis: discusses the Project's construction and operational impacts related to odor generation.

2. EMISSION ESTIMATES

Project and net (Project minus Existing) CAP, TAC and GHG emissions from Project construction and operational sources were estimated. Methodologies used to calculate CAP, TAC and GHG emissions are summarized below.

2.1 Construction Emissions

A detailed construction equipment list was developed by the Project Applicant and construction team, which includes the type, quantity, construction schedule and hours of operation anticipated for each piece of equipment for each construction phase.[12] This data was used to estimate construction emissions using the same methodologies implemented within the California Emissions Estimator Model version 2022.1 (CalEEMod®).[13] It was assumed that all construction off-road equipment would be diesel powered except for those specified as electric powered. All diesel-fueled off-road equipment emissions of PM_{10} were assumed to be Diesel Particulate Matter (DPM), which is a TAC.

As indicated by the construction team, the construction activity and schedule would be the same for the 100% office and 100% R&D scenario. Therefore, the construction evaluation encompasses both scenarios.

The Proposed Project would be constructed in approximately six years with three development phases. Demolition, site preparation, and grading would occur first across the whole site. The remaining construction would then occur in three phases with discrete physical locations. There would be approximately 3 months of overlapping construction between the site preparation phase and Phase 1. There would be no overlapping construction between Phase 1 and Phase 2, and approximately 18 months of overlapping construction between Phase 2 and Phase 3. Construction is assumed to start in June 2025 and full buildout is expected to be completed in late 2031. A mix of construction equipment would operate over the course of any given day. **Table 1** shows land uses constructed by phase for the Project and **Figure 1** shows the location of each phase. **Table 2** shows a summary of the expected construction phasing and sub-phasing provided by the Project Applicant. Project construction and operation schedule by phase are shown in **Figure 2**. Construction emissions were calculated for off-road equipment, on-road vehicles, and off-gassing activities such as architectural coating and paving.

As discussed in **Section 1.3.1**, the BAAQMD CAP threshold for construction-related fugitive dust is whether or not a project would implement BAAQMD's basic Best Management Practices rather than a quantitative emissions-based threshold. Therefore, fugitive dust emissions were excluded in the comparison of the Project's construction emissions with the BAAQMD CAPs emissions thresholds. However, fugitive dust emissions were quantified and included in the health risk assessment for comparison with the BAAQMD's annual average

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[12] This schedule and equipment list is subject to change as Project details evolve. The assessment is based on the most up to date information at the time of preparation of the AQTR. The construction schedule assumes the earliest possible start date, which would result in a conservative evaluation as emissions from the construction fleet tend to decrease with time as newer, lower emitting equipment replaces older equipment.

[13] Due to the complexity of the Project, emissions were not calculated within the California Emission Estimator Model (CalEEMod) itself. However, the CalEEMod methods, assumptions, and default data, when appropriate, were used for emission calculations.

$PM_{2.5}$ concentration threshold. As discussed in Section 2.5, the Project would comply with the BAAQMD's Best Management Practices through the proposed mitigation measure.

2.1.1 Emissions from Diesel Construction Off-road Equipment

Emissions calculations associated with off-road construction equipment were based on the construction schedule and the type, size, fuel type, tier level, hours of operation and utilization factor for each piece of equipment submitted by the Project Applicant. Off-road construction equipment activities are presented in **Table 3**. For diesel-powered off-road construction equipment except for water trucks (as described below), methodologies consistent with CalEEMod were used to estimate emissions. The CalEEMod methodology for off-road construction equipment emissions relies on the ARB In-Use Off-Road Equipment model (OFFROAD2017) as well as specific emission factors by engine tier. The OFFROAD2017 model also identifies average horsepower and load factor for each type of equipment. Where Project-specific equipment information is not available, CalEEMod default values from OFFROAD2017 was used. Load factors for each piece of equipment were based on the default load factor from CalEEMod.

The Project would use a construction fleet with equipment that has Tier 4 final engines. The construction team for the Project Applicant also provided specific equipment that would be powered by electricity. The analysis for the Project incorporates these project commitments. Emissions from all diesel equipment are estimated using CalEEMod Tier 4 Final emissions rates and electric equipment is assumed to not emit CAPs.

As described above, emissions were calculated outside of CalEEMod software using the same methodologies and emissions factors as CalEEMod. Emissions were calculated using the following formula, which is consistent with CalEEMod.

$$E_C = \sum (EF_C * HP * LF * UF * Hr * Red * C)$$

Where:

E_C: off-road equipment exhaust emissions in lbs.

EF_C: emission factor (g/bhp-hr) (CalEEMod defaults)

HP: equipment horsepower (CalEEMod defaults or Project-specific)

LF: equipment load factor (CalEEMod defaults)

UF: equipment utilization percentage (Project-specific)

Hr: equipment operating hours

Red: reduction from Diesel Particulate Filter (DPF), as applicable

C: unit conversion factor

2.1.2 Emissions from Diesel On-Site Water Trucks

Water trucks are expected to be used for 2 hours a day throughout Project construction, as shown in **Table 3** based on the information provided by the Project Applicant's construction team. It is assumed that the water trucks are to be the largest possible truck type from EMFAC options, heavy heavy-duty diesel trucks (HHDT), whose emission factors were obtained from (EMFAC)2021, the ARB Emission Factors model for on-road emissions. Water trucks are assumed to travel repeatedly the greater length of the Project site at a speed of 5 miles per hour, and idle for five minutes at the end of each trip. CAP and GHG emissions from the water trucks were calculated using the same methodologies for on-road mobile sources, detailed in **Section 2.1.5**.

2.1.3 Fugitive Dust Emissions from On-Site Construction Activities

The following on-site construction sources would generate fugitive dust emissions: dismemberment and debris loading during demolition; and material movements including grading equipment passes, bulldozing, and truck loading. CalEEMod methodologies from Appendix C, Sections 4.4 and 4.5 of the CalEEMod User's Guide were used to calculate these on-site fugitive dust emissions.

As discussed in more detail below, Project emissions calculations do not include reductions from watering. A mitigated scenario was evaluated to identify the reduction in fugitive dust from watering that would result from implementing the BAAQMD's best management practices (BMPs) for fugitive dust.

2.1.3.1 Demolition

Fugitive dust emissions from mechanical dismemberment and debris loading during demolition were estimated using CalEEMod methodology and assumptions. The emission factor was calculated on a per-ton of building waste weight. Building waste weight was estimated based on the square footage of the buildings that would be demolished. While there may be minor miscellaneous demolition activities in Phases 2 and 3, demolition material was conservatively assumed to be removed in Phase 1. Therefore, demolition fugitive dust emissions were not estimated for Phases 2 and 3.

The mitigated modeling scenario emissions assume a 36% reduction due to watering two times a day, which is consistent with the BAAQMD's Best Management Practices (BMPs) for construction. Fugitive dust emissions from demolition are presented in **Table 5**.

2.1.3.2 Grading

Fugitive dust emissions from grading equipment (i.e., graders and scrapers) occur during the grading and utility phases. Grading emissions were estimated using CalEEMod methodology and assumptions. The emission factor for grading is calculated on a per-VMT basis. Equipment VMT was calculated using the maximum area disturbed per day, based on Project-specific data and CalEEMod default assumptions.

The mitigated emissions assume a 61% reduction due to watering two times a day, which is consistent with the BAAQMD's construction BMPs. Fugitive dust emissions from grading activities are presented in **Table 6**.

2.1.3.3 Bulldozing

Similar to grading equipment, bulldozing generates fugitive $PM_{2.5}$ emissions. The bulldozing emission factors were derived in CalEEMod based on material moisture content and silt content, consistent with the AP-42 methodologies. Emissions from bulldozing operations were calculated using CalEEMod default emission factors and hours of active operations for the dozers provided in **Table 3**.

The mitigated emissions assume a 61% reduction due to watering two times a day, which is consistent with the BAAQMD's construction BMPs. Bulldozing emissions of fugitive dust are presented in **Table 7**.

2.1.3.4 Material Loading

Fugitive dust from material loading activities includes the unloading of construction materials and loading of soil onto the haul trucks during the grading and utilities excavation phases. Material loading fugitive dust emissions were estimated using CalEEMod methodology and assumptions. The emission factor for material loading is calculated on a per-ton basis. Material loaded in cubic yards is based on Project-specific data provided by the Project construction team, as shown in **Table 4**.

The mitigated emissions assume a 61% reduction due to watering two times a day, which is consistent with the BAAQMD's construction BMPs. Fugitive dust emissions from material loading are presented in **Table 8**.

2.1.4 Emissions from Electric Construction Equipment

GHG emissions from the use of electrical off-road equipment were estimated based on type and usage of each equipment. **Table 3** specifies the equipment that are electrically powered. Yearly electricity consumption by construction equipment was estimated in order to calculate emissions by multiplying the carbon dioxide equivalents (CO_2e) intensity factor with the electricity consumption for each year. Any CAP emissions associated with the generation of electricity used in electrical off-road equipment were not quantified as part of the Project.

2.1.5 Construction On-road Mobile Sources

Construction trip rates were provided by the Project Applicant for each phase. Default trip lengths for vendors, workers, and hauling from Appendix C, Section 4.6.2 of the CalEEMod User's Guide were used in the analysis. Demolition and grading hauling trip generation rates were also provided by Project Applicant. Estimated trips are shown in **Table 4**.

Emission factors from EMFAC2021 were used for emissions of CAPs and GHGs. The emission factors used for construction of the Proposed Project cover the years 2025 through 2031, the anticipated years of construction.

Running exhaust, running loss (*i.e.*, evaporation), tire wear, and brake wear emission factors were estimated with a gram/mile factor. These emissions were calculated as shown below:

$$E_M = \sum (EF_M * VMT)$$

Where:

VMT: Trip Length*Trip Number

EF_M: emission factor in gram per mile (g/mile) from EMFAC2021 for a pollutant represented by the variable M

Emissions from vehicle idling exhaust, starting exhaust, and evaporative emissions were estimated with a gram per trip (g/trip) emission factor. Idling emission factors were only estimated for heavy duty trucks as idling emissions occur during extended idling events for these trucks, and EMFAC2021 takes account of idling emissions from light duty vehicles and other vehicle types in running emissions estimates. These emissions were estimated as shown below:

$$E_T = \sum (EF_T * Trip\ Number)$$

Where:

EF_T = emissions factor (g/trip) from EMFAC2021 for a pollutant represented by the variable T

Trip Number = trips provided by Project Applicant

Idle time is consistent with California Airborne Toxics Control Measure (ATCM) to limit diesel-fueled commercial motor vehicle idling (Title 13, CCR, section 2485) and construction best management practices recommended by BAAQMD.

Vehicles driving on roadways also emit $PM_{2.5}$ and PM_{10} in the form of re-suspended road dust. $PM_{2.5}$ emissions from re-suspended road dust were estimated using guidance from the California ARB and are shown in **Table 9**.[14] Emission factors for streets in Menlo Park were adjusted to account for Menlo Park's street sweeping program.[15] The $PM_{2.5}$ and PM_{10} re-suspended road dust emission factors were reduced by 26% for street sweeping for arterial/collector streets, based on South Coast Air Quality Management District's (SCAQMD) Fugitive Dust Table XI-C.[16] This guidance was used due to the absence of guidance from the BAAQMD and because the factors are derived from roads and traffic patterns that are substantially similar to the roads and traffic patterns in the Bay Area. $PM_{2.5}$ and PM_{10} fugitive dust emissions were not be included in the comparison to BAAQMD's emissions thresholds for construction, but $PM_{2.5}$ were included in the comparison to annual average $PM_{2.5}$ concentration.

2.1.6 Architectural Coatings and Paving Off-Gas Emissions

Emissions from architectural coating and paving off-gas emissions were estimated using methodologies consistent with CalEEMod.

Architectural coating emissions were based on the square footage of different land uses as well as CalEEMod defaults regarding the amount of coated areas for the various land uses. Emissions from architectural coating during Project construction assumes compliance with BAAQMD paint Volatile organic compound (VOC) regulations. Emissions from architectural coatings are presented in **Table 10**.

Paving emissions were based on the square footage of streets and parking lots with impervious surface, which was provided by the Project Applicant. The total amount of impervious surface is conservatively assumed to be paved with asphalt. Asphalt off-gassing emissions from the Project was calculated using default CalEEMod methodologies and factors, as shown in **Table 11**.

2.1.7 Construction CAP and GHG Emissions Summary

A summary of maximum annual average daily construction CAP emissions is shown in **Summary Table A**, below. More detail on construction CAP emissions from the Project is

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[14] California Air Resources Board. 2021. Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust. March. Available online at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf

[15] The City has a comprehensive street sweeping program where every residential and commercial street is swept on a regular basis. The frequency changes depending on the time of year and all streets are maintained at the same level of frequency.

[16] SCAQMD. 2007. Table XI-C Mitigation Measure Examples: Dust From Paved Roads. Available online at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust

provided in **Table 12**. CAP emissions are reported in units of annual average daily emissions for each year of construction.

Total GHG emissions for construction are summarized in **Table 13**. GHG emissions are reported in total metric tons of carbon dioxide equivalents.

For construction that will occur throughout the full year, annual emissions were conservatively averaged over the number of business days per year to give average daily emissions in lbs per day to get an average emission rate to compare against thresholds. Construction will not occur throughout the full year during the first and last years of construction. In these scenarios, the annual construction emissions for the first and last years were averaged over the number of business days from the beginning to the end of the partial year of construction. **Table 14** presents the daily construction CAP emissions and total GHG emissions for the entire construction duration, respectively.

As discussed in Section 2.5, the BAAQMD CAP threshold for fugitive dust is whether or not a project would implement BAAQMD's basic Best Management Practices. The Project would comply with the BAAQMD's basic Best Management Practices through the proposed mitigation measure.

Summary Table A. Summary of Maximum Annual Average Daily Construction CAP Emissions and Total Construction GHG Emissions

	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
	lb/day				MT
BAAQMD Threshold of Significance	54	54	82	54	--
Construction Emissions	36	13	0.64	0.31	5,093
Exceed Threshold?	No	No	No	No	--
Source: Table 12, Table 13, and Table 14					

2.2 Operational Emissions

The net (Project minus existing) CAP, GHG and TAC operational emissions were evaluated. Sources of operational emissions from the existing conditions and the Project include operation of the buildings (area, energy, water, waste, landscaping), stationary sources such as emergency diesel generators and laboratories, and mobile sources including on-road vehicles. The existing site has stationary sources such as a cogeneration plant, emergency generators, and laboratories. The Project would decommission the cogeneration plant, demolish select existing laboratories, and remove select existing stationary sources on site and introduce new emergency diesel generators and laboratories. Existing emergency generators and laboratories associated with the remaining three SRI buildings will also remain. These remaining existing generators would not be affected by the Project and are thus not included in the existing scenario or the Project scenario.

Operational emissions that are concurrent with construction activities are presented by construction phase in order to determine the combined construction and operational emissions for each year of construction, as discussed further in **Section 2.3**. Partial buildout emissions for operational emissions were scaled using the portion of the Project that would become operational in each year of construction, as shown in **Table 15**. For a given calendar year when a part of the Project is operational and another part of the Project is being constructed, total emissions that would occur in that calendar year from Project construction and Project operation were summed for annual total emissions. Average daily emissions were calculated by dividing the annual total emissions by the number of days (365 days).

Project and existing operational emissions were estimated using CalEEMod equivalent methodologies. Unless stated otherwise, below, Project and existing operational emissions used the same methodologies.

Ramboll evaluated which land use scenario (i.e., either the 100% office or 100% R&D) would result in higher emissions for each emissions category to provide a conservative assessment of Project emissions. Both land use scenarios would result in similar emissions for landscaping, architectural coatings and consumer products emissions categories. The 100% R&D land use scenario would result in higher emissions for on-road mobile, stationary sources, and laboratories based on activity data provided. Therefore, the emissions are based on the 100% R&D scenario. This scenario represents a conservative estimate, since the Project would likely incorporate a mix of office and R&D land uses when built out.

Ramboll evaluated two modeled scenarios for emissions from operations. The first does not involve any mitigation measures to reduce operational emissions. This scenario will be referred to as the unmitigated scenario. The second scenario evaluated specific emission mitigation measures, as discussed further below. The second scenario will be discussed herein as the mitigated scenario. Unless explicitly stated, the calculation methodologies are the same for the unmitigated scenario and the mitigated scenario.

2.2.1 Operational On-road Mobile Sources

Emissions were evaluated based on the daily trip generation for the 100% R&D land use scenario for the Project and general office building land use for existing conditions based on information provided by the transportation consultant.

Vehicles on the roadway emit CAPs, TACs, and GHGs in their exhaust and through evaporation, tire wear, brake wear, and re-suspended road dust. Mobile emissions were calculated using Project-specific trip generation and VMT using emission factors from EMFAC2021 for San Mateo County and road dust emission factors consistent with CalEEMod methodologies. More details regarding this calculation are provided below.

2.2.1.1 Vehicle Trips and VMT

Project traffic would include residential and employee trips as well as service vehicle and vendor trips, and retail and commercial trips. The transportation consultant (Hexagon) provided project-specific daily vehicle trips and total VMT for all trip types in addition to providing vehicle trips and VMT for existing conditions. The transportation data request provided from the transportation consultant can be found in **Appendix D**.

The Project's trip generation provided by the transportation consultant incorporates the Project's Transportation Demand Management (TDM) program reduction of 25 percent for residential and non-residential, which is incorporated into the emissions for both the unmitigated scenario and the mitigated scenario.

Since the transportation consultant provided only weekday trip rates, weekend trip rates were estimated in order to calculate an average daily trip rate for each land use and fleet category. Weekday trip rates provided by the transportation consultant were scaled using the default weekday-to-weekend trip ratio derived from CalEEMod trip rates by land use. Average daily trip rates were then calculated as a weighted average of the weekday and weekend trip rates. The daily trip rates and daily VMT are summarized in **Table 16** for baseline, full buildout, and partial buildout.

2.2.1.2 Emission Factors

Mobile emission factors from running, idling, and starting vehicle exhaust, as well as evaporative running loss, tire wear, and brake wear emissions were calculated using EMFAC2021 for San Mateo County. Because the Project is a mixed-use infill development, mobile trips generated by the Project are not expected to include buses or motor homes. The adjusted fleet mix is presented in **Table 17**. Running exhaust, running loss evaporative, tire wear, and brake wear emissions were determined using factors with units of g/mile while idling and starting exhaust and other evaporative emissions were determined using factors with units of g/trip.

For a given calendar year, total emissions from EMFAC2021 were converted to emission factors using the total VMT. The average emission factor for each fleet category were then calculated using the ratio of VMT between vehicle classes.

Emission factors were calculated for the following calendar years: existing conditions (2022), end of Phase 1 (2029), end of Phase 2 (2031), and the first year of full buildout operations (2031). Mobile emissions during interim operational years not listed above were calculated using the same emission factors from the closest year, e.g., 2030 operational emissions from Phase 1 were conservatively calculated using the average emission factors from year 2029. The fleet-average mobile emission factors decrease over time due to fleet turnover and regulations such as Advanced Clean Cars (ACC).

Tables 18 and **19** show the EMFAC CAP and GHG emission factors based on default EMFAC fleet mix for existing, interim, and Project buildout years. Emission factors for the Project are representative of gasoline, diesel, electric, plug-in hybrid and natural gas vehicles. The emission factors incorporate EMFAC's default electrification assumptions and account for the GHG emissions reductions and CAP emissions associated with electric vehicle usage.

Vehicles driving on roadways would also emit $PM_{2.5}$ and PM_{10} in the form of re-suspended road dust as described in **Section 2.1.3**. Emission factors are shown in **Table 9.** Road dust $PM_{2.5}$ and PM_{10} emissions were added to exhaust $PM_{2.5}$ and PM_{10} emissions for comparison against BAAQMD's total operational $PM_{2.5}$ and PM_{10} mass emissions significance thresholds.

2.2.1.3 Emissions

Emission factors for each vehicle class were multiplied by the annual trips or VMT, depending on the emission process described above (e.g., running exhaust versus idling exhaust). For partial buildout years, the emissions were scaled by the proportion that each land use was operational during each year of construction, as shown in **Table 15**.

Mobile CAP and GHG emissions are summarized in **Table 20**.

2.2.2 Laboratory Chemical Usage

In the 100% R&D buildout scenario, wet laboratories may occupy the commercial buildings. Chemicals that emit ROGs and TACs may be used in these wet laboratories.[17] The chemicals used or types of laboratories that would occupy the buildings are not known at this time. Therefore, a conservative estimate of emissions was prepared.

TAC emission factors of laboratory chemicals were adapted from the HRA conducted for the EIR of the University of California Davis 2017 Long Range Development Plan (LRDP).[18]

The emission factors used for the laboratory chemicals, expressed as grams per second emissions per square foot of wet laboratory space (g/s per ft^2), were obtained from page 29 of Appendix 2 from the LRDP HRA. The LRDP provides emission rates for three laboratory types:

- Lab Type I = Chemistry and Chemical Engineering;
- Lab Type II = General Biological Sciences; and
- Lab Type III = Physical Sciences/Other (Engineering, Geology, Physics, etc.).

To be conservative, the Lab Type with the worst-case health impacts by health endpoint among the three Lab Types was evaluated and used for the HRA analysis. TAC emissions for each Lab Type were weighted based on each TAC's toxicity (inhalation cancer potency factor [CPF]). Lab Type I was used in the analysis because it has the highest toxicity-weighted TAC emissions. Lab Type I also resulted in the largest ROG emissions. TAC emission rates per laboratory square foot are summarized in **Table 21**.

Total emissions were calculated assuming operation 24 hours a day and 365 days a year, consistent with the LRDP analysis, and using the maximum possible square footage of wet laboratory space. According to the Project architects, a maximum of 50% of the building could possibly be wet laboratory space if the whole building were dedicated to wet laboratory. The other 50% of the building square footage would be offices, hallways and corridors, mechanical space and support space. Therefore, maximum laboratory emissions were calculated assuming 50% of the commercial land use is wet laboratory.

ROG emissions from use of laboratory chemicals were conservatively estimated by assuming all the laboratory TACs are considered ROG and are presented in **Table 22**.

There are also currently wet laboratories onsite under the existing conditions. However, chemical usage onsite is not known at this time since it is proprietary. Therefore, a similar analysis was performed for the existing conditions. Similar to the Project, the existing square footage of wet laboratories was assumed to be 50% of all buildings that will be demolished and are known to have wet laboratories. This area was used to estimate ROG emissions and is presented in **Table 22**.

2.2.3 On-site Stationary Sources

The Project would include new emergency generators. The 100% R&D scenario and 100% office scenario would require the same number of generators. However, the generators

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[17] Wet laboratories are laboratories that are equipped with appropriate plumbing, ventilation, and equipment to allow for scientific research and experimentation with various types of chemicals and hazardous substances.

[18] Yorke Engineering, LLC, 2018. Health Risk Assessment for the University of California, Davis, 2017 Long Range Development Plan. January.

associated with the R&D buildings would be larger. Therefore, the 100% R&D scenario would result in more emissions and was analyzed.

The Project would also include the removal of three emergency generators and the cogeneration plant under the existing conditions.

The BAAQMD's 2022 CEQA Guidelines recommend including emergency operations in estimating CAP and TAC emissions from emergency generators, in addition to testing and maintenance operations. Based on historical runtime of existing emergency generators on SRI campus, the combined operational hours from engine testing, maintenance and emergency operations for any given existing generator do not exceed 50 hours a year.[19] Therefore, 50 hours of operation were assumed in the emissions estimates and health risk assessment to represent emergency use and testing and maintenance.

Generator information, such as size of engine, quantity, location and engine tier, was provided by the Project Applicant. $PM_{2.5}$ and PM_{10} emissions were calculated using emission factors based on ARB engine tier standards for diesel generator engines. A default load factor of 0.73, consistent with CalEEMod's methodology for emergency generators, was applied to account for the ramping up of the engine loads during testing and emergency use. NO_x, total organic gases (TOG), and ROG emissions were calculated by converting non-methane hydrocarbon emission factor values provided in ARB's Tier standards to the intended emission factors using EPA conversion factors. GHG emissions were calculated using CalEEMod default emission factors. All emission factors can be found in **Table 23**. A summary of on-site generator emissions can be found in **Table 24**.

The reduction in CAP, TAC and GHG emissions from the removal of three existing generators was also estimated using specific generator information and estimates of historical run time. Existing generators at Buildings A, L, and U would be removed as part of the Project and were included in the existing conditions. Four existing generators at Buildings P, S and T would remain unchanged as part of the Project, so were not considered in the existing conditions. Emissions from the existing generators at Buildings A, L, and U are presented in **Table 25**.

The reduction in emissions from the removal of the existing cogeneration plant was calculated based on its natural gas consumption over the course of 12 months under the existing conditions, which was provided by the site's current tenant. More details on the cogeneration plant's emissions of CAPs and GHGs is discussed in Section2.2.4 , below. The removal of the cogeneration facility would also reduce emissions of TACs locally. TAC emission factors of natural gas combustion were based on California Air Toxics Emission Factor (CATEF) data for natural gas turbines. To be conservative, lower values were selected for a given TAC species. TAC emission factors and total emissions from the cogeneration plant are presented in **Table 26.** More details on emissions of CAPs and GHGs are provided in Section 2.2.4, below.

2.2.4 Energy

Typically, energy emissions include indirect emissions from electricity used by buildings and direct natural gas combustion emissions. Indirect emissions are typically due to electricity generation from off-site power plant locations. Emissions from natural gas combustion can

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[19] SRI, 2023. Email attachment titled "SRI generator runtimes 2019-2022" from John Donato at SRI to Sarah Manzano at Ramboll. April 27.

be generated from commercial usage (e.g., cooking and heating) and industrial usage (e.g., boilers).

The maximum impact scenario for energy emissions is the 100% R&D scenario, because R&D land uses may require additional energy for laboratory equipment such as fume hoods and refrigeration, compared to general office land uses. In an effort to reduce GHG emissions, we understand the Project would be entirely electrically powered, and would purchase 100-percent carbon free electricity, consistent with code requirements. Electricity use for the Proposed Project was calculated based on Project-specific energy use studies and would not generate any GHG emissions.

Pacific Gas and Electric's (PG&E) estimated carbon intensity factors for existing conditions, for concurrent construction and operation and for full buildout are shown in **Table 27** and are based on the criteria established in the California's Renewable Portfolio Standard. **Table 27** also summarizes emission factors for natural gas use. CAP emission factors were based on AP 42 Chapter 3.1 for stationary gas turbines. GHG emission factors were based on ARB's regulation for mandatory GHG reporting.[20]

Under the existing conditions, the buildings receive energy from the cogeneration facility in the form of electricity and steam and use natural gas and electricity from PG&E. The cogeneration facility produces more electricity than is used onsite, so energy is exported back to the grid to be used off-site. After the cogeneration facility is removed as a result of the Project, the exported electricity would need to be generated by the utility using other production methods. This additional electricity generation needed as a result of the removal of the cogeneration facility is accounted for in the analysis as a reduction in existing emissions, thereby reducing the emissions of the existing conditions. **Table 28** summarizes the energy use associated with the cogeneration facility and existing buildings.

Table 29 shows the existing conditions emissions from natural gas use at the cogeneration facility and the natural gas used directly in the existing buildings.

After the Project's removal of the cogeneration facility, Buildings P, S and T will remain in operation by SRI and its tenants, and would need to obtain electricity and heat from the utility provider for those ongoing operations. As a result, Buildings P, S and T must obtain energy from the PG&E utility provider due to the Project's removal of the cogeneration facility. While Buildings P, S and T are not part of the Project, the resulting increase in energy from the utility for these buildings is conservatively included in this analysis. **Table 28** shows the additional electricity and natural gas use that would need to be purchased from the utility as a result of the removal of the cogeneration facility. The usage and emissions are shown as negative sums because accounting for this additional energy usage would reduce the Project's total emissions reductions.

A summary of electricity use and emissions for existing and Project conditions are shown in **Table 30**. For existing conditions, emissions from the electricity used from PG&E are shown as well as the additional emissions associated with the replacement of electricity that will no longer be exported to the grid and to power Buildings P, S and T. Emissions from the cogeneration facility itself are shown in **Table 28**.

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[20] Table C-1 and C-2 from US EPA Title 40, Code of Federal Regulations (CFR), Part 98 (April 25, 2011), as incorporated by CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (title 17, California Code of Regulations (CCR), sections 95100-95157) (MRR)

The Project would also include the installation of solar photovoltaic (PV) arrays. The amount of PV arrays and associated electricity production was not known at the time of analysis, therefore a reduction in electricity use was conservatively not included in the analysis.

2.2.5 Water and Wastewater

Indirect GHG emissions would result from the electricity used to convey, treat, and distribute water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of the water. Indirect emissions from electricity to supply, treat, and distribute water decrease over time as the carbon intensity of electricity decreases. Additional emissions from wastewater treatment include methane (CH_4) and nitrous oxide (N_2O), which are emitted directly from the wastewater.

GHG emissions from water and wastewater sources at the existing site were evaluated for a 12-month period based on the utility bills provided by the site's current tenant. To separate indoor and outdoor water usage rates to align calculations with CalEEMod, outdoor water usage rates were calculated by multiplying the full buildout outdoor water use by the ratio of existing landscaping area to Project landscaping area. Indoor water usage rates were calculated by subtracting the outdoor water usage from the total water use as shown on utility statements. Water consumption at the existing site is provided in **Table 31**.

The maximum impact scenario for water and wastewater emissions is the 100% R&D scenario, because R&D land uses may require additional water uses and wastewater generation for laboratory operations, compared to general office land uses. Indoor and outdoor water use rates for the Project were based on Project-specific data, which is summarized in **Table 31**.

Emissions from water and wastewater for both existing and Proposed Project conditions were calculated using CalEEMod methodologies. GHG emissions are based on emissions from the treatment of the water itself and the electricity use associated with water treatment and transport. Emission factors for water treatment were based on CalEEMod defaults for San Mateo County. Water treatment emissions are only applied to indoor water that is sent to wastewater. Electricity used to treat and transport water was estimated using CalEEMod default electricity use rates.

The electricity used to treat and transport the water to the site is not under the control of the Project and therefore cannot be guaranteed to be generated with 100% renewable energy. Therefore, GHG emissions from water transport were based on the grid average carbon intensity of PG&E. PG&E's estimated carbon intensity factor is shown in **Table 27**.

Water and wastewater emissions are summarized in **Table 32**.

2.2.6 Solid Waste Disposal

Emissions from the transport and processing of solid waste were calculated using solid waste generation rates provided by the City for the Project and existing conditions, which were based on the City's 2021 actual disposal rates on a per resident or per employee basis. The City did not provide a waste generation rate for the retail land use; therefore, the CalEEMod default waste generation rate was used. Indirect GHG emissions associated with waste disposal include CH_4 generation from the decomposition of waste and the carbon dioxide (CO_2) emissions associated with the combustion of CH_4, if applicable. GHG emissions associated with non-landfill diverted waste streams were not considered because it is generally assumed that these diversions do not result in any appreciable amounts of GHG emissions.

CO_2 emissions from solid waste disposal are considered Biogenic and are reported in **Table 33**. GHG emissions from solid waste disposal sources under existing conditions and under the Project were estimated using solid waste landfill gas emission factors from CalEEMod.

2.2.7 Refrigerants

Refrigerants are substances used in equipment for air conditioning (A/C) and refrigeration. Most of the refrigerants used today are hydrofluorocarbons (HFCs) or blends thereof, which would contribute to global warming. Two main sources of refrigerant emissions are present for the existing conditions and the Project: refrigerant leakage from the existing and proposed land uses and from vehicular A/C systems.

Average annual GHG emissions from refrigerants for both existing conditions and the Project are presented in **Table 34**. GHG emissions were determined using CalEEMod equivalent methodologies, which includes default assumptions for the equipment charge size, annual operational leak rate, service leak rate, number of times serviced, equipment lifetime, and refrigerant specific Global Warming Potential (GWP) to quantify the refrigerant emissions from leaks during regular operation and routine servicing over the equipment lifetime. The types of refrigeration equipment used for both existing and Project conditions would be for Office/R&D, residential, and retail land use types and include refrigerators, freezers, air conditioners, and heat pumps – all of which emit either R-134a, R-404a or R-410a refrigerants.

HFC emissions (assumed to be HFC-134a) from on-road mobile sources are primarily from refrigerant leakage, which increases when A/C units are in operation. HFC emission factors are based on information provided by ARB and are calculated using a top-down approach (i.e., the factors are derived from total emission inventory estimates and activity data). HFC emission factors, presented in **Table 19**, are calculated as a running loss rate (g/hr) and can be converted to a grams/mile rate by assuming a fleet-average vehicle speed. Using the HFC emission factors, annual VMT, and HFC-134a GWP, the GHG emissions from on-road mobile sources emitting HFC were calculated for both existing and Project conditions and summarized in **Table 20**.

2.2.8 Area Sources

The 100% R&D scenario and the 100% office scenario would generate approximately the same level of impacts related to area source emissions, because CalEEMod default methodologies do not differentiate between these two land uses. GHG and CAP emissions from area sources, such as landscaping equipment, consumer products, and architectural coating, were estimated using CalEEMod default values and equivalent methodologies based on the type and size of land uses associated with the Proposed Project as listed in **Table 1**. The residential units would not include any hearths, so emissions from hearths were not estimated.

2.2.8.1 Landscaping equipment

GHG and CAP emissions from landscaping equipment were estimated for the existing conditions and Project based on the building sizes and CalEEMod default landscaping equipment lists for residential and non-residential land uses. To be conservative, all CalEEMod default landscaping equipment were assumed to be used except for snowblowers, which are not expected for this Project’s climate. Under the unmitigated scenario, the

Project's landscaping equipment were assumed to be fossil fuel powered. For the mitigated scenario, zero-emission electric landscaping equipment were assumed to be used.

Landscaping emissions from the unmitigated and mitigated scenarios are summarized in **Table 35** and **Table 36**, respectively.

2.2.8.2 Architectural Coating

Operational architectural coatings include the reapplication of paint and coatings on interior and exterior surfaces, which result in emissions of ROG. CalEEMod default assumptions were used to calculate the building surface area that would be coated, as well as the application rate and indoor and outdoor ROG emission factors based on BAAQMD Regulation 8 Rule 3 paint VOC regulations. The unmitigated architectural coating emissions are summarized in **Table 37**. Mitigated emissions assume that Project indoor and outdoor painting would utilize super-compliant coatings, which are paints that have been reformulated to exceed the SCAQMD 's Rule 1113 (Architectural Coatings) requirements,[21] as shown in **Table 38**.

2.2.8.3 Consumer Products

Consumer product emissions come from various non-industrial solvents, including cleaning supplies, kitchen aerosols, cosmetics, and toiletries, which emit ROG during their use.

CalEEMod provides a statewide consumer products emission factor based on the ARB 2008 emissions inventory. For this analysis, a San Mateo County specific emission factor was developed based on the emissions from consumer products from the ARB 2020 emissions inventory for San Mateo County and the building square footage in the county using the same methodologies utilized in CalEEMod. The consumer product emission factor for commercial and residential land uses is shown in **Table 39**. The emission factor for the parking area and parks are the default values for the land uses from the CalEEMod User's Guide.

Consumer product emissions are summarized in **Table 40**.

2.2.9 Net Operational CAP and GHG Emissions

As discussed above, the Project would replace several of the existing buildings on the Project site as well as remove some existing stationary sources, including the cogeneration plant, several emergency generators, and laboratory chemical use from the existing buildings that will be demolished. Therefore, total operational emissions associated with the Project would be the difference between emissions from the new land uses and emissions from existing land uses that would no longer be present. Existing emissions were subtracted from Project emissions to calculate net emissions. Annual operational emissions of the Project were averaged over 365 days to provide average daily operational emissions.

Net unmitigated and mitigated CAP emissions are summarized in **Table 41** and **Table 42**, respectively. Operational GHG emissions are summarized by source category in **Table 43**. Summary **Table B**, below, compares operational CAP emissions to the applicable thresholds of significance.

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[21] Assumes "super compliant" architectural coatings for indoor building surfaces based on more stringent VOC limits from South Coast Air Quality Management District (SCAQMD) Rule 1113. South Coast Air Quality Management District. Super Compliant Architectural Coatings per Rule 1113. Available at: http://www.aqmd.gov/home/programs/business/business-detail?title=super-compliant-coatings&parent=other-low-voc-products.

Summary Table B. Summary of Maximum Annual Average Daily Net Operational CAP Emissions and Annual Net Operational GHG Emissions

	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
	lb/day				MT/year
BAAQMD Threshold of Significance	54	54	82	54	N/A
Unmitigated Emissions[1]	56.2	-105	16	-3.5	-12,505
Exceed Threshold?	*Yes*	*No*	*No*	*No*	--
Mitigated Emissions	36	-106	16	-3.7	-12,505
Exceed Threshold?	*No*	*No*	*No*	*No*	--

Source: Table 41, Table 42, and Table 43.
Note 1: The unmitigated emissions do not take into account mitigation measures for low VOC architectural coatings or all-electric landscaping equipment. Both are mitigation measures that are incorporated into the mitigated operational emissions.

2.3 Construction and Operational Emissions by Year

This analysis conservatively assumes that the buildings constructed in each phase of the construction program would be occupied and fully operational upon the completion of their construction phase. This is conservative because occupancy and operation of each phase would likely ramp up over time after construction of the building is completed.

Construction emissions were compared to average daily construction emissions thresholds. For construction that would occur throughout the full year, annual construction emissions were be averaged over the number of work days in each year to provide average daily emissions in pounds per day since construction is anticipated to occur only on workdays. Construction would not occur throughout the full year during the first and last years of construction. In these scenarios, the annual construction emissions for the first and last years were averaged over the number of work days construction will occur in the respective year.

During Project operation, annual operational emissions were averaged over 365 days to give average daily operational emissions. Operation is not expected to occur throughout the full year during the first year of operation. Thus, the operational emissions from the first year were averaged over 365 days to be combined with construction emissions.

Construction is expected to occur during Project operation because the Project is phased. When construction is scheduled to coincide with Project operation, annual construction emissions were combined with annual operational emissions. The combined annual construction and operational emissions were averaged over 365 days and compared with operational average daily thresholds, as shown in **Table 44** and **Table 45**. Summary **Table**

C, below, summarizes the maximum daily average CAP emissions during the Project's interim operations when construction and operations will occur at the same time, which is expected to occur in 2031.

The BAAQMD CAP threshold for fugitive dust is whether or not a project would implement BAAQMD's basic Best Management Practices. As discussed in Section 2.5, the Project would comply with the BAAQMD's basic Best Management Practices through the proposed mitigation measure.

Summary Table C. Summary of Annual Average Daily Net Construction and Operational CAP Emissions for Maximum Year

	ROG	**NO$_X$**	**PM$_{10}$**	**PM$_{2.5}$**
	lb/day			
BAAQMD Threshold of Significance	54	54	82	54
Unmitigated Emissions	34	-108	11	-4.6
Exceed Threshold?	No	No	No	No
Mitigated Emissions	21	-109	10	-4.7
Exceed Threshold?	No	No	No	No
Source: Table 44 and Table 45				

2.4 Climate Impacts from Greenhouse Gas Emissions

As discussed in **Section 1.3.3**, BAAQMD's proposed thresholds of significance for GHG are based on whether or not the Project incorporates specific design and transportation features. The Project's consistency with those design elements associated with GHG significance is discussed in detail in **Summary Table D**, below. The Project is consistent with the design elements for natural gas usage, efficient energy usage, and electric vehicle charging. A separate study conducted by the City's Transportation Engineer will analyze the Project's potential VMT impact as compared to the City's reduction thresholds.

Summary Table D. Project Consistency with Design Elements Associated with GHG Significance

	Requirement	**Project Consistency**
Buildings	No natural Gas	**Consistent.** The Project will not include natural gas use in the new construction.
	No wasteful, inefficient, or unnecessary energy usage	**Consistent**. As discussed in Ramboll's memo "Assessment of Energy Use for the Parkline Project Menlo Park, CA" the Project would result in a reduction in energy use compared to existing conditions.

Transportation	VMT Reduction	**To be determined.** A separate transportation evaluation for the project will analyze the consistency of the Project's VMT with the City's reduction thresholds.
	Electric Vehicle Charging	**Consistent.** The Project will include electric vehicle charging in compliance with the most recently adopted version of CALGreen Tier 2. Consistent with the Tier 2 requirements in Table A5.106.5.3.2 of CALGreen, 45% of the Project's parking spaces will be EV capable and 33% of those spaces would have electric vehicle supply equipment.

2.5 Proposed Mitigation Measures

As discussed, several mitigation measures were incorporated into the analysis of the Project's construction and operational emissions.

The mitigation measures for Project operations are summarized below:

Landscaping Equipment. The applicant shall use all-electric landscaping equipment, which eliminates all CAP emissions associated with landscaping activities.

Architectural Coatings. The applicant shall use super-compliant architectural coatings during construction and operation for all buildings, which shall have VOC content that meet SCAQMD Rule 1113 Architectural Coatings as revised on February 5, 2016.

The mitigation measure for the Project construction is presented below:

Construction Fugitive Dust Emissions. The following BAAQMD BMPs for fugitive dust control shall be required for all construction activities within the project area. These measures would reduce fugitive dust emissions primarily during soil movement and grading, but also during vehicle and equipment movement on unpaved project sites.

Basic BMPs that Apply to All Construction Sites

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All streets, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulation [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. A publicly visible sign shall be posted with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action, if necessary, within 48 hours. BAAQMD’s phone number shall also be visible to ensure compliance with applicable regulations.

3. ESTIMATED AIR CONCENTRATIONS

To evaluate the health risks and concentrations of air toxics upon the surrounding community, BAAQMD recommends estimating concentrations using air pollution dispersion modeling. The methodologies used to evaluate emissions for the Proposed Project and cumulative HRA are based on the most recent BAAQMD CEQA Guidelines,[22] the most recent Air Toxics Hot Spots Program Risk Assessment Guidelines,[23] and BAAQMD's HRA guidelines.[24,25]

As discussed above, construction activities and schedule would be the same for 100% office and 100% R&D land use scenarios, so concentrations of TACs from Project construction would be the same for both scenarios. The R&D land uses would require larger emergency backup generators compared to the 100% office scenario and therefore would result in more emissions. TAC concentrations from operational diesel and gasoline vehicles were estimated based on the 100% R&D land use scenario as it also would generate the highest volumes of traffic, based on information provided by the transportation consultant.

3.1 Chemical Selection and Sources of Emissions

The Project would emit TACs from the combustion of gasoline and diesel fuels. The cancer risk and chronic non-cancer analyses in the HRA for the Project were based on DPM concentrations from diesel combustion and TOG concentrations from gasoline combustion. The existing conditions also emit DPM from the combustion of diesel fuels, and other gaseous TAC species from the combustion of natural gas.

Diesel exhaust, a complex mixture that includes hundreds of individual constituents, is identified by the State of California as a known carcinogen.[26] Under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. California Environmental Protection Agency (Cal/EPA) and other proponents of using the surrogate approach to quantifying cancer risks and non-cancer chronic HI associated with the diesel mixture indicate that this method is preferable to use of a component-based approach. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it underestimates the risks and HI associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known

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[22] BAAQMD. 2023. 2022 California Environmental Quality Act Air Quality Guidelines. April. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

[23] Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[24] BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines, Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. April. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

[25] BAAQMD. 2011. Recommended Methods for Screening and Modeling Local Risks and Hazards. Table 14 and 15. May. Available at: https://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx

[26] California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment (OEHHA). 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting.

and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, Cal/EPA has concluded that "potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components."[27] BAAQMD states "diesel exhaust particulate matter should be used as a surrogate for all TAC emissions from diesel-fueled compression-ignition internal combustion engines."[28]

The Cal/EPA-approved toxicity values for DPM were used to evaluate health impacts from construction and operational diesel fueled sources.[29]

As discussed in more detail below, the health risk assessment also incorporates emissions of TOG from gasoline-fueled vehicles and emissions from exhaust of natural gas combustion at the existing cogeneration plant. Emissions of TOG from gasoline-fueled vehicles were speciated using organic chemical profiles from BAAQMD as shown in **Table 46**.[30,31] TAC emission factors from CATEF are summarized in **Table 26**. The Cal/EPA-approved toxicity values for each TAC were used to evaluate health impacts from construction and operational gasoline fueled sources.[32]

There is currently no acute non-cancer toxicity value available for DPM and acute HI from roadways is expected to be minimal, as discussed in **Section 1.3**. However, an acute HI was estimated from the Project laboratory sources as the emitted chemicals include TACs with acute reference exposure levels.

3.1.1 Construction Phase

The HRA for the Project construction was based on TAC emissions from off-road diesel construction equipment and on-road diesel vendor and hauling trucks. Accordingly, the chemicals evaluated in the HRA for the construction phase were DPM emissions in diesel exhaust and $PM_{2.5}$ emissions from exhaust, tire wear, brake wear, and fugitive dust. DPM emissions were assumed to be equal to exhaust PM_{10} from on- and off-road construction equipment. Fugitive dust emissions include on-road entrained dust from construction vehicles, and off-road fugitive dust from demolition, grading and bulldozing, and materials loading activities. Air concentrations from Project construction emissions were estimated at off-site and on-site receptors. For the mitigated scenario, the fugitive dust emissions were controlled using BAAQMD's construction BMPs as discussed in **Section 1.2.3**.

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[27] Office of Environmental Health Hazard Assessment (OEHHA). 2015b. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. Appendix D: Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Engines. February.

[28] BAAQMD. 2016. Health Risk Assessment Guidelines. Air Toxics NSR program. December. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/permit-modeling/hra_guidelines_12_7_2016_clean-pdf.pdf

[29] Cal/EPA. 2022. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. December. http://www.arb.ca.gov/toxics/healthval/contable.pdf

[30] Speciations are from BAAQMD's Recommended Methods for Screening and Modeling Local Risks and Hazards (2011), Table 14, Toxic Speciation of TOG due to Tailpipe Emissions, and Table 15, Toxic Speciation of TOG due to Evaporative Losses.

[31] BAAQMD. 2011. Recommended Methods for Screening and Modeling Local Risks and Hazards. May. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

[32] Cal/EPA. 2022. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. December. http://www.arb.ca.gov/toxics/healthval/contable.pdf

TAC emissions from exhaust of on-road gasoline worker vehicles were not included in the analysis. Construction worker trips consists primarily of gasoline fueled light duty passenger vehicles and passenger trucks, which tend to have much lower health impacts at low traffic volumes when compared to impacts from the larger diesel-powered trucks. However, emissions of tire wear, brake wear, and fugitive dust were conservatively included in the $PM_{2.5}$ concentration estimation.

Demolition of existing buildings has the potential to release additional TACs from the buildings themselves. TACs that were considered in building demolition include lead and asbestos. We understand the potential for lead paint or asbestos will be identified and all lead paint and asbestos will be removed in accordance with ARB and BAAQMD rules and regulations before demolition of the building occurs. Because the lead and asbestos remediation would occur before demolition and construction and would follow all regulations to reduce impacts to below a level of concern, these sources were not included in the HRA.

Modeled construction sources are presented in **Figure 1**. The modeled haul routes are shown as Ravenwood Avenue and Middlefield Road in **Figure 3**.

3.1.2 Operational Phase

The cancer risk and chronic/acute non-cancer analysis for the Project operation was based on TAC emissions from on-road traffic, diesel-powered emergency generators, and laboratories. The chemicals that were evaluated in the HRA include $PM_{2.5}$ emissions (assumed to be engine exhaust from vehicles and generators, brake wear, tire wear, and entrained dust), DPM emissions (assumed to be exhaust PM_{10} from combustion from diesel vehicles and on-site generators) and speciated evaporative and exhaust TOGs from on-road emissions from gasoline vehicles and laboratories.

Roadway segments within the 1,000 foot buffer of the Project that would have increased traffic due to the Project-generated traffic were identified by the transportation consultant. Net average daily trips (i.e., Project minus existing) were provided by the transportation consultant. Net health impacts from Project-generated traffic on these roadway segments were evaluated at on- and off-site receptors in the vicinity of these roadways. The fleet mix used for the health risk assessment is shown in **Table 17**. A summary of traffic volumes by roadway segment is provided in **Table 47**.

Modeled operational sources are presented in **Figure 3**.

3.1.3 Existing Conditions' Sources

The reduction in health impacts due to the removal of existing sources were estimated and include TAC emissions from diesel-powered emergency generators and the natural gas powered cogeneration plant, which are discussed in **Section 2.2.4**. The traffic volumes provided by the transportation consultant, shown in **Appendix D**, are net new traffic, so TAC emissions from traffic from existing land uses to be removed were not explicitly analyzed. Accordingly, the chemicals evaluated in the HRA for the existing condition's sources were DPM emissions in diesel exhaust from emergency generators, TAC emissions from the cogeneration plant, and $PM_{2.5}$ emissions from exhaust of emergency generators and the cogeneration plant.

As discussed in **Section 2**, TAC emissions from existing laboratories' chemical use were excluded from the HRA. Modeled existing sources that would be removed by the Project are presented in **Figure 3**.

3.2 AERMOD Modeling

The BAAQMD's 2022 CEQA Guidelines recommend a tiered approach for HRA, where a screening-level model can be used in conjunction with or prior to refined modeling analysis. Because the Project site is in an infill mixed-use project with more than one TAC source, a refined modeling analysis was completed in place of any screening level modeling using the American Meteorological Society/USEPA Regulatory Model Improvement Committee (AERMIC) Regulatory Model, USEPA's atmospheric dispersion modeling system (AERMOD). AERMOD (Version 22112) was used to evaluate ambient air concentrations of DPM, $PM_{2.5}$ and TOGs at on- and off-site receptors.[33, 34] For each receptor location, the model generates air concentrations (or air dispersion factors as unit emissions) that result from emissions from multiple sources.

Air dispersion models such as AERMOD require a variety of inputs such as source parameters, meteorological data, topographical data, and receptor parameters. When site-specific information is unknown, default parameter sets that are designed to produce conservative (i.e., overestimates for the Project, underestimates for the existing conditions) air concentrations were used, as shown in **Table 48**.

3.2.1 Meteorological Data

Air dispersion modeling applications require the use of meteorological data that ideally are spatially and temporally representative of conditions in the immediate vicinity of the site under consideration. For this analysis, five years (2012 through 2016) of meteorological data collected from Palo Alto Airport (KPAO) and San Carlos Airport (KSOL) were used, along with five years of upper air data collected at Oakland International Airport (KOAK).

The Palo Alto Airport is located approximately 3.4 miles east of the Project site. It is the closest source of meteorological data to the site with the most similar terrain conditions. While the Palo Alto Airport is closer to the San Francisco Bay than the Project, there are no major terrain changes between the airport and the Project, making it a good candidate for representative meteorological data for dispersion modeling. Unfortunately, like many smaller Automated Surface Observing System (ASOS) stations, meteorological data are only collected during daylight hours. However, the San Carlos Airport collects data 24-hours per day. San Carlos Airport is 5.4 miles northwest of the Project site and is the next closest meteorological station to the Project Site.

In an effort to develop a complete data set, in USEPA's meteorological data preprocessor (AERMET) the Palo Alto Airport was selected as the "on-site" meteorological station and the San Carlos Airport was selected as the "surface" station in AERMET. With these assumptions, data from the Palo Alto Airport was used when available and data from the San Carlos Airport was used when data was not available from Palo Alto Airport (i.e., non-daylight hours). The meteorological data was processed by BAAQMD using AERMET version 19191. A precipitation analysis was performed for both the on-site and surface stations using surface parameters obtained using the latest version of USEPA's land cover data processing tool

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[33] USEPA. 2019. User's Guide for the AMS/EPA Regulatory Model (AERMOD). U.S. EPA Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_userguide.pdf

[34] On October 10, 2023, EPA released a new version of AERMOD (Version 23132). Considering the bug fixes and model upgrades that were released in the newest version, no updates were made to the program that would cause the Project's model results for to change if Version 23132 was used instead of Version 22112.

(AERSURFACE), v20060. The data were processed using the Adjust U* option (ADJ_U*), a method that reduces overprediction of modeled concentrations that occur in stable conditions with low wind speeds due to underprediction of the surface friction velocity (u*).

3.2.2 Terrain and Land Use Considerations

Elevation and land use data were imported from the National Elevation Dataset maintained by the United States Geological Survey at a resolution of 1/3 arc-second (10 meters).[35] An important consideration in an air dispersion modeling analysis is whether or not to model an area as urban. The Project site is located in an urbanized area of the City, which is located in the Peninsula region of the San Francisco Bay Area, a densely populated metropolitan area. Therefore, the model assumed an urban land use and used San Mateo County's 2021 population to capture the region's urban heat island effect.[36]

3.2.3 Building Downwash

Turbulent eddies can form on the downwind side of buildings and may cause a plume from a stack or point source located on or near the building to be drawn towards the ground to a greater degree than if the building were not present. This is referred to as the "building downwash" effect. The effect can increase the resulting ground-level pollutant concentrations downwind of a building. For modeling the Project, the dimensions and locations of all on-site buildings were used, to allow AERMOD to incorporate algorithms to evaluate the downwash effect on point source dispersion. If a building has varying heights, the highest height was chosen to be conservative. For modeling the existing conditions, buildings on which the exhaust vents are located and the immediately adjacent buildings were considered for building downwash. The direction-specific building downwash dimensions were determined by the latest version (04274) of the Building Profile Input Program, PRIME (BPIP PRIME). For modeling purposes, all laboratory emissions were assumed to exhaust through one vent for each building. Thus, laboratory exhausts were represented as point sources in AERMOD. Point sources were used to model the emergency generators, the existing cogeneration plant, and laboratory exhausts, so building downwash was evaluated for these sources.

3.2.4 Emission Rates

Emissions were modeled using the χ/Q ("chi over q") method, such that each source has a unit emission rate (i.e., 1 gram per second [g/s]), and the model estimates dispersion factors (with units of [$\mu g/m^3$]/[g/s]). Actual emissions were multiplied by the dispersion factors to obtain concentrations.

3.2.4.1 Construction Emission Rates

For the construction period, emitting activities were modeled to reflect the actual hours of the day that construction activity would occur. Emissions were modeled as occurring between 7 AM and 6 PM, consistent with the expected construction hours for TAC emitting sources for the Project. The AERMOD's variable emission factor (EMISFACT) option was used to limit emissions to this time period.

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[35] United States Geological Survey (USGS). 2013. National Elevation Dataset. Available at: http://viewer.nationalmap.gov/viewer/.

[36] San Mateo County's population for 2021 is 737,888.

The United States Census Bureau, 2023. Quick Facts, San Mateo County, California, Available at: https://www.census.gov/quickfacts/sanmateocountycalifornia. Accessed on: January 25, 2023.

For annual average ambient air concentrations over the construction period, the estimated annual average dispersion factors were multiplied by the annual average emission rates. The emission rates would vary day to day, with some days having no emissions. To estimate an annual average, the model assumed a constant emission rate during construction hours throughout the entire year. Thus, the average emissions rate was calculated by taking the total mass of emissions and dividing by the hours considered in the model (11 hours per day, 365 days per year). The equipment would be expected to operate at most 8 hours per day, but this 8-hour period can occur anytime in the 11-hour window from 7 AM[37] to 6 PM. Because the exact timing of when the equipment would operate is not known, the eight hours of emissions were averaged over these 11 hours of meteorology in order to generate representative averages.

Emissions from off-road and on-road construction activity, summarized in **Table 12** were converted to annual average emission rates as discussed above and shown in **Appendix Table B.1**.

3.2.4.2 Operational Emission Rates

Because emergency generators' testing and maintenance activities could happen on any day of the year, emissions from the emergency generators were modeled in AERMOD as continuous emission sources (i.e., assuming possible emissions for 24 hours a day, 365 days a year) based on 50 hours per year of operation. Emissions from emergency generators, summarized in **Table 24**, were converted to annual average emission rates as shown in **Appendix Table B.2**.

Laboratory research activities could also happen at any time of day and any day of the year. Emissions from the laboratories were modeled as continuous emission sources. Laboratory TAC emission rates are shown in **Table 21**. The emissions from laboratories were converted to annual average emission rates as shown in **Appendix B.2**.

The diurnal pattern of traffic volumes for operations (high volumes during rush hour and during the day, with low volumes overnight) was incorporated using the AERMOD EMISFACT option and percentage of traffic by hour. Since a Project specific percentage of traffic by hour for Project traffic was not provided by the transportation consultant, hourly VMT from EMFAC was used to derive the diurnal scaling factors for mobile emissions, as shown in **Table 50**.

Emissions rates from Project traffic were determined by multiplying the traffic volumes provided by the transportation engineer and roadways source length shown in **Table 47** with the respective emission factors shown in **Table 49**. Emissions of DPM are only applied to the percentage of the fleet that is diesel and emissions of TOG are only applied to the percentage of the fleet that is gasoline fueled. The fleet percentages are based on EMFAC and are shown in **Table 49**. **Appendix Table B.2** shows the emission rates used in the model.

3.2.4.3 Existing Conditions Emission Rates

Similar to the Project operational emissions, emergency generator emissions were modeled in AERMOD as continuous emission sources (i.e., assuming possible emissions for 24 hours a day, 365 days a year) based on 50 hours per year of operation. Emissions from emergency

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[37] While most construction would occur after 8 AM, 7 AM start time was modeled to capture any potential equipment use at this time, if necessary and approved.

generators, summarized in **Table 25**, were converted to annual average emission rates as shown in **Appendix Table B.2**.

TAC emissions from the cogeneration facility are modeled as a continuous emission source. Emissions are shown in **Table 26** and shown in **Appendix Table B.2**.

3.2.5 Source Parameters

Source location and parameters are necessary to model the dispersion of air emissions.

3.2.5.1 Construction Sources

For construction, area sources were used to represent the on-site activity in AERMOD. The on-site construction sources were modeled with a release height of 5 meters (m) and an initial vertical dimension of 1.16 meters.[38] Fugitive dust sources from grading, demolition, and truck hauling during construction were modeled with a release height of 0 m and an initial vertical dimension of 1 m.[39]

Emissions from heavy-duty haul and vendor trucks on roadways were modeled using volume sources in a line. Each volume source width was the width of the road plus six m, the modeled release height was 2.55 m, and the initial vertical dimension was 2.37 m, consistent with EPA's Guidance from Haul Road Workgroup Recommendations.[40,41] **Table 48** summarizes the construction modeling parameters that were used in AERMOD.

3.2.5.2 Operational Sources

The Project generators and laboratories were modeled as point sources located at the center of each office/R&D building. All laboratory emissions are assumed to exhaust through one vent for each building. The stack heights vary depending on the building heights of the five office/R&D buildings. Other source parameters, such as temperature and velocity were assumed based on the values used in the Health Risk Assessment for the University of California, Davis Long Range Development Plan[42] as this information is not available for the Project at this time, because that level of design detail does not exist yet. At each building, the modeled stack height was the specific building height plus 3.05m. These source parameters were provided by the Project Applicant. Modeled source parameters are summarized in **Table 48**.

Similar to on-road construction trucks, on-road operational traffic sources were modeled as volume sources in a line. In general, DPM emissions are dominated by heavy duty truck emissions, and TOG and $PM_{2.5}$ emissions are dominated by passenger vehicles. The Project's operational traffic was dominated by passenger vehicle trips. Therefore, all vehicular

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[38] USEPA. 2022. User's Guide for the AMS/EPA Regulatory Model (AERMOD). U.S. EPA Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_userguide.pdf

[39] SCAQMD. 2008. Localized Significance Threshold Methodology. July. Available online at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

[40] USEPA. 2012. Haul Road Workgroup Final Report Submission to EPA-OAQPS. March. Available at: https://www3.epa.gov/scram001/reports/Haul_Road_Workgroup-Final_Report_Package-20120302.pdf

[41] Ramboll modeled construction hauling routes in AERMOD before the 2022 BAAQMD Guidelines were released. Therefore, modeling parameters used were obtained from EPA guidance. The modeling parameters were not updated after the BAAQMD CEQA guidance update since the EPA parameters were more conservative.

[42] York Engineering, LLC. 2018. Health Risk Assessment for the University of California, Davis Long Range Development Plan. January.

emissions were modeled with a release height of 1.3 m, as shown in **Table 48**. The release height and the initial vertical dimensions for all pollutants were calculated consistent with Table 11 in Appendix E of the BAAQMD 2022 CEQA Guidelines. Modeled roadways were developed with the input of the transportation consultant based on the roadways with increases in Project traffic. Shown in **Figure 3**, modeled roadways include Ravenswood Avenue, Middlefield Road, Laurel Street, and 2 new onside roads including Loop Road and the residential loop.

3.2.5.3 Existing Sources

The existing emergency generators and the cogeneration plant that will be removed as part of the Project were modeled using stack information provided by the site's current tenant. Existing generators at Buildings A, L, and U would be removed as part of the Project and were modeled.[43] The impact of the existing operational sources that will be removed were subtracted from the impact of the proposed new generators.

Table 48 summarizes the operational phase modeling parameters for the existing conditions that were be used in AERMOD.

3.2.6 Receptors

TAC concentrations were estimated at both on-site and off-site sensitive receptor populations. As discussed in **Section 1.3.2**, sensitive receptors include areas with residents, schools, daycare centers, parks, hospitals and senior care facilities. Recreational receptors and worker receptors near the Project were also evaluated.

Residential, worker, and recreational receptors were identified using zoning maps. Residential and recreational areas were modeled as a grid with 20 m (65.6 feet) spacing within 1,000 m of the Project site.

Other sensitive receptor locations were identified using a report from Environmental Data Resources (EDR). The EDR report identified schools, daycare centers, nursing homes and hospitals near the Project. These locations were modeled as discrete locations.

Both off-site and on-site receptors were modeled at the breathing height of ground floor receptors, assuming a breathing height of 1.5 m, consistent with the BAAQMD guidance.

Maximum average annual dispersion factors were estimated for each receptor location. **Table 51** summarizes the existing receptor types that are present in the Project vicinity and the receptor types that would be added to the Project site**.**

Figure 4 includes a map of both off-site and on-site sensitive receptor locations that were used in the HRA.

3.2.7 Modeling Adjustment Factor

OEHHA recommends applying an adjustment factor to the annual average concentration modeled assuming continuous emissions (i.e., 24 hours per day, seven days per week), when the actual emissions are less than 24 hours per day and exposures are concurrent with activities occurring as part of the Project. For construction and operational activities, emissions only impact receptors during certain hours of the day when activities are

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[43] Existing generators at Buildings P, S and T would remain and therefore would not be considered in the existing sources to be removed. These generators would be considered in the cumulative analysis as discussed in Section 5.

occurring. However, the TAC concentrations modeled during those hours are annualized assuming 24 hour per day in the modeling outputs. Thus, a model adjustment factor (MAF) was applied to the annual average concentration to account for a non-continuous emissions schedule, on which a source's emissions would overlap with the hours during which a school or recreational receptor is present.

Resident children were assumed to be exposed to annual construction and operational emissions (averaged from actual operating hours) 24 hours per day, seven days per week, 350 days per year. This assumption is consistent with the modeled annual average air concentration for construction (24 hours per day, seven days per week). Thus, the annual average concentration for construction was not adjusted for the residential population.

The MAF for non-residential receptors (schools, recreational, worker) assumes receptors are present only during the hours of the day emissions are occurring. Therefore, a modeling adjustment factor of 4.2 was applied to the annual average concentration for construction, emergency generators, and laboratories ([24 hours/8 hours]x[7 days a week/5 workdays a week]). This approach is conservative for recreational receptors because this type of receptor generally would not be at a park or recreational location for more than two hours at a time.

3.2.8 Carbon Monoxide Analysis

Carbon Monoxide (CO) emissions from traffic are expected to be below significance levels if the following criteria are met:

1. The Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The Project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[44]

The San Mateo County Congestion Management Program (CMP) requires a new development projected to add 100 or more average daily trips to the CMP roadway network to implement TDM measures that would reduce project impacts.[45] The Project has a comprehensive TDM program that reduces VMT to be consistent with the City's requirements. Therefore, the Project would not conflict with the CMP.[46]

The Project would also increase traffic volumes at nearby local intersections by up to 3,400 vehicles per day to a maximum of approximately 60,000 vehicles per day when combined with background traffic. Based on this daily traffic volume, the hourly volume is expected to be less than 44,000 vehicles per hour. The Project would increase traffic volumes on several

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[44] BAAQMD, 2023. 2022 CEQA Air Quality Guidelines. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. April 2023.

[45] San Mateo County, 2021. San Mateo County Congestion Management Program, Final Report. Available at: https://ccag.ca.gov/wp-content/uploads/2022/01/258-018-San-Mateo-CMP-Report_Final.pdf. December 2021.

[46] Fehr & Peers. 2023. Draft Parkline Transportation Demand Management (TDM) Plan. September 8, 2023.

segments of Highway 101 in the vicinity of the Project by about 200 - 1,100 vehicles per day to up to 150,000 vehicles per day. However, this is not considered an intersection as noted in #2 and #3 above. Regardless, the hourly traffic volume would likely not exceed 44,000 vehicles per day. In addition, there are no intersections near the Project site that are limited in vertical and/or horizontal mixing. Therefore, additional analysis on CO hotspots is not needed. As such, operational traffic is expected to be a minor contributor to operational CO emissions.

Emergency generators would also emit CO. Emergency generators are subject to permitting by BAAQMD and to federal and state emissions standards. BAAQMD permitting procedures require emergency generators larger than 50 brake horsepower to demonstrate through manufacturer’s specification that CO emissions would not exceed emission standards, and that the generators are installed in separate enclosures with good ventilation. Emissions standards for generators are developed to reduce concentrations of emissions, such that the use of emergency generators in a land use project is not likely to cause CO hotspots.

4. RISK CHARACTERIZATION METHODS

In February 2015, OEHHA released the updated Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, which combines information from previously released and adopted technical support documents to delineate OEHHA's revised risk assessment methodologies based on current science.[47] The BAAQMD has issued Guidelines on adopting the OEHHA 2015 Guidance Manual.[48] This evaluation utilizes the OEHHA 2015 Guidance Manual and the BAAQMD's 2022 CEQA Guidelines; details of this methodology are discussed below.

4.1 Project Construction Sources Evaluated

Excess lifetime cancer risk, non-cancer chronic hazard index and $PM_{2.5}$ concentration were evaluated for on-site and off-site sensitive receptor exposure to emissions from Project construction (construction off-road equipment and nearby off-site trucks). Because the Project would be completed in three phases of construction activity with residents moving in as buildings are completed, the impact of subsequent construction on on-site residents was evaluated, as discussed below.

4.2 Project Operational Sources Evaluated

For Project operations, excess lifetime cancer risk, non-cancer chronic/acute hazard index and $PM_{2.5}$ concentration from on-site and off-site sensitive receptor exposure to emissions from the Project's generators, laboratories, and operational-related traffic were evaluated. Health risk impacts from the existing generators and cogeneration plant currently located at the Project site were evaluated and subtracted from Project's health risk impacts, resulting in health impacts from net new operational emissions.

Health risks solely due to operations were analyzed. In addition, Project construction health impacts and Project operational health impacts were added together to conservatively estimate the combined cancer risk effect of construction activities and Project operation.

4.3 Exposure Assessment

Potentially Exposed Populations: This analysis evaluated on- and off-site sensitive receptors based on OEHHA 2015 Hot Spots Guidelines.

Emissions and exposure to sensitive populations would vary across the construction period. Therefore, multiple exposure scenarios were evaluated to capture the period of maximum impact on each sensitive population and location. The maximum impact from each of these scenarios was reported. Health impacts were evaluated in four exposure scenarios:

- Scenario 1: Offsite receptors' exposure beginning at the start of construction.
- Scenario 2: Offsite and onsite Phase 1 receptors' exposure beginning at the start of Phase 2 construction.

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[47] OEHHA, 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[48] BAAQMD, 2023. California Environmental Quality Act Air Quality Guidelines, Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. April. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en.

- Scenario 3: Offsite and onsite receptors' exposure beginning at the start of Phase 3 construction.
- Scenario 4: Offsite and onsite receptors' exposure to Project Buildout operations.

Exposure Assumptions: The exposure parameters used to estimate excess lifetime cancer risks for all potentially exposed populations for the construction evaluation for this analysis were obtained using risk assessment guidelines from OEHHA and BAAQMD.[49,50] **Table 51** shows the proposed exposure parameters that were used for the HRA. Further details on how the exposure parameters were applied in each calendar year and scenario are shown in **Tables 52a-d.**

Calculation of Intake: The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh}, can be calculated as follows:

$$IF_{inh} = \frac{DBR * FAH * EF * ED * CF}{AT}$$

Where:

IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)
DBR = Daily Breathing Rate (L/kg-day)
FAH = Frequency of time at home (unitless)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
CF = Conversion Factor, 0.001 (m^3/L)
AT = Averaging Time (days)

The chemical intake or dose was estimated by multiplying the inhalation intake factor, IF_{inh}, by the chemical concentration in air, C_i. When coupled with the chemical concentration, this calculation is mathematically equivalent to the dose algorithm given in the current OEHHA Hot Spots guidance. **Table 51** shows the daily breathing rates, frequency of time at home, exposure frequency, age sensitivity factor, and other exposure parameters, consistent with the BAAQMD's 2022 CEQA Guidelines.

4.3.1 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health

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[49] OEHHA, 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[50] BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines, Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. April. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values that are used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

Toxicity values for all TACs are summarized in **Table 53.**

4.3.2 Age Sensitivity Factors

The estimated excess lifetime cancer risks for a resident were adjusted using age sensitivity factors (ASFs) that account for an "anticipated special sensitivity to carcinogens" of infants and children as recommended in the OEHHA 2015 Guidance.[51] Cancer risk estimates were weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) was applied to ages 16 and older. **Table 51** presents the ASF values that were used for the HRA.

4.4 Risk Characterization

4.4.1 Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific CPF.

The equation that was used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Risk_{inh} = C_i \times CF \times IF_{inh} \times CPF_i \times ASF$$

Where:

$Risk_{inh}$ = Cancer risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)

C_i = Annual average air concentration for chemical *i* (µg/m^3)

CF = Conversion factor (microgram [mg]/µg)

IF_{inh} = Intake factor for inhalation (m^3/kg-day)

CPF_i = Cancer potency factor for chemical *i* (mg chemical/kg body weight-day)$^{-1}$

4.5 Estimation of Chronic Noncancer Hazard Indices

The potential for exposure to result in adverse chronic noncancer effects was evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the noncancer chronic reference exposure level (cREL) for

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[51] OEHHA, 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ).

$$HQ_i = C_i \,/\, cREL$$

Where:

HQ_i = Chronic hazard quotient for chemical *i*

C_i = Annual average concentration of chemical *i* (μg/m^3)

$cREL_i$ = Chronic noncancer reference exposure level for chemical *i* (μg/m^3)

4.6 Estimation of Acute Noncancer Hazard Indices

The potential for exposure to result in adverse acute noncancer effects was evaluated by comparing the estimated maximum one hour air concentration to the noncancer acute reference exposure level (aREL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a HQ.

$$HQ_i = C_i \,/\, aREL$$

Where:

HQ_i = Acute hazard quotient for chemical *i*

C_i = Maximum one hour concentration of chemical *i* (μg/m^3)

REL_i = Acute noncancer reference exposure level for chemical *i* (μg/m^3)

4.7 Comparison to Thresholds

Health risks from the existing cogeneration plant and the emergency generators that will be removed by the Project were subtracted from the Project's health risks for the off-site sensitive receptors.[52] Net health risk impacts at the maximally exposed individual receptor (MEIR) in each receptor category in each of the four exposure scenarios were compared to BAAQMD thresholds discussed in **Section 1.3.2**. For on-site receptors, the health risk impacts were based on the Project's impacts from construction and operation only. The health impacts from the removal of existing sources were not subtracted from the Project's health risks for the onsite receptors, since the onsite receptors would not be exposed to these existing sources.

4.8 Health Risk Assessment Results

Heath impacts from baseline operations were subtracted from the health impacts from both Project construction and Project operations to estimate the combined health risk impacts of construction activities and net operations for Exposure Scenarios 1, 2, 3, and 4 discussed above.

4.8.1 Impacts from the Project

A summary of results from the HRA is shown in **Summary Table E**. A breakdown of excess lifetime cancer risk from Project construction, operational generators, operational traffic, and laboratories at the MEIR from the scenario with the maximum impact is shown in **Table 54**.

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[52] To provide for a conservative analysis, the health risks from existing laboratories that would be removed due to Project demolition activities were not subtracted from the Project's health risks because impacts from baseline laboratory solvent use would be localized and therefore were not taken into account.

Similar breakdowns for chronic HI, acute HI, and $PM_{2.5}$ concentration are shown in **Table 55, Table 56** and **Table 57**, respectively. These tables show the scenario and year for which the maximum would occur, since chronic HI and $PM_{2.5}$ concentrations are annual impacts. Mitigated $PM_{2.5}$ concentration calculations include reductions to fugitive dust due to watering. **Appendix C** presents the HRA results for every receptor type for each modeled scenario.

Summary Table E. Summary of Health Risk Assessment Results

	BAAQMD Threshold of Significance	**On-site MEIR**	***Exceed Threshold?***	**Off-site MEIR**	***Exceed Threshold?***
Excess Lifetime Cancer Risk (in a million)	10	6.0	*No*	4.1	*No*
HI (Chronic)	1	0.017	*No*	0.0087	*No*
HI (Acute)	1	0.078	*No*	0.058	*No*
Project $PM_{2.5}$ Concentration[A] ($\mu g/m^3$)	0.3	0.076	*No*	0.15	*No*
Mitigated $PM_{2.5}$ Concentration[A] ($\mu g/m^3$)		0.076	*No*	0.066	*No*

Source: Tables 54-57.

A. The $PM_{2.5}$ concentration at the on-site MEIR is predominantly from traffic, as shown in Table 57. Therefore, the effects of the construction watering mitigation are minimal at this particular receptor.

5. CUMULATIVE ANALYSIS

Consistent with the BAAQMD CEQA guidelines, the combined impacts from off-site and on-site sources were evaluated within the BAAQMD recommended 1,000-foot "zone of influence" surrounding the Project. Off-site sources include BAAQMD-permitted stationary sources, major roadways, adjacent highways, and railways.

The cumulative impact was evaluated for the Project at an on-site MEIR and an off-site MEIR. The MEIR is the receptor with the highest incremental cancer risk, chronic HI, and $PM_{2.5}$ concentration from the Project across all receptor types and exposure scenarios, as identified in Section 4.

Health impacts from all identified sources within 1,000 feet of the Project were evaluated at these two MEIR locations and added to the results from the Project's impacts. The sources that were considered in this analysis are described below.

5.1 Stationary Sources

BAAQMD provides a stationary source tool to use to evaluate the impacts of off-site stationary sources.[53] Consistent with BAAQMD guidance, a request was sent to BAAQMD to confirm the risks, hazards, and $PM_{2.5}$ concentrations reported in the tool and request information about any sources that are new since the tool was published. The resulting potential health risk impacts received from BAAQMD were then used in this analysis. Cancer risks, chronic hazard index, and $PM_{2.5}$ concentrations were estimated from emissions using BAAQMD's Risk and Hazards Emissions Screening Calculator.[54] Where appropriate, the impacts provided by BAAQMD were scaled by the Diesel Internal Combustion Engine Distance Multiplier or Gasoline Dispensing Facility Multiplier per BAAQMD guidance. Based on the list of cumulative projects provided by the City, there are no foreseeable future projects within the 1,000-foot "zone of influence" surrounding the Project site. Therefore, any potential stationary sources that may be introduced by foreseeable future projects are not quantitatively included in the cumulative analysis.

Impacts from SRI's existing operation were refined from BAAQMD's screening-level impacts to reflect the changes in sources at the site as a result of the Project. All existing on-site permitted sources will be removed as part of the Project except for the four emergency generators: one each at Buildings P, S, and T and also a South generator . Therefore, Ramboll only included the impacts from these existing generators in the cumulative analysis. Health impacts from these generators were estimated using AERMOD and receptor specific exposure parameters. Emissions were estimated using the same methodology discussed in Section 2.2.3, generator horsepower (1474 hp, 490 hp,750 hp, and 750 hp) and the emission factors shown in **Table 23**. The locations and engine size of the generators located at Buildings P, S, and T and the South generator were provided by the Project Applicant. Source-specific stack parameters were not available. Therefore, default parameters from Appendix E of BAAQMD 2022 CEQA Guidelines were used to calculate health risks from these

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[53] BAAQMD, 2022. Stationary Source Screening Map. Available at: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3. Last Updated on: November 5, 2022.

[54] BAAQMD, 2022. Health Risk Calculator with Distance Multipliers. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling. Last Updated on May 3, 2022.

emergency generators. Health impacts were calculated using the methodologies discussed in Section 4 and exposure was assumed for the entire construction and operational period.

A summary of nearby stationary source impacts at the Project's on-site and off-site MEIRs is summarized in **Table 58**. Health impacts from the continued operation of the generators at Buildings P, S, and T and the South generator at the Project's on-site and off-site MEIRs are shown in **Table 59**.

5.2 Roadway Sources

BAAQMD recommends evaluating impacts from all roadways within the "zone of influence." The BAAQMD's screening map identifies risks, hazards, and annual $PM_{2.5}$ concentrations for all paved roadways in the nine counties of the Bay Area, summarized in a raster file of health impacts.[55] Ramboll pulled the corresponding values for the on-site and off-site MEIRs from the raster file. These tools were used to estimate cancer risk, chronic HI and $PM_{2.5}$ concentrations from vehicle travel on major roadways and highways surrounding the Project.

5.3 Railway and Railyard Sources

BAAQMD provides raster files with health impacts from railways. The Project is more than 1,000 feet from the railroad that Caltrain uses. However, to be conservative, the health impacts from the railway raster file were used to estimate any potential impact from railways at the MEIRs.[56]

5.4 Cumulative Summary

As described above, nearby cumulative sources include existing stationary sources, highways, major streets, and railways. Impacts from these cumulative sources were combined with Project construction and operational impacts at the on-site and off-site Project MEIRs. A summary of cumulative impacts at the Project MEIRs is shown in **Table 59** and **Summary Table F** below.

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[55] BAAQMD. 2023. Roadway Screening Maps. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling. Last updated on December 8, 2022.

[56] BAAQMD. 2023. Rail and Railyard Screening Maps. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling. Last updated on January 30, 2023.

Summary Table F. Summary of Cumulative Health Risk Assessment Results

	BAAQMD Cumulative Threshold of Significance	**On-site MEIR**	***Exceed Threshold?***	**Off-site MEIR**	***Exceed Threshold?***
Excess Lifetime Cancer Risk (in a million)	100	43	*No*	40	*No*
Chronic HI	10	0.039	*No*	0.042	*No*
$PM_{2.5}$ Concentration ($\mu g/m^3$)	0.8	0.22	*No*	0.25	*No*
Source: Table 59					

6. ODOR ANALYSIS

BAAQMD recommends that potential odor impacts be evaluated if a potential source of objectionable odors is proposed at a location near existing sensitive receptors or if sensitive receptors are proposed to be located near an existing source of objectionable odors. The first step in assessing potential odor impacts is to gather and disclose applicable information regarding the characteristics of the buffer zone between the sensitive receptor(s) and the odor source(s), local meteorological conditions, and the nature of the odor source.

The Project is a mixed-use commercial and residential development and does not propose any odor-generating facilities identified by the BAAQMD, such as wastewater treatment plants, municipal solid waste storage, odoriferous manufacturing processes, and animal handling facilities. The Project would include some laboratory uses; however, laboratories are not listed as odor-generating facilities by the BAAQMD. Therefore, the proposed land uses of the Project are not anticipated to generate persistent and objectional odors affecting a substantial number of people.

During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and depend on specific construction activities occurring at certain times and are not likely to be noticeable for extended periods of time beyond the boundaries of the project site. Therefore, the Project’s construction odor impacts on existing sensitive receptors is considered less than significant.

For Project operation, although there may be some potential for small-scale, localized odor issues to emerge around Project sources such as solid waste collection, wastewater or stormwater collection/conveyance, food preparation, etc., the Project would not include facilities that may generate objectionable odors affecting a substantial number of people. Therefore, substantial odor sources and consequent effects on onsite and offsite sensitive receptors would be unlikely.

In addition, BAAQMD Regulation 7 contains requirements on the discharge of odorous substances after the Air Pollution Control Officer (APCO) receives odor complaints from ten or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel or residence [BAAQMD 7-102]. The operations within the Project will be subject to this regulation and will comply with the requirements if the regulation becomes applicable via BAAQMD 7-102, which is not expected. Therefore, the Project would be in compliance with BAAQMD Regulation 7 regarding limitations on odorous substances.

As stated in the Menlo Park General Plan,[57] the following goals and policies related to odor generation and exposure are applicable to the Project:

- Goal LU-2: Maintain and enhance the character, variety and stability of Menlo Park’s residential neighborhoods.

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[57] City of Menlo Park, Adopted November 29, 2016. General Plan. Available at: https://menlopark.gov/files/sharedassets/public/community-development/documents/general-plan/land-use-and-circulation-element-adopted-20161129.pdf. Accessed October 31, 2022.

  - Policy LU-2.3: Mixed Use Design. Allow mixed-use projects with residential units if project design addresses potential compatibility issues such as traffic, parking, light spillover, dust, odors, and transport and use of potentially hazardous materials.
- Goal LU-3: Retain and enhance existing and encourage new neighborhood-serving commercial uses, particularly retail services, to create vibrant commercial corridors.
  - Policy LU-3.2: Neighborhood Shopping Impacts. Limit the impacts from neighborhood shopping areas, including traffic, parking, noise, light spillover, and odors, on adjacent uses.

As stated above, the Project is not expected to create objectionable odors affecting a substantial number of sensitive receptors and thus, would not create compatibility issues related to odor as stated in Policy LU-2.3 and Policy LU-3.2. The proposed residential and commercial land uses of the Project are consistent with the urban mixed-use setting in the Project’s vicinity, and would not introduce new types of odors that are not already present in the area or exacerbate the existing odor issues (if any) in the area. Overall, the Project’s operational odor impacts on existing sensitive receptors is considered less than significant.

Although this is not a CEQA issue, the Project would introduce new sensitive receptors such as residents, who may potentially be exposed to existing odor sources in the vicinity. In accordance with the recommendations in the BAAQMD guidelines, potential sources of odor have been identified in the area of the Proposed Project within the screening distances set by BAAQMD guidelines. In total, 7 potential sources of odor were identified which include urban farms, chemical plants, pump stations, recycling plants, and coating operations.

The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of receptors. The existing odor sources in the vicinity of Project are limited in size and are required to comply with BAAQMD Regulation 7, as discussed above. Furthermore, the Proposed Project would not introduce new types of sensitive receptors or land uses that are not already included in the existing land uses within the site vicinity. Therefore, the existing odor sources in the Project’s vicinity would not substantially affect the Project’s sensitive receptors.

Because the Project does not propose odor-generating land uses, is consistent with the goals and policies of the General Plan related to odors, and would comply with BAAQMD Regulation 7, the impact of the Project would be considered less than significant with respect to odors.

TABLES

Table 1
Land Use Summary
Parkline
Menlo Park, California

Site	**Land Use Type**	**Description**	**CalEEMod Land Use Category**[1]	**Land Use Quantity**[2]				**Units**
Existing Conditions	Commercial	Commercial - Office/R&D	Research & Development	1,094				ksf
	Parking	Surface Parking	Parking Lot	1,352				ksf
				Phase 1	**Phase 2**	**Phase 3**	**Full Buildout**	**Units**
Full Buildout Conditions	Commercial	Commercial - Office/R&D	Research & Development	408	684	--	1,092	ksf
	Residential	Residential Apartments	Apartments Mid Rise	431	--	100	531	DU
	Residential	Residential Townhome	Condo/Townhouse	19	--	--	19	DU
	Retail	Retail	Convenience Market (24 hour)	2.0	--	--	2.0	ksf
	Parking	Non-Residential Parking Garage	Enclosed Parking with Elevator	890	1,410	--	2,300	Spaces
	Parking	Non-Residential Surface Parking	Parking Lot	500	--	--	500	Spaces
	Parking	Residential Parking Garage	Enclosed Parking with Elevator	371	--	--	371	Spaces
	Parking	Residential Surface Parking	Parking Lot	98	--	50	148	Spaces
	Recreational	Recreational	City Park	25	--	--	25	Acres

Notes:

[1] CalEEMod Land Use Category represents the land uses from CalEEMod used for default assumptions.

[2] Land use quantities were provided by the Project Applicant.

Abbreviations:

DU - Dwelling Unit
ksf - 1000 square feet
R&D - Research and Development

Table 2
Construction Phasing Schedule
Parkline
Menlo Park, California

Construction Phase[1]	Construction Subphase[1]	Start Date	End Date[2]	Days per Week	Number of Work Days	Demolished Area (sqft)[3]
Project Preparation	Demolition	6/9/2025	2/24/2026	5	178	1,095,719
	Site Preparation	1/8/2026	7/20/2026	5	135	--
	Grading	7/21/2026	12/10/2026	5	100	--
Phase 1	Building Construction	9/30/2026	6/5/2028	5	419	--
	Architectural Coating	6/6/2028	3/21/2029	5	199	--
	Paving	3/22/2029	5/28/2029	5	48	--
Phase 2	Demolition	6/26/2029	7/25/2029	5	22	--
	Building Construction	7/26/2029	4/3/2030	5	180	--
	Architectural Coating	4/4/2030	4/23/2031	5	275	--
	Paving	4/24/2031	8/6/2031	5	75	--
Phase 3	Demolition	2/4/2030	3/5/2030	5	22	--
	Building Construction	3/6/2030	12/10/2030	5	200	--
	Architectural Coating	12/11/2030	10/14/2031	5	220	--
	Paving	10/15/2031	11/25/2031	5	30	--

Notes:

[1] Construction phasing information was provided by the Project Sponsor. While most construction using diesel-powered equipment will be between 7am and 6pm, consistent with noise ordinances, modeling was performed assuming a 7am start time to capture any potential equipment use at this time, if necessary and approved. However, equipment will not be running their engines for this entire 11 hour period. No nighttime construction is expected.

[2] Occupancy is expected to begin in 2029 for Phase 1 and 2031 for Phase 2 and Phase 3

[3] Demolition of all buildings will occur in Phase 1. Demolition in Phase 2 and 3 is for minor structures and utilities

Abbreviations:

sqft - square feet

References:

Email communication titled "RE: Devcon - CEQA Construction Data" from Timothy O'Rourke at DevCon Construction. April 24, 2023

Table 3
Construction Equipment
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Equipment Type[1]	CalEEMod Equipment Type[2]	Fuel[1]	Quantity[1]	Daily Usage (hours/day)[3]	Utilization[1]	Horsepower[1]	Engine Tier[4]
Project Preparation	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	2	8	5%	33	Electric
		Excavators	Excavators	Diesel	3	8	90%	36	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	8	90%	367	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	8	55%	367	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	6	8	70%	84	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Grading	Excavators	Excavators	Diesel	2	8	70%	36	Tier 4 Final
		Graders	Graders	Diesel	1	8	75%	148	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	25%	367	Tier 4 Final
		Scrapers	Scrapers	Diesel	2	8	45%	423	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	8	60%	84	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
Phase 1	Building Construction	Cranes	Cranes	Diesel	3	7	95%	367	Tier 4 Final
		Forklifts	Forklifts	Diesel	3	8	35%	82	Tier 4 Final
		Generator Sets	Generator Sets	Diesel	4	8	45%	14	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	7	50%	84	Tier 4 Final
		Drill Rigs	Drill Rigs	Diesel	3	8	15%	221	Tier 4 Final
		Welders	Welders	Diesel	4	8	45%	46	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Paving	Pavers	Pavers	Diesel	2	8	85%	81	Tier 4 Final
		Paving Equipment	Paving Equipment	Diesel	2	8	85%	89	Tier 4 Final
		Rollers	Rollers	Diesel	2	8	20%	36	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Architectural Coating	Industrial Saws	Concrete/Industrial Saws	Electric	1	6	65%	81	Electric
		Aerial Lifts	Aerial Lifts	Diesel	1	6	85%	62	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
Phase 2	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	8	5%	33	Electric
		Excavators	Excavators	Diesel	1	8	90%	36	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	90%	367	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Building Construction	Cranes	Cranes	Diesel	3	7	95%	367	Tier 4 Final
		Forklifts	Forklifts	Diesel	4	8	35%	82	Tier 4 Final
		Generator Sets	Generator Sets	Diesel	5	8	45%	14	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	5	7	50%	84	Tier 4 Final
		Welders	Welders	Diesel	5	8	45%	46	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Paving	Pavers	Pavers	Diesel	2	8	85%	81	Tier 4 Final
		Paving Equipment	Paving Equipment	Diesel	2	8	85%	89	Tier 4 Final
		Rollers	Rollers	Diesel	2	8	20%	36	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Architectural Coating	Industrial Saws	Concrete/Industrial Saws	Electric	1	6	65%	81	Electric
		Aerial Lifts	Aerial Lifts	Diesel	3	6	85%	62	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
Phase 3	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	8	5%	33	Electric
		Excavators	Excavators	Diesel	1	8	90%	36	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	75%	367	Tier 4 Final
	Building Construction	Cranes	Cranes	Diesel	1	7	95%	367	Tier 4 Final
		Forklifts	Forklifts	Diesel	2	8	35%	82	Tier 4 Final
		Generator Sets	Generator Sets	Diesel	2	8	20%	14	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	7	30%	84	Tier 4 Final
		Welders	Welders	Diesel	2	8	45%	46	Tier 4 Final
	Paving	Pavers	Pavers	Diesel	1	8	85%	81	Tier 4 Final
		Paving Equipment	Paving Equipment	Diesel	1	8	85%	89	Tier 4 Final
		Rollers	Rollers	Diesel	1	8	20%	36	Tier 4 Final
	Architectural Coating	Industrial Saws	Concrete/Industrial Saws	Electric	1	6	65%	81	Electric
		Aerial Lifts	Aerial Lifts	Diesel	2	6	40%	62	Tier 4 Final

Notes:

[1] All construction equipment information provided by the Project Sponsor.

[2] CalEEMod equipment types are assigned using CalEEMod User's Guide Appendix G.

[3] While most construction using diesel-powered equipment will be between 7am and 6pm, consistent with noise ordinances, modeling was performed assuming a 7am start time to capture any potential equipment use at this time, if necessary and approved. However, equipment will not be running their engines for this entire 11 hour period. No nighttime construction is expected.

[4] The majority of the equipment in the contractor’s fleet already has Tier 4 engines. Therefore, the unmitigated scenario assumes Tier 4 engines for specific pieces of equipment as provided by the contractor.

[5] The water truck is assumed to be a heavy heavy-duty diesel truck (HHDT) and emissions are calculated based on EMFAC on-road vehicle emission factors.

Abbreviations:

EMFAC - California Air Resources Board EMission FACtor model

HHDT - heavy heavy-duty diesel truck

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Email communication titled "RE: Devcon - CEQA Construction Data" from Timothy O'Rourke at DevCon Construction. January 17, 2023

Table 4
Construction Trips
Parkline
Menlo Park, California

Proposed Project

Construction Phase	Subphase	Construction Days	Worker Trip Rates[1] (trips/day)	Vendor Trip Rates[1] (trips/day)	Haul Amount[1] (CY)	Hauling Trips[1] (one-way trips/subphase)	Trip Lengths[2] (miles/one way trip)			Worker VMT (miles/phase)	Vendor VMT (miles/phase)	Hauling VMT (miles/phase)
							Worker	Vendor	Hauling			
Project Preparation	Demolition	178	12	0	320,250	3,750	11.7	8.4	20	24,991	0	75,000
	Site Preparation	135	29	5		0	11.7	8.4	20	45,806	5,670	0
	Grading	100	20	10		8,920	11.7	8.4	20	23,400	8,400	178400
Phase 1	Building Construction	419	425	21		23,105	11.7	8.4	20	2,083,478	73,912	462,100
	Architectural Coating	199	100	7		0	11.7	8.4	20	232,830	11,701	0
	Paving	48	15	12		0	11.7	8.4	20	8,424	4,838	0
Phase 2	Demolition	22	4	0	43,055	555	11.7	8.4	20	1,030	0	11,100
	Building Construction	180	390	19		4,305	11.7	8.4	20	821,340	28,728	86,100
	Architectural Coating	275	100	7		0	11.7	8.4	20	321,750	16,170	0
	Paving	75	8	9		0	11.7	8.4	20	7,020	5,670	0
Phase 3	Demolition	22	4	0	7,500	88	11.7	8.4	20	1,030	0	1,760
	Building Construction	200	120	15		1,500	11.7	8.4	20	280,800	25,200	30,000
	Architectural Coating	220	95	7		0	11.7	8.4	20	244,530	12,936	0
	Paving	30	8	5		0	11.7	8.4	20	2,808	1,260	0

EMFAC Data

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	San Mateo County Calendar Years 2025-2031 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	25% LDA, 50% LDT1, 25% LDT2	Gasoline
Vendor		50% MHDT, 50% HHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

[1] Worker trips, vendor trips, hauling trips, and hauling amount were provided by the Project Sponsor.

[2] Worker, vendor, and hauling trip lengths are based on CalEEMod Appendix G defaults for the Metropolitan Transportation Commission.

Abbreviations:

EMFAC - California Air Resources Board EMission FACtor model
LDA - light-duty automobile
LDT1 - light-duty trucks (GVWR <6,000 lbs and ETW <= 3,750 lbs)
LDT2 - light-duty trucks (GVWR <6,000 lbs and ETW 3,751-5,760 lbs)
MHDT - medium heavy-duty trucks
HHDT - heavy heavy-duty trucks
VMT - vehicle miles traveled

References

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools
Email communication titled "RE: Devcon - CEQA Construction Data" from Timothy O'Rourke at DevCon Construction. January 17, 2023

Table 5
Fugitive Dust Emissions from Building Demolition Waste
Parkline
Menlo Park, California

Construction Phase[1]	Year	Number of Days	Building Waste[2]		Emission Factor - Mechanical or Explosive Dismemberment[3]	Emission Factor - Debris Loading[4]	Emissions w/o Watering		Emissions w/ Watering[5]	
					$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$		$PM_{2.5}$	
		days	sqft	ton	lb/ton	lb/ton	lb/day	ton/yr	lb/day	ton/yr
Project Preparation	2025	140	1,095,719	50,403	1.4E-04	0.0031	0.91	0.064	0.58	0.041
Project Preparation	2026	38					0.91	0.017	0.58	0.011

Notes:

[1] While there may be minor miscellaneous demolition activities in Phases 2 and 3, demolition material was conservatively assumed to be removed in Phase 1 during Project Preparation. Therefore, demolition fugitive dust emissions were not estimated for Phases 2 and 3

[2] Conversion of building waste to tons assumes a conversion factor of 0.046 tons per square foot, per the CalEEMod® User's Guide, Appendix C Section 4.5.1 Mechanical or Explosive Dismemberment.

[3] Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C Section 4.5.1 Mechanical or Explosive Dismemberment, which is based on AP 42 Section 13.2.4.3 for batch drop operations. The equation is:

$EF = k*(0.0032)*(U/5)^{1.3}/(M/2)^{1.4}$ (lb/ton of debris)

0.35 = k_{PM10} Particle size multiplier (dimensionless)

0.053 = $k_{PM2.5}$ Particle size multiplier (dimensionless)

4.20 = U, mean wind speed (mph)
2 = M, material moisture content (%)

[4] Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C Section 4.5.2 Debris Loading, which is based on AP 42 Section 13.2. The equation is:
$EF = k*EF_{L\text{-}TSP}$

0.35 = k_{PM10} Particle size multiplier (dimensionless)

0.053 = $k_{PM2.5}$ Particle size multiplier (dimensionless)

0.058 = $EF_{L\text{-}TSP}$, lb/ton

[5] Fugitive $PM_{2.5}$ emissions from demolition will be controlled by watering the construction site two times per day, which is estimated to reduce emissions by 61% per CalEEMod® recommendation.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
cy - cubic yards
EF - emission factor
lb - pounds
$PM_{2.5}$ - particulate matter less than 2.5 microns
sqft - square feet
VMT - vehicle miles traveled
yr - years

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 6
Fugitive Dust Emissions from Off-Road Grading Activity
Parkline
Menlo Park, California

Construction Area	Construction Subphase	Year	Maximum Area Disturbed per sub-activity[1]	Grading VMT[2]	$PM_{2.5}$ Emission Factor[3]	Emissions w/o Watering		Emissions w/ Watering[4]	
						$PM_{2.5}$		$PM_{2.5}$	
			acre/day	mile/day	lb/VMT	lb/day	ton/yr	lb/day	ton/yr
Project Preparation	Site Preparation	2026	4.0	2.8	0.17	0.46	0.031	0.18	0.012
	Grading	2026	4.0	2.8		0.46	0.023	0.18	0.0089

Notes:

[1] Maximum graded area is based on Project-specific estimate following guidance in the CalEEMod® User's Guide, Appendix C Section 4.4.1 Grading Equipment Passes.

[2] VMT per day calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equation is:

$VMT = A_S/W_b \times (43{,}560 \text{ sqft/acre})/(5{,}280 \text{ ft/mile})$, where:

A_S = A_S, acres graded per day (varies by sub-activity)
12 = W_b, blade width of grading equipment (CalEEMod® default)

[3] Emission factors calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equations are:

$EF_{PM10} = 0.051 \times (S)^{2.0} \times F_{PM10}$
$EF_{PM2.5} = 0.04 \times (S)^{2.5} \times F_{PM2.5}$ where:

7.1 = S, mean vehicle speed (mph) (AP-42 default)
0.6 = F_{PM10}, PM_{10} scaling factor (AP-42 default)
0.031 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor (AP-42 default)

[4] Fugitive PM emissions will be controlled by watering the construction site two times per day, which is estimated to reduce emissions by 61% per CalEEMod® recommendation.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
ft - feet
lb - pounds
mph - miles per hour
$PM_{2.5}$ - particulate matter less than 2.5 microns
VMT - vehicle miles traveled
yr - years

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 7
Fugitive Dust Emissions from Off-Road Bulldozing Activity
Parkline
Menlo Park, California

Construction Area	Construction Subphase	Year	Number of Days	CalEEMod Equipment	Total Equipment Work Hours[1] (hours/day)	Utilization	$PM_{2.5}$ Emission Factor[2] (lbs/hour)	Emissions w/o Watering		Emissions w/ Watering[3]	
								$PM_{2.5}$		$PM_{2.5}$	
			days					lb/day	ton/yr	lb/day	ton/yr
Project Preparation	Site Preparation	2026	135	Rubber Tired Dozers	16	55%	0.41	3.6	0.25	1.4	0.096
	Grading	2026	100	Rubber Tired Dozers	8	25%		0.8	0.041	0.32	0.016

Notes:

[1] Construction schedule is based on Project-specific estimate. Includes planned hours for all tracked dozers to be used during the given phase. There are two rubber tired dozers being utilized during the Site Preparation subphase.

[2] Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C Section 4.4.2 Bulldozing, which is based on AP-42, Section 11.9 for bulldozing equipment. The equation is:

$EF_{PM2.5} = C_{TSP} \times s^{1.2} / M^{1.3} \times F_{PM2.5}$, where the following default values are used:

5.7 = C_{TSP}, arbitrary coefficient
6.9 = s, material silt content (%)
7.9 = M, material moisture content (%)
0.105 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor

[3] Fugitive emissions were controlled by watering two times per day and a control efficiency of 61% (CalEEMod® default) was used in estimating the emissions.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
lbs - pounds
$PM_{2.5}$ - particulate matter less than 2.5 microns
VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 8
Fugitive Dust Emissions from Truck Loading Activity
Parkline
Menlo Park, California

Construction Area	Construction Subphase	Year	Number of Days	Haul Trips	Material Loaded[1]	Emission Factor[2]	Emissions w/o Watering		Emissions w/ Watering[3]	
						PM$_{2.5}$	PM$_{2.5}$		PM$_{2.5}$	
			days	# trips	ton	lb/ton	lb/day	ton/yr	lb/day	ton/yr
Project Preparation	Demolition	2025	140	2,960	33,494	3.1E-05	0.0075	5.2E-04	0.0029	2.0E-04
	Demolition	2026	38	790	8,943		0.0075	1.4E-04	0.0029	5.5E-05
	Grading	2026	100	8,920	100,944		0.032	0.0016	0.0123	6.2E-04
Phase 1	Building Construction	2026	63	3,494	39,539		0.020	6.2E-04	0.0076	2.4E-04
	Building Construction	2027	249	13,713	155,181		0.020	0.0024	0.0076	9.5E-04
	Building Construction	2028	107	5,898	66,749		0.020	0.0010	0.0076	4.1E-04
Phase 2	Demolition	2029	22	555	6,216		0.0089	9.7E-05	0.0035	3.8E-05
	Building Construction	2029	114	2,716	30,420		0.0084	4.8E-04	0.0033	1.9E-04
	Building Construction	2030	66.4	1589	17,793		0.0084	2.8E-04	0.0033	1.1E-04
Phase 3	Demolition	2030	22	88	525		7.5E-04	8.2E-06	2.9E-04	3.2E-06
	Building Construction	2030	200	1500	8,956		0.0014	1.4E-04	5.5E-04	5.5E-05

Notes:

[1] Total materials loaded for demolition and building construction phases were the total hauling amount for the entire phase scaled by number of trips per year and converted from cubic yards to tons assuming an average soil density of 1.5 grams per cubic centimeter, per the CalEEMod® User's Guide, Appendix C Section 4.4.3 Truck Loading.

[2] Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 13.2.4 for aggregate handling. The equation is:

$EF = k \times (0.0032) \times (U/5)^{1.3} / (M/2)^{1.4}$, where the following default values are used:

0.35 = k_{PM10}, PM_{10} particle size multiplier
0.053 = $k_{PM2.5}$, $PM_{2.5}$ particle size multiplier
4.2 = mean wind speed (U), metes per second
9.4 = mean wind speed (U), miles per hour
12 = material moisture content (M), %

[3] Fugitive PM emissions will be controlled by watering the construction site two times per day, which is estimated to reduce emissions by 61% per CalEEMod® recommendation.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
lbs - pounds
PM$_{2.5}$ - particulate matter less than 2.5 microns

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 9
Fugitive Road Dust Emission Factors
Parkline
Menlo Park, California

Road Dust Equation[1]

E [lb/VMT] = k*(sL)^0.91 * (W)^1.02 * (1-P/4N)

Parameter	Value
k = particle size multiplier for particle size range	
PM_{10} (lb/VMT)	0.0022
$PM_{2.5}$ (lb/VMT)	3.3E-04
sL = roadway silt loading [grams per square meter - g/m^2]	0.032
W = average weight of vehicles traveling the road [tons]	2.4
P = number of “wet” days in county with at least 0.01 in of precipitation during the annual averaging period	74
N = number of days in the averaging period	365
PM_{10} speciation profile fraction	0.46
$PM_{2.5}$ speciation profile fraction	0.069
E = Fugitive PM_{10} Emission Factor [g/VMT]	0.10
E = Fugitive $PM_{2.5}$ Emission Factor [g/VMT][2]	0.015
E = Fugitive PM_{10} Emission Factor with Street Sweeping Reduction [g/VMT][3]	0.075
E = Fugitive $PM_{2.5}$ Emission Factor with Street Sweeping Reduction [g/VMT][3]	0.011

Notes:

1. Road dust equation is based on the U.S. EPA AP-42 Chapter 13.2.1: Paved Roads. Parameter values were obtained from the 2021 California ARB Miscellaneous Process Methodology using major roadways silt loading, annual San Mateo county "wet" days, and statewide average vehicle fleet weight.

2. $PM_{2.5}$ emission factor was scaled from the PM_{10} value based on the ARB's guidance.

3. A 26% reduction in the PM_{10} emission factor was taken for street sweeping of arterial/collector streets, based on SCAQMD's Fugitive Dust Table XI-C. The $PM_{2.5}$ emissions factor was scaled from the PM_{10} value based on the ARB's guidance.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

ARB - Air Resource Board
lb - pounds
g - grams
m^2 - square meters
PM - particulate matter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
SCAQMD - South Coast Air Quality Management District
USEPA - United States Environmental Protection Agency
VMT - vehicle miles traveled

References:

USEPA. 2011. AP 42. Compilation of Air Pollutant Emission Factors, Volume 1. Fifth Edition. Chapter 13.2.1, Paved Roads. Available online at: https://www3.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf

California ARB. 2021. Miscellaneous Processes Methodologies - Paved Entrained Road Dust. Available online at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf

SCAQMD. 2007. Table XI-C Mitigation Measure Examples: Dust From Paved Roads. Available online at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust

Table 10
Estimated Emissions from Construction Architectural Coating Off-Gassing
Parkline
Menlo Park, California

Inputs[1,2]

Parameter		Input	Units
Residential Surface Area to Floor Area Ratio		2.7	--
Non-Residential Surface Area to Floor Area Ratio		2.0	--
Painted Stripes Area in Parking Structures		6%	--
Painted Building Area in Parking Structures		5%	--
Application Rate		100%	--
Fraction of Surface Area	Non-Parking Interior Surfaces	75%	--
	Non-Parking Exterior Shell	25%	--
	Parking Interior Surfaces	90%	--
	Parking Exterior Shell	10%	--
Indoor Paint or Parking Stripes VOC Content		100	g/L
Outdoor Paint VOC Content		150	g/L

Proposed Project Emissions by Phase

Phase	Land Use Type	Description	CalEEMod® Land Use	Square Footage[2] (square feet)	Building Surface Area[2] (square feet)	Painted Parking Stripes Area[2] (square feet)	Architectural Coating VOC emissions[3] (lbs)	Architectural Coating VOC Emissions by Phase (lbs)
Phase 1	Commercial	Commercial - Office/R&D	Research & Development	408,000	816,000	--	4,256	12,493
	Residential	Residential Apartments	Apartments Mid Rise	517,200	1,396,440	--	7,284	
	Residential	Residential Townhome	Condo/Townhouse	38,000	102,600	--	535	
	Retail	Retail	Convenience Market (24 hour)	2,002	4,004	--	21	
	Parking	Parking Garage	Enclosed Parking with Elevator	321,362	16,068	19,282	168	
	Parking	Residential Parking Garage	Enclosed Parking with Elevator	214,000	10,700	12,840	112	
	Parking	Surface Parking	Parking Lot	192,500	9,625	11,550	100	
	Parking	Residential Surface Parking	Parking Lot	33,000	1,650	1,980	17	
	Recreational	Recreational	City Park	1,089,000	--	--	--	
Phase 2	Commercial	Commercial - Office/R&D	Research & Development	683,900	1,367,800	--	7,134	7,386
	Residential	Residential Apartments	Apartments Mid Rise	--	--	--	--	
	Residential	Residential Townhome	Condo/Townhouse	--	--	--	--	
	Retail	Retail	Convenience Market (24 hour)	--	--	--	--	
	Parking	Parking Garage	Enclosed Parking with Elevator	482,400	24,120	28,944	252	
	Parking	Residential Parking Garage	Enclosed Parking with Elevator	--	--	--	--	
	Parking	Surface Parking	Parking Lot	--	--	--	--	
	Parking	Residential Surface Parking	Parking Lot	--	--	--	--	
	Recreational	Recreational	City Park	--	--	--	--	
Phase 3	Commercial	Commercial - Office/R&D	Research & Development	--	--	--	--	1,702
	Residential	Residential Apartments	Apartments Mid Rise	120,000	324,000	--	1,690	
	Residential	Residential Townhome	Condo/Townhouse	--	--	--	--	
	Retail	Retail	Convenience Market (24 hour)	--	--	--	--	
	Parking	Parking Garage	Enclosed Parking with Elevator	--	--	--	--	
	Parking	Residential Parking Garage	Enclosed Parking with Elevator	--	--	--	--	
	Parking	Surface Parking	Parking Lot	--	--	--	--	
	Parking	Residential Surface Parking	Parking Lot	24,000	1,200	1,440	13	
	Recreational	Recreational	City Park	--	--	--	--	

Table 10
Estimated Emissions from Construction Architectural Coating Off-Gassing
Parkline
Menlo Park, California

Proposed Project Emissions by Year[4]

Phase	Year	Work Days per Year	VOC Emissions by Phase (lbs)	VOC Emissions by Year (lbs)
Phase 1	2028	144	12,493	9,035
	2029	55		3,458
Phase 2	2030	194	7,386	5,218
	2031	81		2,168
Phase 3	2030	15	1,702	116
	2031	205		1,586

Notes:

[1] Inputs and assumptions are consistent with CalEEMod® 2022.1 for BAAQMD. Indoor and outdoor paint VOC content parameters were obtained from CalEEMod Appendix G Table G-17 Architectural Coating Emissions Factors by Air District.

[2] Building square footage is based on Methodology Report. Residential building surface area assumed to be 2.7 times the square footage and non-residential square footage is assumed to be 2.0 times the square footage, consistent with CalEEMod® Appendix C. Parking surface area is representative of the surface area of the lot that is painted, in accordance with the CalEEMod default of 6% for stripes and 5% for the building.

[3] Calculated based on CalEEMod® assumption that 1 gallon of paint covers 180 square feet and that building area is assumed to be 75% indoors and 25% outdoors except for parking land uses which are 90% indoors and 10% outdoors.

[4] Emissions were broken down by year based on the project's construction schedule. Emissions for each phases were scaled by the number of work days per year for each phase.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - Emission Factor
g - grams
L - liter
lb - pound
VOC - Volatile Organic Compound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 11
Estimated Emissions from Construction Paving Off-Gassing
Parkline
Menlo Park, California

Construction Area	Construction Activity	Year[1]	Asphalt-Paved Areas (sqft) by Phase[2]	Asphalt-Paved Area (acre)[3]	Asphalt Paving Off-Gassing ROG Emission Factor (lb/acre)[4]	Asphalt Paving Off-Gassing ROG Emissions (lb/Phase)	Asphalt Paving Off-Gassing ROG Emissions (lb/year)
Phase 1	Paving	2029	647,000	15	2.62	39	39
Phase 2	Paving	2031	68,000	2		4	4
Phase 3	Paving	2031	0	0		0	0
Total	**--**		**715,000**	**16**	**--**	**43**	**43**

Notes:

[1] The paving activity for each phase is based on the construction schedule and the number of working days per year.

[2] It was conservatively assumed that all impervious area in each phase is paved with asphalt. Impervious area information was provided by STUDIOS.

[3] This analysis assumes that all parking areas are asphalt paving areas.

[4] Emission factor from CalEEMod User's Guide, Appendix C.

Abbreviations:

lb - pound
ROG - reactive organic gas
sqft - square foot

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 12
Summary of Construction CAP Emissions by Source
Parkline
Menlo Park, California

Proposed Project

Construction Area	Construction Activity	Year	Source	Construction CAP Emissions[1]			
				ROG	NO_X	PM_{10}	$PM_{2.5}$
				lb/yr			
Project Preparation	Demolition	2025	On-Site Exhaust	50	476	10	9.4
			Mobile Exhaust	11	394	3.4	3.3
			Roadway Dust	--	--	17	5.3
		2026	On-Site Exhaust	13	126	2.5	2.5
			Mobile Exhaust	2.7	101	0.91	0.87
			Roadway Dust	--	--	4.4	1.4
	Site Preparation	2026	On-Site Exhaust	43	229	8.8	8.7
			Mobile Exhaust	12	38	0.39	0.37
			Roadway Dust	--	--	2.7	0.83
	Grading	2026	On-Site Exhaust	36	267	7.0	6.9
			Mobile Exhaust	23	1,175	10	10
			Roadway Dust	--	--	50	16
Phase 1	Building Construction	2026	On-Site Exhaust	30	303	5.7	5.6
			Mobile Exhaust	86	555	5.5	5.2
			Roadway Dust	--	--	32	10
		2027	On-Site Exhaust	119	1,185	22	22
			Mobile Exhaust	319	2,082	21	20
			Roadway Dust	--	--	124	39
		2028	On-Site Exhaust	51	508	9.5	9.4
			Mobile Exhaust	131	857	8.8	8.3
			Roadway Dust	--	--	53	17
	Architectural Coating	2028	On-Site Exhaust	12	96	2.2	2.0
			Mobile Exhaust	38.6	65	0.81	0.75
			Roadway Dust	--	--	7.5	2.3
			Architectural Coating	9,028	--	--	--
		2029	On-Site Exhaust	4.5	37	0.82	0.76
			Mobile Exhaust	14.0	23	0.29	0.27
			Roadway Dust	--	--	2.9	0.87
			Architectural Coating	3,456	--	--	--
	Paving	2029	On-Site Exhaust	8.1	53	1.6	1.6
			Mobile Exhaust	2	23	0.20	0.19
			Roadway Dust	--	--	1.2	0.39
			Paving	39	--	--	--
Phase 2	Demolition	2029	On-Site Exhaust	4.3	34	0.84	0.82
			Mobile Exhaust	1.1	63	0.61	0.59
			Roadway Dust	--	--	3.0	1.0
	Building Construction	2029	On-Site Exhaust	55	608	10	10
			Mobile Exhaust	116	458	5.0	4.8
			Roadway Dust	--	--	36	11
		2030	On-Site Exhaust	32	354	5.8	5.7
			Mobile Exhaust	65	256	2.8	2.7
			Roadway Dust	--	--	21	6.5
	Architectural Coating	2030	On-Site Exhaust	23	262	3.5	3.3
			Mobile Exhaust	47.0	78	0.97	0.91
			Roadway Dust	--	--	10.1	3.1
			Architectural Coating	5,248	--	--	--
		2031	On-Site Exhaust	9.4	106	1.4	1.3
			Mobile Exhaust	18.7	31	0.38	0.36
			Roadway Dust	--	--	4.2	1.29
			Architectural Coating	2,180	--	--	--
	Paving	2031	On-Site Exhaust	12	80	2.4	2.3
			Mobile Exhaust	2	25	0.21	0.20
			Roadway Dust	--	--	1.4	0.4
			Paving	4.1	--	--	--

Table 12
Summary of Construction CAP Emissions by Source
Parkline
Menlo Park, California

Phase 3	Demolition	2030	On-Site Exhaust	2.6	24	0.47	0.47
			Mobile Exhaust	0.35	10	0.10	0.093
			Roadway Dust	--	--	0.50	0.16
	Building Construction	2030	On-Site Exhaust	29	335	5.2	5.2
			Mobile Exhaust	61	307	3.2	3.0
			Roadway Dust	--	--	23	7.1
	Architectural Coating	2030	On-Site Exhaust	0.27	4.9	0.031	0.031
			Mobile Exhaust	3.45	5.9	0.073	0.068
			Roadway Dust	--	--	0.75	0.228
			Architectural Coating	116	--	--	--
		2031	On-Site Exhaust	3.8	66	0.42	0.42
			Mobile Exhaust	45.1	77	0.95	0.89
			Roadway Dust	--	--	10.3	3.15
			Architectural Coating	1,584	--	--	--
	Paving	2031	On-Site Exhaust	1.6	12	0.31	0.31
			Mobile Exhaust	0.6	6	0.05	0.05
			Roadway Dust	--	--	0.3	0.11

Notes:

1. Construction emissions were estimated using the same methodologies implemented within CalEEMod® 2022.1.0. On-Site Exhaust represents emissions from off-road equipment, including onsite truck use, while mobile exhaust includes emissions from worker, vendor, and hauling trucks travelling to and from the project site. PM emissions of roadway dust are from the tire wear and brake wear of construction vehicles.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds

NO_X - nitrogen oxides
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
ROG - reactive organic gases

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

2022 California Environmental Quality Act (CEQA) Guidelines. 2023. Bay Area Air Quality Management District (BAAQMD). April. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

Table 13
Summary of Construction GHG Emissions by Source
Parkline
Menlo Park, California

Construction Area	Construction Activity	Year	Source	Construction GHG Emissions[1,2]
				CO_2e
				MT/yr
Project Preparation	Demolition	2025	On-Site Exhaust	194
			Mobile Exhaust	119
		2026	On-Site Exhaust	52
			Mobile Exhaust	31
	Site Preparation	2026	On-Site Exhaust	179
			Mobile Exhaust	23
	Grading	2026	On-Site Exhaust	146
			Mobile Exhaust	355
Phase 1	Building Construction	2026	On-Site Exhaust	121
			Mobile Exhaust	244
		2027	On-Site Exhaust	476
			Mobile Exhaust	940
		2028	On-Site Exhaust	205
			Mobile Exhaust	397
	Architectural Coating	2028	On-Site Exhaust	19
			Mobile Exhaust	62
		2029	On-Site Exhaust	7.3
			Mobile Exhaust	23
	Paving	2029	On-Site Exhaust	28
			Mobile Exhaust	10
Phase 2	Demolition	2029	On-Site Exhaust	15
			Mobile Exhaust	20
	Building Construction	2029	On-Site Exhaust	217
			Mobile Exhaust	273
		2030	On-Site Exhaust	127
			Mobile Exhaust	157
	Architectural Coating	2030	On-Site Exhaust	46
			Mobile Exhaust	81
		2031	On-Site Exhaust	19
			Mobile Exhaust	33
			Architectural Coating	0
	Paving	2031	On-Site Exhaust	44
			Mobile Exhaust	10
Phase 3	Demolition	2030	On-Site Exhaust	12
			Mobile Exhaust	3.4
	Building Construction	2030	On-Site Exhaust	126
			Mobile Exhaust	169
	Architectural Coating	2030	On-Site Exhaust	0.73
			Mobile Exhaust	6.0
		2031	On-Site Exhaust	10
			Mobile Exhaust	82
	Paving	2031	On-Site Exhaust	7.5
			Mobile Exhaust	3
Total				**5,093**

Table 13
Summary of Construction GHG Emissions by Source
Parkline
Menlo Park, California

Notes:

[1] Construction emissions were estimated using the same methodologies implemented within CalEEMod® 2022.1.0. On-Site Exhaust represents emissions from off-road equipment, including onsite truck use, while mobile exhaust includes emissions from worker, vendor, and hauling trucks travelling to and from the project site.

[2] Carbon dioxide equivalent emissions were determined using IPCC 6th Assessment Report Global Warming Potentials for CH_4 and N_2O.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CO_2e - carbon dioxide equivalent
CH_4 - methane
GHG - greenhouse gas
MT - metric tons
N_2O - nitrous oxide

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

2022 California Environmental Quality Act (CEQA) Guidelines. 2023. Bay Area Air Quality Management District (BAAQMD). April. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

Table 14
Construction Emissions by Year
Parkline
Menlo Park, California

Year	Construction Daily CAP Emissions[1]				Construction GHG Emissions
	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
	lb/day				MT/year
2025	0.41	5.9	0.20	0.12	313
2026	0.94	11	0.50	0.26	1,150
2027	1.7	13	0.64	0.31	1,417
2028	36	5.9	0.32	0.15	683
2029	14	5.0	0.24	0.12	593
2030	22	6.3	0.30	0.15	728
2031	16	1.7	0.095	0.046	208

Notes:

[1] Daily emissions are conservatively averaged over the number of work days per year (e.g., 260 days in a full year), not including weekends.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CAP - Criteria Air Pollutants
CO_2e - carbon dioxide equivalent
lb - pounds
MT - metric tons
NO_X - nitrogen oxides
PM - Particulate Matter
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
ROG - reactive organic gases

Table 15
Building Operational Capacity For Emissions Scaling
Parkline
Menlo Park, California

Proposed Project

Phase[1]	Percent Breakdown of Land Use Type by Phase								
	Commercial - Office/R&D	Residential Apartments	Residential Townhome	Retail	Non-Residential Parking Garage	Residential Parking Garage	Non-Residential Surface Parking	Residential Surface Parking	Recreational
Phase 1	37%	81%	100%	100%	39%	100%	100%	66%	100%
Phase 2	63%	0%	0%	0%	61%	0%	0%	0%	0%
Phase 3	0%	19%	0%	0%	0%	0%	0%	34%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Notes:

[1] Land Use area/subphasing information and full buildout square footage by building provided by Project Applicant.

Abbreviations:

% - percent

R&D - Research and Development

Table 16
Trips and VMT for Project Operations
Parkline
Menlo Park, California

Land Use			Unit Trip Rates[1]	Daily Trip Rates[2]				Annual Trips[3]	VMT[3,4]	
Type	**Quantity**	**Unit**	**Weekday**	**Weekday**	**Saturday**	**Sunday**	**Avg. Daily**		**Weekday Daily**	**Annual**
			Trips/day/unit area	**Trips/day**				**Trips/yr**	**Miles/day**	**Miles/yr**
Existing Conditions										
General Office Building	1,094	1,000 sq.ft.	0.47	518	118	37	392	142,738	6,263	1,725,705
Full Buildout Conditions										
Research & Development	1,094	1,000 sq.ft.	7.9	8,662	1,462	854	6,518	2,372,652	104,729	28,685,369
Apartments Mid Rise	431	D.U.	3.2	1,399	1,262	1,052	1,330	484,003	12,323	4,264,071
Single Family Housing	19	D.U.	5.2	98	99	89	97	35,335	866	311,304
Affordable Housing	100	D.U.	3.4	344	310	258	327	118,861	3,026	1,047,166
City Park	1	field	68	68	171	191	100	36,493	658	352,891
			Total	10,571	3,304	2,444	8,372	3,047,346	121,601	34,660,800
Partial Buildout Conditions										
			End of Phase 1	4,802	2,079	1,651	3,963	1,442,399	52,979	15,646,857
			End of Phase 2	10,227	2,994	2,185	8,045	2,928,485	118,575	33,613,633

Notes:

[1] Trip rates provided by the Hexagon transportation engineer.

[2] Weekday Project trip rates provided by the Hexagon transportation engineer. Saturday and Sunday trip generation are adjusted based on weekday trips and CalEEMod default trip rate ratios.

[3] Annual trips are calculated assuming 52 weeks per year of operation for all fleets.

[4] Weekday Daily VMT provided by the transportation engineer. Annual VMT calculated using the daily VMT and the ratio of average daily trips and annual trips.

Abbreviations:

D.U. - dwelling unit
sqft - square feet
VMT - vehicle miles traveled
yr - year

Table 17
Summary of Project Fleet Mix
Parkline
Menlo Park, California

Fleet	Year	By EMFAC2007 Class[1]												
		LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	MCY	SBUS	MH
Existing	2022	49.50%	4.14%	25.56%	14.77%	3.04%	0.63%	1.24%	0.72%	--	--	0.39%	--	--
Full Buildout	2031	38.92%	3.83%	31.58%	18.59%	3.71%	0.86%	1.31%	0.75%	--	--	0.46%	--	--

Notes:

[1] Default EMFAC fleet mix was adjusted to exclude buses and motor homes, because of the infill, mixed-use nature of the Project.

Abbreviations:

EMFAC - EMission FACtor model
HHDT - heavy-heavy duty trucks
LDA - light duty auto (passenger cars)
LDT1 - light-duty trucks (GVWR <6,000 lbs and ETW <= 3,750 lbs)
LDT2 - light-duty trucks (GVWR <6,000 lbs and ETW 3,751-5,760 lbs)
LHDT1 - light heavy duty trucks (GVWR 8,501-10,000 lb)
LHDT2 - light heavy duty trucks (GVWR 10,001 - 14,000 lb)
MCY - motorcycle
MDV - medium duty trucks
MH - motor homes
MHDT - medium-heavy duty trucks
OBUS - other buses
SBUS - school bus
UBUS - urban bus

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 18
Mobile Criteria Air Pollutants Emission Factors
Parkline
Menlo Park, California

Calendar Year	CAP Emission Factors[1,2]																			
	ROG						NO_x			PM_{10}					$PM_{2.5}$					
	RUNEX	RUNLOSS	STREX	IDLEX	DIURN	HOTSOAK	RUNEX	STREX	IDLEX	RUNEX	PMTW	PMBW	STREX	IDLEX	RUNEX	PMTW	PMBW	STREX	IDLEX
	g/mile		g/trip				g/mile	g/trip		g/mile			g/trip		g/mile			g/trip	
2022	0.019	0.035	0.36	0.0044	0.26	0.11	0.12	0.35	0.054	0.0022	0.0083	0.011	0.0020	1.6E-04	0.0020	0.0021	0.0038	0.0018	1.5E-04
2029	0.011	0.032	0.21	0.0036	0.19	0.083	0.062	0.25	0.034	0.0014	0.0083	0.011	0.0014	1.1E-04	0.0014	0.0021	0.0040	0.0013	1.0E-04
2031	0.010	0.031	0.19	0.0035	0.17	0.078	0.054	0.23	0.030	0.0013	0.0083	0.012	0.0013	1.0E-04	0.0012	0.0021	0.0040	0.0012	9.6E-05

Notes:

[1] Emission factors for each fleet type were developed by creating weighted emission factors based on the vehicle classes in each fleet type. EMFAC2021 emissions were summed across each year for each vehicle class within a fleet type, then a vehicle class emission factor based on VMT and trip counts for the vehicle class was calculated. Emission factors for each vehicle class within a fleet type were weighted based on total EMFAC VMT and trips to create a fleet-wide emission factor for each year.

[2] Emission factors were calculated for the following calendar years: existing conditions (2022), end of Phase 1 (2029), end of Phase 2 (2031), and the first year of full buildout operations (2031). Mobile emissions during interim operational years not listed were calculated using the same emission factors from the closest year, e.g., 2030 operational emissions from Phase 1 were conservatively calculated using the average emission factors from year 2029.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CAP - criteria air pollutants
DIURN - diurnal evaporative hydrocarbon emissions
g - grams
HOTSOAK - hot soak evaporative hydrocarbon emissions
IDLEX - idle exhaust emissions
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PMTW - tire wear particulate matter emissions
PMBW - brake wear particulate matter emissions
ROG - reactive organic gases
RUNEX - running exhaust emissions
RUNLOSS - running loss evaporative hydrocarbon emissions
STREX - start exhaust tailpipe emissions
VMT - Vehicle miles traveled

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 19
Mobile Greenhouse Gas Emission Factors
Parkline
Menlo Park, California

Calendar Year	GHG Emission Factors[1,2]												
	CO_2			CH_4			N_2O			HFC	CO_2e		
	RUNEX	STREX	IDLEX	RUNEX	STREX	IDLEX	RUNEX	STREX	IDLEX	RUNEX	RUNEX	STREX	IDLEX
	g/mile	g/trip		g/mile	g/trip		g/mile	g/trip		g/mile	g/mile	g/trip	
2022	350	71	9	0.0056	0.073	0.0023	0.011	0.033	0.0014	5.6E-04	354	83	10
2029	305	60	7.4	0.0036	0.047	0.0020	0.009	0.026	0.0011	2.7E-04	308	69	7.8
2031	296	58	6.9	0.0033	0.043	0.0018	0.0084	0.025	0.0010	2.1E-04	299	67	7.3

Notes:

[1] Emission factors for each fleet type were developed by creating weighted emission factors based on the vehicle classes in each fleet type. EMFAC2021 emissions were summed across each year for each vehicle class within a fleet type, then a vehicle class emission factor based on VMT and trip counts for the vehicle class was calculated. Emission factors for each vehicle class within a fleet type were weighted based on total EMFAC VMT and trips to create a fleet-wide emission factor for each year.

[2] Emission factors were calculated for the following calendar years: existing conditions (2022), end of Phase 1 (2029), end of Phase 2 (2031), and the first year of full buildout operations (2031). Mobile emissions during interim operational years not listed were calculated using the same emission factors from the closest year, e.g., 2030 operational emissions from Phase 1 were conservatively calculated using the average emission factors from year 2029.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
CH_4 - methane
DIURN - diurnal evaporative hydrocarbon emissions
g - grams
GHG - greenhouse gases
HFC - hydrofluorocarbons
HOTSOAK - hot soak evaporative hydrocarbon emissions
IDLEX - idle exhaust emissions
N_20 - nitrous oxide
PMTW - tire wear particulate matter emissions
PMBW - brake wear particulate matter emissions
ROG - reactive organic gases
RUNEX - running exhaust emissions
RUNLOSS - running loss evaporative hydrocarbon emissions
STREX - start exhaust tailpipe emissions
VMT - Vehicle miles traveled

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 20
Mobile Emissions Summary
Parkline
Menlo Park, California

Fleet Type	Year	Trip Rates[1]		Vehicle Miles Traveled[1]		CAP Emissions[2]				GHG Emissions[2]				
		Daily	Annual	Daily	Annual	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	HFC	CO_2e
		Trips/day	Trips/yr	Miles/day	Miles/yr	tons/year				tons/year				MT/year
Existing	2022	392	142,738	4,741	1,725,705	0.22	0.29	0.23	0.044	678	0.023	0.026	0.0011	624
Full Buildout	2031	8,372	3,047,346	95,222	34,660,800	3.1	3.0	4.7	0.86	11,526	0.27	0.41	0.0080	10,583
End of Phase 1	2029	3,963	1,442,399	42,986	15,646,857	1.5	1.5	2.1	0.39	5,371	0.14	0.19	0.0047	4,935
End of Phase 2	2030	8,045	2,928,485	92,345	33,705,978	3.1	3.0	4.5	0.84	11,364	0.28	0.40	0.0089	10,437

Notes:

[1] Daily trip rates and VMT were provided by the transportation consultant, for more detail see Table 16.

[2] Criteria air and greenhouse gas pollutants are calculated by year using emission factors for the associated year and fleet from EMFAC2021. Project emission factors are shown in Table 18 and Table 19.

Abbreviations:

CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
CAP - criteria air pollutant
GHG - greehouse gas
MT - metric ton
N_2O - nitrogen dioxide
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 21

TAC Emission Rates for Laboratories
Parkline
Menlo Park, California

TAC[1]	CAS Number	Annual Emission Factors (g/s/sqft)			Hourly Emission Factors (g/s/sqft)		
		Lab Type 1	Lab Type 2	Lab Type 3	Lab Type 1	Lab Type 2	Lab Type 3
1,4-Dioxane	123-91-1	2.6E-09	2.0E-10	2.3E-11	1.4E-08	8.7E-10	1.2E-10
Acrylamide	79-06-1	1.5E-11	6.2E-11	--	7.9E-11	3.2E-10	--
Benzene	71-43-2	2.3E-09	1.1E-10	7.3E-11	1.2E-08	4.7E-10	3.8E-10
Carbon Tetrachloride	56-23-5	2.0E-10	6.2E-10	4.8E-10	1.0E-09	3.1E-09	2.5E-09
Chloroform	67-66-3	2.7E-08	8.3E-09	9.8E-10	1.4E-07	4.1E-08	5.1E-09
Dimethyl Formamide	68-12-2	5.5E-10	3.1E-10	3.3E-12	2.9E-09	1.4E-09	1.7E-11
Ethylene Dichloride	107-06-2	6.1E-11	2.8E-10	2.5E-09	3.2E-10	1.4E-09	1.3E-08
Formaldehyde	50-00-0	9.4E-11	7.8E-09	9.8E-10	4.8E-10	2.8E-08	5.1E-09
Glutaraldehyde	111-30-8	4.0E-11	2.4E-10	9.4E-11	2.1E-10	1.1E-09	4.9E-10
Hydrochloric Acid	7647-01-0	9.5E-10	2.0E-08	8.5E-09	4.9E-09	4.4E-08	4.4E-08
Hexane	110-54-3	1.8E-10	4.2E-10	8.1E-10	9.1E-10	1.6E-09	4.2E-09
Hydrogen Fluoride	7664-39-3	3.2E-12	1.5E-10	1.8E-09	1.7E-11	4.6E-11	9.3E-09
Hydrazine	302-01-2	1.2E-11	6.8E-12	5.9E-13	6.1E-11	3.2E-11	3.0E-12
Isopropyl Alcohol	67-63-0	3.7E-09	2.5E-08	1.8E-08	1.9E-08	1.2E-07	9.1E-08
Methanol	67-56-1	1.2E-07	9.0E-08	4.4E-08	6.0E-07	3.7E-07	2.3E-07
Methyl Bromide	74-83-9	2.9E-10	6.3E-08	--	1.5E-09	3.2E-07	--
Methylene Chloride	75-09-2	1.1E-07	1.2E-09	2.8E-10	5.6E-07	4.8E-09	1.5E-09
Perchloroethylene	127-18-4	9.8E-11	5.7E-12	4.9E-11	5.1E-10	3.0E-11	2.5E-10
Trichloroethylene	79-01-6	--	6.3E-11	3.9E-10	--	3.2E-10	2.0E-09
Toluene	108-88-3	7.7E-09	7.8E-10	4.1E-10	4.0E-08	3.8E-09	2.1E-09
Triethylamine	121-44-8	6.5E-10	1.3E-10	--	3.4E-09	5.3E-10	--
Xylenes	1330-20-7	2.7E-10	1.5E-09	8.4E-10	1.4E-09	7.4E-09	4.4E-09

Notes:

[1] TACs and emission rates listed were obtained from page 29 of Appendix 2 from the Health Risk Assessment for the University of California, Davis Long Range Development Plan.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

TAC - toxic air contaminant
CAS - Chemical Abstracts Service
g- gram
s - second
sqft - square feet

References:

Yorke Engineering, LLC, 2018. Health Risk Assessment for the University of California, Davis, 2017 Long Range Development Plan. January. Emission rates are based on Page 29 of 43 of Appendix 2.

Table 22
Laboratory Emissions of Reactive Organic Gases (ROG)
Parkline
Menlo Park, California

Parameters	Value	Unit
Percent of Wet Lab	50%	--
ROG Emission Rate[1]	2.7E-07	g/s/sqft
Laboratory Operation Time[2]	3.2E+07	s

Land Use Type	Wet Lab Area[3]	Lab VOC emissions
	sqft	tons/yr
Existing Conditions		
Commercial - Office/R&D	216,197	2.0
Full Buildout		
Commercial - Office/R&D	545,950	5.1
Partial Buildout[4]		
Phase 1 Emissions		1.9
Phase 2 Emissions		3.2
Phase 3 Emissions		0

Notes:

[1] The specific lab-type is unknown by the Project Applicant. Therefore, the ROG emission rate is based on Lab Type 1 because it results in the most conservative estimate of emissions.

[2] The laboratories are assumed to be opperating 24 hours a day and 365 days a year.

[3] The area of wet labs is assumed to be 50% of total office/R&D space for project conditions. For existing conditions, the square footage of wet labs was 50% all buildings that would be demolished and that contain wet labs, including buildings A, L, M, 301, 304 and 306.

[4] Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

g - gram	sqft - square feet
ROG - reactive organic gases	VOC - volatile organic compounds
s - second	yr - year

Table 23
Project Generator Emission Factors
Parkline
Menlo Park, California

Fuel	Engine Tier	Generator Size Range (hp)		Engine Emission Factors[1]				
				(g/bhp-hr)				
		Minimum	**Maximum**	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
Diesel	Tier 2	175	300	0.26	4.7	0.15	0.15	523
Diesel	Tier 2	300	600	0.26	4.6	0.15	0.15	523
Diesel	Tier 2	750	1,200	0.26	4.6	0.15	0.15	523
Diesel	Tier 4	1,207	--	0.15	0.50	0.020	0.020	523

Notes:

[1] Engine emission factors for PM_{10} and $PM_{2.5}$ (assumed all engines are diesel fueled and that all PM_{10} is diesel particulate matter) based on ARB standards for diesel generator engines. Emission factors for TOG and ROG were converted from NMHC values provided in the Tier standards using EPA hydrocarbon conversion factors. When an emission factor was specified as a combined NMHC+NOx factor, the NMHC/NOx ratio of 5%/95% was taken from BAAQMD guidance. The emission factors for CO_2e are based on diesel emergency generator CO_2, CH_4 and N_2O emission factors from CalEEMod User's Guide Appendix G, Table G-40, along with a GWP of 25 for CH_4 and a GWP of 298 for N_2O.

Abbreviations:

ARB - [California] Air Resources Board
BAAQMD - Bay Area Air Quality Management District
CalEEMod - CALifornia Emissions Estimator MODel
CO_2e - carbon dioxide equivalents
EPA - US Environmental Protection Agency
g/bhp-hr - Grams per Brake Horsepower Hour
hp - horsepower
NMHC - non-methane hydrocarbon
NO_X - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
GWP - global warming potential

References:

CalEEMod Version 2020.4.0. Available online at: http://www.caleemod.com

California Air Resources Board. Non-road Diesel Engine Certification Tier Chart. Available online at: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart

USEPA. 2010. Conversion Factors for Hydrocarbon Emission Components, NR-002d. EPA-420-R-10-015. July. Available online at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P10081RP.PDF?Dockey=P10081RP.PDF

BAAQMD. 2004. CARB Emission Factors for CI Diesel Engines - Percent HC in Relation to NMHC + NOx. Available at: https://www.baaqmd.gov/~/media/files/engineering/policy_and_procedures/engines/emissionfactorsfordieselengines.pdf

Table 24
Project Generator Emissions
Parkline
Menlo Park, California

Generator Information[1]

Source	Number of Generators	Engine Control[2]	Fuel Type	Size	Annual Operation[3]	Load Factor
				hp	hr/yr	
Office B1 Generator	1	Tier 4	Diesel	2,012	50	0.73
Office B2 Generator	1	Tier 4	Diesel	2,012	50	0.73
Office B3 Generator	1	Tier 4	Diesel	2,012	50	0.73
Office B4 Generator	1	Tier 4	Diesel	2,012	50	0.73
Office B5 Generator	1	Tier 4	Diesel	2,012	50	0.73
Amenities Generator	1	Tier 2	Diesel	402	50	0.73
Parking PG1 Generator	1	Tier 2	Diesel	268	50	0.73
Parking PG2 Generator	1	Tier 2	Diesel	268	50	0.73
Parking PG3 Generator	1	Tier 2	Diesel	268	50	0.73
Residential R1 Generator	1	Tier 2	Diesel	268	50	0.73
Residential R2 Generator	1	Tier 2	Diesel	268	50	0.73
Residential R3 Generator	1	Tier 2	Diesel	268	50	0.73
VLA Generator	1	Tier 2	Diesel	268	50	0.73

Generator Emissions

Source	Size	Annual Emissions				
		(ton/yr)				(MT/yr)
		ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
Office B1 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Office B2 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Office B3 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Office B4 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Office B5 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Amenities Generator	402	0.0042	0.074	0.0024	0.0024	7.7
Parking PG1 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Parking PG2 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Parking PG3 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Residential R1 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Residential R2 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Residential R3 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
VLA Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Total Emissions		**0.085**	**0.63**	**0.022**	**0.022**	**236**
Phase 1 Generator Emissions		0.040	0.36	0.012	0.012	105
Phase 2 Generator Emissions		0.042	0.22	0.0081	0.0081	126
Phase 3 Generator Emissions		0.0028	0.050	0.0016	0.0016	5.1

Notes:

1. Number, size, and fuel of emergency generators were provided by the Project Applicant in Summary of Stationary Equipment Memo on April 18, 2023. The term "VLA Generator" refers to the generator located at the Phase 3 residential area.
2. All generators over 1,000 HP were assumed to be Tier 4, and all other generators are assumed to be Tier 2, consistent with BAAQMD BACT guidelines.
3. Based on historical runtime of existing emergency generators on SRI campus, the combined operational hours from engine testing, maintenance and emergency operations for any given existing generator do not exceed 50 hours a year. Therefore, 50 hours of operation was used to represent emergency use and testing and maintenance.

Abbreviations:

BACT - Best Available Control Technology
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
g - grams
hp - horsepower
hr - hour
MT - metric tons
NO_X - oxides of nitrogen
PM - particulate matter
PM_{10} - PM less than 10 microns in diameter
$PM_{2.5}$ - PM less than 2.5 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Resources Board. Airborne Toxic Control Measures (ATCM), 17 CCR § 93115. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf

BAAQMD. Best Available Control Technology (BACT) Guideline. Available online at: https://www.baaqmd.gov/~/media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en.

Table 25
Generator TAC Emissions for Existing Conditions
Parkline
Menlo Park, California

Generator Location[1,2]	Number of Generators	Size	Load Factor	Engine Control	Annual Operation	Annual Emissions[3]				
						tons/yr				MT/yr
		hp			hr/yr	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
Building U	1	755	0.73	Tier 2	50	0.0078	0.14	0.0046	0.0046	14
Building A	1	402	0.73	Tier 2	50	0.0042	0.07	0.0024	0.0024	8
Building L	1	536	0.73	Tier 2	50	0.0055	0.10	0.0032	0.0032	10
Total Emissions						**0.018**	**0.31**	**0.010**	**0.010**	**32**

Notes:

[1] Building U generator information is provided by the Project Applicant. Daily emissions of the Building U emergency generator were obtained from the BAAQMOD Permit To Operate. Operation for routine maintenance and testing was conservatively assumed to be 50 hours per year, the maximum allowable by the Airborne Toxics Control Measure (ATCM) for Stationary Compression Ignition Engines (17 CCR 93115).

[2] Building A and L generator horsepower information is provided by the Project Applicant. All generators below 1,000 HP were assumed to be Tier 2. Based on historical runtime of existing emergency generators on SRI campus, the combined operational hours from engine testing, maintenance and emergency operations for any given existing generator do not exceed 50 hours a year. Therefore, 50 hours of operation was used to represent emergency use and testing and maintenance.

[3] $PM_{2.5}$ emissions were conservatively assumed to be equal to DPM emissions.

Abbreviations:

DPM - diesel particulate matter
hr - hour
lb - pound
TAC - toxic air contaminants
BAAQMD - Bay Area Air Quality Management District
yr - year

Table 26

California Air Toxics Emission Factors (CATEF) and Emissions for Natural Gas Combustion in Cogeneration Plant

Parkline
Menlo Park, California

Fuel Usage[1]	MMBTU	457,514
	MMscf	441

TAC	CAS	Emission Factor[2]	Annual Emissions[3]	Emission Rate[4]
		lbs/MMscf	lb/yr	g/s
$PM_{2.5}$	88101	6.0	2,644	0.038
1,3-Butadiene	106-99-0	1.2E-04	0.055	7.9E-07
2-Chloronaphthalene	91-58-7	1.7E-07	7.7E-05	1.1E-09
2-Methylnaphthalene	91-57-6	5.1E-06	0.0022	3.2E-08
Acenaphthene	83-32-9	5.2E-06	0.0023	3.3E-08
Acenaphthylene	208-96-8	2.9E-06	0.0013	1.8E-08
Acetaldehyde	75-07-0	0.054	24	3.4E-04
Acrolein	107-02-8	0.011	4.8	6.9E-05
Anthracene	120-12-7	9.4E-06	0.0041	6.0E-08
Benzene	71-43-2	0.010	4.5	6.4E-05
Benzo(a)anthracene	56-55-3	3.6E-06	0.0016	2.3E-08
Benzo(a)pyrene	50-32-8	2.6E-06	0.0011	1.6E-08
Benzo(b)fluoranthene	205-99-2	2.9E-06	0.0013	1.8E-08
Benzo(e)pyrene	192-97-2	4.6E-07	2.0E-04	2.9E-09
Benzo(g,h,i)perylene	191-24-2	3.0E-06	0.0013	1.9E-08
Benzo(k)fluoranthene	207-08-9	2.9E-06	0.0013	1.8E-08
Chrysene	218-01-9	5.0E-06	0.0022	3.2E-08
Dibenz(a,h)anthracene	53-70-3	3.0E-06	0.0013	1.9E-08
Ethylbenzene	100-41-4	0.010	4.3	6.2E-05
Fluoranthene	206-44-0	1.1E-05	0.0047	6.8E-08
Fluorene	86-73-7	1.6E-05	0.0069	9.9E-08
Formaldehyde	50-00-0	0.11	49	7.1E-04
Hexane	110-54-3	0.22	96	0.0014
Indeno(1,2,3-cd)pyrene	193-39-5	2.9E-06	0.0013	1.8E-08
Naphthalene	91-20-3	9.3E-04	0.41	5.9E-06
Perylene	198-55-0	5.8E-07	2.6E-04	3.7E-09
Phenanthrene	85-01-8	8.6E-05	0.038	5.4E-07
Propylene	115-07-1	0.57	252	0.0036
Propylene Oxide	75-56-9	0.045	20	2.8E-04
Pyrene	129-00-0	1.2E-05	0.0052	7.5E-08
Toluene	108-88-3	0.059	26	3.8E-04
Xylenes	1330-20-7	0.043	19	2.7E-04

Notes:

[1] Cogen fuel usages for existing conditions were estimated for the time period between September 2021 and August 2022.

[2] Emission factors are the median emission factors from the CARB California Air Toxics Emission Factor (CATEF) database for natural gas combustion at a stationary turbine.

[3] Emissions estimated assuming operation all year long.

[4] Emissions rates are used for dispersion modeling.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CARB - California Air Resources Board
CAS - chemical abstract services
Cogen - Cogeneration Plant
g - gram
MMBtu - million British Thermal Units
MMscf - million metric standard cubic feet
TAC - toxic air contaminants
yr - year
hr - hour
kW - kilowatt
lb - pound
s - second

References:

CARB 1996. California Air Toxics Emission Factor. Available at: https://ww2.arb.ca.gov/california-air-toxics-emission-factor.

Table 27
Energy Use Emission Factors
Parkline
Menlo Park, California

Historical Electricity Intensity

Electricity Data	Electricity Carbon Intensity Factor	Units
CO_2 Intensity Factor per Total Energy Delivered[1]	96	lbs CO_2/MWh delivered
CO_2e Intensity Factor per Total Energy Delivered[1]	98	lbs CO_2e/MWh delivered
CO_2 Intensity Factor per Total Fossil Fuel-Fired Energy[2]	895	lbs CO_2/MWh delivered
CO_2e Intensity Factor per Total Fossil Fuel-Fired Energy[2]	897	lbs CO_2e/MWh delivered

Estimated Intensity Factor for Total Energy Delivered by PG&E

Year[3]	Electricity Carbon Intensity Factor[4,5]	Units
2022	96	lbs CO_2/MWh delivered
	98	lbs CO_2e/MWh delivered
2029	96	lbs CO_2/MWh delivered
	98	lbs CO_2e/MWh delivered
2031	95	lbs CO_2/MWh delivered
	96	lbs CO_2e/MWh delivered

Natural Gas Emission Factors[6]

Greenhouse Gas Emission Factor	CO_2	CH_4	N_2O	CO_2e	Units
Global Warming Potential	1	25	298	-	
Cogen	117	0.0022	2.2E-04	117	lb/MMBTU
Nonresidential Boiler (5-75 MMBTU)	118	0.0023	6.3E-04	118	lb/MMBTU
Criteria Air Pollutant Emission Factor by Land Use Type	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**Units**
Cogen	0.0021	0.099	0.0066	0.0066	lb/MMBtu
Nonresidential Boiler (5-75 MMBTU)	0.0054	0.10	0.0075	0.0075	lb/MMBtu

Notes:

[1] This CO_2e intensity factor is the latest carbon intensity reported by PG&E, as reported in the 2021 Power Content Label. The intensity factor for CO_2 is conservatively calculated using CH_4 and N_2O emissions factors for PG&E from CalEEMod version 2022.1, as reported in Table G-3 in Appendix G of the CalEEMod User Guide.

[2] This intensity factor is from the EPA's Emissions and Generation Resource Integrated Database (eGRID) for 2020. This CO_2 intensity factor is the output emission rate for fossil fuel sources of energy only in the California Independent System Operator's balancing authority area which includes PG&E and is assumed to remain constant. The intensity factor for CO_2e is conservatively calculated using CH_4 and N_2O emissions factors for PG&E from CalEEMod version 2022.1, as reported in Table G-3 in Appendix G of the CalEEMod User Guide.

[3] The percentage of retail sales of electricity from carbon-free sources to California were assumed to be 90% by 2035, 95% by 2040, and 100% by 2045 and are consistent with Senate Bill No. 1020. Consistent with the California Public Utilities Commission (CPUC), a linear trend was assumed in between the target years. As a result, the carbon-free percentages for 2031-2034, 2036-2039, and 2041-2044 were estimated by assuming a constant linear increase of 1% per year.

[4] This intensity factor includes both fossil fuel and carbon-free sources of energy, such as nuclear. Diablo Canyon Nuclear Plant, which accounts for a portion of the carbon-free energy in this CO_2 intensity factor, is expected to be closed by 2024-2025 (https://www.pge.com/en_US/safety/how-the-system-works/diablo-canyon-power-plant/diablo-canyon-power-plant/engagement-panel.page). According to Senate Bill No. 1090 (approved 9/2018), "The [California Public Utilities] commission shall ensure that integrated resource plans are designed to avoid any increase in emissions of greenhouse gases as a result of the retirement of the Diablo Canyon Units 1 and 2 powerplant." This was incorporated into CPUC section 712.7(2)(b). Based on this information, the total CO_2 intensity factor was assumed to remain constant at the 2021 reported intensity factor for PG&E until 2031. The intensity factors for total energy delivered from 2035 and onwards were estimated by multiplying the percentage of energy delivered from fossil-fuel fired sources by the CO2 emissions per total fossil-fuel fired energy presented above. The intensity factors between 2030 and 2035 were linearly interpolated.

[5] Global Warming Potentials (GWP) are based on the IPCC Fourth Assessment Report. CH_4 and N_2O emission factors are from the CalEEMod version 2022.1 defaults for PG&E, and are conservatively assumed not to change from these estimates. As more renewable energy is integrated into the electricity grid, these intensity factors will also decrease.

[6] Natural Gas Use emission factors of nonresidential boiler (5-75 MMBTU) are from AP-42 Table 1.4-1 and 1.4-2. Natural Gas Use emission factors of cogen are from Table C-1 and C-2 from US EPA Title 40, Code of Federal Regulations (CFR), Part 98 (April 25, 2011), as incorporated by CARB’s Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (title 17, California Code of Regulations (CCR), sections 95100-95157) (MRR).

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
CPUC - California Public Utilities Commission

GWP - global warming potential
lb - pound(s)
MWh - megawatt-hour
NO_X - nitrogen oxides

Table 28
Baseline Operational Energy Usage
Parkline
Menlo Park, California

Source	Natural Gas[1]	Electricity Generated for Onsite Use[2]	Electricity Exported[2]	Total Electricity Produced[2]
	MMBTU	MWh	MWh	MWh
Cogen	457,514	19,806	8,076	27,882

Source	Natural Gas from PG&E[1]	Electricity Imported from PG&E[2]	Total Electricity Used[3]
	MMBTU	MWh	MWh
Building Use (to be demolished)	252	793	20,599
Building Use (P, S, and T)	-6,810	-4,114	-4,114

Notes:

[1] Natural gas usage for baseline operational conditions was obtained from utility bills provided by the Project Applicant. Natural gas usage for Buildings P, S, and T was calculated using CalEEMod 2022.1.1.3 factors for annual energy use for Research & Development land uses in EDFZ 1, as reported in Table G-28 in Appendix G of the CalEEMod User Guide.

[2] Electricity usages for existing conditions were obtained from utility information provided by SRI International on October 13, 2022 for the time period between September 2021 and August 2022. Under baseline conditions, the existing site exports electricity to PG&E grid when the on-site cogeneration plant generates excess electricity, and imports electricity from PG&E grid when there's greater electricity demand on campus than the cogeneration plan could generate. In the absence of the cogeneration plant, PG&E grid would need to generate additional electricity to replace the electricity that would no longer be exported from the cogeneration plant.

[3] Total electricity used by the building is equal to electricity imported from PG&E and electricity generated by the cogen for onsite use

[4] Electricity usage for Buildings P, S, and T after removal of the cogeneration plant was accounted for by multiplying the electricity generated at the cogeneration plant for the campus by the ratio of the square footage of Buildings P,S, and T to the total existing site square footage. The electricity generated at the cogeneration plant for the campus was obtained from utility information provided by SRI International on October 13, 2022

Abbreviations:

MWh - Megawatt Hours

MMBTU - Million British Thermal Units

Table 29
Natural Gas Usage and Emissions from Existing Conditions
Parkline
Menlo Park, California

Existing Conditions[1]

Source	Year	Natural Gas Usage[2]	Natural Gas CAP Emissions[3]				
			ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2e
		MMBTU	(tons/yr)				MT/yr
Existing Conditions							
Cogen	2022	457,514	0.48	23	1.5	1.5	24,232
Building Use (PG&E)		252	6.8E-04	0.013	9.4E-04	9.4E-04	13
Building Use (P, S, and T)		-6,810	-1.8E-02	-0.340	-2.5E-02	-2.5E-02	-364
	Total	**450,956**	**0.46**	**22**	**1.5**	**1.5**	**23,881**

Notes:

[1] The Project would not construct natural gas infrastructure or use natural gas for operations, therefore, only natural gas usage and emissions from exisiting conditions are shown here. The natural gas volume supplied by PG&E to all existing buildings has been scaled according to building square feet to only account for the buildings that will be demolished. This natural gas usage does not account for buildings that will remain (Buildings P, S and T).

[2] Energy use values for existing uses were obtained from utility bills provided by the Project Applicant.

[3] CAP emissions from natural gas use were calculated using the natural gas emission factors presented in Table 27.

[4] Natural gas usage for Buildings P, S, and T was calculated using CalEEMod 2022.1.1.3 factors for annual energy use for Research & Development land uses in EDFZ 1, as reported in Table G-28 in Appendix G of the CalEEMod User Guide.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CAP - Criteria Air Pollutants
Cogen - Cogeneration Plant
MMBtu - million British Thermal Units
PG&E - Pacific Gas and Electric
CO_2e - carbon dioxide equivalents
ROG - reactive organic gases

yr - year
EDFZ - electricity demand forecast zone
CalEEMod - California Emissions Estimator Model
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
NOx - nitrogen oxides

Table 30
Electricity Usage and Emissions for Existing Conditions and Proposed Project
Parkline
Menlo Park, California

Site	Source or Land Use Type	Year	Electricity Usage[1,2]	Electricity Emission Factor[3]	Electricity CO_2e Emissions[4]
			MWhr/yr	lbs CO_2/MWh delivered	MT/yr
Existing Conditions					
Existing Conditions on the Site[1]	Cogen (exported to PG&E)	2022	-8,076	98	-359
	Building Use (from PG&E)		629		28
	Building Use (P, S, and T)[5]		-4,114		-183
Full Buildout Energy Use and Emissions					
Proposed Project[2]	Commercial - Office/R&D	2031	47,167	--	--
	Residential Apartments		5,229		--
	Residential Townhome		312		--
	Retail		47		--
	Non-Residential Parking Garage		1,650		--
	Residential Parking Garage		1,582		--
	Non-Residential Surface Parking		282		--
	Residential Surface Parking		407		--
	Recreational		--		--
		Total	**56,675**		**--**

Notes:

[1] Electricity usages for existing conditions were obtained from utility information provided by SRI International on October 13, 2022 for the time period between September 2021 and August 2022. Under baseline conditions, the existing site exports electricity to PG&E grid when the on-site cogeneration plant generates excess electricity, and imports electricity from PG&E grid when there's greater electricity demand on campus than the cogeneration plan could generate. In the absence of the cogeneration plant, the PG&E grid would need to generate additional electricity to replace the electricity that would no longer be exported from the cogeneration plant. The electricity supplied by PG&E to all existing building use has been scaled according to building square feet to only account for the buildings that will be demolished.

[2] Electricity usages for Project conditions were obtained from the Building Energy Preliminary Estimate Memo dated June 29, 2023 (updated: December 2023).

[3] The electricity emission factor for the proposed project is zero because the project would meet Menlo Park's commitment to 100% renewable and 100% greenhouse gas-free energy.

[4] Greenhouse gas emissions from electricity were calculated using the electricity usage and the Electricity Carbon Intensity Factor presented in Table 27 for the applicable year.

[5] Electricity usage for Buildings P, S, and T after removal of the cogeneration plant was accounted for by multiplying the electricity generated at the cogeneration plant for the campus by the ratio of the square footage of Buildings P,S, and T to the total existing site square footage. The electricity generated at the cogeneration plant for the campus was obtained from utility information provided by SRI International on October 13, 2022

Abbreviations:

CalEEMod - California Emissions Estimator Model	PG&E - Pacific Gas and Electric
CO_2 - carbon dioxide	yr - year
CO_2e - carbon dioxide equivalents	MT - Metric Ton
MWh - Megawatt Hour	

References:

Pacific Architects and Engineers (PAE). June 29, 2023 (updated: December 2023). Parkline - Building Energy & Water Preliminary Estimates Memo.

Table 31
Water Usage for Existing Conditions and Project Operations
Parkline
Menlo Park, California

Land Use Type	Indoor Water Use	Outdoor Water Use
	(million gal/year)	**(million gal/year)**
Existing Conditions[1,2]		
Existing Conditions	39	5.3
Full Buildout[3]		
Commercial - Office/R&D	47	22
Residential Apartments	26	
Residential Townhome	0.9	
Retail	0.10	
Non-Residential Parking Garage	0	
Residential Parking Garage	0	
Non-Residential Surface Parking	0	
Residential Surface Parking	0	
Recreational	0	
Total Full Buildout Water Use	**73**	**22**

Notes:

1. Existing water use was calculated using utility statements from Menlo Park Municipal Water provided to Ramboll on October 13, 2022.
2. Existing conditions outdoor water use was calculated by multiplying the full buildout outdoor water use by the ratio of existing landscaping area to project landscaping area. Existing conditions indoor water use was calculated by subtracting the existing conditions outdoor water use from the total water use shown on utility statements.

3. Water usage for the proposed project was obtained from the Building Energy Preliminary Estimate Memo dated June 29, 2023 (updated: December 2023).

Abbreviations:

CalEEMod - California Emissions Estimator Model

gal - gallon

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2022.1.0. Available online at http://www.caleemod.com

Pacific Architects and Engineers (PAE). January 12, 2023 (updated: December 2023). Parkline - Building Energy & Water Preliminary Estimates Memo.

Table 32
Water and Wastewater Emissions from Existing Conditions and Project Operations
Parkline
Menlo Park, California

Land Use	Electricity Indirect Emissions[1]	Wastewater Treatment Emissions[2,3]	Total Emissions
	(MT CO_2e/yr)	(MT CO_2e/yr)	(MT CO_2e/yr)
Existing Conditions			
Existing Buildings	11	53	64
Existing Landscaping	1.5	--	1.5
Total Existing Emissions	**13**	**53**	**65**
Full Buildout			
Commercial - Office/R&D	13.2	63	77
Residential Apartments	7.3	35	42
Residential Townhome	0.26	1.3	1.5
Retail	0.029	0.14	0.169
Recreational	--	--	--
Landscaping	6.3	--	6.3
Total Full Buildout Emissions	**27**	**100**	**127**

Notes:

[1] Electricity indirect emissions were calculated using baseline and project water use rates energy emission factors for 2022 (baseline) and 2031 (Project) from PG&E for Menlo Park, shown in Table 27.

[2] Wastewater emissions were calculated using default values and methods from CalEEMod Version 2022.1.0. The Water Electricity Intensity, Water Treatment Types, and Wastewater Treatment Direct Emission Factors can be found in tables G-32, G-34, G-35 from Appendix G of the CalEEMod user guide, respectively. These calculations were performed using project water use rates and a weighted average CO_2e emission factor based on the wastewater treatment types for San Mateo County.

[3] Consistent with CalEEMod, indoor water use was assumed to be processed as wastewater and outdoor water use was assumed to not be processed as wastewater.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2e - carbon dioxide equivalents
MT - metric ton
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2020.4.0. Available online at http://www.caleemod.com

Table 33
Solid Waste Generation and Emissions for Existing Conditions and Project Operations
Parkline
Menlo Park, California

Land Use[1]	**Size[1]**	**Units**	**Solid Waste Generation Rate[2] (lb/day/SP)**	**Solid Waste Generation (ton/yr)**	**CO_2 Emissions[3] (MT/year)**	**CH_4 Emissions[3] (MT/year)**	**CO_2e Emissions[3] (MT/year)**
Existing Conditions							
Commercial - Office/R&D	700	Employees	2.3	294	26	2.6	92
			Total	**294**	**26**	**2.6**	**92**
Full Buildout							
Commercial - Office/R&D	4,268	Employees	2.3	1,791	160	16	559
Residential Apartments	1,328	Resident	4.1	993	89	8.9	310
Residential Townhome	48	Resident	4.1	36	3.2	0.32	11
Retail	2.0	1000sqft	--	6.0	0.54	0.054	1.9
			Total	**2,826**	**252**	**25**	**882**

Notes:

[1] The number of Project residents was provided by Project Sponsor, based on a value of 2.50 persons per household.

[2] Solid Waste Generation Rates were provided by the City based on CalRecycle actual solid waste generation rates, except for the retail land use. For retail, CalEEMod default solid waste generation was used. CalRecycle assumes the waste disposal rate for parking and recreational land uses is zero; therefore it is not shown on this table.

[3] Emissions shown in this table were calculated using default values and methods from CalEEMod Version 2022 including default solid waste landfill gas emission factors from CalEEMod User's Guide Appendix G Table G-37.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CH_4 - methane
CO_2 - carbon dioxide
SP - Service population
CO_2e - carbon dioxide equivalents
MT - metric ton
lb - pound

References

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2022.1.0. Available online at http://www.caleemod.com

Table 34
Refrigerant GHG Emissions
Parkline
Menlo Park, California

Land Use Type	Refrigeration Equipment[1]	Refrigerant[2]	Equipment Charge Size[2]	Annual Operational Leak Rate[2]	Service Leak[2]	Times Serviced[2]	Lifetime[2]	Global Warming Potential[2]	Land Use	Average Annual Refrigerant Emissions[3]
			kg refrigerant/ 1000 sqft				years		1000 sqft	MT CO_2e/yr
Existing Conditions										
Commercial - Office/R&D	Household refrigerators and/or freezers	R-134a	0.45	1%	0%	1	14	1,430	1,094	4.27
Commercial - Office/R&D	Other commercial A/C and heat pumps	R-410A	0.0023	4%	4%	18	25	2,088	1094	0.36
									Total Existing Emissions	4.63
Full Buildout										
Commercial - Office/R&D	Household refrigerators and/or freezers	R-134a	0.45	1%	0%	1	14	1,430	1,092	4.3
Commercial - Office/R&D	Other commercial A/C and heat pumps	R-410A	0.0023	4%	4%	18	25	2,088	1,092	0.36
Residential Apartments	Average room A/C & Other residential A/C and heat pumps	R-410A	0.0023	3%	3%	10	15	2,088	637	0.12
Residential Apartments	Household refrigerators and/or freezers	R-134a	0.12	1%	0%	1	14	1,430	637	0.63
Residential Townhome	Average room A/C & Other residential A/C and heat pumps	R-410A	0.0023	3%	3%	10	15	2,088	38	0.0074
Residential Townhome	Household refrigerators and/or freezers	R-134a	0.12	1%	0%	1	14	1,430	38	0.038
Retail	Other commercial A/C and heat pumps	R-410A	0.0018	4%	4%	18	25	2,088	2.0	5.2E-04
Retail	Stand-alone retail refrigerators and freezers	R-134a	0.037	1%	0%	1	10	1,430	2	0.00
Retail	Walk-in refrigerators and freezers	R-404A	4.0E-04	8%	8%	20	20	3,922	2	0.000
									Total Full Buildout Emissions	**5.4**

Notes

[1] Refrigeration equipment types for each land use type were determined using Table 38 from CalEEMod Appendix G.

[2] Refrigeration Equipment, Refrigerant, Equipment charge size, Annual Operational Leak Rate, Service Leak Rate, Times Serviced, Lifetime, and Global Warming Potential were based on CalEEMod defaults in Appendix G Tables 38 and 39.

[3] The emissions from the refrigeration equipment were estimated using the following equation:

$E = \Sigma(((CS \times OLR) + (CS \times SLR \times (TS / L))) \times GWP)_r \times KSF \times UC_1$, where:

= E, average annual refrigerant emissions (MT CO_2e/yr)
= CS, equipment charge size (kg refrigerant/KSF). The equipment charge size is the total quantity of Refrigerant installed in the refrigeration or A/C equipment.
= OLR, annual operational leak rate (%)
= SLR, service leak rate (%)
= TS, times serviced (number of times serviced over equipment lifetime)
=L, average equipment operation lifetime (years)
= GWP, global warming potential (unitless)
= KSF, land use size (1000 sqft)
= UC_1, unit conversion form kg to MT
= r, refrigerant
= I, equipment type

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations

A/C - air conditioning	kg - kilogram
CalEEMod® - California Emissions Estimate Model	MT- metric tons
CO_2e - carbon dioxide equivalent	sqft - square feet
GHG - greenhouse gas	yr - year

Table 35

Unmitigated Landscaping Emissions from Existing Conditions and Project Operations

Parkline

Menlo Park, California

Land Use Type	Non-Residential Area[2]	Residential Dwelling Units	Emissions from Landscaping Equipment[1]				
			ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
	sqft	DU	(tons/yr)				(MT/yr)
Existing Conditions							
Nonresidential Landscaping Equipment	1,093,602	--	1.2	0.065	0.017	0.013	23
Full Buildout							
Nonresidential Landscaping Equipment	2,162,302	550	2.3	0.13	0.034	0.025	45
Residential Landscaping Equipment			0.38	0.035	0.0020	0.0015	7.0
Total Full Buildout Emissions			**2.7**	**0.16**	**0.036**	**0.027**	**52**
Partial Buildout[3]							
Phase 1 Emissions			1.3	0.083	0.016	0.012	25
Phase 2 Emissions			1.3	0.075	0.019	0.015	26
Phase 3 Emissions			0.069	0.0063	3.7E-04	2.8E-04	1.3

Notes:

1. Landscape emissions are calculated using the emission factors from CalEEMod Appendix G.
2. Landscaping areas for exisiting and full buildout conditions are based on the CalEEMod's default methodology of using dwelling units and non-residential building sizes to generate landscaping equipment activities.
3. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2e - carbon dioxide equivalent
DU - dwelling unit
MT - metric tons
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter

NO_x - nitrogen oxides
PM - particulate matter
ROG - reactive organic gases
sqft - square feet
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 36

Mitigated Landscaping Emissions from Existing Conditions and Project Operations

Parkline
Menlo Park, California

Land Use Type	Non-Residential Area[2]	Residential Dwelling Units	Emissions from Landscaping Equipment[1]				
			ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
	sqft	DU	(tons/yr)				(MT/yr)
Existing Conditions							
Nonresidential Landscaping Equipment	1,093,602	--	1.2	0.065	0.0170	0.0128	22.9
Full Buildout							
Nonresidential Landscaping Equipment	2,162,302	550	--	--	--	--	--
Residential Landscaping Equipment			--	--	--	--	--

Notes:

1. Landscape emissions are calculated assuming all landscaping equipment is electric. The energy demand is determined using CalEEMod defualt equipment horsepower converted to kilowatt hours. The electricity emission factor for the proposed project is zero to meet Menlo Park's commitment to 100% renewable and 100% greenhouse gas-free energy.
2. Landscaping areas for exisiting and full buildout conditions are based on the CalEEMod's default methodology of using dwelling units and non-residential building sizes to generate landscaping equipment activities.

Abbreviations:

CalEEMod - California Emissions Estimator Model
DU - dwelling unit
MT - metric tons
NO_x - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
PM - particulate matter
ROG - reactive organic gases
sqft - square feet
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 37
Unmitigated Architectural Coating Emissions from Existing Conditions and Project Operations
Parkline
Menlo Park, California

Land Use Type	Building Area[1]	Building Surface Area[2]	Painted Parking Stripes Area[2]	Application Rate[3]	Indoor or Parking Stripe Paint VOC EF[4]	Outdoor Paint VOC EF[4]	Architectural Coating VOC Emissions[5]	Architectural Coating VOC Emissions as ROG
	sqft	sqft	sqft		g/L	g/L	lb/yr	tons/yr
Existing Conditions								
Commercial - Office/R&D	1,093,602	2,187,204	--	10%	100	150	1,141	0.57
Surface Parking	1,351,783	67,589	81,107	10%	100	100	69	0.034
Total Existing Conditions Emissions							**1,210**	**0.60**
Full Buildout								
Commercial - Office/R&D	1,091,900	2,183,800	--	10%	100	150	1,139	0.57
Residential Apartments	637,200	1,720,440	--	10%	100	150	897	0.45
Residential Townhome	38,000	102,600	--	10%	100	150	54	0.027
Retail	2,002	4,004	--	10%	100	150	2.1	0.0010
Non-Residential Non-Residential Parking Garage	920,000	1,840,000	--	10%	100	150	960	0.480
Residential Parking Garage	148,400	296,800	--	10%	100	150	155	0.0774
Non-Residential Non-Residential Surface Parking	200,000	10,000	12,000	10%	100	100	10	0.0051
Residential Surface Parking	59,200	2,960	3,552	10%	100	100	3	0.002
Recreational	1,089,000	--	--	10%	--	--	--	--
Total Full Buildout Emissions							**3,219**	**1.6**
Partial Buildout[6]								
Phase 1 Emissions							**1,748**	**0.87**
Phase 2 Emissions							**1,302**	**0.65**
Phase 3 Emissions							**170**	**0.085**

Notes:

[1] Square footage for parking areas assume 400 square feet per parking space, consistent with CalEEMod default assumptions.

[2] Consistent with CalEEMod Appendix C, residential building surface area was assumed to be 2.7 times the floor area, and non-residential 2 times the floor area. Also consistent with CalEEMod Appendix E, the parking painted stripes and building area was assumed to be 6% and 5% of the total surface area for surface lots respectively.

[3] Consistent with CalEEMod Appendix C, 10% of all surfaces were assumed to be coated each year.

[4] Consistent with CalEEMod Appendix G Table G-17, which is based on BAAQMD Regulation 8 Rule 3 paint VOC regulations, use VOC EF of 100 g/L for flat paints, generally used indoors, and 150 g/L for all other architectural coatings.

[5] Uses CalEEMod Appendix C assumption that 1 gallon of paint covers 180 square feet. Building surface area is assumed to be 75% indoors and 25% outdoors, consistent with CalEEMod Appendix C. Parking garages are assumed to have 90% indoor areas and 10% outdoor.

[6] Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
EF - emission factor
g - grams
L - liters
lb - pounds
ROG - reactive organic gases
sqft - square feet
VOC - volatile organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 38
Mitigated Architectural Coating Emissions from Existing Conditions and Project Operations
Parkline
Menlo Park, California

Land Use Type	Building Area[1]	Building Surface Area[2]	Painted Parking Stripes Area[2]	Application Rate[3]	Indoor or Parking Stripe Paint VOC EF[4]	Outdoor Paint VOC EF[4]	Architectural Coating VOC Emissions[5]	Architectural Coating VOC Emissions as ROG
	sqft	sqft	sqft		g/L	g/L	lb/yr	tons/yr
Existing Conditions								
Commercial - Office/R&D	1,093,602	2,187,204	--	0.10	100	150	1,141	0.57
Surface Parking	1,351,783	67,589	81,107	0.10	100	100	69	0.034
Total Existing Conditions Emissions							**1210**	**0.60**
Full Buildout								
Commercial - Office/R&D	1,091,900	2,183,800	--	0.10	10	150	456	0.23
Residential Apartments	637,200	1,720,440	--	0.10	10	150	359	0.18
Residential Townhome	38,000	102,600	--	0.10	10	150	21	0.011
Retail	2,002	4,004	--	0.10	10	150	0.84	4.2E-04
Non-Residential Non-Residential Parking Garage	920,000	1,840,000	--	0.10	10	150	384	0.19
Residential Parking Garage	148,400	296,800	--	0.10	10	150	62	0.031
Non-Residential Non-Residential Surface Parking	200,000	10,000	12,000	0.10	10	100	1.4	7.2E-04
Residential Surface Parking	59,200	2,960	3,552	0.10	10	100	0.43	2.1E-04
Recreational	1,089,000	0	--	0.10	--	--	--	--
Total Full Buildout Emissions							**1,284**	**0.64**
Partial Buildout[6]								
Phase 1 Emissions							**696**	**0.35**
Phase 2 Emissions							**521**	**0.26**
Phase 3 Emissions							**68**	**0.034**

Notes:

1. Square footage for parking areas assume 400 square feet per parking space, consistent with CalEEMod default assumptions.
2. Consistent with CalEEMod Appendix C, residential building surface area was assumed to be 2.7 times the floor area, and non-residential 2 times the floor area. Also consistent with CalEEMod Appendix E, the parking painted stripes and building area was assumed to be 6% and 5% of the total surface area for surface lots respectively.
3. Consistent with CalEEMod Appendix C, 10% of all surfaces were assumed to be coated each year.
4. Consistent with SCAQMD's Super-Compliant Architectural Coatings standard, a VOC EF of 10 g/L was used for indoor paint. Consistent with CalEEMod Appendix G Table G-17, which is based on BAAQMD Regulation 8 Rule 3 paint VOC regulations, a VOC EF of 150 g/L for all other architectural coatings was used.
5. Uses CalEEMod Appendix C assumption that 1 gallon of paint covers 180 square feet. Building surface area is assumed to be 75% indoors and 25% outdoors, consistent with CalEEMod Appendix C. Parking garages are assumed to have 90% indoor areas and 10% outdoor.
6. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District	lb - pound
CalEEMod - California Emissions Estimator Model	ROG - reactive organic gases
EF - emission factor	sqft - square feet
g - grams	VOC - volatile organic gases
L - liters	yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

SCAQMD. Super-Compliant Architectural Coatings. Available online at: https://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings

Table 39
Consumer Product Emission Factor Refinement
Parkline
Menlo Park, California

Year	County	Countywide Consumer Products VOC inventory (tons/day)[1]	Total County Building Area (sqft)[2]	Consumer Products VOC EF (lb/sqft/day)
2020	San Mateo	5.294	604,287,813	1.75E-05

Notes:

1. ROG consumer products inventory obtained from California Emissions Projection Analysis Model for San Mateo County.
2. Total building square footage in San Mateo County for 2020 was obtained from FEMA HAZUS-MH software (version 6.0). The 2020 emission factor was conservatively assumed to represent the emission factor at full buildout.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

lb - pound
VOC - Volatile Organic Compound
EF - emission factor
sqft - square foot

References:

California Air Resources Board. California Emissions Projection Analysis Model, CEPAM2019v1.03. Available online at https://ww2.arb.ca.gov/applications/cepam2019v103-standard-emission-tool.

US Federal Emergency Management Agency's Hazus software (HAZUS-MH), Version 6.0. Available online at https://msc.fema.gov/portal/resources/hazus.

Table 40
Consumer Product Emissions from Existing Conditions and Project Operations
Parkline
Menlo Park, California

Proposed Project

Land Use Type	Building Area[1]	Consumer Products VOC EF[2]	Days per Year	Consumer Products VOC Emissions as ROG[2,3]	Consumer Products VOC Emissions as ROG
	sqft	lb/sqft/day		lb/yr	tons/yr
Existing Conditions					
Commercial - Office/R&D	1,093,602	1.8E-05	365	6994	3.5
Surface Parking	1,351,783	5.7E-07	365	280	0.14
Total Existing Conditions Emissions				**7274**	**3.6**
Full Buildout					
Commercial - Office/R&D	1,091,900	1.8E-05	365	6,983	3.5
Residential Apartments	637,200	1.8E-05	365	4,075	2.0
Residential Townhome	38,000	1.8E-05	365	243	0.12
Retail	2,002	1.8E-05	365	13	0.0064
Non-Residential Non-Residential Parking Garage	920,000	5.7E-07	365	191	0.095
Residential Parking Garage	148,400	5.7E-07	365	31	0.015
Non-Residential Non-Residential Surface Parking	200,000	5.7E-07	365	41	0.021
Residential Surface Parking	59,200	5.7E-07	365	12	0.0061
Recreational	1,089,000	7.9E-08	365	31	0.016
Total Full Buildout Emissions				**11,620**	**5.8**
Partial Buildout[2]					
Phase 1 Emissions				6,358	3.2
Phase 2 Emissions				4,491	2.2
Phase 3 Emissions				772	0.39

Notes:

[1] Square footage for parking areas assume 400 square feet per parking space, consistent with CalEEMod default assumptions.

[2] Consumer product VOC EFs for commercial and residential land use types are presented in Table 39. Emission factors for parking and recreational land use types were obtained from CalEEMod 2022.1

[3] Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod - California Emissions Estimator Model
VOC - volatile organic compounds
EF - emisison factor
lb - pound
sqft - square feet
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 41
Summary of Project Unmitigated Operational CAP Emissions
Parkline
Menlo Park, California

Emissions Source	CAP Emissions[1]							
	(ton/year)				(lb/day)[2]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Existing Conditions[3]								
Mobile	0.22	0.29	0.23	0.044	1.2	1.6	1.3	0.24
Laboratory	2.0	--	--	--	11	--	--	--
Emergency Generators	0.018	0.31	0.010	0.010	0.10	1.7	0.056	0.056
Natural Gas Use - PG&E[7]	6.8E-04	0.013	9.4E-04	9.4E-04	0.0037	0.069	0.0051	0.0051
Natural Gas Use - Cogen	0.48	23	1.5	1.5	2.6	124	8.3	8.3
Natural Gas Use - P, S, & T	-0.018	-0.34	-0.025	-0.025	-0.10	-1.9	-0.14	-0.14
Landscaping	1.2	0.065	0.017	0.013	6.3	0.36	0.09	0.070
Architectural Coating	0.60	--	--	--	3.3	--	--	--
Consumer Products	3.6	--	--	--	20	--	--	--
Total Emissions	**8.1**	**23**	**1.7**	**1.6**	**44**	**126**	**10**	**8.5**
Full Buildout Conditions[4]								
Mobile	3.1	3.0	4.7	0.86	17	16	26	4.7
Laboratory	5.1	--	--	--	28	--	--	--
Emergency Generators	0.085	0.63	0.022	0.022	0.46	3.4	0.12	0.12
Landscaping	2.7	0.16	0.036	0.027	15	0.90	0.19	0.15
Architectural Coating	1.6	--	--	--	8.8	--	--	--
Consumer Products	5.8	--	--	--	32	--	--	--
Total Emissions	**18**	**3.7**	**4.7**	**0.91**	**101**	**21**	**26**	**5.0**
Partial Buildout Emissions[5]								
Phase 1 Emissions	8.8	1.9	2.1	0.42	48	11	12	2.3
Phase 2 Emissions	10.5	3.3	4.6	0.86	58	18	25	4.7
Phase 3 Emissions	0.54	0.057	0.0020	0.0019	3.0	0.31	0.011	0.010
Net Emissions[6]								
Net Full Buildout Emissions	**10.3**	**-19**	**3.0**	**-0.64**	**56.2**	**-105**	**16**	**-3.5**
BAAQMD Significance Threshold	10	10	15	10	54	54	82	54

Notes:

[1] Emissions estimated using methods consistent with CalEEMod® version 2022.1.

[2] Operational emissions shown represent activity and emissions across 365 days per year.

[3] Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use types provided by the Project Applicant and CalEEMod defaults.

[4] Existing and full buildout operational CAP emissions are based on Table 20 through Table 40.

[5] Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15. The sum of these emissions are slightly different than full buildout due to using different year-dependent emission factors for each phases's buildout year for mobile emissions calculations.

[6] Net emissions were calculated as the difference between full buildout emissions for each phase and existing condition emissions.

[7] Emissions from natural gas consumption for all non-cogen related activies on the exisiting project site.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO_X - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 42
Summary of Project Mitigated Operational CAP Emissions
Parkline
Menlo Park, California

Emissions Source	**CAP Emissions[1,2]**							
	(ton/year)				**(lb/day)[3]**			
	ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Existing Conditions[4]								
Mobile	0.22	0.29	0.23	0.044	1.2	1.6	1.3	0.24
Laboratory	2.0	--	--	--	11	--	--	--
Emergency Generators	0.018	0.31	0.010	0.010	0.10	1.7	0.056	0.056
Natural Gas Use - PG&E[8]	6.8E-04	0.013	9.4E-04	9.4E-04	0.0037	0.069	0.0051	0.0051
Natural Gas Use - Cogen	0.48	23	1.5	1.5	2.6	124	8.3	8.3
Natural Gas Use - P, S, & T	-0.018	-0.34	-0.025	-0.025	-0.10	-1.9	-0.14	-0.14
Landscaping	1.2	0.065	0.017	0.013	6.3	0.36	0.09	0.070
Architectural Coating	0.60	--	--	--	3.3	--	--	--
Consumer Products	3.6	--	--	--	20	--	--	--
Total Emissions	**8.1**	**23**	**1.7**	**1.6**	**44**	**126**	**10**	**8.5**
Full Buildout Conditions[5]								
Mobile	3.1	3.0	4.7	0.86	17	16	26	4.7
Laboratory	5.1	--	--	--	28	--	--	--
Emergency Generators	0.085	0.63	0.022	0.022	0.46	3.4	0.12	0.12
Landscaping	--	--	--	--	--	--	--	--
Architectural Coating	0.64	--	--	--	3.5	--	--	--
Consumer Products	5.8	--	--	--	32	--	--	--
Total Emissions	**15**	**3.6**	**4.7**	**0.88**	**81**	**20**	**26**	**4.8**
Partial Buildout Emissions[6]								
Phase 1 Emissions	7.0	1.9	2.1	0.40	38	10	12	2.2
Phase 2 Emissions	8.8	3.2	4.5	0.85	48	18	25	4.6
Phase 3 Emissions	0.42	0.050	0.0016	0.0016	2.3	0.28	0.0089	0.0089
Net Emissions[7]								
Net Full Buildout Emissions	**6.6**	**-19**	**2.9**	**-0.67**	**36**	**-106**	**16**	**-3.7**
BAAQMD Significance Threshold	10	10	15	10	54	54	82	54

Notes:

[1] Mitigated emissions assume all electric landscaping emissions and super compliant architectural coatings, as discussed in Table 36 and Table 38.

[2] Emissions estimated using methods consistent with CalEEMod® version 2022.1.

[3] Operational emissions shown represent activity and emissions across 365 days per year.

[4] Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use types provided by the Project Applicant and CalEEMod defaults.

[5] Existing and full buildout operational CAP emissions are based on Table 20 through Table 40.

[6] Partial mitigated buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15. The sum of these emissions are slightly different than full buildout due to using different year-dependent emission factors for each phases's buildout year for mobile emissions calculations.

[7] Net emissions were calculated as the difference between controlled full buildout emissions for each phase and existing condition emissions.

[8] Emissions from natural gas consumption for all non-cogen related activies on the exisiting project site.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO_X - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 43
Summary of Operational GHG Emissions
Parkline
Menlo Park, California

Emissions Source	GHG Emissions[1,2] (MT/yr) CO_2e Existing Conditions	 Full Buildout Conditions
Mobile	624	10,583
Laboratory	--	--
Emergency Generators	32	236
Replaced Exported Electricity Generation[4]	-359	--
Electricity Use from PG&E[4]	28	--
Natural Gas Use - PG&E	13	--
Natural Gas Use - Cogen	24,232	--
Natural Gas Use - P,S, & T	-364	--
Water Use	65	127
Waste Disposed	92	882
Refrigerants	4.6	4.9
Landscaping	23	52
Total Emissions	**24,390**	**11,885**
Net Full Buildout Emissions[3]		**-12,505**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1.0.
2. Existing and full buildout operational GHG emissions are based on Table 20 through Table 40.
3. Net emissions were calculated as the difference between full buildout emissions and the existing condition emissions. Net full buildout emissions are negative, which means the Project reduces GHG emissions compared to the existing conditions.
4. The replaced exported electricity generation emissions are associated with the removal of the cogeneration plant. Electricity use from PG&E refers to building electricity use.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CO_2e - carbon dioxide equivalent
GHG - greenhouse gas
MT - metric ton
yr - year

References:

CalEEMod® Version 2020.4.0 Available Online at: http://www.caleemod.com

Table 44
Construction and Unmitigated Net New Operational CAP Emissions by Year
Parkline
Menlo Park, California

Proposed Project

Year	Annual CAP Emissions[1,2] ton/yr											
	Construction Emissions Only				Net Operational Emissions[3]				Construction and Net Operational Emissions[3]			
	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$
2025	0.030	0.43	0.015	0.0090	-8.1	-23	-1.7	-1.6	-8.1	-23	-1.7	-1.5
2026	0.12	1.4	0.065	0.034	-8.1	-23	-1.7	-1.6	-8.0	-22	-1.7	-1.5
2027	0.22	1.6	0.084	0.040	-8.1	-23	-1.7	-1.6	-7.9	-21	-1.7	-1.5
2028	4.6	0.76	0.041	0.020	-8.1	-23	-1.7	-1.6	-3.5	-22	-1.7	-1.5
2029	1.9	0.65	0.031	0.016	-3.0	-22	-0.50	-1.3	-1.1	-21	-0.47	-1.3
2030	2.8	0.82	0.039	0.019	0.67	-21	0.39	-1.1	3.5	-20	0.43	-1.1
2031	1.9	0.20	0.011	0.0054	4.2	-20	1.9	-0.85	6.1	-20	1.9	-0.84
Full Buildout	--	--	--	--	10	-19	3.0	-0.64	10	-19	3.0	-0.64

Year	Average Daily CAP Emissions[1,2] lb/day											
	Construction Emissions Only[4]				Net Operational Emissions[4]				Construction and Net Operational Emissions			
	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$
2025	0.17	2.4	0.081	0.049	-44	-126	-10	-8.5	-44	-124	-9	-8.5
2026	0.67	7.7	0.36	0.19	-44	-126	-10	-8.5	-44	-118	-9.2	-8.3
2027	1.2	9.0	0.46	0.22	-44	-126	-10	-8.5	-43	-117	-9.1	-8.3
2028	25	4.2	0.22	0.11	-44	-126	-10	-8.5	-19	-122	-9.3	-8.4
2029	10	3.6	0.17	0.088	-16	-120	-2.7	-7.2	-6.3	-116	-2.6	-7.1
2030	15	4.5	0.21	0.11	3.7	-115	2.1	-6.2	19	-111	2.3	-6.1
2031	11	1.1	0.061	0.030	23	-109	10	-4.7	34	-108	11	-4.6
Full Buildout	--	--	--	--	56.2	-105	16	-3.5	56.2	-105	16	-3.5

Notes:

[1] Emissions estimated using methods consistent with CalEEMod® version 2022.1.

[2] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.

[3] Construction emissions can be found in Table 14. Net Unmitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the project emissions, as reported in Table 41.

[4] To calculate average daily emissions, annual total emissions from both construction sources and operational sources were divided by 365 days.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO$_x$ - nitrogen oxides
PM - particulate matter
PM$_{2.5}$ - PM less than 2.5 microns in diameter
PM$_{10}$ - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 45
Construction and Mitigated Net New Operational CAP Emissions by Year
Parkline
Menlo Park, California

Proposed Project

Year	Annual CAP Emissions[1,2]											
	ton/yr											
	Construction Emissions Only				Net Operational Emissions[3]				Construction and Net Operational Emissions[3]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
2025	0.030	0.43	0.015	0.0090	-8.1	-23	-1.7	-1.6	-8.1	-23	-1.7	-1.5
2026	0.12	1.4	0.065	0.034	-8.1	-23	-1.7	-1.6	-8.0	-22	-1.7	-1.5
2027	0.22	1.6	0.084	0.040	-8.1	-23	-1.7	-1.6	-7.9	-21	-1.7	-1.5
2028	4.6	0.76	0.041	0.020	-8.1	-23	-1.7	-1.6	-3.5	-22	-1.7	-1.5
2029	1.9	0.65	0.031	0.016	-4.0	-22	-0.51	-1.3	-2.2	-21	-0.48	-1.3
2030	2.8	0.82	0.039	0.019	-1.1	-21	0.37	-1.1	1.7	-20	0.41	-1.1
2031	1.9	0.20	0.011	0.0054	1.8	-20	1.9	-0.87	3.8	-20	1.9	-0.86
Full Buildout	--	--	--	--	6.6	-19	2.9	-0.67	6.6	-19	2.9	-0.67

Year	Average Daily CAP Emissions[1,2]											
	lb/day											
	Construction Emissions Only[4]				Net Operational Emissions[4]				Construction and Net Operational Emissions			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
2025	0.17	2.4	0.081	0.049	-44	-126	-10	-8.5	-44	-124	-9	-8.5
2026	0.67	7.7	0.36	0.19	-44	-126	-10	-8.5	-44	-118	-9.2	-8.3
2027	1.2	9.0	0.46	0.22	-44	-126	-10	-8.5	-43	-117	-9.1	-8.3
2028	25	4.2	0.22	0.11	-44	-126	-10	-8.5	-19	-122	-9.3	-8.4
2029	10	3.6	0.17	0.088	-22	-120	-2.8	-7.2	-12	-116	-2.6	-7.1
2030	15	4.5	0.21	0.11	-6.2	-116	2.1	-6.3	9.2	-111	2.3	-6.2
2031	11	1.1	0.061	0.030	10.1	-110	10	-4.7	21	-109	10	-4.7
Full Buildout	--	--	--	--	36	-106	16	-3.7	36	-106	16	-3.7
BAAQMD Significance Threshold									54	54	82	54

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1.
2. Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
3. Construction emissions can be found in Table 14. Net Mitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the project emissions, as reported in Table 42.
4. To calculate average daily emissions, annual total emissions from both construction sources and operational sources were divided by 365 days.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO_x - nitrogen oxides
PM - particulate matter
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 46
TOG Speciation of Gasoline Vehicle Exhaust
Parkline
Menlo Park, California

TAC	CAS	Weight Fraction of Emissions by Pollutant[1]	
		TOG	
		Evaporative	Exhaust
Ethylbenzene	100414	0.0012	0.011
Toluene	108883	0.017	0.058
Hexane	110543	0.015	0.016
Xylenes	1330207	0.0058	0.048
Benzene	71432	0.0036	0.025
Styrene	100425	--	0.0012
1,3-Butadiene	106990	--	0.0055
Acrolein	107028	--	0.0013
Propylene	115071	--	0.031
Formaldehyde	50000	--	0.016
Methanol	67561	--	0.0012
Acetaldehyde	75070	--	0.0028
Methyl Ethyl Ketone	78933	--	0.0002
Naphthalene	91203	--	0.0005

Notes:

[1] Speciation profiles are taken from the BAAQMD's guidance on Recommended Methods for Screening and Modeling Local Risks and Hazards. Speciation profiles for Gasoline Exhaust are located in Table 14 and Gasoline Evaporative are located in Table 15 of the BAAQMD's guidance.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CAS - chemical abstract services
TAC - toxic air contaminant
TOG - total organic gases

Reference:

BAAQMD. 2011. Recommended Methods for Screening and Modeling Local Risks and Hazards. Table 14 and Table 15. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/baaqmd-modeling-approach.pdf

Table 47
Roadway Traffic Volumes and Modeled Distances
Parkline
Menlo Park, CA

	Traffic Volume[1,2,3] (vehicles/day)	**Modeled Roadway Distance (miles)**
Middlefield Road	3,432	0.73
Ravenswood Avenue	1,375	0.61
Laurel Street	476	0.72
Residential Loop[2]	1,840	0.19
Loop Road[3]	4,331	1.0

Notes

[1] Trip volumes provided by the Hexagon transportation engineer.

[2] The traffic volume for onsite Residential Loop was determined by applying the residential land use trip rate, provided by the transportation engineer, and dividing in half assuming a typical trip will only travel on half on the loop.

[3] The traffic volume for onsite Loop Road was determined by applying the 100% R&D land use trip rate, provided by the transportation engineer, and dividing in half assuming a typical trip will only travel on half of the loop.

Table 48
AERMOD Source Parameters
Parkline
Menlo Park, California

Existing Condition Sources

Source	Number of Sources	Source Type	Stack Height[1]	Stack Diameter[1]	Exit Temperature[1]	Exit Velocity[1]
			m	m	K	m/s
Cogen	1	Point	15.2	2.59	533.2	2.4
Emergency Generator (Building U)[2]	1	Point	3.35	0.127	754.3	136.8
Emergency Generators (Buildings A and L)[3]	2	Point	3.66	0.183	739.8	45.3

Construction Sources

Source	Number of Sources[4,5]	Source Type	Source Dimension	Release Height[6]	Initial Vertical Dimension[7]	Initial Lateral Dimension[8]
			m	m	m	m
Construction Equipment Exhaust[4]	4	Area	Parcel Area	5.0	1.2	--
On-Site Fugitive Dust[4]	4	Area	Parcel Area	0	1.0	--
On-Road Haul Trucks	Variable	Volume	Variable[5]	2.55	3.16	Variable

Operational Sources

Source	Number of Sources	Source Type	Stack height	Stack Diameter	Exit Temperature	Exit Velocity
			m	m	K	m/s
Generators[9]	13	Point	3.66	0.183	739.8	45.3
Laboratory Exhausts[10]	5	Point	Building Height + 3.05 m	0.914	293.2	15.24

Source	Number of Sources	Source Type[5]	Source Dimension	Release Height	Initial Vertical Dimension[7]	Initial Lateral Dimension[8]
			m	m	m	m
On-Road Vehicles[11]	Variable	Volume	Variable[5]	1.3	1.21	Variable

Notes

1. Source parameters for the cogeneration plant and the associated backup generator in Building U were provided by the Project Sponsor. When specific stack parameters are not available, emergency generator stack parameters were obtained from Appendix E of the BAAQMD 2022 CEQA Guidelines.
2. Backup generator for the cogeneration plant is located in Building U.
3. Source-specific stack parameters are not available for the emergency generators located in Buildings A and L. Default parameters from Appendix E of BAAQMD 2022 CEQA Guidelines are used for these emergency generators.
4. Construction off-road equipment and on-site fugitive dust will be modeled as an area source covering the parcel(s) under construction. The number of sources is based on the number of construction phases (Demolition, Phases 1-3).
5. The number of on-road sources is based on the geometry of the truck or traffic routes. Source dimension of on-road vehicles vary and based on the width of the road/lane+ 6 meters, according to the USEPA Haul Road and Appendix E of BAAQMD 2022 guidance.
6. Release height of construction equipment exhaust is 5 meters, consistent with guidance from SCAQMD for construction sources. Release of construction fugitive dust is assumed to be at ground level. Release height for on-road trucks is based on EPA's Guidance from Haul Road Workgroup Recommendations.
7. Based on USEPA's AERMOD guidance, initial vertical dimensions for construction equipment exhaust were determined by dividing the release height by 4.3. Initial vertical dimension for on-site fugitive dust is based on the guidance from SCAQMD for construction sources. Initial vertical dimension for construction on-road trucks is based on EPA's Guidance from Haul Road Workgroup Recommendations. For operational on-road vehicles, initial vertical dimension is based on Appendix E of BAAQMD 2022 CEQA Guidelines.
8. According to BAAQMD 2022 CEQA Guidelines, for a line source modeled as adjacent volume sources, the initial lateral dimension is the width of plume divided by 2.15. Width of plume is road/lane width + 6 meters.
9. Operational emergency generator stack parameters were obtained from Table 10 of Appendix E of BAAQMD 2022 CEQA Guidelines. There is one generator point source for every generator included in the Project.
10. Laboratory exhausts parameters were provided by Project Sponsor. Exit temperature and velocity used in the Health Risk Assessment for the University of California, Davis Long Range Development Plan was used in this analysis. All laboratory emissions are assumed to exhaust through one vent for each building. The stack heights vary depending on the building heights of the five office/R&D buildings.
11. Operational on-road vehicle parameters were obtained from Table 11 in Appendix E of the BAAQMD 2022 CEQA Guidelines.

Abbreviations:

m - meter
K - Kelvin
m/s - meters per second

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

SCAQMD. 2008. Final Localized Significance Threshold Methodology. July. Available at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

USEPA. 2012. Haul Road Workgroup Final Report Submission to EPA-OAQPS. March. Available at: https://www3.epa.gov/scram001/reports/Haul_Road_Workgroup-Final_Report_Package-20120302.pdf

USEPA. 2021. User's Guide for the AMS/EPA Regulatory Model (AERMOD). Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina. EPA-454/B-20-001, April 2021). Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_userguide.pdf

York Engineering, LLC. 2018. Health Risk Assessment for the University of California, Davis Long Range Development Plan. January.

Table 49
Operational On-Road Emission Factors
Parkline Menlo Park
Menlo Park, CA

On-Road Emission Factors for Project Induced Traffic[1,2]

Fleet Type	Fuel	Fleet Percentages[3]	Emission Factor Units	TOG (exhaust)	TOG (evaporation)	PM_{10}[4] (exhaust)	$PM_{2.5}$[4]	$PM_{2.5}$ (fugitive)
ALL	Gasoline	90%	g/mile	0.012	0.035	--	--	--
	Diesel	4%	g/mile	--	--	0.015	--	--
	ALL	100%	g/mile	--	--	--	0.0073	0.015

Notes:

[1] Emission factors were estimated using EMFAC2021 for San Mateo County. EMFAC2021 was run in Emission Rates mode for calendar year 2031 in the annual season. The following processes have units of g/mile: PMBW, PMTW, and RUNEX. The RUNLOSS process has units of g/trip were converted to g/mile based on EMFAC outputs for total trips and total VMT. Note that IDLEX, STREX, DIRUN, HOTSOAK processes are excluded from the emission factors presented above.

[2] Health impacts from gasoline are estimated by speciating TOG emissions. Health impacts from diesel fueled vehicles are estimated using DPM as PM_{10}. $PM_{2.5}$ concentration is estimated from all vehicles.

[3] The remaining 6% of the fleet is composed of electric vehicles, which only emit emissions from PMTW and PMBW. The gasoline vehicles include plug-in hybrid vehicles.

[4] PM_{10} emission factors only include RUNLOSS. $PM_{2.5}$ emission factors include RUNLOSS, PMTW, and PMBW.

Abbreviations:

CAP - criteria air pollutants
DIURN - diurnal evaporative hydrocarbon emissions
g - grams
HOTSOAK - hot soak evaporative hydrocarbon emissions
IDLEX - idle exhaust emissions
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PMTW - tire wear particulate matter emissions
PMBW - brake wear particulate matter emissions
RUNEX - running exhaust emissions
RUNLOSS - running loss evaporative hydrocarbon emissions
STREX - start exhaust tailpipe emissions
TOG - toxic organic gases
VMT - Vehicle miles traveled

References:

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-

Table 50
Diurnal Traffic Patterns for San Mateo
Parkline
Menlo Park, California

Hour of Day	**Percent of Total Daily San Mateo Fleet VMT**[1]
1	1.1%
2	0.5%
3	0.6%
4	0.2%
5	0.5%
6	0.9%
7	3.7%
8	7.7%
9	7.1%
10	4.4%
11	4.7%
12	5.9%
13	6.1%
14	6.0%
15	7.0%
16	7.1%
17	7.5%
18	8.2%
19	5.7%
20	4.2%
21	3.2%
22	3.2%
23	2.5%
24	1.9%

Notes:

1. The percent of total daily VMT is calculated using EMFAC2021 data for all vehicle types in San Mateo County in 2028. It is equal to the hourly VMT divided by the daily VMT.

Abbreviations:

VMT - vehicles miles traveled

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 51
Exposure Parameters
Parkline
Menlo Park, California

Receptor Type	Receptor Age Group	Exposure Parameters								
		Daily Breathing Rate (DBR)[1,2,3,4]	Annual Exposure Duration (ED)[5]	Fraction of Time at Home (FAH)[6]	Exposure Frequency (EF)[7]	Averaging Time (AT)	Intake Factor, Inhalation (IF$_{inh}$)	Age Sensitivity Factor (ASF)[8]	Modeling Adjustment Factor[14]	
		[L/kg-day]	[years]	[unitless]	[days/year]	[days]	[m^3/kg-day]	(unitless)	Construction	Operations
Resident[9]	3rd Trimester	361	1.0	1.0	350	25,550	0.0049	10	1.0	1.0
	Age 0-<2 Years	1,090	1.0	1.0	350	25,550	0.015	10	1.0	1.0
	Age 2-<16 Years	572	1.0	1.0	350	25,550	0.0078	3	1.0	1.0
	Age 16-30 Years	261	1.0	0.73	350	25,550	0.0026	1	1.0	1.0
Worker[10]	Age 16-70 Years	230	1.0	--	250	25,550	0.0023	1	4.2	4.2
High school[11]	Age 2-<16 Years	520	1.0	--	180	25,550	0.0037	3	4.2	4.2
	Age 16-30 Years	230	1.0	--	180	25,550	0.0016	1	4.2	4.2
Daycare[12]	Age 0-<2 Years	1,090	1.0	--	250	25,550	0.011	10	4.2	4.2
	Age 2-16 Years	520	1.0	--	250	25,550	0.0051	3	4.2	4.2
Pre-school[13]	Age 2-16 Years	520	1.0	--	250	25,550	0.0051	3	4.2	4.2
Recreational[9]	Age 0-<2 Years	300	1.0	--	180	25,550	0.0021	10	4.2	4.2
	Age 2-<9 Years	160	1.0	--	180	25,550	0.0011	3	4.2	4.2
	Age 2-<16 Years	130	1.0	--	180	25,550	9.2E-04	3	4.2	4.2
	Age 16-30 Years	60	1.0	--	180	25,550	4.2E-04	1	4.2	4.2

Notes:

[1] Daily breathing rates for residents and daycare children reflect default breathing rates from OEHHA 2015 and Appendix E of BAAQMD 2022 CEQA Guidelines as follows:

95th percentile 24-hour daily breathing rate for 3rd trimester and age 0-<2 years;
80th percentile 24-hour daily breathing rate for age 2 and older.

[2] Daily breathing rates for workers assume 230 L/kg-8 hours, which represents the 95th percentile 8-hour breathing rates based on moderate activity of 16-70 years-old age range.

[3] Daily breathing rates for high school receptors and pre-school children assume 95th percentile 8-hour breathing rates for Moderate Intensity Activities for age bins 2-<9, 2-<16, and 16-30.

[4] Daily breathing rates for recreational receptors assume 95th percentile 8-hour daily breathing rates for Moderate Intensity Activities, scaled to 2 hours per day.

[5] Annual exposure duration represents one full year. The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. Actual exposure duration for each age group is shown in Tables 52a-d.

[6] Fraction of time spent at home is conservatively assumed to be 1 (i.e., 24 hours/day) for age groups from the third trimester to less than 16 years old based on the recommendation from BAAQMD (BAAQMD 2023) and OEHHA (OEHHA 2015). The fraction of time at home for adults age 16-30 reflects default OEHHA guidance (OEHHA 2015) as recommended by BAAQMD (2023).

[7] Exposure frequency was determined as follows:
Resident: reflects default residential exposure frequency from OEHHA (OEHHA 2015).
Worker: reflects default worker exposure frequency from OEHHA (OEHHA 2015).
Daycare and Pre-school: since the OEHHA guidance does not provide specific guidance for exposure frequency for daycares, this analysis assumes default worker exposure frequency, which is based on the assumption that a child is at the daycare or pre-school when the parents are at work (250 days/year).

High school, reflects default number of school days per year.

[8] Age sensitivity factors (ASFs) account for an “anticipated special sensitivity to carcinogens” of infants and children as recommended in the OEHHA Technical Support Document (OEHHA 2015) and current OEHHA guidance (OEHHA 2015). This approach is consistent with the cancer risk adjustment factor calculations recommended by BAAQMD (BAAQMD 2023).

[9] A resident and recreational receptor is assumed to be exposed for 30 years.

[10] A worker receptor is assumed to be exposed for 25 years.

[11] A high school receptor is assumed to be exposed for 4 years starting at the age of 14 (grade 9).

[12] A daycare receptor is assumed to be exposed for 6 years starting at the age of 0.

[13] A pre-school receptor is assumed to be exposed for 4 years starting at the age of 2.

[14] Modeling adjustment factors are calculated based on the methodology from OEHHA's Guidance Manual for Preparation of Health Risk Assessments (2015). For both construction and operations, the MAF for the worker, high school, daycare and pre-school receptors is calculated to adjust from 24 hours/day to 8 hours/day and from 7 days/week to 5 days/week ([24 hours/8 hours] * [7 days/5 days] = 4.20). Resident types are expected to be exposed 24 hours/day and 7 days/week; as a result, the MAF is 1.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Calculation:

IF_{inh} = DBR * FAH * EF * ED * CF / AT
CF = 0.001 (m^3/L)

Abbreviations:

ASF - age sensitivity factors	FAH - fraction of time at home
AT - averaging time	IF$_{inh}$ - intake factor
BAAQMD - Bay Area Air Quality Management District	kg - kilogram
DBR - daily breathing rate	L - liter
ED - exposure duration	m^3 - cubic meter
EF - exposure frequency	OEHHA - Office of Environmental Health Hazard Assessment

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 52a
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Exposure to Construction and Operation Scenario 1
Parkline
Menlo Park, California

Year[1]	Resident					Worker		High school			Daycare			Pre-school		Recreational				
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd T	0-2	2-16	16-30	(m^3/kg-day)	16-70	(m^3/kg-day)	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	0-2	2-9	2-16	16-30	(m^3/kg-day)
2025	0.44	0.56			0.11	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2026		1			0.15	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2027		0.69	0.31		0.110	1	0.0023	0.436	0.56	0.0057	0.436	0.56	0.055	1	0.015	0.436	0.56			0.0111
2028			1		0.024	1	0.0023		1	0.0016		1	0.015	1	0.015		1			0.0034
2029			1		0.024	1	0.0023		0.436	7.1E-04		1	0.015	0.436	0.0066		1			0.0034
2030			1		0.024	1	0.0023					1	0.015				1			0.0034
2031			1		0.024	1	0.0023					0.436	0.0066				1			0.0034
2032			1		0.024	1	0.0023										1			0.0034
2033			1		0.024	1	0.0023										1			0.0034
2034			1		0.024	1	0.0023										0.436	0.56		0.0030
2035			1		0.024	1	0.0023											1		0.0027
2036			1		0.024	1	0.0023											1		0.0027
2037			1		0.024	1	0.0023											1		0.0027
2038			1		0.024	1	0.0023											1		0.0027
2039			1		0.024	1	0.0023											1		0.0027
2040			1		0.024	1	0.0023											1		0.0027
2041			0.69	0.31	0.0169	1	0.0023											0.436	0.56	1.4E-03
2042				1	0.0026	1	0.0023												1	4.2E-04
2043				1	0.0026	1	0.0023												1	4.2E-04
2044				1	0.0026	1	0.0023												1	4.2E-04
2045				1	0.0026	1	0.0023												1	4.2E-04
2046				1	0.0026	1	0.0023												1	4.2E-04
2047				1	0.0026	1	0.0023												1	4.2E-04
2048				1	0.0026	1	0.0023												1	4.2E-04
2049				1	0.0026	1	0.0023												1	4.2E-04
2050				1	0.0026														1	4.2E-04
2051				1	0.0026														1	4.2E-04
2052				1	0.0026														1	4.2E-04
2053				1	0.0026														1	4.2E-04
2054				1	0.0026														1	4.2E-04
2055				0.69	1.8E-03														0.44	1.8E-04

Notes:

[1] Exposure Scenario 1 begins at the start of construction. Only offsite receptors are evaluated in this scenario.

[2] The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.

[3] The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.

[4] Intake Factors are based on exposure assumptions in Table 51.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

IF - intake factor	kg - kilogram	m^3 - cubic meter	T - trimester

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.
OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 52b
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Exposure to Construction and Operation Scenario 2
Parkline
Menlo Park, California

Year[1]	Resident					Worker		High school			Daycare			Pre-school		Recreational				
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd T	0-2	2-16	16-30	(m^3/kg-day)	16-70	(m^3/kg-day)	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	0-2	2-9	2-16	16-30	(m^3/kg-day)
2029	0.48	0.52			0.10	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2030		1			0.15	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2031		0.73	0.27		0.116	1	0.0023	0.48	0.52	0.0061	0.48	0.52	0.059	1	0.015	0.48	0.52			0.0119
2032			1		0.024	1	0.0023		1	0.0016		1	0.015	1	0.015		1			0.0034
2033			1		0.024	1	0.0023		0.48	7.8E-04		1	0.015	0.48	0.0074		1			0.0034
2034			1		0.024	1	0.0023					1	0.015				1			0.0034
2035			1		0.024	1	0.0023					0.48	0.0074				1			0.0034
2036			1		0.024	1	0.0023										1			0.0034
2037			1		0.024	1	0.0023										1			0.0034
2038			1		0.024	1	0.0023										0.48	0.52		0.0031
2039			1		0.024	1	0.0023											1		0.0027
2040			1		0.024	1	0.0023											1		0.0027
2041			1		0.024	1	0.0023											1		0.0027
2042			1		0.024	1	0.0023											1		0.0027
2043			1		0.024	1	0.0023											1		0.0027
2044			1		0.024	1	0.0023											1		0.0027
2045			0.73	0.27	0.018	1	0.0023											0.48	0.52	0.0015
2046				1	0.0026	1	0.0023												1	4.2E-04
2047				1	0.0026	1	0.0023												1	4.2E-04
2048				1	0.0026	1	0.0023												1	4.2E-04
2049				1	0.0026	1	0.0023												1	4.2E-04
2050				1	0.0026	1	0.0023												1	4.2E-04
2051				1	0.0026	1	0.0023												1	4.2E-04
2052				1	0.0026	1	0.0023												1	4.2E-04
2053				1	0.0026	1	0.0023												1	4.2E-04
2054				1	0.0026														1	4.2E-04
2055				1	0.0026														1	4.2E-04
2056				1	0.0026														1	4.2E-04
2057				1	0.0026														1	4.2E-04
2058				1	0.0026														1	4.2E-04
2059				0.73	0.0019														0.48	2.0E-04

Notes:

[1] Exposure Scenario 2 begins at the start of Phase 2 construction. Both onsite and offsite receptors are evaluated in this scenario.

[2] The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.

[3] The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.

[4] Intake Factors are based on exposure assumptions in Table 51.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

IF - intake factor	kg - kilogram	m^3 - cubic meter	T - trimester

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 52c
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Exposure to Construction and Operation Scenario 3
Parkline
Menlo Park, California

Year[1]	Resident					Worker		High school			Daycare			Pre-school		Recreational				
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd T	0-2	2-16	16-30	(m^3/kg-day)	16-70	(m^3/kg-day)	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	0-2	2-9	2-16	16-30	(m^3/kg-day)
2030	0.28	0.72			0.12	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2031		1			0.15	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2032		0.34	0.66		0.067	1	0.0023	0.093	0.91	0.0025	0.093	0.91	0.024	1	0.015	0.093	0.91			0.0050
2033			1		0.024	1	0.0023		1	0.0016		1	0.015	1	0.015		1			0.0034
2034			1		0.024	1	0.0023		0.093	1.5E-04		1	0.015	0.093	0.0014		1			0.0034
2035			1		0.024	1	0.0023					1	0.015				1			0.0034
2036			1		0.024	1	0.0023					0.093	0.0014				1			0.0034
2037			1		0.024	1	0.0023										1			0.0034
2038			1		0.024	1	0.0023										1			0.0034
2039			1		0.024	1	0.0023										0.093	0.91		0.0028
2040			1		0.024	1	0.0023											1		0.0027
2041			1		0.024	1	0.0023											1		0.0027
2042			1		0.024	1	0.0023											1		0.0027
2043			1		0.024	1	0.0023											1		0.0027
2044			1		0.024	1	0.0023											1		0.0027
2045			1		0.024	1	0.0023											1		0.0027
2046			0.34	0.66	0.010	1	0.0023											0.093	0.91	6.4E-04
2047				1	0.0026	1	0.0023												1	4.2E-04
2048				1	0.0026	1	0.0023												1	4.2E-04
2049				1	0.0026	1	0.0023												1	4.2E-04
2050				1	0.0026	1	0.0023												1	4.2E-04
2051				1	0.0026	1	0.0023												1	4.2E-04
2052				1	0.0026	1	0.0023												1	4.2E-04
2053				1	0.0026	1	0.0023												1	4.2E-04
2054				1	0.0026	1	0.0023												1	4.2E-04
2055				1	0.0026														1	4.2E-04
2056				1	0.0026														1	4.2E-04
2057				1	0.0026														1	4.2E-04
2058				1	0.0026														1	4.2E-04
2059				1	0.0026														1	4.2E-04
2060				0.34	9.0E-04														0.093	3.9E-05

Notes:

[1] Exposure Scenario 3 begins at the start of Phase 3 construction. Both onsite and offsite receptors are evaluated in this scenario.

[2] The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.

[3] The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.

[4] Intake Factors are based on exposure assumptions in Table 51.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

IF - intake factor
kg - kilogram
m^3 - cubic meter
T - trimester

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 52d
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Operation-Only Exposure Scenario 4
Parkline
Menlo Park, California

Year[1]	Resident					Worker		High school			Daycare			Pre-school		Recreational				
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd T	0-2	2-16	16-30	(m^3/kg-day)	16-70	(m^3/kg-day)	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	0-2	2-9	2-16	16-30	(m^3/kg-day)
2031	1.00				0.049	1	0.0023	1		0.011	1		0.107	1	0.015	1				0.021
2032	0.15	0.85			0.13	1	0.0023	1		0.011	1		0.107	1	0.015	1				0.021
2033		1.00			0.149	1	0.0023	0.90	0.10	0.0100	0.90	0.10	0.097	1	0.015	0.90	0.10			0.019
2034		0.15	0.85		0.042	1	0.0023		1	0.0016		1	0.015	1	0.015		1			0.0034
2035			1		0.024	1	0.0023		0.90	1.5E-03		1	0.015	0.90	0.0137		1			0.0034
2036			1		0.024	1	0.0023					1	0.015				1			0.0034
2037			1		0.024	1	0.0023					0.90	0.0137				1			0.0034
2038			1		0.024	1	0.0023										1			0.0034
2039			1		0.024	1	0.0023										1			0.0034
2040			1		0.024	1	0.0023										0.90	0.10		0.0033
2041			1		0.024	1	0.0023											1		0.0027
2042			1		0.024	1	0.0023											1		0.0027
2043			1		0.024	1	0.0023											1		0.0027
2044			1		0.024	1	0.0023											1		0.0027
2045			1		0.024	1	0.0023											1		0.0027
2046			1		0.024	1	0.0023											1		0.0027
2047			1		0.024	1	0.0023											0.90	0.10	0.0025
2048			0.15	0.85	0.0057	1	0.0023												1	4.2E-04
2049				1	0.0026	1	0.0023												1	4.2E-04
2050				1	0.0026	1	0.0023												1	4.2E-04
2051				1	0.0026	1	0.0023												1	4.2E-04
2052				1	0.0026	1	0.0023												1	4.2E-04
2053				1	0.0026	1	0.0023												1	4.2E-04
2054				1	0.0026	1	0.0023												1	4.2E-04
2055				1	0.0026	1	0.0023												1	4.2E-04
2056				1	0.0026														1	4.2E-04
2057				1	0.0026														1	4.2E-04
2058				1	0.0026														1	4.2E-04
2059				1	0.0026														1	4.2E-04
2060				1	0.0026														1	4.2E-04
2061				1	0.0026														1	4.2E-04
2062				0.15	3.9E-04														0.90	3.8E-04

Notes:

[1] Exposure assumes to begin following the full buildout of the Project. Both onsite and offsite receptors are evaluated in this scenario.

[2] The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.

[3] The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.

[4] Intake Factors are based on exposure assumptions in Table 51.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

IF - intake factor	kg - kilogram	m^3 - cubic meter	T - trimester

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 53

Toxicity Values for TACs Emitted by Existing Conditions and by Project
Parkline
Menlo Park, California

TAC[1]	CAS Number	Inhalation Cancer Potency Factor (mg/kg-d)$^{-1}$	Acute Inhalation (µg/m3)	Chronic Inhalation (µg/m^3)	Source(s)
1,3-Butadiene	106-99-0	0.60	660	2.0	Mobile, Cogen
1,4 Dioxane	123-91-1	0.027	3,000	3,000	Labs
Acetaldehyde	75-07-0	0.010	470	140	Mobile, Cogen
Acrolein	107-02-8	--	2.5	0.35	Mobile, Cogen
Acrylamide	79-06-1	4.5	--	--	Labs
Benzene	71-43-2	0.10	27	3.0	Labs, Mobile, Cogen
Benzo(a)anthracene	56-55-3	0.39	--	--	Cogen
Benzo(a)pyrene	50-32-8	3.9	--	--	Cogen
Benzo(b)fluoranthene	205-99-2	0.39	--	--	Cogen
Benzo(k)fluoranthene	207-08-9	0.39	--	--	Cogen
Carbon Tetrachloride	56-25-5	0.15	1,900	40	Labs
Chloroform	67-66-3	0.019	150	300	Labs
Chrysene	218-01-9	0.039	--	--	Cogen
Dibenz(a,h)anthracene	53-70-3	4.1	--	--	Cogen
Dimethyl Formamide	68-12-2	--	--	80	Labs
Ethylbenzene	100-41-4	0.0087	--	2,000	Mobile
Ethylene Dichloride	107-06-2	0.072	--	400	Labs
Fluorene	86-73-7	--	--	--	Cogen
Formaldehyde	50-00-0	0.021	55	9.0	Labs, Mobile, Cogen
Glutaraldehyde	111-30-8	--	--	0.080	Labs
Hexane	110-54-3	--	--	7,000	Labs, Mobile, Cogen
Hydrochloric Acid	7647-01-0	--	2,100	9.0	Labs
Hydrogen Fluoride	7664-39-3	--	240	14	Labs
Hydrazine	302-01-2	--	240	14	Labs
Indeno(1,2,3-cd)pyrene	193-39-5	0.39	--	--	Cogen
Isopropyl Alcohol	67-63-0	--	3,200	7,000	Labs
Methanol	67-56-1	--	28,000	4,000	Labs, Mobile
Methyl Bromide	74-83-9	--	3,900	5.0	Labs
Methylene Chloride	75-09-2	0.0035	14,000	400	Labs
Methyl Ethyl Ketone	78-93-3	--	13,000	--	Mobile
Naphthalene	91-20-3	0.12	--	9.0	Mobile, Cogen
Perchloroethylene	127-18-4	0.021	20,000	35	Labs
Propylene	115-07-1	--	--	3,000	Mobile, Cogen
Propylene Oxide	75-56-9	3.7E-06	3,100	30	Cogen
Pyrene	129-00-0	--	--	--	Cogen
Styrene	100-42-5	--	21,000	900	Mobile
Toluene	108-88-3	--	5,000	420	Labs, Mobile
Trichloroethylene	79-01-6	0.0070	--	600	Labs
Triethylamine	121-44-8	--	2,800	200	Labs
Xylenes	1330-20-7	700	22,000	--	Labs, Mobile, Cogen
DPM	9901	1.1	--	5.0	Mobile, Generators

Notes:

[1] Toxicity values for TACs are based on the OEHHA Toxicity Criteria of Chemicals Database.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

TAC - toxic air contaminant	mg - milligram
CAS - Chemical Abstracts Service	kg - kilogram
m - meter	µg - microgram
d - day	DPM - diesel particulate matter

References:

Cal/EPA. 2022. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. December. http://www.arb.ca.gov/toxics/healthval/contable.pdf

Table 54
Project Excess Lifetime Cancer Risk at MEIR
Parkline
Menlo Park, CA

MEIR Risk and Location	Excess Lifetime Cancer Risk[1] in a million	
	On-site Receptor	**Off-site Receptor**
Baseline	-0.64	-0.89
Construction	2.6	0.72
Generator Operations	3.1	2.9
Laboratories	0.86	1.2
Traffic	0.094	0.15
Total Project Contribution	**6.0**	**4.1**
Receptor Type	Phase 1 Resident	Offsite Resident
RID	895	900
UTMx (m)	572858	572958
UTMy (m)	4145588	4145588
Modeling Scenario	Scenario 2	Scenario 2
BAAQMD Threshold of Significance	10	10
Exceed?	No	No

Notes:

[1] The Project construction cancer risks were estimated using the following equation:

Riskinh = Ci x CF x IFinh x CPFi x ASF
Where:
Riskinh = Cancer Risk for the Inhalation Pathway (unitless)
Ci = Annual Average Air Concentration for Chemical "i" (μg/m3)
CF = Conversion Factor (mg/μg)
IFinh = Intake Factor for Inhalation (m3/kg-day)
CPFi = Cancer Potency Factor for Chemical "i" (mg/kg-day)-1
ASF = Age Sensitivity Factor (unitless)

Abbreviations:

g - gram
kg - kilogram
m^3 - cubic meter
m - meter
MEIR - maximally exposed individual receptor
UTMx - x coordinate in the Universal Transverse Mercator system
UTMy - y coordinate in the Universal Transverse Mercator system

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 55
Project Chronic Hazard Index at MEIR
Parkline
Menlo Park, CA

MEIR Risk and Location	Chronic Hazard Index[1] unitless	
	On-site Receptor	**Off-site Receptor**
Baseline	-4.0E-04	-9.0E-04
Construction	--	1.4E-03
Generator Operations	0.0015	1.9E-04
Laboratories	0.015	7.3E-03
Traffic	4.0E-04	6.0E-04
Total Project Contribution	**0.017**	**0.0087**
Receptor Type	Phase 2 Worker	Offsite Worker
UTMx (m)	573118	573158
UTMy (m)	4145868	4145748
Modeling Scenario	Scenario 3	Scenario 1
Year	2032	2029
BAAQMD Threshold of Significance	1	1
Exceed?	No	No

Notes:

[1] The potential for exposure to result in adverse chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) from operations to the non-cancer chronic REL for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient or HQ. To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index or HI.

The chronic HI for each receptor was estimated using the following equation:

HIinh =Ci / cREL
Where:
HIinh = Chronic HI for the Inhalation Pathway (unitless)
Ci = Annual Average Air Concentration for Chemical "i" (µg/m3)
cREL = Chronic Reference Exposure Level (µg/m3)

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

g - gram
kg - kilogram
m^3 - cubic meter
m - meter
MEIR - maximally exposed individual receptor
REL - reference exposure level
UTMx - x coordinate in the Universal Transverse Mercator system
UTMy - y coordinate in the Universal Transverse Mercator system

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 56
Project Acute Hazard Index at MEIR
Parkline
Menlo Park, CA

MEIR Risk and Location[2]	Acute Hazard Index[1] unitless	
	On-site Receptor	**Off-site Receptor**
Laboratories	0.078	0.058
Total Project Contribution	**0.078**	**0.058**
Receptor Type	Phase 2 Worker	Offsite Worker
UTMx (m)	573138	573138
UTMy (m)	4145848	4146068
Modeling Scenario	Scenario 3 and 4	Scenario 1 - 4
Year	2029+	2029+
BAAQMD Threshold of Significance	1	1
Exceed?	No	No

Notes:

[1] The potential for exposure to result in adverse acute non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the 1-hour max air concentration) from operations to the non-cancer acute REL for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient or HQ. To evaluate the potential for adverse acute non-cancer health effects from simultaneous exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index or HI.

The acute HI for each receptor was estimated using the following equation:

HIinh =Ci / aREL
Where:
HIinh = Chronic HI for the Inhalation Pathway (unitless)
Ci = 1-hour Max Concentration "i" (µg/m3)
aREL = Acute Reference Exposure Level (µg/m3)

[2] Diesel particulate matter (DPM) does not have an acute non-cancer toxicity value, and BAAQMD does not estimate acute HI from roadways in its Roadway Screening Analysis Calculator since impacts from all roadways were well below thresholds. Therefore, an acute HI was only estimated from the laboratory sources as the emitted chemicals include TACs with acute reference exposure levels.

Abbreviations:

g - gram
kg - kilogram
m^3 - cubic meter
m - meter
MEIR - maximally exposed individual receptor
REL - reference exposure level
UTMx - x coordinate in the Universal Transverse Mercator system
UTMy - y coordinate in the Universal Transverse Mercator system

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 57
Project $PM_{2.5}$ Concentration at MEIR
Parkline
Menlo Park, CA

MEIR Risk and Location	**$PM_{2.5}$ Concentration[1]**			
	µg/m^3			
	On-site Receptor		**Off-site Receptor**	
	Unmitigated	**Mitigated**	**Unmitigated**	**Mitigated**
Baseline	-0.0077	-0.0077	-0.024	-0.0064
Construction	5.8E-04	5.6E-04	0.17	7.7E-04
Generator Operations	0.0013	0.0013	--	0.0019
Laboratories	--	--	--	--
Traffic	0.081	0.081	--	0.070
Total Project Contribution	**0.076**	**0.076**	**0.15**	**0.066**
Receptor Type	Phase 1 Worker	Phase 1 Worker	Offsite Worker	Offsite Worker
UTMx (m)	572838	572838	573118	572838
UTMy (m)	4145988	4145988	4145648	4145828
Modeling Scenario	Scenario 2	Scenario 2	Scenario 1	Scenario 2
Year	2030	2030	2026	2030
BAAQMD Threshold of Significance	0.3	0.3	0.3	0.3
Exceed?	No	No	No	No

Notes:

[1] The $PM_{2.5}$ concentration due to Project construction at each receptor was estimated using the following equation:

Ci =E x Di
Where:
C = Concentration of $PM_{2.5}$ at receptor "i" (µg/m3)
Di = Dispersion factor associated with unit emissions at receptor "i" (µg/m3)/(g/s)
E = Emission Rate (g/s)

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

g - gram	UTMx - x coordinate in the Universal Transverse Mercator system
kg - kilogram	UTMy - y coordinate in the Universal Transverse Mercator system
m^3 - cubic meter	
m - meter	
MEIR - maximally exposed individual receptor	

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 58
Health Risk Impacts from Stationary Sources for Cumulative Analysis
Parkline
San Mateo, CA

Location of MEIR	BAAQMD Facility Number[1]	Facility Name[1]	Facility Address	Source type (used for distance multiplier)[1]	Location[1,2]		Health Risk Screening Values Adjusted by BAAQMD Screening Tool[3]		
					Latitude	Longitude	Lifetime Excess Cancer Risk	Noncancer Chronic HI	$PM_{2.5}$ Concentration
					(degrees)		(in a million)		($\mu g/m^3$)
On-Site MEIR	598	SRI International - Buildings P, S, and T	333 Ravenswood Ave	Generators	37.455	-122.178	0.058	3.5E-06	2.2E-05
	18909	City of Menlo Park	333 Burgess Dr	Generators	37.454	-122.174	0.41	3.6E-04	2.8E-04
	21224	West Bay Sanitary District	500 Laurel St	Generators	37.453	-122.174	0.22	4.0E-05	2.4E-04
	106921	City of Menlo Park Attn: Fleet Supervision	333 Burgess Dr	Gas Dispensing Facility	37.455	-122.173	0.21	7.9E-04	0
	200608	City of Menlo Park	701 Laurel St	Generators	37.453	-122.178	0.33	4.0E-05	1.6E-04
Off-Site MEIR	598	SRI International - Buildings P, S, and T	333 Ravenswood Ave	Generators	37.455	-122.178	0.025	3.5E-06	2.2E-05
	18909	City of Menlo Park	333 Burgess Dr	Generators	37.454	-122.174	1.1	6.3E-04	1.1E-03
	19243	General Service Administration	345 Middlefield Rd	No detail	37.456	-122.171	15	0.010	0.027
	21224	West Bay Sanitary District	500 Laurel St	Generators	37.453	-122.174	0.39	4.0E-05	4.8E-04
	106921	City of Menlo Park Attn: Fleet Supervision	333 Burgess Dr	Gas Dispensing Facility	37.455	-122.173	0.39	0.0029	0
	200608	City of Menlo Park	701 Laurel St	Generators	37.453	-122.178	0.17	4.0E-05	1.6E-04

Notes:

[1] Health impacts from Stationary Sources are estimated using BAAQMD Stationary Source Screening Analysis Tool based on sources within 1,000 feet of the MEIRs.

[2] Locations are approximate for preliminary assessment of risk.

[3] Health risk values listed are maximum values, not expected values. Results have been adjusted by the BAAQMD-recommended distance multiplier, where relevant. MEIR locations are summarized in Table 59.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

µg - microgram
BAAQMD - Bay Area Air Quality Management District
ft - feet
HI - hazard index
m - meter
m^3 - cubic meter
MEIR - maximum exposed individual receptor
$PM_{2.5}$ - fine particulate matter

Table 59
Cumulative Risks and Hazards
Parkline
Menlo Park, CA

Cumulative Risks and Hazards for On-Site MEIR

Source	Lifetime Excess Cancer Risk	Noncancer Chronic HI	$PM_{2.5}$ Concentration
	(in a million)	(unitless)	($\mu g/m^3$)
Stationary Sources[1]	1.2	0	0
SRI Continued Operations	0.058	3.5E-06	2.2E-05
Roadways[2]	7.5	0.019	0.13
Railways[2]	29	0.0033	0.015
Foreseeable Future Cumulative Development Projects[3]	--	--	--
Net Project	6.0	0.017	0.076
Total	**43**	**0.039**	**0.22**
Exceeds Threshold?	**NO**	**NO**	**NO**
Year	--	2032	2030
UTMx	572858	573118	572838
UTMy	4145588	4145868	4145988
Receptor Type	Phase 1 Resident	Phase 2 Worker	Phase 1 Worker
Threshold	**100**	**10**	**0.8**

Cumulative Risks and Hazards for Off-Site MEIR

Source	Lifetime Excess Cancer Risk	Noncancer Chronic HI	$PM_{2.5}$ Concentration
	(in a million)	(unitless)	($\mu g/m^3$)
Stationary Sources[1]	2.1	0.014	0
SRI Continued Operations	0.025	3.5E-06	2.2E-05
Roadways[2]	10	0.016	0.13
Railways[2]	23	0.0034	0.020
Foreseeable Future Cumulative Development Projects[3]	--	--	--
Net Project	4.1	0.0087	0.066
Total	**40**	**0.042**	**0.25**
Exceeds Threshold?	**NO**	**NO**	**NO**
Year	--	2029	2030
UTMx	572958	573158	572838
UTMy	4145588	4145748	4145828
Receptor Type	Offsite Resident	Offsite Worker	Offsite Worker
Threshold	**100**	**10**	**0.8**

Notes:

[1] Health impacts from Stationary Sources estimated using BAAQMD Stationary Source Screening Analysis Tool. Risk values listed are maximum values, not expected values. Results, shown in Table 58, have been adjusted by the BAAQMD-recommended distance multiplier, where relevant.

[2] Health risks from roadways and railways were determined using BAAQMD screening tools and are based on the maximum impact of a raster cell located on the identified sensitive receptors.

[3] A list of foreseeable future development was provided by the City of Menlo Park. No foreseeable future developments were located within a 1000ft buffer from the Project; therefore there are no health risk impacts from future development.

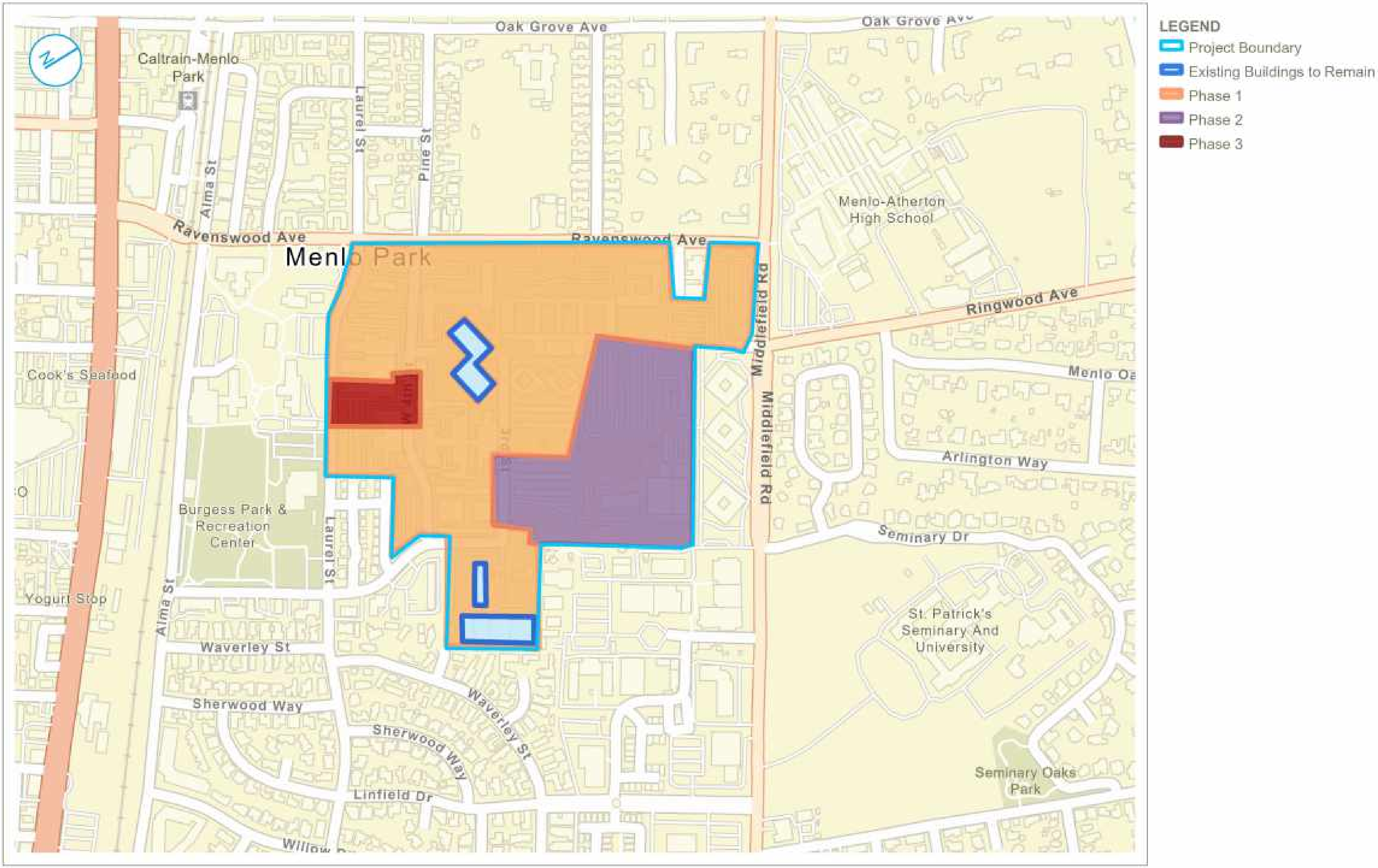
[4] The continued use of the generators at Buildings P, S, and T and the South generator were modeled using default parameters. Emissions were based on the size of the generator, as provided by the Project Applicant, and 50 hours of annual operations. health impacts were estimated at the MEIR locations based on exposure for the entire exposure duration.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

HI - hazard index
MEIR - maximally exposed individual receptor
$PM_{2.5}$ - particulate matter less than 2.5 microns
$\mu g/m^3$ - microgram per cubic meter
UTMx UTMy - Universal Transverse Mercator coordinates

FIGURES



MODELED SOURCES OF TOXIC AIR CONTAMINANTS

Parkline Menlo Park
333 Ravenswood Ave
Menlo Park, CA 94025

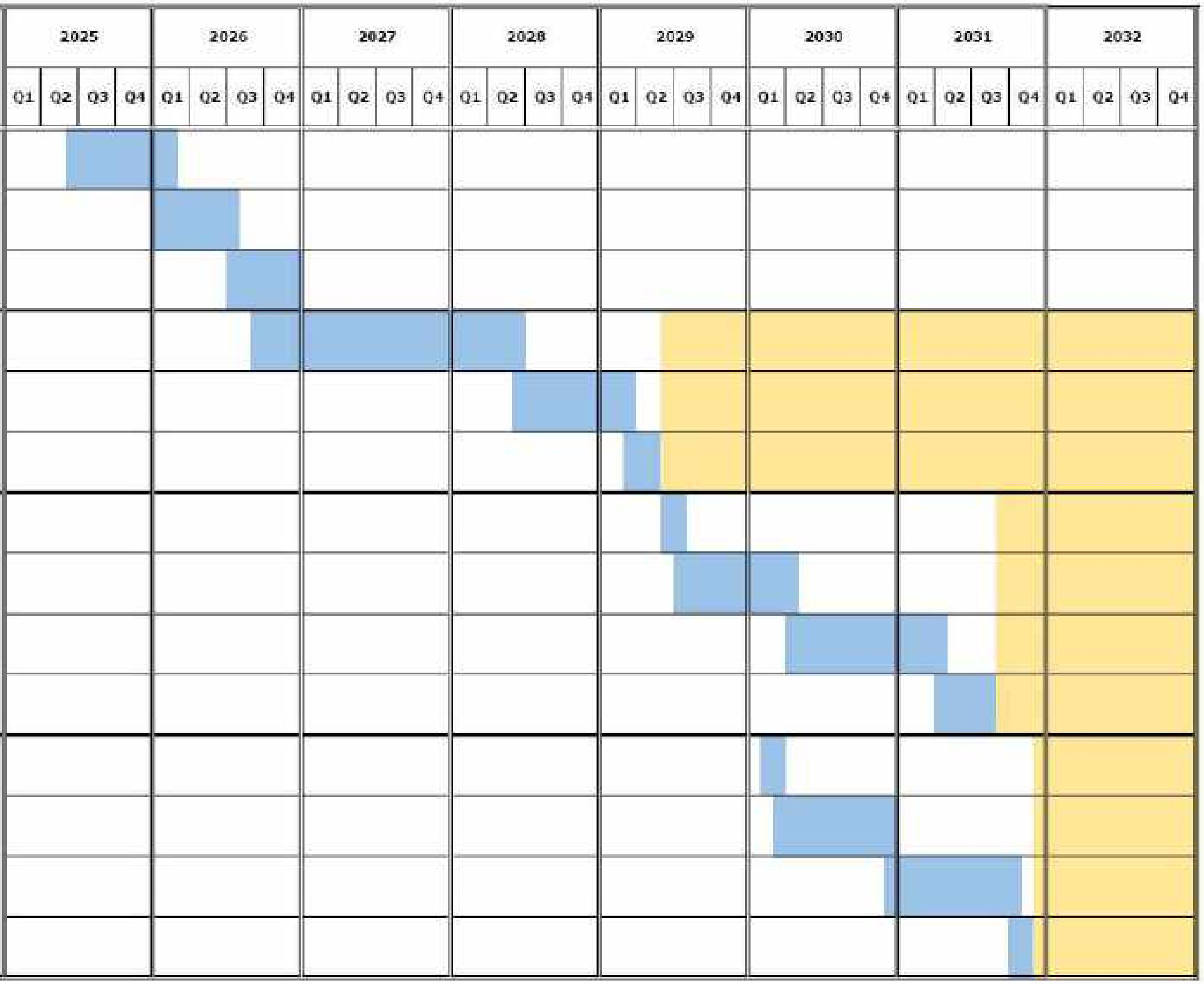
FIGURE 01

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL

Project Construction

Phase	Subphase	Construction Schedule		Number of Work Days	Operational Year
		Start	End		
Project Preparation	Demolition	06/09/25	02/24/26	178	--
	Site Preparation	01/08/26	07/20/26	135	
	Grading	07/21/26	12/10/26	100	
Phase 1	Building Construction	09/30/26	06/05/28	419	2029
	Architectural Coating	06/06/28	03/21/29	199	
	Paving	03/22/29	05/28/29	40	
Phase 2	Demolition	06/26/29	07/25/29	22	2031
	Building Construction	07/26/29	04/03/30	180	
	Architectural Coating	04/04/30	04/23/31	275	
	Paving	04/24/31	08/06/31	75	
Phase 3	Demolition	02/04/30	03/05/30	22	2031
	Building Construction	03/06/30	12/10/30	200	
	Architectural Coating	12/11/30	10/14/31	220	
	Paving	10/15/31	11/25/31	30	



Key:

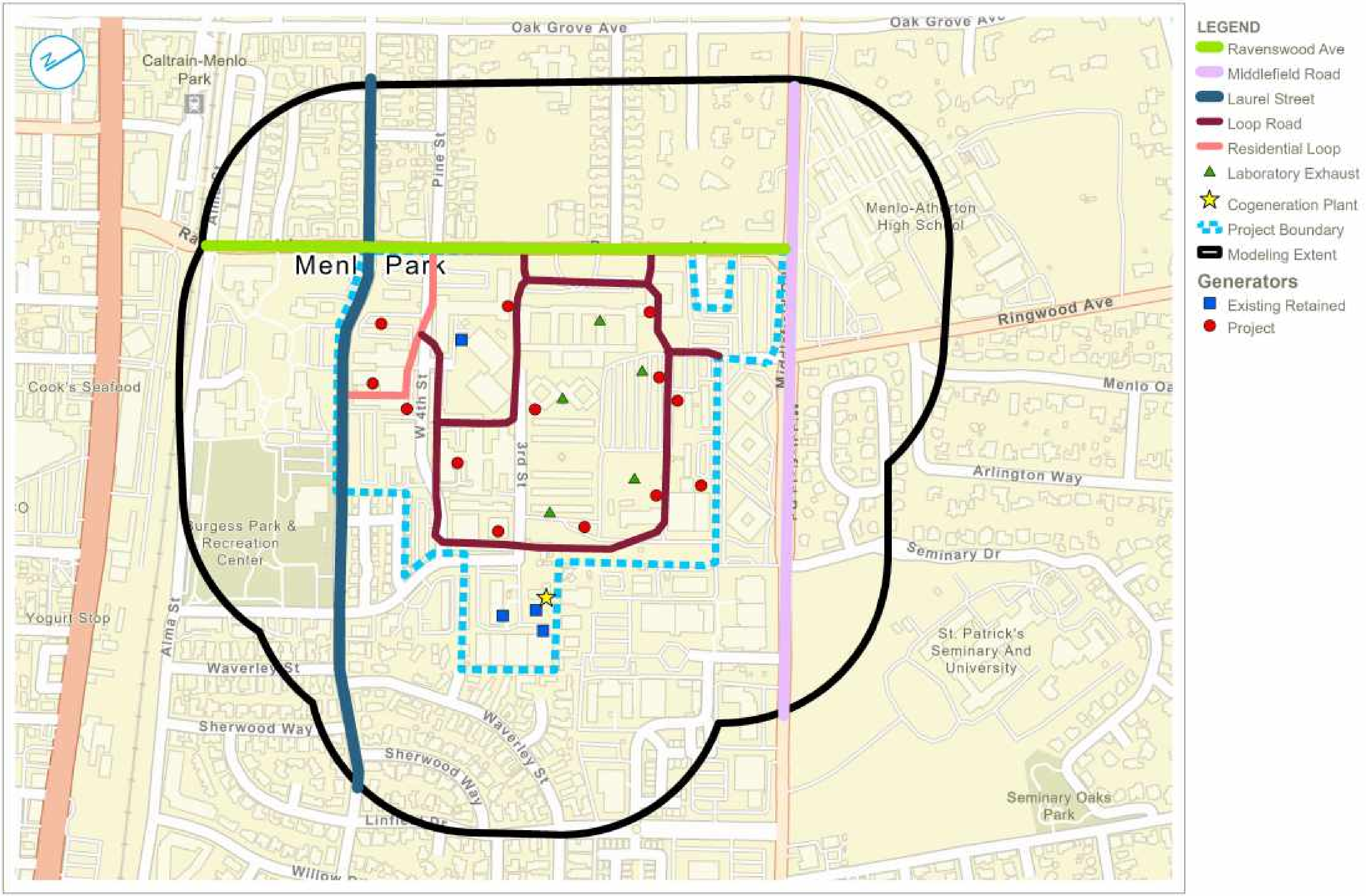
🟦	Active Construction Period
🟨	Phase is Operational

PROPOSED PROJECT PHASING SCHEDULE

Parkline Menlo Park
333 Ravenswood Ave.
Menlo Park, CA

FIGURE 02

RAMBOLL US CORPORATION
A RAMBOLL COMPANY



MODELED SOURCES OF TOXIC AIR CONTAMINANTS

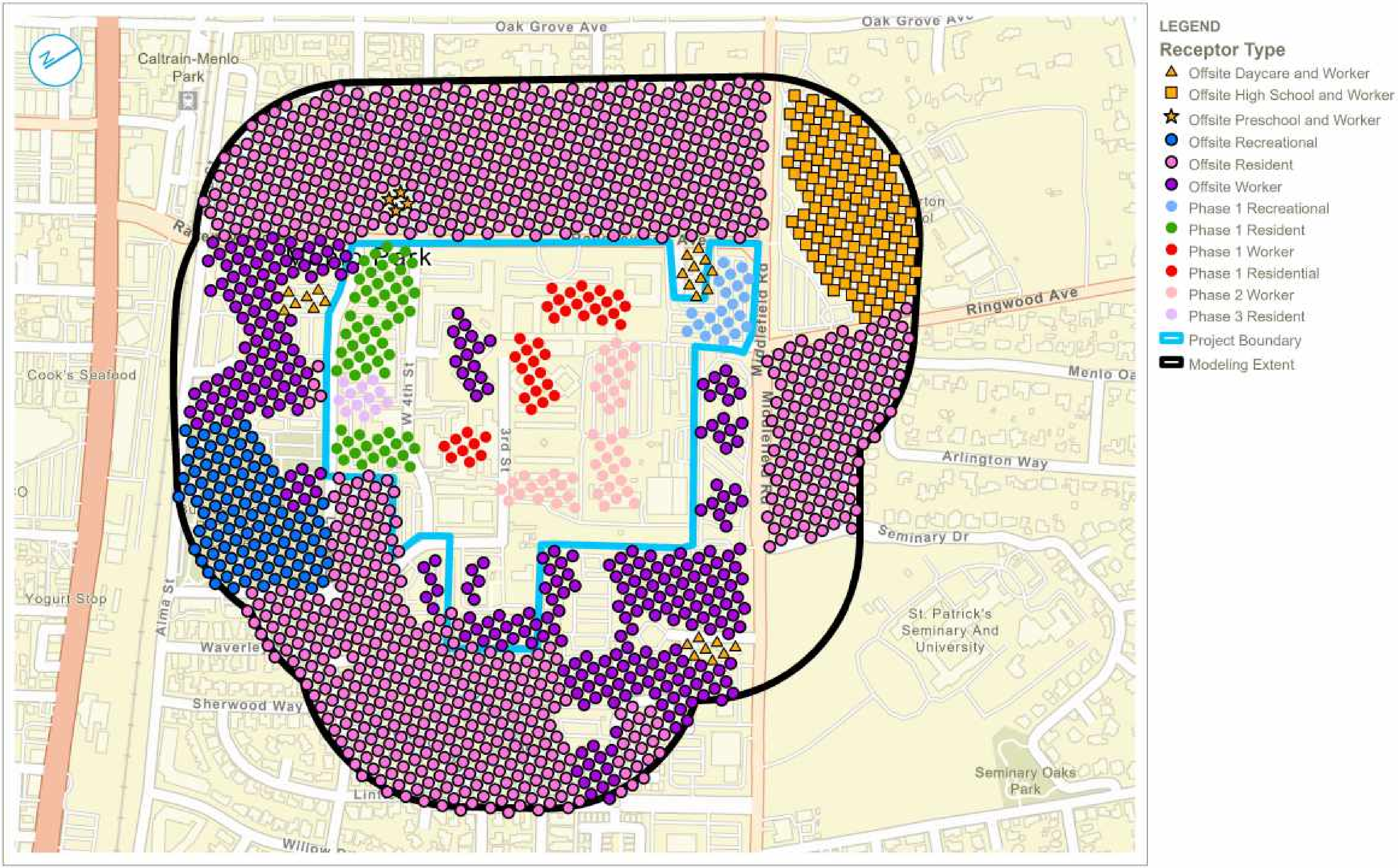
0 500 1,000 Feet

Parkline Menlo Park
333 Ravenswood Ave
Menlo Park, CA 94025

FIGURE 03

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL



MODELED RECEPTOR LOCATIONS

Parkline Menlo Park
333 Ravenswood Ave
Menlo Park, CA 94025

FIGURE 04

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL

APPENDIX A
CEQA Analysis Air Quality and Greenhouse Gas Consistency Analysis

CEQA ANALYSIS
AIR QUALITY AND GREENHOUSE GAS CONSISTENCY ANALYSIS

PARKLINE

MENLO PARK, CALIFORNIA

Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The Project is located in San Mateo County, in the San Francisco Bay Area Air Basin (SFBAAB). The 2017 Clean Air Plan, prepared by the Bay Area Air Quality Management District (BAAQMD), is a comprehensive plan to improve air quality, protect public health and protect the climate in the SFBAAB. The 2017 Clean Air Plan serves as an update to the region's State ozone plan pursuant to the requirements of the California Health and Safety Code. The control strategies presented in the 2017 Clean Air Plan include all feasible measures that the BAAQMD can take within its current statutory authority to reduce air pollutants and greenhouse gases (GHG) emissions. The 2017 Clean Air Plan is designed to accomplish three complimentary goals: attain all state and national air quality standards; eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and protect the climate by meeting the State's GHG reduction targets in 2030 and 2050.

A project is considered to be consistent with the Clean Air Plan when it 1) supports the goals of the Clean Air Plan, 2) includes applicable control measures from the Clean Air Plan, and 3) would not disrupt or hinder implementation of any control measure included in the Clean Air Plan. The sections below provide an evaluation of the Project's consistency with each of the criteria.

Supporting the goals of the 2017 Clean Air Plan

As discussed above, the primary goals of the 2017 Clean Air Plan are to attain air quality standards, reduce the population's exposure to pollutants, protect public health in the Bay Area, reduce GHG emissions, and protect the climate. The BAAQMD's 2022 California Environmental Quality Act (CEQA) Air Quality Guidelines recommend project-level thresholds of significance for air quality impacts, health risk impacts and greenhouse gas emissions. The criteria pollutants' emissions thresholds of significance were established to determine whether emissions associated with construction or operation of a project would represent a cumulatively considerable contribution to adverse air quality in the SFBAAB and conflict with planning efforts to attain or maintain ambient air quality standards. The health risk thresholds were established to protect health of local communities. The thresholds of significance for greenhouse gas emissions were established to determine whether a project would make cumulative considerable contribution to the significant cumulative impact on climate change.

As discussed in Section 2 of the CEQA Air Quality, Greenhouse gas and Health Risk Assessment Technical Report, the Project's construction and operation would not exceed the thresholds of significance for criteria air pollutants emissions or the thresholds of significance for local air quality health risks impacts. In addition, the Project would not result in a significant impact related to the BAAQMD's thresholds of significance for land use projects, because the Project is consistent with the City of Menlo Park's Climate Action Plan and the project design elements recommended by the BAAQMD, such as exclusion of natural gas appliances and plumbing, and meeting CALGreen Tier 2 electric vehicle charging requirements. Therefore, the Project would not conflict with the goals of the 2017 Clean Air Plan to attain air quality standards and meet the State's GHG reduction targets.

Implementation of applicable control measures in the 2017 Clean Air Plan

The 2017 Clean Air Plan defines a control strategy based on reducing emissions from all key sources, reducing "super-GHGs",[1] decreasing demand for fossil fuels, and decarbonizing the energy system. The control strategy contains 85 control measures that are specific actions to reduce air pollutants and GHGs in the SFBAAB. These control strategies are grouped into the following categories:

- Stationary source measures;
- Transportation control measures;
- Energy control measures;
- Building control measures;
- Agricultural control measures;
- Natural and working lands control measures;
- Waste management control measures;
- Water control measures; and
- Super-GHG control measures

Many of the 85 control measures are largely directed at BAAQMD action and therefore beyond the scope and control of the Project. For example, some address stationary sources and will be implemented by BAAQMD using its permit authority and therefore are not suited to implementation through local planning efforts or project approval actions. The Clean Air Plan measures potentially applicable to the Project are listed below along with an analysis of the Project's consistency with those control measures. The summary below describes how Project features would support BAAQMD's implementation of control measures within its purview.

---

[1] "Super-GHGs" are defined in the Clean Air Plan as methane, black carbon, and fluorinated gases.

Table 1. Consistency of Project with the 2017 Climate Action Plan's Control Strategies		
Measure	**Measure Description**[2]	**Project Consistency**
Transportation Control Measures		
TR1 - Clean Air Teleworking Initiative	Develop teleworking best practices for employers and develop additional strategies to promote telecommuting. Promote teleworking on Spare the Air Days.	**Supporting.** Many of the Project's employees and residents are anticipated to have the ability to telecommute. The Project would also promote commuting by non-single-occupancy vehicles through implementation of its Transportation Demand Management (TDM) Program (details below).
TR2 - Trip Reduction Programs	Implement the regional Commuter Benefits Program (Rule 14-1) that requires employers with 50 or more Bay Area employees to provide commuter benefits. Encourage trip reduction policies and programs in local plans, e.g., general and specific plans while providing grants to support trip reduction efforts. Encourage local governments to require mitigation of vehicle travel as part of new development approval, to adopt transit benefits ordinances in order to reduce transit costs to employees, and to develop innovative ways to encourage rideshare, transit, cycling, and walking for work trips. Fund various employer-based trip reduction programs.	**Supporting.** The majority of the Project Site is within 0.25 mile of the Menlo Park Caltrain station and close to the San Mateo County Transit District (SamTrans) bus and Menlo Park community shuttle stops at Middlefield Road and Ravenswood Avenue. The Project Site is served by SamTrans routes 81, 82, 296, and 397 and Menlo Park community shuttle routes M1 and M4. The Project's proximate location to public transit would encourage transit use by placing dense commercial space and residents near transit. The Project will implement a TDM program for both the residential and commercial components. The TDM program would further encourage reduction of single occupancy vehicles, and incorporates a range of physical and operational TDM measures intended to encourage utilization of alternative forms of transit.
TR5 - Transit Efficiency and Use	Improve transit efficiency and make transit more convenient for riders through continued operation of 511 Transit, full implementation of Clipper® fare payment system and the Transit Hub Signage Program.	**Supporting**. While the explicit requirements of this measure are outside the control of the Project, the Project would improve transit efficiency through implementation of its TDM Program, which among other measures, may include a commuter shuttle to transit, commuter benefits, and transit rider subsidies.
TR8 - Ridesharing	Promote carpooling and vanpooling by providing funding to continue regional and local ridesharing programs, and support the expansion of carsharing programs. Provide incentive funding for pilot projects to evaluate the feasibility and cost-effectiveness of innovative ridesharing and other	**Supporting.** While the explicit requirements of this measure are outside the control of the Project, the Project would implement trip reduction strategies through its TDM program, which includes a range of potential measures including a commuter shuttle, carsharing, carpool subsidies, and other commuter benefits that may be implemented throughout the Project site.

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[2] Bay Area Air Quality Management District, 2017. Spare the Air Cool the Climate: Final 2017 Clean Air Plan. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf

	last-mile solution trip reduction strategies. Encourage employers to promote ridesharing and carsharing to their employees.	
TR9 - Bicycle and Pedestrian Access and Facilities	Encourage planning for bicycle and pedestrian facilities in local plans, e.g., general and specific plans, fund bike lanes, routes, paths and bicycle parking facilities.	**Supporting.** The Project includes land uses and infrastructure investments that support higher density mixed-use, residential, and employment development near transit, thereby encouraging walking, bicycling, and transit use. The Project site is currently closed to the public and generally surrounded by a secured perimeter. The existing bicycle and pedestrian facilities are limited to on-street bicycle lanes and narrow sidewalks along the perimeter of the site's roadway frontages within the public right-of-way. The Project would create a bicycle- and pedestrian-friendly environment that enhances connectivity between the Project Site and surrounding areas by eliminating the existing security perimeter and open the Project Site to the surrounding community by creating accessible and safe multi-modal pathways, allowing bicyclists and pedestrians to circulate throughout the site. These bicycle and pedestrian pathways would be located along the perimeter of the Project Site and throughout the interior of site to create east–west bicycle and pedestrian linkages that would connect through the Project Site to Burgess Park, the future Caltrain undercrossing, and the Menlo Park downtown area.
TR10 - Land Use Strategies	Support implementation of Plan Bay Area, maintain and disseminate information on current climate action plans and other local best practices, and collaborate with regional partners to identify innovative funding mechanisms to help local governments address air quality and climate change in their general plans.	**Supporting.** The Project consists of a dense, walkable, mixed-used development that balances jobs and housing while considering safety, traffic, retail amenities, and other community needs. The Project implements features that reduce air pollutant and greenhouse gas emissions, such as an extensive TDM program, electrification of buildings, purchase of 100% carbon-free electricity, and meeting LEED Gold standards or equivalent for the commercial buildings and LEED New Construction certification or equivalent standards for residential buildings.
TR13 - Parking Policies	Encourage parking policies and programs in local plans, e.g., reduce minimum parking requirements; limit the supply of off-street parking in transit-oriented areas; unbundle the price of parking spaces; support implementation of demand-based pricing (such as "SF Park") in high-traffic areas.	**Supporting.** The Project would limit commercial and residential parking ratios to be consistent with other transit-oriented projects within the City, including a further reduced parking ratio for the Project site area to be dedicated to a third-party affordable housing developer.
TR14 - Cars and Light Trucks	Commit regional clean air funds toward qualifying vehicle purchases and infrastructure development. Partner with private, local, state and federal	**Supporting.** While the explicit requirements of this measure are outside the control of the Project, the Project would incorporate adequate EV-ready parking spaces within both the Office/R&D District and Residential District to meet code requirements pursuant to CALGreen Tier 2 electric vehicle

	programs to promote the purchase and lease of battery-electric and plug-in hybrid electric vehicles.	(EV) charging requirements and would provide 100% carbon-free electricity at the EV charging stations, which could have the indirect effect of incentivizing EV usage among Project users.
TR22 - Construction, Freight and Farming Equipment	Provide incentives for the early deployment of electric, Tier 3 and 4 off-road engines used in construction, freight and farming equipment. Support field demonstrations of advanced technology for off-road engines and hybrid drive trains.	**Supporting**. All diesel construction equipment used during the construction of the Project would have Tier 4 engines. In addition, some construction equipment would be all-electric.
Energy Control Measures		
EN1 - Decarbonize Electricity Production	Engage with Pacific Gas and Electric (PG&E), municipal electric utilities and CCEs to maximize the amount of renewable energy contributing to the production of electricity within the Bay Area as well as electricity imported into the region. Work with local governments to implement local renewable energy programs. Engage with stakeholders including dairy farms, forest managers, water treatment facilities, food processors, public works agencies and waste management to increase use of biomass in electricity production.	**Supporting.** The Project will replace old buildings constructed under building codes that required less energy efficiency with new all-electric buildings. All electricity would be 100% carbon free. The Project also involves the decommissioning of a natural gas fired cogeneration facility. In addition, the Project will install solar photovoltaic systems as required by Title 24 and is exploring the use of solar arrays as a strategy for achieving Reach Code compliance by generating power onsite, which would power EV charging stations and offset energy use from each building.
Building Control Measures		
BL1 - Green Buildings	Collaborate with partners such as KyotoUSA to identify energy-related improvements and opportunities for onsite renewable energy systems in school districts; investigate funding strategies to implement upgrades. Identify barriers to effective local implementation of the CALGreen (Title 24) statewide building energy code; develop solutions to improve implementation/enforcement. Work with ABAG's BayREN program to make additional funding available for energy-related projects in the buildings sector. Engage with additional partners to target reducing emissions from specific types of buildings.	**Supporting**. This action is directed at the Air District. However, the Project incorporates the goals associated with this measure. The Project would comply with building energy code and would be designed to meet LEED Gold standards or equivalent for the commercial buildings and LEED New Construction certification or equivalent standards for residential buildings. In addition, the Project will install solar photovoltaic systems as required by Title 24 and is exploring the use of solar arrays as a strategy for achieving Reach Code compliance by generating power onsite, which would power EV charging stations and offset energy use from each building.
BL2 - Decarbonize Buildings	Explore potential Air District rulemaking options regarding the sale of fossil fuel-based space and water heating systems for both residential and	**Supporting**. This action is directed at the Air District. However, the Project incorporates the goals associated with this measure. The Project

	commercial use. Explore incentives for property owners to replace their furnace, water heater or natural-gas powered appliances with zero-carbon alternatives. Update Air District guidance documents to recommend that commercial and multi-family developments install ground source heat pumps and solar hot water heaters.	would be entirely powered by 100% carbon-free electricity, which supports the decarbonization of buildings.
BL4 - Urban Heat Island Mitigation	Develop and urge adoption of a model ordinance for "cool parking" that promotes the use of cool surface treatments for new parking facilities, as well existing surface lots undergoing resurfacing. Develop and promote adoption of model building code requirements for new construction or re-roofing/roofing upgrades for commercial and residential multi-family housing. Collaborate with expert partners to perform outreach to cities and counties to make them aware of cool roofing and cool paving techniques, and of new tools available.	**Supporting**. The Project would include cool roofs and may include cool parking. The Project would demolish existing parking lots and would provide parks and vegetation lined roadways. The Project will install solar photovoltaic systems as required by Title 24 and is exploring the use of solar arrays as a strategy for achieving Reach Code compliance by generating power onsite, which may include structures with solar ready rooftops that would otherwise replace existing surface parking.
Agricultural Control Measures		
Not Applicable	The agriculture control measures are designed to reduce primarily emissions of methane. Because the Project would not include any agricultural activities, the agriculture control measures of the Clean Air Plan are not applicable to the Project.	
Natural and Working Lands Control Measures		
The natural and working lands control measures focus on increasing carbon sequestration on rangelands and wetlands. They also encourage local governments to adopt ordinances that promote urban tree planting. Because the Project would not disturb rangelands or wetlands, the natural and working lands control measures of the Clean Air Plan are generally not applicable to the Project. Nevertheless, analysis regarding NW2 – Urban Tree Planting is provided below for informational purposes.		
NW2 - Urban Tree Planting	Develop or identify an existing model municipal tree planting ordinance and encourage local governments to adopt such an ordinance. Include tree planting recommendations the Air District's technical guidance, best practices for local plans and CEQA review.	**Supporting.** There are approximately 1,366 existing trees on the Project Site, The proposed land use program, including site orientation, was developed to emphasize the preservation of heritage trees where feasible and to ensure that existing and new trees are distributed throughout the Project Site. The Project would preserve approximately 615 existing trees and would plant approximately 873 new trees, resulting in a total of 1,498 trees on the Project Site, an overall increase in the number of trees compared to existing conditions. The Project's urban tree-planting will result in greater CO_2 absorption, providing shade to

		reduce urban heat island effects, and increase carbon sequestration in urban areas.
Waste Management Control Measures		
WA3 - Green Waste Diversion	Develop model policies to facilitate local adoption of ordinances and programs to reduce the amount of green waste going to landfills.	**Supporting.** The Project would comply with the City's Municipal Codes on garbage, recycling and composting services, including source separation requirements.
WA4 - Recycle and Waste Reduction	Develop or identify and promote model ordinances on community-wide zero waste goals and recycling of construction and demolition materials in commercial and public construction projects.	**Supporting**. The Project would comply with the City's zero waste management plans that set goals for waste diversion percentages from 2023 through 2035.
Water Reduction Control Measures		
WR2 - Support Water Conservation	Develop a list of best practices that reduce water consumption and increase on-site water recycling in new and existing buildings; incorporate into local planning guidance.	**Supporting.** The Project would be designed to meet LEED Gold standards or equivalent for commercial uses and LEED New Construction certification or equivalent standards for multi-family residential buildings. In doing so, the Project will implement features that reduce water consumption. Also, the Project would demolish existing inefficient buildings onsite, with the exception of Buildings P, S, and T, and replace them, including the existing cogeneration plant, with new sustainable and water-efficient buildings. To responsibly manage and reduce potable water use, the Project will comply with all applicable state and local codes and regulations regarding water usage, and where feasible, will incorporate certain features, such as low-flow fixtures, options for greywater use, and recycled water for landscape irrigation, among others. Native drought-tolerant plants and low-flow drip irrigation systems would be installed to minimize potable water consumption for landscaping.

As shown in **Table 1**, the Project includes numerous design and operational measures to promote sustainability and environmental stewardship, which would act to reduce Project-related area, building, and mobile source emissions. As discussed above, the agriculture control measures and natural and working lands control measures of the Clean Air Plan generally would not be applicable to the Project. The Project would be consistent with the applicable stationary-source control measures, transportation control measures, energy control measures, building control measures, and waste control measures included in the 2017 Clean Air Plan.

Disruption or Hinderance of Control Measures in the 2017 Clean Air Plan

As described above, the Project would support the goals of the Clean Air Plan and is consistent with applicable control measures. As indicated in **Table 1**, the Project would not disrupt or hinder implementation of any control measure in the Clean Air Plan. Further, the Project would not contribute significantly to any cumulative impacts related to emissions of a criteria air pollutant for which the SFBAAB is in nonattainment status or exposure of sensitive receptors to substantial pollutant concentrations or other emissions. The Project would result in a reduction of GHG emissions compared to the existing conditions, largely due to the Project's decommissioning of the existing cogeneration facility, which would help to achieve the region's and the State's long-term climate goals. Therefore, the Project would not disrupt or hinder the implementation of the 2017 Clean Air Plan or any of the control measures.

Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions?

There are local, regional, and state policies, plans and regulations aimed at reducing emissions of greenhouse gases. The Project's consistency with these applicable State, regional and local policies, plans and regulations is reviewed.

State

The State has developed plans and legislation to address GHG emissions, including the 2022 Scoping Plan and other legislative documents specifically addressing GHG emissions from the transportation and the building sectors. The Project's operations were analyzed and compared to these applicable State plans and policies, below, to evaluate the Project's consistency with them.

2022 Scoping Plan

In November 2022, the California Air Resources Board (CARB) approved California's 2022 Scoping Plan for Achieving Carbon Neutrality (Third Update). This update extends the previous Scoping Plans and lays out a path to achieve carbon neutrality no later than 2045, as directed by AB 1279. The previous 2017 Scoping Plan identified a technologically feasible and cost-effective path to achieve the 2030 GHG reduction target by leveraging existing programs such as the Renewables Portfolio Standard, Advanced Clean Cars, Low Carbon Fuel Standard, Short-Lived Climate Pollutant (SLCP) Reduction Strategy, Cap-and-Trade Program, and a Mobile Source Strategy that included strategies targeted to increase zero emission vehicle fleet penetration. The 2022 Scoping Plan looks toward the 2045 climate goals and the deeper GHG reductions needed to meet the state's statutory carbon neutrality target specified in AB 1279 and EO B-55-18. The 2022 Scoping Plan provides a sector-by-sector roadmap for achieving these goals, focusing on technological feasibility, cost-effectiveness and equity. The Plan's Appendix D makes nonbinding suggestions that local agencies, such as the City of Menlo Park, may consider as they identify significance thresholds and mitigation measures for GHG impacts. The 2022 Scoping Plan suggests, but does not mandate, measures related to renewable energy, the low carbon fuel standard, cleaner vehicles and fuels, short-lived climate pollutants, and natural and working lands that could be relevant to the Project.

As discussed in Section 3.2.3, Appendix D of the 2022 Scoping Plan states that a development project can determine consistency with the Scoping Plan by using significance criteria from an air district or other lead agency if the criteria align with the State's current GHG emission reduction goals. Because the BAAQMD's current GHG significance criteria were created to determine a project's "fair share" of what is necessary to meet California's 2045 climate goals, the criteria are sufficient to determine consistency with the 2022 Scoping Plan. Because the Project's impacts would be less than significant when compared against the BAAQMD's CEQA significance criteria for building and transportation design features, the Project would be consistent with the 2022 Scoping Plan.

Transportation-Related Standards and Regulations

SB 743, passed in 2013, and codified in Public Resources Code Section 21099, eliminated vehicular congestion, traditionally expressed as Level of Service (LOS), as the operative metric for identifying transportation impacts, and replaced it with Vehicle Miles Traveled (VMT). The Project Site is a qualifying infill site for purposes of SB 743 that is currently developed with a mix of R&D, office, amenity, and supporting uses. The entire perimeter of the Project Site adjoins urban uses or public rights-of-way. The Metropolitan Transportation Commission (MTC) has identified locations of Transportation Priority Areas (TPAs) within the Bay Area.[3] The Project Site is largely within a TPA due to its proximity to the Menlo Park Caltrain station, SamTrans bus stops, and Menlo Park shuttle stops. The Project also meets the SB 743 criteria as a qualifying mixed-use residential project. However, the Project site is not within a low VMT area per the City's model, so to comply with the City's Transportation Impact Analysis (TIA) requirements, the City completed a quantitative evaluation of the Project's potential VMT impacts utilizing the City's VMT methodology. Based on that analysis, the Project's residential land use would be below the City's VMT impact threshold; however, the Project's office/R&D land use would generate a potentially significant VMT impact. As a result, the Project office/R&D component would be required to implement a TDM plan that achieves a 28% trip reduction from ITE trip generation rates; with implementation of that TDM plan for the office/R&D component, the Project's VMT impacts would be less than significant. Therefore, the Project does not conflict with the implementation of SB 743.

The Advanced Clean Cars Initiative and the State's Zero-Emission Vehicles Mandate were established to set a target of reaching 1.5 million zero-emission vehicles (ZEVs) (meaning battery electric vehicles and fuel cell electric vehicles) and plug-in hybrid electric vehicles on California's roadways by 2025. The Project is consistent with State goals for ZEVs as expressed in the Advanced Clean Cars Initiative and the ZEV goal established by Executive Order B-16-12. The Project is also consistent with State goals established by Executive Order N-79-20, which sets a target that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. The Project supports these ZEV goals by installing electric vehicle (EV) charging capabilities consistent with the City of Menlo Park Code, discussed further below. The installation of EV chargers and EV charging infrastructure in the residential and non-residential areas of the Project would support the goals by providing infrastructure for those who purchase ZEVs to charge the vehicles at home or at work. The Project would contribute to emissions reductions due to increased electric VMT facilitated by the Project chargers. Therefore, the Project does not conflict with the implementation of this initiative and this mandate.

Building-Related Standards and Regulations

The State's Building Energy Efficiency Standards, known as Title 24, are designed to reduce wasteful, uneconomical, and unnecessary uses of energy and contain standards covering a wide range of aspects related to building design, construction, and operation, including energy use, lighting, HVAC systems, and water conservation. Title 24 is updated every three years to align with advancements

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[3] Metropolitan Transportation Commission. 2021. *Transit Priority Areas*. Available: https://opendata.mtc.ca.gov/datasets/MTC::transit-priority-areas-2021-1/explore . Accessed: September 28, 2023.

in technology and changing energy efficiency goals.

The California Green Building Standards Code (CalGreen) is Part 11 of Title 24 and was first introduced in 2010. The CalGreen Code establishes mandatory and voluntary green building standards for new construction projects in California. Some recent updates to the CALGreen Code include solar photovoltaic prewiring on new residential buildings, expanded landscape water efficiency requirements, and requirements for newly constructed buildings to be electric-ready. Title 24 and CALGreen Code were amended and adopted by the City of Menlo Park, as discussed further below.

The Project would replace nearly all the existing outdated and energy inefficient buildings on the Project Site with buildings that reflect the latest green and sustainability requirements, including Title 24, CALGreen Code, and the City's all-electric Reach Code, discussed below. By designing the buildings to rely on electricity and not natural gas, the energy use within the buildings can become carbon neutral as the grid becomes carbon neutral. The Project would also comply with voluntary CALGreen Tier 2 EV charging requirements. Therefore, the Project does not conflict with the implementation of the State's Building Energy Efficiency Standards.

Regional

Plan Bay Area 2050 is a 30-year plan that outlines thirty-five integrated strategies focused on four key interrelated elements – housing, the economy, transportation, and the environment – to make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. The Plan's strategies chart a course to make the Bay Area more affordable, connected, diverse, healthy, and vibrant for all residents, while also achieving regional GHG reduction targets established by CARB pursuant to the Sustainable Communities and Climate Protection Act of 2008 (Senate Bill (SB) 375, Statutes of 2008). The Plan serves as the Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) for the Bay Area. An RTP/SCS is required by State and Federal laws to be updated every four years. The Plan covers the Bay Area's nine counties – including San Mateo County. Environmental Strategies EN1, EN4, EN7, EN8 and EN9 are strategies recommended to reduce climate change impacts. **Table 2** shows that the Project features are consistent with these strategies.

Table 2. Consistency of Project with Plan Bay Area 2050

Category		**Strategy**	**Project Consistency**
Housing Strategies	Protect and Preserve Affordable Housing	Further strengthen renter protections beyond state law	**Not applicable**. This action is not directly applicable to the Project as this requires Municipal action.
		Preserve existing affordable housing	**Not applicable**. This action is not directly applicable to the Project. The Project would not result in displacement of existing affordable housing and would instead add additional affordable housing to the area.
	Spur Housing Production for Residents of All Income Levels	Allow a greater mix of housing densities and types in Growth Geographies	**Consistent.** The Project is located within the Growth Geography area and supports a greater mix of housing densities and types as the Project would include market-rate residential dwelling units as well as affordable housing.

		Build adequate affordable housing to ensure homes for all	**Consistent**. The Project would include affordable housing both through compliance with the City's local inclusionary requirements along with providing land to be dedicated to an affordable housing developer for development of additional affordable housing units.
		Integrate affordable housing into all major housing projects	**Consistent**. The Project would include affordable housing both through compliance with the City's local inclusionary requirements along with providing land to be dedicated to an affordable housing developer for development of additional affordable housing units.
		Transform aging malls and office parks into neighborhoods	**Consistent**. The Project would demolish aging office/R&D buildings and would transform the existing aging campus into a modern mixed-use neighborhood.
	Create Inclusive Communities	Provide targeted mortgage, rental and small business assistance to Equity Priority Communities	**Not applicable**. This action is not directly applicable to the Project as this requires Municipal action.
		Accelerate reuse of public and community-owned land for mixed-income housing	**Not applicable**. This action is not directly applicable to the Project as it does not utilize any public or community-owned land.
Economic Strategies	Improve Economic Mobility	Implement a statewide universal basic income	**Not applicable**. This action is not directly applicable to the Project as it requires statewide action.
		Expand job training and incubator programs	**Not applicable**. This action is not directly applicable to the Project as this requires Municipal action.
		Invest in high-speed internet in underserved low-income communities	**Not applicable**. This action is not directly applicable to the Project as this requires Municipal action.
	Shift the Location of Jobs	Allow greater commercial densities in Growth Geographies	**Consistent.** The Project is located within a Growth Geography area and supports increasing commercial densities by replacing the existing aging office/R&D campus with new modern office/R&D buildings that will attract commercial end users, while maintaining the existing amount of commercial square footage within the Project site.

		Provide incentives to employers to shift jobs to housing-rich areas well served by transit	**Not applicable**. This action is not directly applicable to the proposed Project; however, the Project would co-locate jobs and housing proximate to existing transit.
		Retain and invest in key industrial lands	**Not applicable**. This action is not directly applicable to the proposed Project, which is not located on key industrial lands.
Transportation Strategies	Maintain and Optimize the Existing System	Restore, operate and maintain the existing system	**Not applicable**. This action is not directly applicable to the Project. However, the Project would be making improvements to intersections, bike lanes and pedestrian connections that will upgrade infrastructure that will benefit roadways, pedestrian and bicycle circulation systems.
		Support community-led transportation enhancements in Equity Priority Communities.	**Not applicable.** This action is not directly applicable to the proposed Project. However, the Project would be making improvements to existing intersections, and to expand bike and pedestrian connections that will enhance transportation in the community.
		Enable a seamless mobility experience	**Not applicable**. This action is not directly applicable to the Project as it requires coordination among the region's existing transit agencies.
		Reform regional transit fare policy	**Not applicable**. This action is not directly applicable to the Project as it requires coordination among the region's existing transit agencies.
		Implement per-mile tolling on congested freeways with transit alternatives	**Not applicable**. This action is not directly applicable to the Project as it requires regional/Caltrans action.
		Improve interchanges and address highway bottlenecks	**Not applicable**. This action is not directly applicable to the Project. However, the Project would implement TDM programs and make improvements to intersections, bike lanes and pedestrian connections that will improve transportation and decrease single-occupancy commuter vehicle usage.
		Advance other regional programs and local priorities	**Not applicable**. This action is not directly applicable to the Project. The Project will be making improvements to local intersections, bike lanes and pedestrian connections, which help advance local transportation priorities.

	Create Healthy and Safe Streets	Build a Complete Streets network	**Consistent**. The Project would enhance streets to promote walking, biking, and other micro-mobility by improving biking and walking networks and providing bicycle amenities.
		Advance regional Vision Zero policy through street design and reduced speeds	**Consistent.** The Project would comply with City of Menlo Park requirements in support of Vision Zero.
	Build a Next-Generation Transit Network	Enhance local transit frequency, capacity and reliability	**Not applicable.** This action is not directly applicable to the Project.
		Expand and modernize the regional rail network	**Not applicable.** This action is not directly applicable to the Project as this requires regional and state level action.
		Build an integrated regional express lanes and express bus network	**Not applicable.** This action is not directly applicable to the Project as this requires regional and Caltrans action.
Environmental Strategies	Reduce Risks from Hazards	Adapt to sea level rise	**Not Applicable.** The Project is not within a shoreline community affected by sea level rise.
		Provide means-based financial support to retrofit existing residential buildings	**Not applicable.** This action is not directly applicable to the Project as it does not include retrofit of any existing residential buildings.
		Fund energy upgrades to enable carbon neutrality in all existing commercial and public buildings	**Not applicable.** This action is not directly applicable to the Project as it is directed toward municipal action. However, the Project would involve removing the existing cogeneration plant, and under the Reach Code new buildings would be required to be powered with carbon neutral power.
	Expand Access to Parks and Open Space	Maintain urban growth boundaries	**Consistent.** The Project is an infill project that redevelops a site with existing urban development. The Project replaces old buildings with new, efficient mixed-use development. and is near the city center and transit. The Project boundaries are entirely within an existing municipal urban footprint.
		Protect and manage high-value conservation lands	**Not applicable.** This action is not directly applicable to the Project as the Project would re-develop aging buildings and is not located within high-value conservation lands.

		Modernize and expand parks, trails and recreation facilities	**Consistent**. The proposed Project would include approximately 25 acres of open space areas and supporting amenities, including a network of publicly accessible pedestrian and bicycle trails, open spaces and active/passive recreational areas.
	Reduce Climate Emissions	Expand commute trip reduction programs at major employers	**Consistent.** The Project is near transit and, as applicable, employers would be required to comply with the Bay Area Commuter Benefits Program. The Project's TDM program would include additional measures that disincentivize auto commuters and incentivize the use of alternative modes of transportation.
		Expand clean vehicle initiatives	**Supporting.** This measure is directed towards public agencies. However, the Project's TDM program would include a range of potential measures including a commuter shuttle, carsharing, carpool subsidies, and other commuter benefits that may be implemented throughout the Project site. Additionally, the Project is designed to encourage alternative travel modes by providing end-of-trip bicycle facilities and bike paths. The Project would incorporate adequate EV-ready parking spaces within both the Office/R&D District and Residential District to meet code requirements pursuant to CALGreen Tier 2 electric vehicle (EV) charging requirements and would provide 100% carbon-free electricity at the EV charging stations, which could have the indirect effect of incentivizing EV usage among Project users.
		Expand transportation and demand management initiatives	**Supporting.** This measure is directed towards public agencies. However, the Project's TDM program would include a range of potential measures to discourage solo driving, including a commuter shuttle, carsharing, carpool subsidies, and other commuter benefits that may be implemented throughout the Project Site. The Project also is designed to reduce solo driving by limiting parking spaces on-site, and providing end-of-trip bicycle facilities and bike paths.

City of Menlo Park

City of Menlo Park Climate Action Plan

The City of Menlo Park adopted its Climate Action Plan in May 2021, which aims to reduce the City's GHG emissions 40% below 2005 levels by 2030 and 80% below 2005 levels by 2050, consistent with the State goals. The City has identified GHG reduction measures related to the transportation, energy, and land use sectors that can be coupled with state and existing local actions to reduce GHG emissions. The Climate Action Plan identifies six actions that are anticipated to have the highest impacts. **Table 3** discusses and demonstrates the Project's consistency with these actions in the City's Climate Action Plan.

Table 3. Consistency of the Project with the City of Menlo Park's Climate Action Plan

Action	**Project Consistency**
Explore policy/program options to convert 95% of existing buildings to all-electric by 2030	**Not applicable.** The entire Project Site would be converted to an all-electric design for operational energy needs, in compliance with the city's adopted Reach Code. Two existing buildings (Buildings P and T) would retain natural gas and diesel backup generators, for continued laboratory and R&D purposes. The Project would also remove a cogeneration plant powered by natural gas on the Project Site.
Set citywide goals for increasing EVs and decreasing gasoline sales	**Supporting.** This action is directed toward the City. However, the Project would comply with CALGreen Tier 2 voluntary off-street EV charging requirements, which would incentivize EV usage among Project users. These charging stations would also be powered by 100% carbon-free electricity.
Expand access to EV charging for multiple family and commercial properties	**Consistent.** The Project would install EV charging capabilities consistent with CALGreen Tier 2 and the City of Menlo Park's Code, including residential and commercial areas on the Project Site, expanding access to EV chargers.
Reduce vehicle miles traveled (VMT) by 25% or an amount recommended by the Complete Streets Commission	**Consistent.** The Project would include a TDM program, which would reduce trip generation and VMT by at least 25%. Parkline will incorporate TDM measures yielding a 25% reduction from the ITE standard rates for Project-related residential trips and 28% reduction from the ITE standard rates for Project-related general office and research and development (R&D) trips. The City of Menlo Park applies TDM trip reductions after any internal trip reductions for mixed use developments. Therefore, Parkline will be required to have a 27% trip reduction for residential trips and 30% for office/R&D trips after taking into account trip internalization.
Eliminate the use of fossil fuels from municipal operations	**Not Applicable.** The Project is a private development. However, the Project would not include any natural gas plumbing or appliances in the proposed buildings and would purchase 100% carbon-free electricity.
Develop a climate adaptation plan to project the community from sea level rise and flooding	**Not Applicable.** This action is directed toward the City. The Project Site is not within a shoreline community affected by sea level rise.

City of Menlo Park General Plan, Zoning Ordinance, Municipal Code and Reach Codes

The Project is located in an area where the General Plan and the Zoning Ordinance designations for the surrounding properties include residential, commercial, public/quasi-public, and parks and recreation. As a part of the Project, the General Plan and the Zoning Ordinance would be amended to reflect the proposed range of Project land uses, *i.e.,* multi-family apartments, public and quasi-public, office, R&D, and compatible uses, which are consistent with the surrounding land uses. The goals and policies adopted in the General Plan to avoid or minimize climate change impacts pertain to the Project and are reflected in the Project's location and design.

The City's Municipal Code includes several GHG emissions reduction requirements for mixed-use residential and office zoning districts that are likely applicable to the Project. The Project would purchase 100 percent renewable electricity, meet CALGreen Tier 2 standards for EV charging, and will provide onsite energy generation by installing solar photovoltaic systems as required by Title 24. The use of solar arrays as a strategy for achieving Reach Code compliance by generating power onsite, which would power EV charging stations and offset energy use from each building, is also being explored. The Project would also comply with Menlo Park Municipal Code Section 12.18.060, which requires 15 percent of all parking spaces to be EV spaces and 10 percent to be designated emergency vehicle service equipment. The Project would also divert (i.e., salvage, recycle, or compost rather than send to a landfill) at least 65 percent of both inert and non-inert nonhazardous demolition and construction waste, as required by Menlo Park Municipal Code Title 12, Chapters 12.18 and 12.48.

The City adopted local amendments to Title 24 in its Reach Code that would require electricity as the only fuel source (no natural gas) for newly constructed buildings. As discussed above, the Project would comply with the City's Reach Code by eliminating natural gas plumbing and appliances in the proposed buildings. The Project would follow Menlo Park Municipal Code Chapter 12.16, which requires qualifying new construction to meet 100 percent of energy demand (electricity and natural gas). The Project would not conflict with the City's plans, policies, and regulations adopted for the purpose of reducing GHG emissions.

Conclusion

The Project would be consistent with all applicable plans, policies, and regulations related to air quality and GHG emissions.

APPENDIX B
Construction Emission Rates

Appendix B.1
Construction Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	CONTROL SCENARIO	PHASE	SUBPHASE	EQUIPMENT	EMISSIONS (G/S)
PAREA1	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Aerial Lifts	9.8E-06
PAREA1	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Concrete/Industrial Saws	0
PAREA1	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Off-Highway Trucks	5.3E-05
PAREA1	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Aerial Lifts	3.7E-06
PAREA1	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Concrete/Industrial Saws	0
PAREA1	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Off-Highway Trucks	2.0E-05
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Bore/Drill Rigs	1.7E-05
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Cranes	9.3E-05
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Forklifts	6.0E-06
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Generator Sets	6.5E-06
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Off-Highway Trucks	2.5E-05
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	1.4E-05
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Welders	1.3E-05
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Bore/Drill Rigs	6.8E-05
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Cranes	3.7E-04
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Forklifts	2.4E-05
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Generator Sets	2.6E-05
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Off-Highway Trucks	9.4E-05
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	5.6E-05
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Welders	5.1E-05
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Bore/Drill Rigs	2.9E-05
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Cranes	1.6E-04
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Forklifts	1.0E-05
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Generator Sets	1.1E-05
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Off-Highway Trucks	4.0E-05
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	2.4E-05
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Welders	2.2E-05
PAREA1	PM25 EXH	2029	ALL	Phase 1	Paving	Off-Highway Trucks	1.8E-05
PAREA1	PM25 EXH	2029	ALL	Phase 1	Paving	Pavers	1.5E-05
PAREA1	PM25 EXH	2029	ALL	Phase 1	Paving	Paving Equipment	1.4E-05
PAREA1	PM25 EXH	2029	ALL	Phase 1	Paving	Rollers	1.5E-06
PAREA2	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Aerial Lifts	4.0E-05
PAREA2	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	6.5E-05
PAREA2	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Aerial Lifts	1.6E-05
PAREA2	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	2.6E-05
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Cranes	1.7E-04
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Forklifts	1.4E-05
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Generator Sets	1.5E-05
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Off-Highway Trucks	4.2E-05
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Tractors/Loaders/Backhoes	4.3E-05
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Welders	2.9E-05
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Cranes	9.8E-05
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Forklifts	8.4E-06
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Generator Sets	8.6E-06
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Off-Highway Trucks	2.2E-05
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Tractors/Loaders/Backhoes	2.5E-05
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Welders	1.7E-05
PAREA2	PM25 EXH	2029	ALL	Phase 2	Demolition	Excavators	1.5E-06
PAREA2	PM25 EXH	2029	ALL	Phase 2	Demolition	Off-Highway Trucks	8.1E-06
PAREA2	PM25 EXH	2029	ALL	Phase 2	Demolition	Rubber Tired Dozers	1.6E-05
PAREA2	PM25 EXH	2031	ALL	Phase 2	Paving	Off-Highway Trucks	2.4E-05
PAREA2	PM25 EXH	2031	ALL	Phase 2	Paving	Pavers	2.4E-05
PAREA2	PM25 EXH	2031	ALL	Phase 2	Paving	Paving Equipment	2.3E-05
PAREA2	PM25 EXH	2031	ALL	Phase 2	Paving	Rollers	2.3E-06
PAREA3	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Aerial Lifts	9.6E-07
PAREA3	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Concrete/Industrial Saws	0
PAREA3	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Aerial Lifts	1.3E-05
PAREA3	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Concrete/Industrial Saws	0
PAREA3	PM25 EXH	2030	ALL	Phase 3	Building Construction	Cranes	9.8E-05
PAREA3	PM25 EXH	2030	ALL	Phase 3	Building Construction	Forklifts	1.3E-05
PAREA3	PM25 EXH	2030	ALL	Phase 3	Building Construction	Generator Sets	4.6E-06
PAREA3	PM25 EXH	2030	ALL	Phase 3	Building Construction	Tractors/Loaders/Backhoes	2.7E-05
PAREA3	PM25 EXH	2030	ALL	Phase 3	Building Construction	Welders	2.1E-05
PAREA3	PM25 EXH	2030	ALL	Phase 3	Demolition	Excavators	1.5E-06
PAREA3	PM25 EXH	2030	ALL	Phase 3	Demolition	Rubber Tired Dozers	1.3E-05
PAREA3	PM25 EXH	2031	ALL	Phase 3	Paving	Pavers	4.8E-06
PAREA3	PM25 EXH	2031	ALL	Phase 3	Paving	Paving Equipment	4.5E-06
PAREA3	PM25 EXH	2031	ALL	Phase 3	Paving	Rollers	4.5E-07
DEMOALL	PM25 EXH	2025	ALL	Project Preparation	Demolition	Excavators	2.9E-05
DEMOALL	PM25 EXH	2025	ALL	Project Preparation	Demolition	Off-Highway Trucks	6.0E-05
DEMOALL	PM25 EXH	2025	ALL	Project Preparation	Demolition	Rubber Tired Dozers	2.1E-04
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Demolition	Excavators	7.7E-06
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Demolition	Off-Highway Trucks	1.5E-05
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Demolition	Rubber Tired Dozers	5.5E-05
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Excavators	1.1E-05
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Graders	2.5E-05
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Off-Highway Trucks	3.9E-05
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Rubber Tired Dozers	2.0E-05
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Scrapers	1.0E-04
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Tractors/Loaders/Backhoes	2.1E-05
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Off-Highway Trucks	5.3E-05
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Rubber Tired Dozers	1.2E-04
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Tractors/Loaders/Backhoes	9.8E-05
HAUL MID	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL RAV	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Hauling	0
PAREA1	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL MID	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Vendor	8.2E-07
HAUL RAV	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Vendor	2.2E-07
PAREA1	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Vendor	4.5E-07
HAUL MID	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Worker	6.6E-08
HAUL RAV	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Worker	1.7E-08
PAREA1	PM25 EXH	2028	ALL	Phase 1	Architectural Coating	Worker	5.2E-07
HAUL MID	PM25 FUG	2028	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL RAV	PM25 FUG	2028	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL MID	PM25 FUG	2028	ALL	Phase 1	Architectural Coating	Vendor	1.4E-06
HAUL RAV	PM25 FUG	2028	ALL	Phase 1	Architectural Coating	Vendor	3.8E-07
HAUL MID	PM25 FUG	2028	ALL	Phase 1	Architectural Coating	Worker	2.9E-07
HAUL RAV	PM25 FUG	2028	ALL	Phase 1	Architectural Coating	Worker	7.7E-08
HAUL MID	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL RAV	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Hauling	0
PAREA1	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL MID	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Vendor	3.0E-07
HAUL RAV	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Vendor	7.9E-08
PAREA1	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Vendor	1.5E-07
HAUL MID	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Worker	2.3E-08
HAUL RAV	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Worker	6.1E-09
PAREA1	PM25 EXH	2029	ALL	Phase 1	Architectural Coating	Worker	1.9E-07
HAUL MID	PM25 FUG	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL RAV	PM25 FUG	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL MID	PM25 FUG	2029	ALL	Phase 1	Architectural Coating	Vendor	5.5E-07
HAUL RAV	PM25 FUG	2029	ALL	Phase 1	Architectural Coating	Vendor	1.5E-07
HAUL MID	PM25 FUG	2029	ALL	Phase 1	Architectural Coating	Worker	1.1E-07
HAUL RAV	PM25 FUG	2029	ALL	Phase 1	Architectural Coating	Worker	2.9E-08
HAUL MID	PM25 EXH	2026	ALL	Phase 1	Building Construction	Hauling	2.5E-06
HAUL RAV	PM25 EXH	2026	ALL	Phase 1	Building Construction	Hauling	6.5E-07
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Hauling	1.4E-06
HAUL MID	PM25 EXH	2026	ALL	Phase 1	Building Construction	Vendor	7.0E-07
HAUL RAV	PM25 EXH	2026	ALL	Phase 1	Building Construction	Vendor	1.8E-07
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Vendor	4.3E-07
HAUL MID	PM25 EXH	2026	ALL	Phase 1	Building Construction	Worker	9.4E-07
HAUL RAV	PM25 EXH	2026	ALL	Phase 1	Building Construction	Worker	2.5E-07
PAREA1	PM25 EXH	2026	ALL	Phase 1	Building Construction	Worker	7.4E-06
HAUL MID	PM25 FUG	2026	ALL	Phase 1	Building Construction	Hauling	3.9E-06
HAUL RAV	PM25 FUG	2026	ALL	Phase 1	Building Construction	Hauling	1.0E-06
HAUL MID	PM25 FUG	2026	ALL	Phase 1	Building Construction	Vendor	1.1E-06
HAUL RAV	PM25 FUG	2026	ALL	Phase 1	Building Construction	Vendor	2.9E-07
HAUL MID	PM25 FUG	2026	ALL	Phase 1	Building Construction	Worker	3.7E-06
HAUL RAV	PM25 FUG	2026	ALL	Phase 1	Building Construction	Worker	9.6E-07
HAUL MID	PM25 EXH	2027	ALL	Phase 1	Building Construction	Hauling	9.6E-06
HAUL RAV	PM25 EXH	2027	ALL	Phase 1	Building Construction	Hauling	2.5E-06
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Hauling	5.0E-06
HAUL MID	PM25 EXH	2027	ALL	Phase 1	Building Construction	Vendor	2.6E-06
HAUL RAV	PM25 EXH	2027	ALL	Phase 1	Building Construction	Vendor	6.8E-07
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Vendor	1.5E-06
HAUL MID	PM25 EXH	2027	ALL	Phase 1	Building Construction	Worker	3.5E-06
HAUL RAV	PM25 EXH	2027	ALL	Phase 1	Building Construction	Worker	9.1E-07
PAREA1	PM25 EXH	2027	ALL	Phase 1	Building Construction	Worker	2.7E-05
HAUL MID	PM25 FUG	2027	ALL	Phase 1	Building Construction	Hauling	1.5E-05
HAUL RAV	PM25 FUG	2027	ALL	Phase 1	Building Construction	Hauling	4.1E-06
HAUL MID	PM25 FUG	2027	ALL	Phase 1	Building Construction	Vendor	4.4E-06
HAUL RAV	PM25 FUG	2027	ALL	Phase 1	Building Construction	Vendor	1.1E-06
HAUL MID	PM25 FUG	2027	ALL	Phase 1	Building Construction	Worker	1.4E-05
HAUL RAV	PM25 FUG	2027	ALL	Phase 1	Building Construction	Worker	3.8E-06
HAUL MID	PM25 EXH	2028	ALL	Phase 1	Building Construction	Hauling	4.1E-06
HAUL RAV	PM25 EXH	2028	ALL	Phase 1	Building Construction	Hauling	1.1E-06
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Hauling	2.0E-06
HAUL MID	PM25 EXH	2028	ALL	Phase 1	Building Construction	Vendor	1.1E-06
HAUL RAV	PM25 EXH	2028	ALL	Phase 1	Building Construction	Vendor	2.8E-07
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Vendor	5.8E-07
HAUL MID	PM25 EXH	2028	ALL	Phase 1	Building Construction	Worker	1.4E-06
HAUL RAV	PM25 EXH	2028	ALL	Phase 1	Building Construction	Worker	3.6E-07
PAREA1	PM25 EXH	2028	ALL	Phase 1	Building Construction	Worker	1.1E-05
HAUL MID	PM25 FUG	2028	ALL	Phase 1	Building Construction	Hauling	6.6E-06
HAUL RAV	PM25 FUG	2028	ALL	Phase 1	Building Construction	Hauling	1.7E-06

Appendix B.1
Construction Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	CONTROL SCENARIO	PHASE	SUBPHASE	EQUIPMENT	EMISSIONS (G/S)
HAUL MID	PM25 FUG	2028	ALL	Phase 1	Building Construction	Vendor	1.9E-06
HAUL RAV	PM25 FUG	2028	ALL	Phase 1	Building Construction	Vendor	4.9E-07
HAUL MID	PM25 FUG	2028	ALL	Phase 1	Building Construction	Worker	6.2E-06
HAUL RAV	PM25 FUG	2028	ALL	Phase 1	Building Construction	Worker	1.6E-06
HAUL MID	PM25 EXH	2029	ALL	Phase 1	Paving	Hauling	0
HAUL RAV	PM25 EXH	2029	ALL	Phase 1	Paving	Hauling	0
PAREA1	PM25 EXH	2029	ALL	Phase 1	Paving	Hauling	0
HAUL MID	PM25 EXH	2029	ALL	Phase 1	Paving	Vendor	1.5E-07
HAUL RAV	PM25 EXH	2029	ALL	Phase 1	Paving	Vendor	4.0E-08
PAREA1	PM25 EXH	2029	ALL	Phase 1	Paving	Vendor	7.9E-08
HAUL MID	PM25 EXH	2029	ALL	Phase 1	Paving	Worker	1.4E-07
HAUL RAV	PM25 EXH	2029	ALL	Phase 1	Paving	Worker	3.5E-08
PAREA1	PM25 EXH	2029	ALL	Phase 1	Paving	Worker	1.1E-06
HAUL MID	PM25 FUG	2029	ALL	Phase 1	Paving	Hauling	0
HAUL RAV	PM25 FUG	2029	ALL	Phase 1	Paving	Hauling	0
HAUL MID	PM25 FUG	2029	ALL	Phase 1	Paving	Vendor	2.8E-07
HAUL RAV	PM25 FUG	2029	ALL	Phase 1	Paving	Vendor	7.4E-08
HAUL MID	PM25 FUG	2029	ALL	Phase 1	Paving	Worker	6.5E-07
HAUL RAV	PM25 FUG	2029	ALL	Phase 1	Paving	Worker	1.7E-07
HAUL MID	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL RAV	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL MID	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Vendor	7.7E-07
HAUL RAV	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Vendor	2.0E-07
PAREA2	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Vendor	3.6E-07
HAUL MID	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Worker	4.1E-08
HAUL RAV	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Worker	1.1E-08
PAREA2	PM25 EXH	2030	ALL	Phase 2	Architectural Coating	Worker	3.3E-07
HAUL MID	PM25 FUG	2030	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL RAV	PM25 FUG	2030	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL MID	PM25 FUG	2030	ALL	Phase 2	Architectural Coating	Vendor	1.5E-06
HAUL RAV	PM25 FUG	2030	ALL	Phase 2	Architectural Coating	Vendor	3.8E-07
HAUL MID	PM25 FUG	2030	ALL	Phase 2	Architectural Coating	Worker	2.1E-07
HAUL RAV	PM25 FUG	2030	ALL	Phase 2	Architectural Coating	Worker	5.5E-08
HAUL MID	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL RAV	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL MID	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Vendor	3.1E-07
HAUL RAV	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Vendor	8.1E-08
PAREA2	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Vendor	1.4E-07
HAUL MID	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Worker	1.6E-08
HAUL RAV	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Worker	4.2E-09
PAREA2	PM25 EXH	2031	ALL	Phase 2	Architectural Coating	Worker	1.3E-07
HAUL MID	PM25 FUG	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL RAV	PM25 FUG	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL MID	PM25 FUG	2031	ALL	Phase 2	Architectural Coating	Vendor	6.1E-07
HAUL RAV	PM25 FUG	2031	ALL	Phase 2	Architectural Coating	Vendor	1.6E-07
HAUL MID	PM25 FUG	2031	ALL	Phase 2	Architectural Coating	Worker	8.9E-08
HAUL RAV	PM25 FUG	2031	ALL	Phase 2	Architectural Coating	Worker	2.3E-08
HAUL MID	PM25 EXH	2029	ALL	Phase 2	Building Construction	Hauling	1.9E-06
HAUL RAV	PM25 EXH	2029	ALL	Phase 2	Building Construction	Hauling	4.9E-07
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Hauling	8.8E-07
HAUL MID	PM25 EXH	2029	ALL	Phase 2	Building Construction	Vendor	9.9E-07
HAUL RAV	PM25 EXH	2029	ALL	Phase 2	Building Construction	Vendor	2.6E-07
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Vendor	5.1E-07
HAUL MID	PM25 EXH	2029	ALL	Phase 2	Building Construction	Worker	1.2E-06
HAUL RAV	PM25 EXH	2029	ALL	Phase 2	Building Construction	Worker	3.3E-07
PAREA2	PM25 EXH	2029	ALL	Phase 2	Building Construction	Worker	1.0E-05
HAUL MID	PM25 FUG	2029	ALL	Phase 2	Building Construction	Hauling	3.1E-06
HAUL RAV	PM25 FUG	2029	ALL	Phase 2	Building Construction	Hauling	8.0E-07
HAUL MID	PM25 FUG	2029	ALL	Phase 2	Building Construction	Vendor	1.8E-06
HAUL RAV	PM25 FUG	2029	ALL	Phase 2	Building Construction	Vendor	4.7E-07
HAUL MID	PM25 FUG	2029	ALL	Phase 2	Building Construction	Worker	6.0E-06
HAUL RAV	PM25 FUG	2029	ALL	Phase 2	Building Construction	Worker	1.6E-06
HAUL MID	PM25 EXH	2030	ALL	Phase 2	Building Construction	Hauling	1.1E-06
HAUL RAV	PM25 EXH	2030	ALL	Phase 2	Building Construction	Hauling	2.8E-07
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Hauling	4.6E-07
HAUL MID	PM25 EXH	2030	ALL	Phase 2	Building Construction	Vendor	5.5E-07
HAUL RAV	PM25 EXH	2030	ALL	Phase 2	Building Construction	Vendor	1.5E-07
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Vendor	2.6E-07
HAUL MID	PM25 EXH	2030	ALL	Phase 2	Building Construction	Worker	6.8E-07
HAUL RAV	PM25 EXH	2030	ALL	Phase 2	Building Construction	Worker	1.8E-07
PAREA2	PM25 EXH	2030	ALL	Phase 2	Building Construction	Worker	5.6E-06
HAUL MID	PM25 FUG	2030	ALL	Phase 2	Building Construction	Hauling	1.8E-06
HAUL RAV	PM25 FUG	2030	ALL	Phase 2	Building Construction	Hauling	4.7E-07
HAUL MID	PM25 FUG	2030	ALL	Phase 2	Building Construction	Vendor	1.1E-06
HAUL RAV	PM25 FUG	2030	ALL	Phase 2	Building Construction	Vendor	2.8E-07
HAUL MID	PM25 FUG	2030	ALL	Phase 2	Building Construction	Worker	3.5E-06
HAUL RAV	PM25 FUG	2030	ALL	Phase 2	Building Construction	Worker	9.2E-07
HAUL MID	PM25 EXH	2029	ALL	Phase 2	Demolition	Hauling	3.8E-07
HAUL RAV	PM25 EXH	2029	ALL	Phase 2	Demolition	Hauling	1.0E-07
PAREA2	PM25 EXH	2029	ALL	Phase 2	Demolition	Hauling	1.8E-07
HAUL MID	PM25 EXH	2029	ALL	Phase 2	Demolition	Vendor	0
HAUL RAV	PM25 EXH	2029	ALL	Phase 2	Demolition	Vendor	0
PAREA2	PM25 EXH	2029	ALL	Phase 2	Demolition	Vendor	0
HAUL MID	PM25 EXH	2029	ALL	Phase 2	Demolition	Worker	2.5E-09
HAUL RAV	PM25 EXH	2029	ALL	Phase 2	Demolition	Worker	6.5E-10
PAREA2	PM25 EXH	2029	ALL	Phase 2	Demolition	Worker	2.0E-08
HAUL MID	PM25 FUG	2029	ALL	Phase 2	Demolition	Hauling	6.2E-07
HAUL RAV	PM25 FUG	2029	ALL	Phase 2	Demolition	Hauling	1.6E-07
HAUL MID	PM25 FUG	2029	ALL	Phase 2	Demolition	Vendor	0
HAUL RAV	PM25 FUG	2029	ALL	Phase 2	Demolition	Vendor	0
HAUL MID	PM25 FUG	2029	ALL	Phase 2	Demolition	Worker	1.2E-08
HAUL RAV	PM25 FUG	2029	ALL	Phase 2	Demolition	Worker	3.1E-09
HAUL MID	PM25 EXH	2031	ALL	Phase 2	Paving	Hauling	0
HAUL RAV	PM25 EXH	2031	ALL	Phase 2	Paving	Hauling	0
PAREA2	PM25 EXH	2031	ALL	Phase 2	Paving	Hauling	0
HAUL MID	PM25 EXH	2031	ALL	Phase 2	Paving	Vendor	2.2E-07
HAUL RAV	PM25 EXH	2031	ALL	Phase 2	Paving	Vendor	5.8E-08
PAREA2	PM25 EXH	2031	ALL	Phase 2	Paving	Vendor	9.8E-08
HAUL MID	PM25 EXH	2031	ALL	Phase 2	Paving	Worker	1.9E-07
HAUL RAV	PM25 EXH	2031	ALL	Phase 2	Paving	Worker	4.9E-08
PAREA2	PM25 EXH	2031	ALL	Phase 2	Paving	Worker	1.5E-06
HAUL MID	PM25 FUG	2031	ALL	Phase 2	Paving	Hauling	0
HAUL RAV	PM25 FUG	2031	ALL	Phase 2	Paving	Hauling	0
HAUL MID	PM25 FUG	2031	ALL	Phase 2	Paving	Vendor	4.4E-07
HAUL RAV	PM25 FUG	2031	ALL	Phase 2	Paving	Vendor	1.2E-07
HAUL MID	PM25 FUG	2031	ALL	Phase 2	Paving	Worker	1.0E-06
HAUL RAV	PM25 FUG	2031	ALL	Phase 2	Paving	Worker	2.7E-07
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Hauling	0
PAREA3	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Vendor	3.3E-08
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Vendor	8.6E-09
PAREA3	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Vendor	1.5E-08
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Worker	3.2E-09
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Worker	8.3E-10
PAREA3	PM25 EXH	2030	ALL	Phase 3	Architectural Coating	Worker	2.6E-08
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Architectural Coating	Vendor	6.3E-08
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Architectural Coating	Vendor	1.6E-08
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Architectural Coating	Worker	1.6E-08
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Architectural Coating	Worker	4.3E-09
HAUL MID	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL RAV	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Hauling	0
PAREA3	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL MID	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Vendor	4.4E-07
HAUL RAV	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Vendor	1.1E-07
PAREA3	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Vendor	1.9E-07
HAUL MID	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Worker	4.1E-08
HAUL RAV	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Worker	1.1E-08
PAREA3	PM25 EXH	2031	ALL	Phase 3	Architectural Coating	Worker	3.3E-07
HAUL MID	PM25 FUG	2031	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL RAV	PM25 FUG	2031	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL MID	PM25 FUG	2031	ALL	Phase 3	Architectural Coating	Vendor	8.6E-07
HAUL RAV	PM25 FUG	2031	ALL	Phase 3	Architectural Coating	Vendor	2.2E-07
HAUL MID	PM25 FUG	2031	ALL	Phase 3	Architectural Coating	Worker	2.3E-07
HAUL RAV	PM25 FUG	2031	ALL	Phase 3	Architectural Coating	Worker	5.9E-08
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Building Construction	Hauling	1.0E-06
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Building Construction	Hauling	2.7E-07
PAREA3	PM25 EXH	2030	ALL	Phase 3	Building Construction	Hauling	4.4E-07
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Building Construction	Vendor	1.3E-06
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Building Construction	Vendor	3.5E-07
PAREA3	PM25 EXH	2030	ALL	Phase 3	Building Construction	Vendor	6.2E-07
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Building Construction	Worker	6.3E-07
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Building Construction	Worker	1.7E-07
PAREA3	PM25 EXH	2030	ALL	Phase 3	Building Construction	Worker	5.2E-06
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Building Construction	Hauling	1.7E-06
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Building Construction	Hauling	4.4E-07
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Building Construction	Vendor	2.5E-06
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Building Construction	Vendor	6.6E-07
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Building Construction	Worker	3.3E-06
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Building Construction	Worker	8.6E-07
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Demolition	Hauling	6.0E-08
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Demolition	Hauling	1.6E-08

Appendix B.1
Construction Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	CONTROL SCENARIO	PHASE	SUBPHASE	EQUIPMENT	EMISSIONS (G/S)
PAREA3	PM25 EXH	2030	ALL	Phase 3	Demolition	Hauling	2.6E-08
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Demolition	Vendor	0
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Demolition	Vendor	0
PAREA3	PM25 EXH	2030	ALL	Phase 3	Demolition	Vendor	0
HAUL MID	PM25 EXH	2030	ALL	Phase 3	Demolition	Worker	2.3E-09
HAUL RAV	PM25 EXH	2030	ALL	Phase 3	Demolition	Worker	6.1E-10
PAREA3	PM25 EXH	2030	ALL	Phase 3	Demolition	Worker	1.9E-08
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Demolition	Hauling	9.9E-08
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Demolition	Hauling	2.6E-08
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Demolition	Vendor	0
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Demolition	Vendor	0
HAUL MID	PM25 FUG	2030	ALL	Phase 3	Demolition	Worker	1.2E-08
HAUL RAV	PM25 FUG	2030	ALL	Phase 3	Demolition	Worker	3.1E-09
HAUL MID	PM25 EXH	2031	ALL	Phase 3	Paving	Hauling	0
HAUL RAV	PM25 EXH	2031	ALL	Phase 3	Paving	Hauling	0
PAREA3	PM25 EXH	2031	ALL	Phase 3	Paving	Hauling	0
HAUL MID	PM25 EXH	2031	ALL	Phase 3	Paving	Vendor	8.9E-08
HAUL RAV	PM25 EXH	2031	ALL	Phase 3	Paving	Vendor	2.3E-08
PAREA3	PM25 EXH	2031	ALL	Phase 3	Paving	Vendor	3.9E-08
HAUL MID	PM25 EXH	2031	ALL	Phase 3	Paving	Worker	7.1E-08
HAUL RAV	PM25 EXH	2031	ALL	Phase 3	Paving	Worker	1.9E-08
PAREA3	PM25 EXH	2031	ALL	Phase 3	Paving	Worker	5.8E-07
HAUL MID	PM25 FUG	2031	ALL	Phase 3	Paving	Hauling	0
HAUL RAV	PM25 FUG	2031	ALL	Phase 3	Paving	Hauling	0
HAUL MID	PM25 FUG	2031	ALL	Phase 3	Paving	Vendor	1.8E-07
HAUL RAV	PM25 FUG	2031	ALL	Phase 3	Paving	Vendor	4.6E-08
HAUL MID	PM25 FUG	2031	ALL	Phase 3	Paving	Worker	3.9E-07
HAUL RAV	PM25 FUG	2031	ALL	Phase 3	Paving	Worker	1.0E-07
DEMOALL	PM25 EXH	2025	ALL	Project Preparation	Demolition	Hauling	1.2E-06
HAUL MID	PM25 EXH	2025	ALL	Project Preparation	Demolition	Hauling	2.1E-06
HAUL RAV	PM25 EXH	2025	ALL	Project Preparation	Demolition	Hauling	5.5E-07
DEMOALL	PM25 EXH	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL MID	PM25 EXH	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL RAV	PM25 EXH	2025	ALL	Project Preparation	Demolition	Vendor	0
DEMOALL	PM25 EXH	2025	ALL	Project Preparation	Demolition	Worker	4.8E-07
HAUL MID	PM25 EXH	2025	ALL	Project Preparation	Demolition	Worker	6.2E-08
HAUL RAV	PM25 EXH	2025	ALL	Project Preparation	Demolition	Worker	1.6E-08
HAUL MID	PM25 FUG	2025	ALL	Project Preparation	Demolition	Hauling	3.4E-06
HAUL RAV	PM25 FUG	2025	ALL	Project Preparation	Demolition	Hauling	8.8E-07
HAUL MID	PM25 FUG	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL RAV	PM25 FUG	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL MID	PM25 FUG	2025	ALL	Project Preparation	Demolition	Worker	2.3E-07
HAUL RAV	PM25 FUG	2025	ALL	Project Preparation	Demolition	Worker	6.0E-08
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Demolition	Hauling	3.1E-07
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Demolition	Hauling	5.6E-07
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Demolition	Hauling	1.5E-07
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Demolition	Vendor	0
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Demolition	Worker	1.2E-07
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Demolition	Worker	1.6E-08
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Demolition	Worker	4.1E-09
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Demolition	Hauling	8.9E-07
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Demolition	Hauling	2.3E-07
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Demolition	Worker	6.1E-08
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Demolition	Worker	1.6E-08
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Hauling	3.5E-06
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Grading	Hauling	6.3E-06
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Grading	Hauling	1.7E-06
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Vendor	3.2E-07
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Grading	Vendor	5.3E-07
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Grading	Vendor	1.4E-07
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Grading	Worker	5.5E-07
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Grading	Worker	7.0E-08
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Grading	Worker	1.8E-08
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Grading	Hauling	1.0E-05
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Grading	Hauling	2.6E-06
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Grading	Vendor	8.4E-07
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Grading	Vendor	2.2E-07
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Grading	Worker	2.7E-07
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Grading	Worker	7.1E-08
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Hauling	0
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Vendor	2.2E-07
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Vendor	3.6E-07
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Vendor	9.3E-08
DEMOALL	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Worker	1.1E-06
HAUL MID	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Worker	1.4E-07
HAUL RAV	PM25 EXH	2026	ALL	Project Preparation	Site Preparation	Worker	3.6E-08
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Site Preparation	Vendor	5.7E-07
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Site Preparation	Vendor	1.5E-07
HAUL MID	PM25 FUG	2026	ALL	Project Preparation	Site Preparation	Worker	5.3E-07
HAUL RAV	PM25 FUG	2026	ALL	Project Preparation	Site Preparation	Worker	1.4E-07
PAREA1	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Aerial Lifts	9.8E-06
PAREA1	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Concrete/Industrial Saws	0
PAREA1	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Off-Highway Trucks	5.8E-05
PAREA1	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Aerial Lifts	3.7E-06
PAREA1	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Concrete/Industrial Saws	0
PAREA1	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Off-Highway Trucks	2.2E-05
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Bore/Drill Rigs	1.7E-05
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Cranes	9.3E-05
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Forklifts	6.0E-06
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Generator Sets	6.5E-06
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Off-Highway Trucks	2.7E-05
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	1.4E-05
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Welders	1.3E-05
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Bore/Drill Rigs	6.8E-05
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Cranes	3.7E-04
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Forklifts	2.4E-05
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Generator Sets	2.6E-05
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Off-Highway Trucks	1.0E-04
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	5.6E-05
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Welders	5.1E-05
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Bore/Drill Rigs	2.9E-05
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Cranes	1.6E-04
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Forklifts	1.0E-05
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Generator Sets	1.1E-05
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Off-Highway Trucks	4.3E-05
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	2.4E-05
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Welders	2.2E-05
PAREA1	PM10 EXH	2029	ALL	Phase 1	Paving	Off-Highway Trucks	1.9E-05
PAREA1	PM10 EXH	2029	ALL	Phase 1	Paving	Pavers	1.5E-05
PAREA1	PM10 EXH	2029	ALL	Phase 1	Paving	Paving Equipment	1.4E-05
PAREA1	PM10 EXH	2029	ALL	Phase 1	Paving	Rollers	1.5E-06
PAREA2	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Aerial Lifts	4.0E-05
PAREA2	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	7.1E-05
PAREA2	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Aerial Lifts	1.6E-05
PAREA2	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	2.8E-05
PAREA2	PM10 EXH	2029	ALL	Phase 2	Building Construction	Cranes	1.7E-04
PAREA2	PM10 EXH	2029	ALL	Phase 2	Building Construction	Forklifts	1.4E-05
PAREA2	PM10 EXH	2029	ALL	Phase 2	Building Construction	Generator Sets	1.5E-05
PAREA2	PM10 EXH	2029	ALL	Phase 2	Building Construction	Off-Highway Trucks	4.5E-05
PAREA2	PM10 EXH	2029	ALL	Phase 2	Building Construction	Tractors/Loaders/Backhoes	4.3E-05
PAREA2	PM10 EXH	2029	ALL	Phase 2	Building Construction	Welders	2.9E-05
PAREA2	PM10 EXH	2030	ALL	Phase 2	Building Construction	Cranes	9.8E-05
PAREA2	PM10 EXH	2030	ALL	Phase 2	Building Construction	Forklifts	8.4E-06
PAREA2	PM10 EXH	2030	ALL	Phase 2	Building Construction	Generator Sets	8.6E-06
PAREA2	PM10 EXH	2030	ALL	Phase 2	Building Construction	Off-Highway Trucks	2.4E-05
PAREA2	PM10 EXH	2030	ALL	Phase 2	Building Construction	Tractors/Loaders/Backhoes	2.5E-05
PAREA2	PM10 EXH	2030	ALL	Phase 2	Building Construction	Welders	1.7E-05
PAREA2	PM10 EXH	2029	ALL	Phase 2	Demolition	Excavators	1.5E-06
PAREA2	PM10 EXH	2029	ALL	Phase 2	Demolition	Off-Highway Trucks	8.8E-06
PAREA2	PM10 EXH	2029	ALL	Phase 2	Demolition	Rubber Tired Dozers	1.6E-05
PAREA2	PM10 EXH	2031	ALL	Phase 2	Paving	Off-Highway Trucks	2.6E-05
PAREA2	PM10 EXH	2031	ALL	Phase 2	Paving	Pavers	2.4E-05
PAREA2	PM10 EXH	2031	ALL	Phase 2	Paving	Paving Equipment	2.3E-05
PAREA2	PM10 EXH	2031	ALL	Phase 2	Paving	Rollers	2.3E-06
PAREA3	PM10 EXH	2030	ALL	Phase 3	Architectural Coating	Aerial Lifts	9.6E-07
PAREA3	PM10 EXH	2030	ALL	Phase 3	Architectural Coating	Concrete/Industrial Saws	0
PAREA3	PM10 EXH	2031	ALL	Phase 3	Architectural Coating	Aerial Lifts	1.3E-05
PAREA3	PM10 EXH	2031	ALL	Phase 3	Architectural Coating	Concrete/Industrial Saws	0
PAREA3	PM10 EXH	2030	ALL	Phase 3	Building Construction	Cranes	9.8E-05
PAREA3	PM10 EXH	2030	ALL	Phase 3	Building Construction	Forklifts	1.3E-05
PAREA3	PM10 EXH	2030	ALL	Phase 3	Building Construction	Generator Sets	4.6E-06
PAREA3	PM10 EXH	2030	ALL	Phase 3	Building Construction	Tractors/Loaders/Backhoes	2.7E-05
PAREA3	PM10 EXH	2030	ALL	Phase 3	Building Construction	Welders	2.1E-05
PAREA3	PM10 EXH	2030	ALL	Phase 3	Demolition	Excavators	1.5E-06
PAREA3	PM10 EXH	2030	ALL	Phase 3	Demolition	Rubber Tired Dozers	1.3E-05
PAREA3	PM10 EXH	2031	ALL	Phase 3	Paving	Pavers	4.8E-06

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Construction Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	CONTROL SCENARIO	PHASE	SUBPHASE	EQUIPMENT	EMISSIONS (G/S)
PAREA3	PM10 EXH	2031	ALL	Phase 3	Paving	Paving Equipment	4.5E-06
PAREA3	PM10 EXH	2031	ALL	Phase 3	Paving	Rollers	4.5E-07
DEMOALL	PM10 EXH	2025	ALL	Project Preparation	Demolition	Excavators	2.9E-05
DEMOALL	PM10 EXH	2025	ALL	Project Preparation	Demolition	Off-Highway Trucks	6.5E-05
DEMOALL	PM10 EXH	2025	ALL	Project Preparation	Demolition	Rubber Tired Dozers	2.1E-04
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Demolition	Excavators	7.7E-06
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Demolition	Off-Highway Trucks	1.6E-05
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Demolition	Rubber Tired Dozers	5.5E-05
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Grading	Excavators	1.1E-05
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Grading	Graders	2.5E-05
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Grading	Off-Highway Trucks	4.3E-05
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Grading	Rubber Tired Dozers	2.0E-05
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Grading	Scrapers	1.0E-04
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Grading	Tractors/Loaders/Backhoes	2.1E-05
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Off-Highway Trucks	5.8E-05
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Rubber Tired Dozers	1.2E-04
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Tractors/Loaders/Backhoes	9.8E-05
HAUL MID	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL RAV	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Hauling	0
PAREA1	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL MID	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Vendor	8.6E-07
HAUL RAV	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Vendor	2.3E-07
PAREA1	PM10 EXH	2028	ALL	Phase 1	Architectural Coating	Vendor	4.7E-07
HAUL MID	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL RAV	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Hauling	0
PAREA1	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL MID	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Vendor	3.2E-07
HAUL RAV	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Vendor	8.3E-08
PAREA1	PM10 EXH	2029	ALL	Phase 1	Architectural Coating	Vendor	1.6E-07
HAUL MID	PM10 EXH	2026	ALL	Phase 1	Building Construction	Hauling	2.6E-06
HAUL RAV	PM10 EXH	2026	ALL	Phase 1	Building Construction	Hauling	6.8E-07
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Hauling	1.4E-06
HAUL MID	PM10 EXH	2026	ALL	Phase 1	Building Construction	Vendor	7.3E-07
HAUL RAV	PM10 EXH	2026	ALL	Phase 1	Building Construction	Vendor	1.9E-07
PAREA1	PM10 EXH	2026	ALL	Phase 1	Building Construction	Vendor	4.5E-07
HAUL MID	PM10 EXH	2027	ALL	Phase 1	Building Construction	Hauling	1.0E-05
HAUL RAV	PM10 EXH	2027	ALL	Phase 1	Building Construction	Hauling	2.6E-06
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Hauling	5.2E-06
HAUL MID	PM10 EXH	2027	ALL	Phase 1	Building Construction	Vendor	2.7E-06
HAUL RAV	PM10 EXH	2027	ALL	Phase 1	Building Construction	Vendor	7.2E-07
PAREA1	PM10 EXH	2027	ALL	Phase 1	Building Construction	Vendor	1.6E-06
HAUL MID	PM10 EXH	2028	ALL	Phase 1	Building Construction	Hauling	4.3E-06
HAUL RAV	PM10 EXH	2028	ALL	Phase 1	Building Construction	Hauling	1.1E-06
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Hauling	2.1E-06
HAUL MID	PM10 EXH	2028	ALL	Phase 1	Building Construction	Vendor	1.1E-06
HAUL RAV	PM10 EXH	2028	ALL	Phase 1	Building Construction	Vendor	2.9E-07
PAREA1	PM10 EXH	2028	ALL	Phase 1	Building Construction	Vendor	6.1E-07
HAUL MID	PM10 EXH	2029	ALL	Phase 1	Paving	Hauling	0
HAUL RAV	PM10 EXH	2029	ALL	Phase 1	Paving	Hauling	0
PAREA1	PM10 EXH	2029	ALL	Phase 1	Paving	Hauling	0
HAUL MID	PM10 EXH	2029	ALL	Phase 1	Paving	Vendor	1.6E-07
HAUL RAV	PM10 EXH	2029	ALL	Phase 1	Paving	Vendor	4.2E-08
PAREA1	PM10 EXH	2029	ALL	Phase 1	Paving	Vendor	8.2E-08
HAUL MID	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL RAV	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL MID	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Vendor	8.0E-07
HAUL RAV	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Vendor	2.1E-07
PAREA2	PM10 EXH	2030	ALL	Phase 2	Architectural Coating	Vendor	3.8E-07
HAUL MID	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL RAV	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL MID	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Vendor	3.2E-07
HAUL RAV	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Vendor	8.5E-08
PAREA2	PM10 EXH	2031	ALL	Phase 2	Architectural Coating	Vendor	1.4E-07
HAUL MID	PM10 EXH	2029	ALL	Phase 2	Building Construction	Hauling	2.0E-06
HAUL RAV	PM10 EXH	2029	ALL	Phase 2	Building Construction	Hauling	5.1E-07
PAREA2	PM10 EXH	2029	ALL	Phase 2	Building Construction	Hauling	9.2E-07
HAUL MID	PM10 EXH	2029	ALL	Phase 2	Building Construction	Vendor	1.0E-06
HAUL RAV	PM10 EXH	2029	ALL	Phase 2	Building Construction	Vendor	2.7E-07
PAREA2	PM10 EXH	2029	ALL	Phase 2	Building Construction	Vendor	5.3E-07
HAUL MID	PM10 EXH	2030	ALL	Phase 2	Building Construction	Hauling	1.1E-06
HAUL RAV	PM10 EXH	2030	ALL	Phase 2	Building Construction	Hauling	2.9E-07
PAREA2	PM10 EXH	2030	ALL	Phase 2	Building Construction	Hauling	4.8E-07
HAUL MID	PM10 EXH	2030	ALL	Phase 2	Building Construction	Vendor	5.8E-07
HAUL RAV	PM10 EXH	2030	ALL	Phase 2	Building Construction	Vendor	1.5E-07
PAREA2	PM10 EXH	2030	ALL	Phase 2	Building Construction	Vendor	2.7E-07
HAUL MID	PM10 EXH	2029	ALL	Phase 2	Demolition	Hauling	4.0E-07
HAUL RAV	PM10 EXH	2029	ALL	Phase 2	Demolition	Hauling	1.0E-07
PAREA2	PM10 EXH	2029	ALL	Phase 2	Demolition	Hauling	1.9E-07
HAUL MID	PM10 EXH	2029	ALL	Phase 2	Demolition	Vendor	0
HAUL RAV	PM10 EXH	2029	ALL	Phase 2	Demolition	Vendor	0
PAREA2	PM10 EXH	2029	ALL	Phase 2	Demolition	Vendor	0
HAUL MID	PM10 EXH	2031	ALL	Phase 2	Paving	Hauling	0
HAUL RAV	PM10 EXH	2031	ALL	Phase 2	Paving	Hauling	0
PAREA2	PM10 EXH	2031	ALL	Phase 2	Paving	Hauling	0
HAUL MID	PM10 EXH	2031	ALL	Phase 2	Paving	Vendor	2.3E-07
HAUL RAV	PM10 EXH	2031	ALL	Phase 2	Paving	Vendor	6.1E-08
PAREA2	PM10 EXH	2031	ALL	Phase 2	Paving	Vendor	1.0E-07
HAUL MID	PM10 EXH	2030	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL RAV	PM10 EXH	2030	ALL	Phase 3	Architectural Coating	Hauling	0
PAREA3	PM10 EXH	2030	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL MID	PM10 EXH	2030	ALL	Phase 3	Architectural Coating	Vendor	3.4E-08
HAUL RAV	PM10 EXH	2030	ALL	Phase 3	Architectural Coating	Vendor	9.0E-09
PAREA3	PM10 EXH	2030	ALL	Phase 3	Architectural Coating	Vendor	1.6E-08
HAUL MID	PM10 EXH	2031	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL RAV	PM10 EXH	2031	ALL	Phase 3	Architectural Coating	Hauling	0
PAREA3	PM10 EXH	2031	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL MID	PM10 EXH	2031	ALL	Phase 3	Architectural Coating	Vendor	4.6E-07
HAUL RAV	PM10 EXH	2031	ALL	Phase 3	Architectural Coating	Vendor	1.2E-07
PAREA3	PM10 EXH	2031	ALL	Phase 3	Architectural Coating	Vendor	2.0E-07
HAUL MID	PM10 EXH	2030	ALL	Phase 3	Building Construction	Hauling	1.1E-06
HAUL RAV	PM10 EXH	2030	ALL	Phase 3	Building Construction	Hauling	2.8E-07
PAREA3	PM10 EXH	2030	ALL	Phase 3	Building Construction	Hauling	4.6E-07
HAUL MID	PM10 EXH	2030	ALL	Phase 3	Building Construction	Vendor	1.4E-06
HAUL RAV	PM10 EXH	2030	ALL	Phase 3	Building Construction	Vendor	3.6E-07
PAREA3	PM10 EXH	2030	ALL	Phase 3	Building Construction	Vendor	6.5E-07
HAUL MID	PM10 EXH	2030	ALL	Phase 3	Demolition	Hauling	6.2E-08
HAUL RAV	PM10 EXH	2030	ALL	Phase 3	Demolition	Hauling	1.6E-08
PAREA3	PM10 EXH	2030	ALL	Phase 3	Demolition	Hauling	2.7E-08
HAUL MID	PM10 EXH	2030	ALL	Phase 3	Demolition	Vendor	0
HAUL RAV	PM10 EXH	2030	ALL	Phase 3	Demolition	Vendor	0
PAREA3	PM10 EXH	2030	ALL	Phase 3	Demolition	Vendor	0
HAUL MID	PM10 EXH	2031	ALL	Phase 3	Paving	Hauling	0
HAUL RAV	PM10 EXH	2031	ALL	Phase 3	Paving	Hauling	0
PAREA3	PM10 EXH	2031	ALL	Phase 3	Paving	Hauling	0
HAUL MID	PM10 EXH	2031	ALL	Phase 3	Paving	Vendor	9.3E-08
HAUL RAV	PM10 EXH	2031	ALL	Phase 3	Paving	Vendor	2.4E-08
PAREA3	PM10 EXH	2031	ALL	Phase 3	Paving	Vendor	4.1E-08
DEMOALL	PM10 EXH	2025	ALL	Project Preparation	Demolition	Hauling	1.3E-06
HAUL MID	PM10 EXH	2025	ALL	Project Preparation	Demolition	Hauling	2.2E-06
HAUL RAV	PM10 EXH	2025	ALL	Project Preparation	Demolition	Hauling	5.8E-07
DEMOALL	PM10 EXH	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL MID	PM10 EXH	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL RAV	PM10 EXH	2025	ALL	Project Preparation	Demolition	Vendor	0
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Demolition	Hauling	3.2E-07
HAUL MID	PM10 EXH	2026	ALL	Project Preparation	Demolition	Hauling	5.8E-07
HAUL RAV	PM10 EXH	2026	ALL	Project Preparation	Demolition	Hauling	1.5E-07
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL MID	PM10 EXH	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL RAV	PM10 EXH	2026	ALL	Project Preparation	Demolition	Vendor	0
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Grading	Hauling	3.6E-06
HAUL MID	PM10 EXH	2026	ALL	Project Preparation	Grading	Hauling	6.6E-06
HAUL RAV	PM10 EXH	2026	ALL	Project Preparation	Grading	Hauling	1.7E-06
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Grading	Vendor	3.4E-07
HAUL MID	PM10 EXH	2026	ALL	Project Preparation	Grading	Vendor	5.5E-07
HAUL RAV	PM10 EXH	2026	ALL	Project Preparation	Grading	Vendor	1.4E-07
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL MID	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL RAV	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Hauling	0
DEMOALL	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Vendor	2.3E-07
HAUL MID	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Vendor	3.7E-07
HAUL RAV	PM10 EXH	2026	ALL	Project Preparation	Site Preparation	Vendor	9.7E-08
HAUL RAV	PM25 FUG MASS	2025	ALL	Project Preparation	Demolition	Road Dust	4.0E-07
HAUL RAV	PM25 FUG MASS	2026	ALL	Project Preparation	Demolition	Road Dust	1.1E-07
HAUL RAV	PM25 FUG MASS	2026	ALL	Project Preparation	Site Preparation	Road Dust	3.9E-07
HAUL RAV	PM25 FUG MASS	2026	ALL	Project Preparation	Grading	Road Dust	1.0E-06
HAUL RAV	PM25 FUG MASS	2026	ALL	Phase 1	Building Construction	Road Dust	2.7E-06
HAUL RAV	PM25 FUG MASS	2027	ALL	Phase 1	Building Construction	Road Dust	1.1E-05
HAUL RAV	PM25 FUG MASS	2028	ALL	Phase 1	Building Construction	Road Dust	4.6E-06
HAUL RAV	PM25 FUG MASS	2028	ALL	Phase 1	Architectural Coating	Road Dust	3.3E-07
HAUL RAV	PM25 FUG MASS	2029	ALL	Phase 1	Architectural Coating	Road Dust	1.3E-07
HAUL RAV	PM25 FUG MASS	2029	ALL	Phase 1	Paving	Road Dust	4.4E-07
HAUL RAV	PM25 FUG MASS	2029	ALL	Phase 2	Demolition	Road Dust	5.5E-08
HAUL RAV	PM25 FUG MASS	2029	ALL	Phase 2	Building Construction	Road Dust	4.2E-06
HAUL RAV	PM25 FUG MASS	2030	ALL	Phase 2	Building Construction	Road Dust	2.5E-06

Appendix B.1
Construction Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	CONTROL SCENARIO	PHASE	SUBPHASE	EQUIPMENT	EMISSIONS (G/S)
HAUL RAV	PM25 FUG MASS	2030	ALL	Phase 2	Architectural Coating	Road Dust	2.8E-07
HAUL RAV	PM25 FUG MASS	2031	ALL	Phase 2	Architectural Coating	Road Dust	1.2E-07
HAUL RAV	PM25 FUG MASS	2031	ALL	Phase 2	Paving	Road Dust	6.8E-07
HAUL RAV	PM25 FUG MASS	2030	ALL	Phase 3	Demolition	Road Dust	1.5E-08
HAUL RAV	PM25 FUG MASS	2030	ALL	Phase 3	Building Construction	Road Dust	2.4E-06
HAUL RAV	PM25 FUG MASS	2030	ALL	Phase 3	Architectural Coating	Road Dust	1.7E-08
HAUL RAV	PM25 FUG MASS	2031	ALL	Phase 3	Architectural Coating	Road Dust	2.3E-07
HAUL RAV	PM25 FUG MASS	2031	ALL	Phase 3	Paving	Road Dust	2.6E-07
HAUL MID	PM25 FUG MASS	2025	ALL	Project Preparation	Demolition	Road Dust	1.5E-06
HAUL MID	PM25 FUG MASS	2026	ALL	Project Preparation	Demolition	Road Dust	4.0E-07
HAUL MID	PM25 FUG MASS	2026	ALL	Project Preparation	Site Preparation	Road Dust	1.5E-06
HAUL MID	PM25 FUG MASS	2026	ALL	Project Preparation	Grading	Road Dust	3.9E-06
HAUL MID	PM25 FUG MASS	2026	ALL	Phase 1	Building Construction	Road Dust	1.0E-05
HAUL MID	PM25 FUG MASS	2027	ALL	Phase 1	Building Construction	Road Dust	4.1E-05
HAUL MID	PM25 FUG MASS	2028	ALL	Phase 1	Building Construction	Road Dust	1.7E-05
HAUL MID	PM25 FUG MASS	2028	ALL	Phase 1	Architectural Coating	Road Dust	1.3E-06
HAUL MID	PM25 FUG MASS	2029	ALL	Phase 1	Architectural Coating	Road Dust	4.8E-07
HAUL MID	PM25 FUG MASS	2029	ALL	Phase 1	Paving	Road Dust	1.7E-06
HAUL MID	PM25 FUG MASS	2029	ALL	Phase 2	Demolition	Road Dust	2.1E-07
HAUL MID	PM25 FUG MASS	2029	ALL	Phase 2	Building Construction	Road Dust	1.6E-05
HAUL MID	PM25 FUG MASS	2030	ALL	Phase 2	Building Construction	Road Dust	9.4E-06
HAUL MID	PM25 FUG MASS	2030	ALL	Phase 2	Architectural Coating	Road Dust	1.1E-06
HAUL MID	PM25 FUG MASS	2031	ALL	Phase 2	Architectural Coating	Road Dust	4.5E-07
HAUL MID	PM25 FUG MASS	2031	ALL	Phase 2	Paving	Road Dust	2.6E-06
HAUL MID	PM25 FUG MASS	2030	ALL	Phase 3	Demolition	Road Dust	5.7E-08
HAUL MID	PM25 FUG MASS	2030	ALL	Phase 3	Building Construction	Road Dust	9.3E-06
HAUL MID	PM25 FUG MASS	2030	ALL	Phase 3	Architectural Coating	Road Dust	6.3E-08
HAUL MID	PM25 FUG MASS	2031	ALL	Phase 3	Architectural Coating	Road Dust	8.7E-07
HAUL MID	PM25 FUG MASS	2031	ALL	Phase 3	Paving	Road Dust	1.0E-06
DEMOFD	PM25 FUG MASS	2025	UNMIT	Project Preparation	Demolition	Building Demolition Waste Fugitive Dust	0.0040
DEMOFD	PM25 FUG MASS	2026	UNMIT	Project Preparation	Demolition	Building Demolition Waste Fugitive Dust	0.0011
DEMOFD	PM25 FUG MASS	2026	UNMIT	Project Preparation	Site Preparation	Off-Road Grading Fugitive Dust	0.0019
DEMOFD	PM25 FUG MASS	2026	UNMIT	Project Preparation	Grading	Off-Road Grading Fugitive Dust	0.0014
DEMOFD	PM25 FUG MASS	2025	UNMIT	Project Preparation	Demolition	Truck Loading Fugitive Dust	3.3E-05
DEMOFD	PM25 FUG MASS	2026	UNMIT	Project Preparation	Demolition	Truck Loading Fugitive Dust	8.8E-06
DEMOFD	PM25 FUG MASS	2026	UNMIT	Project Preparation	Grading	Truck Loading Fugitive Dust	9.9E-05
PAREA1FD	PM25 FUG MASS	2026	UNMIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	3.9E-05
PAREA1FD	PM25 FUG MASS	2027	UNMIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	1.5E-04
PAREA1FD	PM25 FUG MASS	2028	UNMIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	6.6E-05
PAREA2FD	PM25 FUG MASS	2029	UNMIT	Phase 2	Demolition	Truck Loading Fugitive Dust	6.1E-06
PAREA2FD	PM25 FUG MASS	2029	UNMIT	Phase 2	Building Construction	Truck Loading Fugitive Dust	3.0E-05
PAREA2FD	PM25 FUG MASS	2030	UNMIT	Phase 2	Building Construction	Truck Loading Fugitive Dust	1.8E-05
PAREA3FD	PM25 FUG MASS	2030	UNMIT	Phase 3	Demolition	Truck Loading Fugitive Dust	5.2E-07
PAREA3FD	PM25 FUG MASS	2030	UNMIT	Phase 3	Building Construction	Truck Loading Fugitive Dust	8.8E-06
DEMOFD	PM25 FUG MASS	2026	UNMIT	Project Preparation	Site Preparation	Off-Road Bulldozing Fugitive Dust	0.015
DEMOFD	PM25 FUG MASS	2026	UNMIT	Project Preparation	Grading	Off-Road Bulldozing Fugitive Dust	0.0026
DEMOFD	PM25 FUG MASS	2025	MIT	Project Preparation	Demolition	Building Demolition Waste Fugitive Dust	0.0026
DEMOFD	PM25 FUG MASS	2026	MIT	Project Preparation	Demolition	Building Demolition Waste Fugitive Dust	6.8E-04
DEMOFD	PM25 FUG MASS	2026	MIT	Project Preparation	Site Preparation	Off-Road Grading Fugitive Dust	7.6E-04
DEMOFD	PM25 FUG MASS	2026	MIT	Project Preparation	Grading	Off-Road Grading Fugitive Dust	5.6E-04
DEMOFD	PM25 FUG MASS	2025	MIT	Project Preparation	Demolition	Truck Loading Fugitive Dust	1.3E-05
DEMOFD	PM25 FUG MASS	2026	MIT	Project Preparation	Demolition	Truck Loading Fugitive Dust	3.4E-06
DEMOFD	PM25 FUG MASS	2026	MIT	Project Preparation	Grading	Truck Loading Fugitive Dust	3.9E-05
PAREA1FD	PM25 FUG MASS	2026	MIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	1.5E-05
PAREA1FD	PM25 FUG MASS	2027	MIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	6.0E-05
PAREA1FD	PM25 FUG MASS	2028	MIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	2.6E-05
PAREA2FD	PM25 FUG MASS	2029	MIT	Phase 2	Demolition	Truck Loading Fugitive Dust	2.4E-06
PAREA2FD	PM25 FUG MASS	2029	MIT	Phase 2	Building Construction	Truck Loading Fugitive Dust	1.2E-05
PAREA2FD	PM25 FUG MASS	2030	MIT	Phase 2	Building Construction	Truck Loading Fugitive Dust	6.8E-06
PAREA3FD	PM25 FUG MASS	2030	MIT	Phase 3	Demolition	Truck Loading Fugitive Dust	2.0E-07
PAREA3FD	PM25 FUG MASS	2030	MIT	Phase 3	Building Construction	Truck Loading Fugitive Dust	3.4E-06
DEMOFD	PM25 FUG MASS	2026	MIT	Project Preparation	Site Preparation	Off-Road Bulldozing Fugitive Dust	0.0060
DEMOFD	PM25 FUG MASS	2026	MIT	Project Preparation	Grading	Off-Road Bulldozing Fugitive Dust	0.0010

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
COGEN	1,3-Butadiene	ALL	Existing	Cogeneration Plant	-7.9E-07
COGEN	Acetaldehyde	ALL	Existing	Cogeneration Plant	-3.4E-04
COGEN	Acrolein	ALL	Existing	Cogeneration Plant	-6.9E-05
COGEN	Benzene	ALL	Existing	Cogeneration Plant	-6.4E-05
COGEN	Benzo(a)anthracene	ALL	Existing	Cogeneration Plant	-2.3E-08
COGEN	Benzo(a)pyrene	ALL	Existing	Cogeneration Plant	-1.6E-08
COGEN	Benzo(b)fluoranthene	ALL	Existing	Cogeneration Plant	-1.8E-08
COGEN	Benzo(k)fluoranthene	ALL	Existing	Cogeneration Plant	-1.8E-08
COGEN	Chrysene	ALL	Existing	Cogeneration Plant	-3.2E-08
COGEN	Dibenz(a,h)anthracene	ALL	Existing	Cogeneration Plant	-1.9E-08
COGEN	Ethylbenzene	ALL	Existing	Cogeneration Plant	-6.2E-05
COGEN	Formaldehyde	ALL	Existing	Cogeneration Plant	-7.1E-04
COGEN	Hexane	ALL	Existing	Cogeneration Plant	-0.0014
COGEN	Indeno(1,2,3-cd)pyrene	ALL	Existing	Cogeneration Plant	-1.8E-08
COGEN	Naphthalene	ALL	Existing	Cogeneration Plant	-5.9E-06
COGEN	Propylene	ALL	Existing	Cogeneration Plant	-0.0036
COGEN	Propylene Oxide	ALL	Existing	Cogeneration Plant	-2.8E-04
COGEN	Pyrene	ALL	Existing	Cogeneration Plant	-7.5E-08
COGEN	Toluene	ALL	Existing	Cogeneration Plant	-3.8E-04
COGEN	Xylenes	ALL	Existing	Cogeneration Plant	-2.7E-04
COGEN	PM25	ALL	Existing	Cogeneration Plant	-0.038
GEN	DPM	ALL	Existing	Generators	-1.3E-04
GEN	PM25	ALL	Existing	Generators	-1.3E-04
GENA	DPM	ALL	Existing	Generators	-7.0E-05
GENA	PM25	ALL	Existing	Generators	-7.0E-05
GENL	DPM	ALL	Existing	Generators	-9.3E-05
GENL	PM25	ALL	Existing	Generators	-9.3E-05
OFFGEN1	DPM	2029	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2031	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2031	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2031	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2029	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2029	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2031	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2031	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2029	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2029	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2029	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2029	Phase 1	Generators	4.7E-05
VLA	DPM	2031	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2029	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2031	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2031	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2031	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2029	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2029	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2031	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2031	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2029	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2029	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2029	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2029	Phase 1	Generators	4.7E-05
VLA	PM25	2031	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2030	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2032	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2032	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2032	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2030	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2030	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2032	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2032	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2030	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2030	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2030	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2030	Phase 1	Generators	4.7E-05
VLA	DPM	2032	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2030	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2032	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2032	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2032	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2030	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2030	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2032	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2032	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2030	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2030	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2030	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2030	Phase 1	Generators	4.7E-05
VLA	PM25	2032	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2031	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2033	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2033	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2033	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2031	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2031	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2033	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2033	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2031	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2031	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2031	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2031	Phase 1	Generators	4.7E-05
VLA	DPM	2033	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2031	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2033	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2033	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2033	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2031	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2031	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2033	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2033	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2031	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2031	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2031	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2031	Phase 1	Generators	4.7E-05
VLA	PM25	2033	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2032	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2034	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2034	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2034	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2032	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2032	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2034	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2034	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2032	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2032	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2032	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2032	Phase 1	Generators	4.7E-05
VLA	DPM	2034	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2032	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2034	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2034	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2034	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2032	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2032	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2034	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2034	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2032	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2032	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2032	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2032	Phase 1	Generators	4.7E-05
VLA	PM25	2034	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2033	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2035	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2035	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2035	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2033	Phase 1	Generators	4.7E-05

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
AMENGEN	DPM	2033	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2035	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2035	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2033	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2033	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2033	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2033	Phase 1	Generators	4.7E-05
VLA	DPM	2035	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2033	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2035	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2035	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2035	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2033	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2033	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2035	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2035	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2033	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2033	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2033	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2033	Phase 1	Generators	4.7E-05
VLA	PM25	2035	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2034	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2036	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2036	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2036	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2034	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2034	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2036	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2036	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2034	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2034	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2034	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2034	Phase 1	Generators	4.7E-05
VLA	DPM	2036	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2034	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2036	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2036	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2036	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2034	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2034	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2036	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2036	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2034	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2034	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2034	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2034	Phase 1	Generators	4.7E-05
VLA	PM25	2036	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2035	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2037	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2037	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2037	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2035	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2035	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2037	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2037	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2035	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2035	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2035	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2035	Phase 1	Generators	4.7E-05
VLA	DPM	2037	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2035	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2037	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2037	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2037	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2035	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2035	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2037	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2037	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2035	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2035	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2035	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2035	Phase 1	Generators	4.7E-05
VLA	PM25	2037	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2036	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2038	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2038	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2038	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2036	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2036	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2038	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2038	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2036	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2036	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2036	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2036	Phase 1	Generators	4.7E-05
VLA	DPM	2038	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2036	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2038	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2038	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2038	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2036	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2036	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2038	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2038	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2036	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2036	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2036	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2036	Phase 1	Generators	4.7E-05
VLA	PM25	2038	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2037	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2039	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2039	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2039	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2037	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2037	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2039	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2039	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2037	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2037	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2037	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2037	Phase 1	Generators	4.7E-05
VLA	DPM	2039	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2037	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2039	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2039	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2039	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2037	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2037	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2039	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2039	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2037	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2037	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2037	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2037	Phase 1	Generators	4.7E-05
VLA	PM25	2039	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2038	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2040	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2040	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2040	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2038	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2038	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2040	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2040	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2038	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2038	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2038	Phase 1	Generators	4.7E-05

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
RESGEN3	DPM	2038	Phase 1	Generators	4.7E-05
VLA	DPM	2040	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2038	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2040	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2040	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2040	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2038	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2038	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2040	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2040	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2038	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2038	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2038	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2038	Phase 1	Generators	4.7E-05
VLA	PM25	2040	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2039	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2041	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2041	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2041	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2039	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2039	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2041	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2041	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2039	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2039	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2039	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2039	Phase 1	Generators	4.7E-05
VLA	DPM	2041	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2039	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2041	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2041	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2041	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2039	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2039	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2041	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2041	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2039	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2039	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2039	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2039	Phase 1	Generators	4.7E-05
VLA	PM25	2041	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2040	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2042	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2042	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2042	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2040	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2040	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2042	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2042	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2040	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2040	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2040	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2040	Phase 1	Generators	4.7E-05
VLA	DPM	2042	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2040	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2042	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2042	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2042	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2040	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2040	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2042	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2042	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2040	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2040	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2040	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2040	Phase 1	Generators	4.7E-05
VLA	PM25	2042	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2041	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2043	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2043	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2043	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2041	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2041	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2043	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2043	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2041	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2041	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2041	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2041	Phase 1	Generators	4.7E-05
VLA	DPM	2043	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2041	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2043	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2043	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2043	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2041	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2041	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2043	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2043	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2041	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2041	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2041	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2041	Phase 1	Generators	4.7E-05
VLA	PM25	2043	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2042	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2044	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2044	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2044	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2042	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2042	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2044	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2044	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2042	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2042	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2042	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2042	Phase 1	Generators	4.7E-05
VLA	DPM	2044	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2042	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2044	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2044	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2044	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2042	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2042	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2044	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2044	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2042	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2042	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2042	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2042	Phase 1	Generators	4.7E-05
VLA	PM25	2044	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2043	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2045	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2045	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2045	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2043	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2043	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2045	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2045	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2043	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2043	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2043	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2043	Phase 1	Generators	4.7E-05
VLA	DPM	2045	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2043	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2045	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2045	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2045	Phase 2	Generators	4.7E-05

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
OFFGEN5	PM25	2043	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2043	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2045	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2045	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2043	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2043	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2043	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2043	Phase 1	Generators	4.7E-05
VLA	PM25	2045	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2044	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2046	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2046	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2046	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2044	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2044	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2046	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2046	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2044	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2044	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2044	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2044	Phase 1	Generators	4.7E-05
VLA	DPM	2046	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2044	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2046	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2046	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2046	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2044	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2044	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2046	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2046	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2044	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2044	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2044	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2044	Phase 1	Generators	4.7E-05
VLA	PM25	2046	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2045	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2047	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2047	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2047	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2045	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2045	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2047	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2047	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2045	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2045	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2045	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2045	Phase 1	Generators	4.7E-05
VLA	DPM	2047	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2045	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2047	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2047	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2047	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2045	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2045	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2047	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2047	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2045	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2045	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2045	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2045	Phase 1	Generators	4.7E-05
VLA	PM25	2047	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2046	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2048	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2048	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2048	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2046	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2046	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2048	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2048	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2046	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2046	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2046	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2046	Phase 1	Generators	4.7E-05
VLA	DPM	2048	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2046	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2048	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2048	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2048	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2046	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2046	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2048	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2048	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2046	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2046	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2046	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2046	Phase 1	Generators	4.7E-05
VLA	PM25	2048	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2047	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2049	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2049	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2049	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2047	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2047	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2049	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2049	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2047	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2047	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2047	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2047	Phase 1	Generators	4.7E-05
VLA	DPM	2049	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2047	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2049	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2049	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2049	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2047	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2047	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2049	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2049	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2047	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2047	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2047	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2047	Phase 1	Generators	4.7E-05
VLA	PM25	2049	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2048	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2050	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2050	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2050	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2048	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2048	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2050	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2050	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2048	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2048	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2048	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2048	Phase 1	Generators	4.7E-05
VLA	DPM	2050	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2048	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2050	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2050	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2050	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2048	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2048	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2050	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2050	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2048	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2048	Phase 1	Generators	4.7E-05

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
RESGEN2	PM25	2048	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2048	Phase 1	Generators	4.7E-05
VLA	PM25	2050	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2049	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2051	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2051	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2051	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2049	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2049	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2051	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2051	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2049	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2049	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2049	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2049	Phase 1	Generators	4.7E-05
VLA	DPM	2051	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2049	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2051	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2051	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2051	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2049	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2049	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2051	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2051	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2049	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2049	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2049	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2049	Phase 1	Generators	4.7E-05
VLA	PM25	2051	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2050	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2052	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2052	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2052	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2050	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2050	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2052	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2052	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2050	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2050	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2050	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2050	Phase 1	Generators	4.7E-05
VLA	DPM	2052	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2050	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2052	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2052	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2052	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2050	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2050	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2052	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2052	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2050	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2050	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2050	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2050	Phase 1	Generators	4.7E-05
VLA	PM25	2052	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2051	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2053	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2053	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2053	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2051	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2051	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2053	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2053	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2051	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2051	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2051	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2051	Phase 1	Generators	4.7E-05
VLA	DPM	2053	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2051	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2053	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2053	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2053	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2051	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2051	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2053	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2053	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2051	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2051	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2051	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2051	Phase 1	Generators	4.7E-05
VLA	PM25	2053	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2052	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2054	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2054	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2054	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2052	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2052	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2054	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2054	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2052	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2052	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2052	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2052	Phase 1	Generators	4.7E-05
VLA	DPM	2054	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2052	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2054	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2054	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2054	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2052	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2052	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2054	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2054	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2052	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2052	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2052	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2052	Phase 1	Generators	4.7E-05
VLA	PM25	2054	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2053	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2055	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2055	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2055	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2053	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2053	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2055	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2055	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2053	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2053	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2053	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2053	Phase 1	Generators	4.7E-05
VLA	DPM	2055	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2053	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2055	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2055	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2055	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2053	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2053	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2055	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2055	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2053	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2053	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2053	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2053	Phase 1	Generators	4.7E-05
VLA	PM25	2055	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2054	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2056	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2056	Phase 2	Generators	4.7E-05

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
OFFGEN4	DPM	2056	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2054	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2054	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2056	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2056	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2054	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2054	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2054	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2054	Phase 1	Generators	4.7E-05
VLA	DPM	2056	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2054	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2056	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2056	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2056	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2054	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2054	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2056	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2056	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2054	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2054	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2054	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2054	Phase 1	Generators	4.7E-05
VLA	PM25	2056	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2055	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2057	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2057	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2057	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2055	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2055	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2057	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2057	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2055	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2055	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2055	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2055	Phase 1	Generators	4.7E-05
VLA	DPM	2057	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2055	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2057	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2057	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2057	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2055	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2055	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2057	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2057	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2055	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2055	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2055	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2055	Phase 1	Generators	4.7E-05
VLA	PM25	2057	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2056	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2058	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2058	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2058	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2056	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2056	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2058	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2058	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2056	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2056	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2056	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2056	Phase 1	Generators	4.7E-05
VLA	DPM	2058	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2056	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2058	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2058	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2058	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2056	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2056	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2058	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2058	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2056	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2056	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2056	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2056	Phase 1	Generators	4.7E-05
VLA	PM25	2058	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2057	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2059	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2059	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2059	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2057	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2057	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2059	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2059	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2057	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2057	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2057	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2057	Phase 1	Generators	4.7E-05
VLA	DPM	2059	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2057	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2059	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2059	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2059	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2057	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2057	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2059	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2059	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2057	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2057	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2057	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2057	Phase 1	Generators	4.7E-05
VLA	PM25	2059	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2058	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2060	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2060	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2060	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2058	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2058	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2060	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2060	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2058	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2058	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2058	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2058	Phase 1	Generators	4.7E-05
VLA	DPM	2060	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2058	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2060	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2060	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2060	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2058	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2058	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2060	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2060	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2058	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2058	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2058	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2058	Phase 1	Generators	4.7E-05
VLA	PM25	2060	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2059	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2061	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2061	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2061	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2059	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2059	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2061	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2061	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2059	Phase 1	Generators	4.7E-05

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
RESGEN1	DPM	2059	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2059	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2059	Phase 1	Generators	4.7E-05
VLA	DPM	2061	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2059	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2061	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2061	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2061	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2059	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2059	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2061	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2061	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2059	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2059	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2059	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2059	Phase 1	Generators	4.7E-05
VLA	PM25	2061	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2060	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2062	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2062	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2062	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2060	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2060	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2062	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2062	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2060	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2060	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2060	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2060	Phase 1	Generators	4.7E-05
VLA	DPM	2062	Phase 3	Generators	4.7E-05
OFFGEN1	PM25	2060	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2062	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2062	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2062	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2060	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2060	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2062	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2062	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2060	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2060	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2060	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2060	Phase 1	Generators	4.7E-05
VLA	PM25	2062	Phase 3	Generators	4.7E-05
OFFGEN1	DPM	2061	Phase 1	Generators	4.7E-05
OFFGEN2	DPM	2063	Phase 2	Generators	4.7E-05
OFFGEN3	DPM	2063	Phase 2	Generators	4.7E-05
OFFGEN4	DPM	2063	Phase 2	Generators	4.7E-05
OFFGEN5	DPM	2061	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2061	Phase 1	Generators	7.0E-05
PARKGEN1	DPM	2063	Phase 2	Generators	4.7E-05
PARKGEN2	DPM	2063	Phase 2	Generators	4.7E-05
PARKGEN3	DPM	2061	Phase 1	Generators	4.7E-05
RESGEN1	DPM	2061	Phase 1	Generators	4.7E-05
RESGEN2	DPM	2061	Phase 1	Generators	4.7E-05
RESGEN3	DPM	2061	Phase 1	Generators	4.7E-05
OFFGEN1	PM25	2061	Phase 1	Generators	4.7E-05
OFFGEN2	PM25	2063	Phase 2	Generators	4.7E-05
OFFGEN3	PM25	2063	Phase 2	Generators	4.7E-05
OFFGEN4	PM25	2063	Phase 2	Generators	4.7E-05
OFFGEN5	PM25	2061	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2061	Phase 1	Generators	7.0E-05
PARKGEN1	PM25	2063	Phase 2	Generators	4.7E-05
PARKGEN2	PM25	2063	Phase 2	Generators	4.7E-05
PARKGEN3	PM25	2061	Phase 1	Generators	4.7E-05
RESGEN1	PM25	2061	Phase 1	Generators	4.7E-05
RESGEN2	PM25	2061	Phase 1	Generators	4.7E-05
RESGEN3	PM25	2061	Phase 1	Generators	4.7E-05
OFFGEN1	DPM	2062	Phase 1	Generators	4.7E-05
OFFGEN5	DPM	2062	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2062	Phase 1	Generators	7.0E-05
PARKGEN3	DPM	2062	Phase 1	Generators	4.7E-05
OFFGEN1	PM25	2062	Phase 1	Generators	4.7E-05
OFFGEN5	PM25	2062	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2062	Phase 1	Generators	7.0E-05
PARKGEN3	PM25	2062	Phase 1	Generators	4.7E-05
OFFGEN1	DPM	2063	Phase 1	Generators	4.7E-05
OFFGEN5	DPM	2063	Phase 1	Generators	4.7E-05
AMENGEN	DPM	2063	Phase 1	Generators	7.0E-05
PARKGEN3	DPM	2063	Phase 1	Generators	4.7E-05
OFFGEN1	PM25	2063	Phase 1	Generators	4.7E-05
OFFGEN5	PM25	2063	Phase 1	Generators	4.7E-05
AMENGEN	PM25	2063	Phase 1	Generators	7.0E-05
PARKGEN3	PM25	2063	Phase 1	Generators	4.7E-05
OFF1EX	1,4-Dioxane	2029+	All	Lab Emissions	2.4E-04
OFF1EX	Acrylamide	2029+	All	Lab Emissions	1.4E-06
OFF1EX	Benzene	2029+	All	Lab Emissions	2.1E-04
OFF1EX	Carbon Tetrachloride	2029+	All	Lab Emissions	1.9E-05
OFF1EX	Chloroform	2029+	All	Lab Emissions	0.0025
OFF1EX	Dimethyl Formamide	2029+	All	Lab Emissions	5.1E-05
OFF1EX	Ethylene Dichloride	2029+	All	Lab Emissions	5.6E-06
OFF1EX	Formaldehyde	2029+	All	Lab Emissions	8.6E-06
OFF1EX	Glutaraldehyde	2029+	All	Lab Emissions	3.7E-06
OFF1EX	Hydrochloric Acid	2029+	All	Lab Emissions	8.7E-05
OFF1EX	Hexane	2029+	All	Lab Emissions	1.6E-05
OFF1EX	Hydrogen Fluoride	2029+	All	Lab Emissions	3.0E-07
OFF1EX	Hydrazine	2029+	All	Lab Emissions	1.1E-06
OFF1EX	Isopropyl Alcohol	2029+	All	Lab Emissions	3.4E-04
OFF1EX	Methanol	2029+	All	Lab Emissions	0.011
OFF1EX	Methyl Bromide	2029+	All	Lab Emissions	2.7E-05
OFF1EX	Methylene Chloride	2029+	All	Lab Emissions	0.010
OFF1EX	Perchloroethylene	2029+	All	Lab Emissions	9.1E-06
OFF1EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF1EX	Toluene	2029+	All	Lab Emissions	7.1E-04
OFF1EX	Triethylamine	2029+	All	Lab Emissions	6.0E-05
OFF1EX	Xylenes	2029+	All	Lab Emissions	2.5E-05
OFF2EX	1,4-Dioxane	2029+	All	Lab Emissions	3.0E-04
OFF2EX	Acrylamide	2029+	All	Lab Emissions	1.8E-06
OFF2EX	Benzene	2029+	All	Lab Emissions	2.6E-04
OFF2EX	Carbon Tetrachloride	2029+	All	Lab Emissions	2.3E-05
OFF2EX	Chloroform	2029+	All	Lab Emissions	0.0032
OFF2EX	Dimethyl Formamide	2029+	All	Lab Emissions	6.4E-05
OFF2EX	Ethylene Dichloride	2029+	All	Lab Emissions	7.0E-06
OFF2EX	Formaldehyde	2029+	All	Lab Emissions	1.1E-05
OFF2EX	Glutaraldehyde	2029+	All	Lab Emissions	4.6E-06
OFF2EX	Hydrochloric Acid	2029+	All	Lab Emissions	1.1E-04
OFF2EX	Hexane	2029+	All	Lab Emissions	2.0E-05
OFF2EX	Hydrogen Fluoride	2029+	All	Lab Emissions	3.7E-07
OFF2EX	Hydrazine	2029+	All	Lab Emissions	1.4E-06
OFF2EX	Isopropyl Alcohol	2029+	All	Lab Emissions	4.3E-04
OFF2EX	Methanol	2029+	All	Lab Emissions	0.013
OFF2EX	Methyl Bromide	2029+	All	Lab Emissions	3.4E-05
OFF2EX	Methylene Chloride	2029+	All	Lab Emissions	0.012
OFF2EX	Perchloroethylene	2029+	All	Lab Emissions	1.1E-05
OFF2EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF2EX	Toluene	2029+	All	Lab Emissions	8.9E-04
OFF2EX	Triethylamine	2029+	All	Lab Emissions	7.6E-05
OFF2EX	Xylenes	2029+	All	Lab Emissions	3.1E-05
OFF3EX	1,4-Dioxane	2029+	All	Lab Emissions	3.1E-04
OFF3EX	Acrylamide	2029+	All	Lab Emissions	1.8E-06
OFF3EX	Benzene	2029+	All	Lab Emissions	2.6E-04
OFF3EX	Carbon Tetrachloride	2029+	All	Lab Emissions	2.4E-05
OFF3EX	Chloroform	2029+	All	Lab Emissions	0.0032
OFF3EX	Dimethyl Formamide	2029+	All	Lab Emissions	6.5E-05
OFF3EX	Ethylene Dichloride	2029+	All	Lab Emissions	7.2E-06
OFF3EX	Formaldehyde	2029+	All	Lab Emissions	1.1E-05
OFF3EX	Glutaraldehyde	2029+	All	Lab Emissions	4.7E-06

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
OFF3EX	Hydrochloric Acid	2029+	All	Lab Emissions	1.1E-04
OFF3EX	Hexane	2029+	All	Lab Emissions	2.1E-05
OFF3EX	Hydrogen Fluoride	2029+	All	Lab Emissions	3.8E-07
OFF3EX	Hydrazine	2029+	All	Lab Emissions	1.4E-06
OFF3EX	Isopropyl Alcohol	2029+	All	Lab Emissions	4.3E-04
OFF3EX	Methanol	2029+	All	Lab Emissions	0.014
OFF3EX	Methyl Bromide	2029+	All	Lab Emissions	3.4E-05
OFF3EX	Methylene Chloride	2029+	All	Lab Emissions	0.013
OFF3EX	Perchloroethylene	2029+	All	Lab Emissions	1.2E-05
OFF3EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF3EX	Toluene	2029+	All	Lab Emissions	9.1E-04
OFF3EX	Triethylamine	2029+	All	Lab Emissions	7.7E-05
OFF3EX	Xylenes	2029+	All	Lab Emissions	3.2E-05
OFF4EX	1,4-Dioxane	2029+	All	Lab Emissions	2.8E-04
OFF4EX	Acrylamide	2029+	All	Lab Emissions	1.7E-06
OFF4EX	Benzene	2029+	All	Lab Emissions	2.5E-04
OFF4EX	Carbon Tetrachloride	2029+	All	Lab Emissions	2.2E-05
OFF4EX	Chloroform	2029+	All	Lab Emissions	0.0030
OFF4EX	Dimethyl Formamide	2029+	All	Lab Emissions	6.0E-05
OFF4EX	Ethylene Dichloride	2029+	All	Lab Emissions	6.6E-06
OFF4EX	Formaldehyde	2029+	All	Lab Emissions	1.0E-05
OFF4EX	Glutaraldehyde	2029+	All	Lab Emissions	4.4E-06
OFF4EX	Hydrochloric Acid	2029+	All	Lab Emissions	1.0E-04
OFF4EX	Hexane	2029+	All	Lab Emissions	1.9E-05
OFF4EX	Hydrogen Fluoride	2029+	All	Lab Emissions	3.5E-07
OFF4EX	Hydrazine	2029+	All	Lab Emissions	1.3E-06
OFF4EX	Isopropyl Alcohol	2029+	All	Lab Emissions	4.0E-04
OFF4EX	Methanol	2029+	All	Lab Emissions	0.013
OFF4EX	Methyl Bromide	2029+	All	Lab Emissions	3.2E-05
OFF4EX	Methylene Chloride	2029+	All	Lab Emissions	0.012
OFF4EX	Perchloroethylene	2029+	All	Lab Emissions	1.1E-05
OFF4EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF4EX	Toluene	2029+	All	Lab Emissions	8.4E-04
OFF4EX	Triethylamine	2029+	All	Lab Emissions	7.1E-05
OFF4EX	Xylenes	2029+	All	Lab Emissions	2.9E-05
OFF5EX	1,4-Dioxane	2029+	All	Lab Emissions	2.4E-04
OFF5EX	Acrylamide	2029+	All	Lab Emissions	1.4E-06
OFF5EX	Benzene	2029+	All	Lab Emissions	2.1E-04
OFF5EX	Carbon Tetrachloride	2029+	All	Lab Emissions	1.9E-05
OFF5EX	Chloroform	2029+	All	Lab Emissions	0.0025
OFF5EX	Dimethyl Formamide	2029+	All	Lab Emissions	5.1E-05
OFF5EX	Ethylene Dichloride	2029+	All	Lab Emissions	5.6E-06
OFF5EX	Formaldehyde	2029+	All	Lab Emissions	8.6E-06
OFF5EX	Glutaraldehyde	2029+	All	Lab Emissions	3.7E-06
OFF5EX	Hydrochloric Acid	2029+	All	Lab Emissions	8.7E-05
OFF5EX	Hexane	2029+	All	Lab Emissions	1.6E-05
OFF5EX	Hydrogen Fluoride	2029+	All	Lab Emissions	2.9E-07
OFF5EX	Hydrazine	2029+	All	Lab Emissions	1.1E-06
OFF5EX	Isopropyl Alcohol	2029+	All	Lab Emissions	3.4E-04
OFF5EX	Methanol	2029+	All	Lab Emissions	0.011
OFF5EX	Methyl Bromide	2029+	All	Lab Emissions	2.7E-05
OFF5EX	Methylene Chloride	2029+	All	Lab Emissions	0.010
OFF5EX	Perchloroethylene	2029+	All	Lab Emissions	9.1E-06
OFF5EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF5EX	Toluene	2029+	All	Lab Emissions	7.1E-04
OFF5EX	Triethylamine	2029+	All	Lab Emissions	6.0E-05
OFF5EX	Xylenes	2029+	All	Lab Emissions	2.5E-05
OFF1EX	1,4-Dioxane	2029+	All	Lab Emissions	0.0012
OFF1EX	Acrylamide	2029+	All	Lab Emissions	7.2E-06
OFF1EX	Benzene	2029+	All	Lab Emissions	0.0011
OFF1EX	Carbon Tetrachloride	2029+	All	Lab Emissions	9.6E-05
OFF1EX	Chloroform	2029+	All	Lab Emissions	0.013
OFF1EX	Dimethyl Formamide	2029+	All	Lab Emissions	2.6E-04
OFF1EX	Ethylene Dichloride	2029+	All	Lab Emissions	2.9E-05
OFF1EX	Formaldehyde	2029+	All	Lab Emissions	4.5E-05
OFF1EX	Glutaraldehyde	2029+	All	Lab Emissions	1.9E-05
OFF1EX	Hydrochloric Acid	2029+	All	Lab Emissions	4.5E-04
OFF1EX	Hexane	2029+	All	Lab Emissions	8.4E-05
OFF1EX	Hydrogen Fluoride	2029+	All	Lab Emissions	1.5E-06
OFF1EX	Hydrazine	2029+	All	Lab Emissions	5.7E-06
OFF1EX	Isopropyl Alcohol	2029+	All	Lab Emissions	0.0018
OFF1EX	Methanol	2029+	All	Lab Emissions	0.055
OFF1EX	Methyl Bromide	2029+	All	Lab Emissions	1.4E-04
OFF1EX	Methylene Chloride	2029+	All	Lab Emissions	0.051
OFF1EX	Perchloroethylene	2029+	All	Lab Emissions	4.7E-05
OFF1EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF1EX	Toluene	2029+	All	Lab Emissions	0.0037
OFF1EX	Triethylamine	2029+	All	Lab Emissions	3.1E-04
OFF1EX	Xylenes	2029+	All	Lab Emissions	1.3E-04
OFF2EX	1,4-Dioxane	2029+	All	Lab Emissions	0.0016
OFF2EX	Acrylamide	2029+	All	Lab Emissions	9.1E-06
OFF2EX	Benzene	2029+	All	Lab Emissions	0.0014
OFF2EX	Carbon Tetrachloride	2029+	All	Lab Emissions	1.2E-04
OFF2EX	Chloroform	2029+	All	Lab Emissions	0.016
OFF2EX	Dimethyl Formamide	2029+	All	Lab Emissions	3.3E-04
OFF2EX	Ethylene Dichloride	2029+	All	Lab Emissions	3.6E-05
OFF2EX	Formaldehyde	2029+	All	Lab Emissions	5.6E-05
OFF2EX	Glutaraldehyde	2029+	All	Lab Emissions	2.4E-05
OFF2EX	Hydrochloric Acid	2029+	All	Lab Emissions	5.7E-04
OFF2EX	Hexane	2029+	All	Lab Emissions	1.0E-04
OFF2EX	Hydrogen Fluoride	2029+	All	Lab Emissions	1.9E-06
OFF2EX	Hydrazine	2029+	All	Lab Emissions	7.1E-06
OFF2EX	Isopropyl Alcohol	2029+	All	Lab Emissions	0.0022
OFF2EX	Methanol	2029+	All	Lab Emissions	0.069
OFF2EX	Methyl Bromide	2029+	All	Lab Emissions	1.7E-04
OFF2EX	Methylene Chloride	2029+	All	Lab Emissions	0.064
OFF2EX	Perchloroethylene	2029+	All	Lab Emissions	5.9E-05
OFF2EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF2EX	Toluene	2029+	All	Lab Emissions	0.0046
OFF2EX	Triethylamine	2029+	All	Lab Emissions	3.9E-04
OFF2EX	Xylenes	2029+	All	Lab Emissions	1.6E-04
OFF3EX	1,4-Dioxane	2029+	All	Lab Emissions	0.0016
OFF3EX	Acrylamide	2029+	All	Lab Emissions	9.2E-06
OFF3EX	Benzene	2029+	All	Lab Emissions	0.0014
OFF3EX	Carbon Tetrachloride	2029+	All	Lab Emissions	1.2E-04
OFF3EX	Chloroform	2029+	All	Lab Emissions	0.017
OFF3EX	Dimethyl Formamide	2029+	All	Lab Emissions	3.4E-04
OFF3EX	Ethylene Dichloride	2029+	All	Lab Emissions	3.7E-05
OFF3EX	Formaldehyde	2029+	All	Lab Emissions	5.7E-05
OFF3EX	Glutaraldehyde	2029+	All	Lab Emissions	2.4E-05
OFF3EX	Hydrochloric Acid	2029+	All	Lab Emissions	5.8E-04
OFF3EX	Hexane	2029+	All	Lab Emissions	1.1E-04
OFF3EX	Hydrogen Fluoride	2029+	All	Lab Emissions	2.0E-06
OFF3EX	Hydrazine	2029+	All	Lab Emissions	7.2E-06
OFF3EX	Isopropyl Alcohol	2029+	All	Lab Emissions	0.0022
OFF3EX	Methanol	2029+	All	Lab Emissions	0.070
OFF3EX	Methyl Bromide	2029+	All	Lab Emissions	1.8E-04
OFF3EX	Methylene Chloride	2029+	All	Lab Emissions	0.065
OFF3EX	Perchloroethylene	2029+	All	Lab Emissions	6.0E-05
OFF3EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF3EX	Toluene	2029+	All	Lab Emissions	0.0047
OFF3EX	Triethylamine	2029+	All	Lab Emissions	4.0E-04
OFF3EX	Xylenes	2029+	All	Lab Emissions	1.6E-04
OFF4EX	1,4-Dioxane	2029+	All	Lab Emissions	0.0015
OFF4EX	Acrylamide	2029+	All	Lab Emissions	8.6E-06
OFF4EX	Benzene	2029+	All	Lab Emissions	0.0013
OFF4EX	Carbon Tetrachloride	2029+	All	Lab Emissions	1.1E-04
OFF4EX	Chloroform	2029+	All	Lab Emissions	0.015
OFF4EX	Dimethyl Formamide	2029+	All	Lab Emissions	3.1E-04

Appendix B.2
Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
OFF4EX	Ethylene Dichloride	2029+	All	Lab Emissions	3.4E-05
OFF4EX	Formaldehyde	2029+	All	Lab Emissions	5.3E-05
OFF4EX	Glutaraldehyde	2029+	All	Lab Emissions	2.3E-05
OFF4EX	Hydrochloric Acid	2029+	All	Lab Emissions	5.3E-04
OFF4EX	Hexane	2029+	All	Lab Emissions	9.9E-05
OFF4EX	Hydrogen Fluoride	2029+	All	Lab Emissions	1.8E-06
OFF4EX	Hydrazine	2029+	All	Lab Emissions	6.7E-06
OFF4EX	Isopropyl Alcohol	2029+	All	Lab Emissions	0.0021
OFF4EX	Methanol	2029+	All	Lab Emissions	0.065
OFF4EX	Methyl Bromide	2029+	All	Lab Emissions	1.6E-04
OFF4EX	Methylene Chloride	2029+	All	Lab Emissions	0.061
OFF4EX	Perchloroethylene	2029+	All	Lab Emissions	5.5E-05
OFF4EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF4EX	Toluene	2029+	All	Lab Emissions	0.0044
OFF4EX	Triethylamine	2029+	All	Lab Emissions	3.7E-04
OFF4EX	Xylenes	2029+	All	Lab Emissions	1.5E-04
OFF5EX	1,4-Dioxane	2029+	All	Lab Emissions	0.0012
OFF5EX	Acrylamide	2029+	All	Lab Emissions	7.2E-06
OFF5EX	Benzene	2029+	All	Lab Emissions	0.0011
OFF5EX	Carbon Tetrachloride	2029+	All	Lab Emissions	9.6E-05
OFF5EX	Chloroform	2029+	All	Lab Emissions	0.013
OFF5EX	Dimethyl Formamide	2029+	All	Lab Emissions	2.6E-04
OFF5EX	Ethylene Dichloride	2029+	All	Lab Emissions	2.9E-05
OFF5EX	Formaldehyde	2029+	All	Lab Emissions	4.5E-05
OFF5EX	Glutaraldehyde	2029+	All	Lab Emissions	1.9E-05
OFF5EX	Hydrochloric Acid	2029+	All	Lab Emissions	4.5E-04
OFF5EX	Hexane	2029+	All	Lab Emissions	8.4E-05
OFF5EX	Hydrogen Fluoride	2029+	All	Lab Emissions	1.5E-06
OFF5EX	Hydrazine	2029+	All	Lab Emissions	5.7E-06
OFF5EX	Isopropyl Alcohol	2029+	All	Lab Emissions	0.0018
OFF5EX	Methanol	2029+	All	Lab Emissions	0.055
OFF5EX	Methyl Bromide	2029+	All	Lab Emissions	1.4E-04
OFF5EX	Methylene Chloride	2029+	All	Lab Emissions	0.051
OFF5EX	Perchloroethylene	2029+	All	Lab Emissions	4.7E-05
OFF5EX	Trichloroethylene	2029+	All	Lab Emissions	0
OFF5EX	Toluene	2029+	All	Lab Emissions	0.0037
OFF5EX	Triethylamine	2029+	All	Lab Emissions	3.1E-04
OFF5EX	Xylenes	2029+	All	Lab Emissions	1.3E-04
MID1	MOBILE-CANCER	2029+	All	Traffic	8.1E-07
MID2	MOBILE-CANCER	2029+	All	Traffic	3.8E-07
MID3	MOBILE-CANCER	2029+	All	Traffic	7.7E-07
MID4	MOBILE-CANCER	2029+	All	Traffic	9.7E-07
RAV1	MOBILE-CANCER	2029+	All	Traffic	3.8E-07
RAV2	MOBILE-CANCER	2029+	All	Traffic	9.2E-08
RAV3	MOBILE-CANCER	2029+	All	Traffic	1.3E-07
RAV4	MOBILE-CANCER	2029+	All	Traffic	1.8E-07
RAV5	MOBILE-CANCER	2029+	All	Traffic	2.0E-07
RING	MOBILE-CANCER	2029+	All	Traffic	0
LAUREL1	MOBILE-CANCER	2029+	All	Traffic	1.1E-07
LAUREL2	MOBILE-CANCER	2029+	All	Traffic	2.9E-07
RES	MOBILE-CANCER	2029+	All	Traffic	4.1E-07
LOOP	MOBILE-CANCER	2029+	All	Traffic	5.2E-06
MID1	MOBILE-CHRONIC	2029+	All	Traffic	1.8E-06
MID2	MOBILE-CHRONIC	2029+	All	Traffic	8.6E-07
MID3	MOBILE-CHRONIC	2029+	All	Traffic	1.7E-06
MID4	MOBILE-CHRONIC	2029+	All	Traffic	2.2E-06
RAV1	MOBILE-CHRONIC	2029+	All	Traffic	8.5E-07
RAV2	MOBILE-CHRONIC	2029+	All	Traffic	2.1E-07
RAV3	MOBILE-CHRONIC	2029+	All	Traffic	2.9E-07
RAV4	MOBILE-CHRONIC	2029+	All	Traffic	4.1E-07
RAV5	MOBILE-CHRONIC	2029+	All	Traffic	4.5E-07
RING	MOBILE-CHRONIC	2029+	All	Traffic	0
LAUREL1	MOBILE-CHRONIC	2029+	All	Traffic	2.4E-07
LAUREL2	MOBILE-CHRONIC	2029+	All	Traffic	6.6E-07
RES	MOBILE-CHRONIC	2029+	All	Traffic	9.3E-07
LOOP	MOBILE-CHRONIC	2029+	All	Traffic	1.2E-05
MID1	PM25	2029+	All	Traffic	1.8E-04
MID2	PM25	2029+	All	Traffic	8.4E-05
MID3	PM25	2029+	All	Traffic	1.7E-04
MID4	PM25	2029+	All	Traffic	2.1E-04
RAV1	PM25	2029+	All	Traffic	8.3E-05
RAV2	PM25	2029+	All	Traffic	2.0E-05
RAV3	PM25	2029+	All	Traffic	2.9E-05
RAV4	PM25	2029+	All	Traffic	4.0E-05
RAV5	PM25	2029+	All	Traffic	4.5E-05
RING	PM25	2029+	All	Traffic	0
LAUREL1	PM25	2029+	All	Traffic	2.4E-05
LAUREL2	PM25	2029+	All	Traffic	6.4E-05
RES	PM25	2029+	All	Traffic	9.1E-05
LOOP	PM25	2029+	All	Traffic	0.0012

Notes:
MOBILE-CANCER refers to a weighted cancer risk toxicity value for the speciation of TACs from gasoline.
MOBILE-CANCER refers to a weighted chronic HI risk toxicity value for the speciation of TACs from gasoline.

APPENDIX C
Project Excess Lifetime Cancer Risk, Chronic HI, and Acute HI for all Scenarios

Appendix C
Project Excess Lifetime Cancer Risk, Chronic HI, and Acute HI for all Scenarios
Parkline
Menlo Park, CA

Cancer Risk

Receptor Type	Excess Lifetime Cancer Risk (in a million)			
	S1	S2	S3	S4
Phase 1 Resident	--	6.0	6.0	4.5
Phase 3 Resident	--	--	--	4.7
Phase 1 Recreational	--	1.1	1.0	1.1
Phase 1 Worker	--	2.3	2.3	2.3
Phase 2 Worker	--	--	4.6	4.5
Offsite Resident	3.4	4.1	4.0	3.8
Offsite Worker	2.1	2.5	2.4	2.4
Offsite Recreational	1.1	1.6	1.6	1.6
Offsite High school	-0.019	0.09	0.088	0.13
Offsite Pre-school	0.12	0.23	0.24	0.25
Offsite Daycare	1.9	2.3	2.1	2.5

Chronic HI Risk

Receptor Type	Chronic Hazard Index			
	S1	S2	S3	S4
Phase 1 Resident	--	0.0049	0.0028	0.0025
Phase 3 Resident	--	--	--	0.0027
Phase 1 Recreational	--	0.0024	0.0024	0.0023
Phase 1 Worker	--	0.010	0.0095	0.0095
Phase 2 Worker	--	--	0.017	0.017
Offsite Resident	0.0035	0.0035	0.0035	0.0035
Offsite Worker	0.0087	0.0086	0.0085	0.0081
Offsite Recreational	0.0025	0.0025	0.0023	0.0022
Offsite High school	8.7E-04	9.3E-04	9.3E-04	9.3E-04
Offsite Pre-school	4.9E-04	4.7E-04	4.7E-04	4.6E-04
Offsite Daycare	0.0020	0.0016	0.0016	0.0016

Acute HI Risk

Receptor Type	Acute Hazard Index			
	S1	S2	S3	S4
Phase 1 Resident	--	0.043	0.043	0.043
Phase 3 Resident	--	--	--	0.043
Phase 1 Recreational	--	0.053	0.053	0.053
Phase 1 Worker	--	0.068	0.068	0.068
Phase 2 Worker	--	--	0.078	0.078
Offsite Resident	0.041	0.041	0.041	0.041
Offsite Worker	0.058	0.058	0.058	0.058
Offsite Recreational	0.037	0.037	0.037	0.037
Offsite High school	0.033	0.033	0.033	0.033
Offsite Pre-school	0.031	0.031	0.031	0.031
Offsite Daycare	0.036	0.036	0.036	0.036

Mitigated PM$_{2.5}$ Concentration

Receptor Type	PM$_{2.5}$ Concentration (ug/m^3)			
	S1	S2	S3	S4
Phase 1 Resident	--	0.075	0.074	0.072
Phase 3 Resident	--	--	--	0.052
Phase 1 Recreational	--	0.044	0.044	0.043
Phase 1 Worker	--	0.076	0.075	0.075
Phase 2 Worker	--	--	0.071	0.070
Offsite Resident	-0.23	0.052	0.052	0.052
Offsite Worker	0.047	0.066	0.066	0.065
Offsite Recreational	0.017	0.016	0.015	0.013
Offsite High school	-0.003	0.016	0.016	0.016
Offsite Pre-school	0.003	0.0075	0.0074	0.0074
Offsite Daycare	0.005	0.030	0.030	0.029

Unmitigated PM$_{2.5}$ Concentration

Receptor Type	PM$_{2.5}$ Concentration (ug/m^3)			
	S1	S2	S3	S4
Phase 1 Resident	--	0.075	0.076	0.072
Phase 3 Resident	--	--	--	0.052
Phase 1 Recreational	--	0.044	0.044	0.043
Phase 1 Worker	--	0.076	0.076	0.075
Phase 2 Worker	--	--	0.071	0.070
Offsite Resident	-0.15	0.052	0.052	0.052
Offsite Worker	0.15	0.066	0.066	0.065
Offsite Recreational	0.056	0.016	0.017	0.013
Offsite High school	0.000	0.016	0.016	0.016
Offsite Pre-school	0.010	0.0075	0.0075	0.0074
Offsite Daycare	0.08	0.030	0.031	0.029

APPENDIX D
Transportation Data Request

Instructions: Please fill in all cells highlighted in yellow.

Daily Trips Rates and VMT for Existing Conditions

Land Use[1]		Land Use Quantity[2]	Land Use Unit	Daily Project Trip Rates (Weekday) (trips/1,000 s.f.) or (trips/d.u.)	Daily Project VMT (Weekday) (including reductions for passby and diverted trips)	TDM Reduction %	Fleet type if available[4]
Existing Conditions	General Office	1,094	1,000 sq.ft.	0.47	6,263	--	--

Existing VMT does not include Buildings P, S, T

Daily Trips Rates and VMT for Proposed Project

Land Use[1]		Land Use Quantity[2]	Land Use Unit	Daily Project Trip Rates (Weekday) (trips/1,000 s.f.) or (trips/d.u.)	Daily Project VMT (Weekday) (including reductions for passby and diverted trips)	TDM Reduction %	Fleet type if available[4]
		Full Buildout (Phases 1, 2 & 3)		Full Buildout (Phases 1, 2 & 3)	Full Buildout (Phases 1, 2 & 3)		
Proposed Project	Assumed as 100% R&D	1,094	1,000 sq.ft.	7.92	104,729	25%	--
	Multifamily Housing (Mid-Rise)	431	D.U.	3.25	12,323	25%	--
	Single-Family Attached Housing	19	D.U.	5.17	866	25%	--
	Affordable Housing	100	D.U.	3.44	3,026	25%	--
	Soccer Complex	1	field	68.00	--	--	--

Project VMT does not include Buildings P, S, T; The Office/R&D portion is assumed as 100% R&D for a conservative analysis.

Daily trip rates and VMT estimates already included the 25% TDM reduction

Daily Trips Rates and VMT for Increased Residential Variant[5]

Land Use[1]		Land Use Quantity[2]	Land Use Unit	Daily Project Trip Rates (Weekday) (trips/1,000 s.f.) or (trips/d.u.)	Daily Project VMT (Weekday) (including reductions for passby and diverted trips)	TDM Reduction %	Fleet type if available[4]
		Full Buildout (Phases 1, 2 & 3)		Full Buildout (Phases 1, 2 & 3)	Full Buildout (Phases 1, 2 & 3)		
Increased Residential Variant[5]	Assumed as 100% R&D	1,094	1,000 sq.ft.	7.92	104,729	25%	--
	Multifamily Housing (Mid-Rise)	700	D.U.	3.25	20,014	25%	--
	Affordable Housing	100	D.U.	3.44	3,026	25%	--
	Soccer Complex	1	field	68.00	--	--	--

Project VMT does not include Buildings P, S, T; The Office/R&D portion is assumed as 100% R&D for a conservative analysis.

Daily trip rates and VMT estimates already included the 25% TDM reduction

Notes:

[1] Land use types identified from project description and Notice of Preparation. Add additional land use types as applicable.

[2] Please fill in the land use sizes used to derive daily trips and daily VMT.

[3] Trip rates for end of Phase 1 or Phase 2 only required if Hexagon is analyzing phased trip rates. If phased trips are not considered in transportation, we will assume the full buildout trip generation rates apply at the end of Phase

[4] If fleet type information is known (e.g., 100% passenger vehicles, or 5% trucks) please provide.

[5] Increased Residential Variant refers to the 700-unit residential scenario.

Instructions

Please provide background traffic volumes for any roadway with over 10,000 vehicles per day in the vicinity of the project.

Roadway[1]	Segment Limit[2]		Posted Speed Limit (mph)	Vehicles Per Day	Fleet type if available[3]
Middlefield Road	Willow Road	Ravenswood Avenue	35	21,233	99% Passenger Vehicles and 1% Trucks
Middlefield Road	Woodland Avenue	Willow Road	25	23,531	98% Passenger Vehicles and 2% Trucks
Willow Road	Gilbert Avenue	Coleman Avenue	25	26,099	98% Passenger Vehicles and 2% Trucks
Willow Road	Coleman Avenue	Durham Street	25	28,043	98% Passenger Vehicles and 2% Trucks
Willow Road	Durham Street	Bay Road	25	32,340	99% Passenger Vehicles and 1% Trucks
El Camino Real	Sand Hill Road	Middle Avenue	35	51,922	99% Passenger Vehicles and 1% Trucks
El Camino Real	Middle Avenue	Ravenswood Avenue	35	54,777	99% Passenger Vehicles and 1% Trucks
El Camino Real	Ravenswood Avenue	Oak Grove Avenue	35	41,268	99% Passenger Vehicles and 1% Trucks
El Camino Real	Oak Grove Avenue	Valparaiso Avenue	35	39,093	99% Passenger Vehicles and 1% Trucks
El Camino Real	Valparaiso Avenue	Encinal Avenue	35	44,891	99% Passenger Vehicles and 1% Trucks
Marsh Road	Bay Road	Bohannan Drive	35	33,321	99% Passenger Vehicles and 1% Trucks
Marsh Road	Bohannan Drive	Scott Drive	35	37,598	99% Passenger Vehicles and 1% Trucks
Marsh Road	US 101 SB Ramps	US 101 NB Ramps	35	62,184	99% Passenger Vehicles and 1% Trucks
San Hill Road	Santa Cruz Avenue	Oak Avenue	40	32,452	99% Passenger Vehicles and 1% Trucks
US 101 NB	University Avenue	Willow Road	65	124,035	97% Passenger Vehicles and 3% Trucks
US 101 NB	Willow Road	Marsh Road	65	152,084	98% Passenger Vehicles and 2% Trucks
US 101 NB	Marsh Road	Woodside Road	65	126,176	98% Passenger Vehicles and 2% Trucks
US 101 SB	Woodside Road	Marsh Road	65	124,327	98% Passenger Vehicles and 2% Trucks
US 101 SB	Marsh Road	Willow Road	65	129,565	98% Passenger Vehicles and 2% Trucks
US 101 SB	Willow Road	University Avenue	65	107,446	98% Passenger Vehicles and 2% Trucks
Ravenswood Avenu	Laurel Street	Middlefield Road	30	9,959	99% Passenger Vehicles and 1% Trucks
Laurel Street	Ravenswood Avenue	Burgess Drive	25	6,495	99% Passenger Vehicles and 1% Trucks

Note from Hexagon: fleet type estimated using the travel demand model

Notes:

[1] If additional link locations (i.e. modeled roadways) are needed, please add them in.

[2] Segment limits are the cross streets on each link. Please add additional rows to include all necessary segment limits.

[3] If fleet type information is known (e.g., 100% passenger vehicles, or 5% trucks) please provide.

Instructions:

Please provide segment limits for each link location listed below, in addition to traffic volumes at full buildout and the fleet make-up of the traffic. Please add additional link locations and rows as needed.

Roadway[1]	Segment Limits[2]			Net New Traffic Volumes Full Buildout (Vehicles/day)		Fleet make-up if available[4]
			Posted Speed Limit (mph)	Proposed Project	Increased Residential Variant[3]	
Middlefield Road	Willow Road	Ravenswood Avenue	35	3,432	3,544	--
Middlefield Road	Woodland Avenue	Willow Road	25	702	756	--
Willow Road	Gilbert Avenue	Coleman Avenue	25	3,250	3,517	--
Willow Road	Coleman Avenue	Durham Street	25	3,250	3,517	--
Willow Road	Durham Street	Bay Road	25	3,199	3,464	--
El Camino Real	Sand Hill Road	Middle Avenue	35	1,552	1,670	--
El Camino Real	Middle Avenue	Ravenswood Avenue	35	1,552	1,670	--
El Camino Real	Ravenswood Avenue	Oak Grove Avenue	35	798	866	--
El Camino Real	Oak Grove Avenue	Valparaiso Avenue	35	979	1,061	--
El Camino Real	Valparaiso Avenue	Encinal Avenue	35	984	1,064	--
Marsh Road	Bay Road	Bohannan Drive	35	950	1,044	--
Marsh Road	Bohannan Drive	Scott Drive	35	649	719	--
Marsh Road	US 101 SB Ramps	US 101 NB Ramps	35	500	552	--
San Hill Road	Santa Cruz Avenue	Oak Avenue	40	265	290	--
US 101 NB	University Avenue	Willow Road	65	1,104	1,190	--
US 101 NB	Willow Road	Marsh Road	65	202	204	--
US 101 NB	Marsh Road	Woodside Road	65	502	541	--
US 101 SB	Woodside Road	Marsh Road	65	502	541	--
US 101 SB	Marsh Road	Willow Road	65	353	374	--
US 101 SB	Willow Road	University Avenue	65	1,104	1,190	--
Ravenswood Avenue	Laurel Street	Middlefield Road	30	1,375	1,608	--
Laurel Street	Ravenswood Avenue	Burgess Drive	25	476	637	--

HEX: net project traffic already accounted for the 25% TDM reduciton

Notes:

1. If additional link locations (i.e. modeled roadways) are needed, please add them in.
2. Segment limits are the cross streets on each link. Please add additional rows to include all necessary segment limits.
3. If volumes for the increased residential variant is known, please populate this column.
4. If fleet type information is known (e.g., 100% passenger vehicles, or 5% trucks) please provide.

Appendix 3.5-1

Project Assessment of Energy Use

RAMBOLL

ENVIRONMENT
& HEALTH

MEMORANDUM

Date: January 26, 2024

To: Mark Murray, Lane Partners

From: Michael Keinath
Sarah Manzano

Subject: **Assessment of Energy Use for the Parkline Project**
Menlo Park, CA

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Ramboll conducted an assessment of energy use for the construction and operation of the proposed mixed-use development (the “Project” or “Parkline”) located at 333 Ravenswood Avenue in the City of Menlo Park (the “City”) for Lane Partners (the “Project Applicant”). The scope and methods used in this assessment are consistent with recommended analyses for projects requiring review under the California Environmental Quality Act (CEQA). The analysis in this report will be independently reviewed by the City of Menlo Park, California (referred to as the "City") and peer reviewed by the City's environmental consultant for possible incorporation into the Environmental Impact Report (EIR) for the Project. Assumptions used herein are consistent with assumptions used in our Air Quality, Greenhouse Gas, Transportation, and Health Risk Assessment Technical Report for the Parkline Project.

The Project results in 69,504 MMBTU per year of energy consumption for construction, and results in a net reduction of 98,372 MMBTU per year in energy consumption for ongoing operations due largely to the decommissioning of the existing cogeneration plant.

1. METHODOLOGY FOR DEVELOPMENT OF ENERGY PROJECTIONS

Table 1 lists the sources for which energy use estimates from the Project are quantified.

1.1 Baseline Energy Use

To evaluate the Proposed Project’s energy consumption, energy consumption was estimated and presented under baseline and future operational conditions. The existing land use at the Project site is research and development operations and a cogeneration power facility; sources of energy use for the existing site include mobile energy use for traffic associated with the existing site, building energy use for the existing buildings, emergency generator energy use for the existing generators, water energy use, along with energy generated at the cogeneration facility as summarized in **Table 1**.

1.1.1 Baseline Natural Gas and Electricity Energy Use

Under existing conditions, the site has its own cogeneration facility that uses natural gas to produce electricity that powers the onsite buildings and steam that is used to heat the buildings. Electricity from the grid is also used and natural gas is also purchased from PG&E to be used separately from the cogeneration facility. Utility statements and cogeneration electricity logs for the time period between September 2021 and August 2022 were used to estimate baseline annual energy use.

Under baseline conditions, the existing site exports surplus electricity to the PG&E grid when the on-site cogeneration plant generates excess electricity, and imports electricity from the PG&E grid when operation of the existing buildings results in greater electricity demand on campus than generated by cogeneration plant.

The Project would demolish nearly all buildings on SRI International's Campus, including the cogeneration facility, but excluding Buildings P, S, and T, which would remain onsite and be operated by SRI International and its tenants, unaffiliated with the Project. In the absence of the cogeneration plant, the PG&E grid would need to generate additional electricity to replace the electricity that would no longer be exported from the cogeneration plant. Therefore, to provide for a conservative analysis, the baseline energy calculations shown in **Summary Table A** accounts for energy needed to be imported from PG&E for SRI's continued operations of Buildings P, S, and T due to removal of the cogeneration plant. Electricity usage for Buildings P, S, and T was calculated by multiplying the electricity generated at the cogeneration plant for the campus by the ratio of the square footage of Buildings P, S, and T and the total existing site square footage. Natural gas usage for Buildings P, S, and T was estimated using CalEEMod 2022.1.1.3 factors for annual energy use for Research & Development land uses in EDFZ 1, as reported in Table G-28 in Appendix G of the CalEEMod User Guide.

Table 2 summarizes the natural gas used by the cogeneration plant, along with the total electricity produced by the cogeneration plant and resulting electricity exported. **Table 2** also shows the natural gas and electricity purchased from PG&E separate from the cogeneration facility and the total electricity used onsite, both for the existing buildings to be demolished and the buildings to be retained (Building P, S, T).

1.1.2 Baseline Water Energy Use

Electricity is used to supply, treat, and distribute potable water and treat the resulting wastewater needed for Project operations. Total water usage rates for baseline operations were calculated from Menlo Park Municipal Water utility statements provided by the Project Applicant. Those utility statements do not specify indoor versus outdoor water usage. Therefore, to separate indoor and outdoor water usage rates in order to align calculations with the California Emissions Estimator Model (CalEEMod®), existing outdoor water usage rates were estimated using landscaped area ratios and project water usage rates. The project water usage rates were multiplied by the ratio of existing landscaping area and project landscaping area to obtain the existing outdoor water usage rates. Indoor water usage rates were calculated by subtracting the outdoor water usage from the total water use from utility statements. Energy use associated with water consumption and wastewater treatment was quantified using a methodology consistent with CalEEMod® 2022.[1] Based on these calculations, the electricity from water use is summarized in **Table 3.**

1.1.3 Baseline Mobile Energy Use

Fuel usage for baseline operations was estimated from on-road VMT by employees commuting to the Project site. Trip generation rates and total VMT for baseline operation were prepared by the Transportation Engineer. For detailed calculations of VMT, refer to the Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report.

Fuel usage for baseline operations was estimated using an average miles-per-gallon (mpg) obtained from the California on-road EMission FACtor 2021 (EMFAC2021) model for the fleet mix corresponding to the vehicle category and fuel type (gasoline, diesel, or electric). **Table 4** shows detailed vehicle fuel usage estimates for the baseline.

1.1.4 Stationary Source Energy Use

Diesel fuel usage from diesel combustion resulting from maintenance, testing, and emergency use of emergency generators is included in this analysis. The baseline conditions assume removal of 3 existing emergency generators. Emergency generators at buildings P, S and T and the South generator are assumed to remain unchanged, so are not considered in calculating energy use for the baseline or the Project. Operation for routine maintenance, testing, and emergency operation is conservatively assumed to be 50 hours per year for each emergency generator based on historical records of generator runtime at the site.[1]

Fuel usage was estimated using methodology consistent with Environmental Protection Agency (EPA) AP-42 Section 3.4 for Large Stationary and All Stationary Dual Fuel Engines, which provides the average brake-specific fuel consumption rates for large stationary diesel engines. Emergency generator size and tier were provided by the Project Applicant. **Table 5** provides details on fuel usage estimates from emergency generators for the baseline and Project.

1.2 Project Construction Energy Use

Construction activities related to the proposed Project include the demolition of most existing structures (except buildings P, S, and T), site preparation, grading of the site, building construction, architectural coating, and paving.

Sources of energy use from construction are shown in **Table 1**. Energy use calculations associated with off-road construction equipment are based on the construction schedule, type and quantity of equipment and hours of operation for each piece of equipment based on Project-specific information provided by the Project Applicant. All off-road construction equipment is diesel-fueled based on Project-specific information except for the electric concrete/industrial saws. Fuel use from off-road construction equipment is estimated using methodology consistent with EPA AP-42 Section 3.4 for Large Stationary and All Stationary Dual Fuel Engines. **Table 6** shows the anticipated fuel usage from off-road equipment for Project construction.

Energy consumption from on-road construction vehicles, in the form of fuel use, was calculated based on the number of trips and vehicle miles travelled (VMT) along with fuel efficiency data derived from EMFAC2021. Fuel efficiency data for on-road construction vehicles was calculated by dividing fuel consumption by the VMT for each fleet, as reported by EMFAC2021. Passenger vehicles for construction workers are assumed to use gasoline. On-road construction vehicles such as vendors and trucks for demolition material, soil, and other material hauling are assumed to use diesel fuel. Trip counts were provided by the Project Applicant for hauling, worker and vendor trips, and CalEEMod® defaults are used for worker, vendor, and haul trip lengths. **Table 7** shows the anticipated fuel consumption from on-road construction vehicles for the Project.

Total construction energy use for the Project is summarized in **Table 8**. For comparison purposes, all forms of energy use are converted to units of metric million BTU per year (MMBTU/yr) in **Table 8**.

1.3 Project Operational Energy Use

Detailed calculations for net Project operational energy uses are further explained below. Sources for operational energy use include building energy use, water energy use, mobile energy use, and

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[1] Generator runtime logs were obtained from SRI International on April 27, 2023 and recorded a maximum annual operational time of 41.3 hours for both testing and emergency use for any generator over the previous four years.

stationary source energy use, as shown in **Table 1**.

The Project would accommodate either office or R&D uses or a combination of both in the Office/R&D District. Office and R&D land uses have different impacts for air quality and GHG impact categories. Therefore, to capture maximum possible impacts from the Project, Ramboll evaluated the 100% R&D land use scenario, as it resulted in higher impacts in each impact category. As discussed in more detail in the CEQA Air Quality, Greenhouse Gas and Health Risk Assessment Technical Report, all air quality and GHG impact categories were conservatively evaluated by assuming the 100% R&D land use scenarios. The Project would be entirely electrically powered, and would purchase 100-percent carbon free electricity, consistent with code requirements.

The 100% office and 100% R&D scenario would require virtually the same construction activity, so a distinction between the two scenarios was not required for construction impacts.

1.3.1 Building Energy Use

The Project buildings would receive energy from electricity. There would not be natural gas connections at any of the new buildings associated with the Project.

Project building energy usage was obtained from the Building Energy Preliminary Estimate Memo received on June 29, 2023 (updated: December 2023). Since the Project will use exclusively electricity, no natural gas usage is expected. **Table 9** shows the annual electricity use for the Project buildings. Baseline electricity use for the site is shown for reference.

The Project’s operational energy usage includes parking uses. Electricity usages for parking land use types account for both building energy use and electric vehicle charging, as described in the Building Energy Preliminary Estimate Memo dated June 29, 2023 (updated: December 2023). Electric vehicle charging accounts for 58.8% of the estimated parking electricity usage, which is subject to change depending on demand. As discussed below, the fuel use estimates associated with passenger vehicles assume a low percentage of electric vehicles to provide conservative estimates of fossil fuels. However, if vehicles are electric instead of fossil fueled, fossil fuel will decrease at a rate of 0.034 gallons per mile and electricity would increase at a rate of 0.37 kWh per mile.

1.3.2 Water Energy Use

Water usage rates were provided in the Building Energy Preliminary Estimate Memo received on June 29, 2023 (updated: December 2023), for Project operations. Consistent with the calculation of baseline usage, energy use associated with water consumption and wastewater treatment for the Project was quantified using a methodology consistent with CalEEMod 2022.1. The electricity from water use is summarized in **Table 3**.

1.3.3 Mobile Energy Use

Fuel usage for Project operations was estimated from on-road VMT by employees commuting to the Project site. Trip generation rates and total VMT for Project operation were prepared by the Transportation Engineer and shown in Attachment A. For detailed calculations of VMT, refer to the Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report

Fuel usage for Project operations was estimated using an average miles-per-gallon (mpg) obtained from EMFAC2021 for the fleet mix corresponding to the vehicle category and fuel type (gasoline, diesel, or electricity). **Table 4** shows detailed vehicle fuel usage estimates for the Project.

1.3.4 Stationary Source Energy Use

Diesel fuel usage from diesel combustion resulting from testing, maintenance and emergency use of emergency generators is included in this analysis. Project operation includes 13 emergency generators.[2] Operation for routine maintenance, testing, and emergency operation is conservatively assumed to be 50 hours per year for each existing emergency generator that would be removed based on historical records of generator runtime at the site.[3]

Consistent with the methodology used in the baseline usage, fuel usage was estimated using methodology consistent with AP-42 Section 3.4 for Large Stationary and All Stationary Dual Fuel Engines, which provides the average brake-specific fuel consumption rates for large stationary diesel engines. Emergency engine size and tier were provided by the Project Applicant. **Table 5** provide details on fuel usage estimates from emergency engines for the Project.

1.3.5 Summary of Net Project Operational and Construction Energy Consumption

Summary Table A below summarizes the baseline energy use, operational energy use with the Project, and energy use associated with Project construction. More detail can be found in **Table 10,** which summarizes baseline conditions and Full Project Buildout operational energy use by source and the change in energy use as compared between the baseline conditions and Full Project Buildout. Construction details can be found in **Table 8**.

Energy use is presented in mega-watt hours (MWh) for electricity, metric million British thermal units (MMBtu) for natural gas, and gallons for gasoline and diesel. To compare the total energy use for the Project and Baseline, the total energy use for all energy sources is converted from their respective units to MMBtu, which is also summarized in Summary Table A below. Energy use from electricity, gasoline and diesel were converted to MMBtu using the factors of 3.412 MMBtu/MWh, 0.12 MMBtu/gallon gasoline, and 0.14 MMBtu/gallon diesel, respectively.

Summary Table A. Summary of Net Project Energy Use

	Electricity	Natural Gas	Gasoline	Diesel	Total Energy Use
Units for Baseline and Project	(MWh/yr)	(MMBtu/yr)	(gallons/yr)	(gallons/yr)	(MMBtu/yr)
Baseline Operations	-3,182	450,956	65,283	9,164	449,206
Project Operations	58,400	0	1,107,380	134,114	350,834
Project Net Change	61,582	-450,956	1,042,098	124,950	-98,372
Units for Construction	(MWh)	(MMBtu)	(gallons)	(gallons)	(MMBtu)
Project Construction	122	0	140,814	395,078	71,631

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[2] PAE. Summary of Stationary Equipment Memo. April 18, 2023.

[3] Generator runtime logs were obtained from SRI International on April 27, 2023 and recorded a maximum operational time of 41.3 hours for both testing and emergency use for any generator over the previous four years.

TABLES

Table 1
Energy Use Sources
Parkline
Menlo Park, California

Type	Source	Description
Baseline	On-Road Mobile Sources	Diesel hauling vehicle fuel use, and gasoline worker vehicle fuel use
	Building Energy Use	Electricity and natural gas used in existing buildings
	Standby Emergency Generators	Diesel fuel use by emergency generators
	Cogenerator Energy Produced	Electricity produced at the Facility's cogeneration plant
	Water	Electricity use for supply, distribution, and treatment
Construction	Off-Road Equipment	Diesel fuel use of off-road construction equipment
	On-Road Mobile Sources	Diesel hauling and vendor vehicle fuel use, and gasoline worker vehicle fuel use
Operations	Building Energy Use	Electricity use in buildings
	On-Road Mobile Sources	Electricity, diesel, and gasoline fuel use for vehicles
	Water	Electricity use for water supply, distribution, and treatment
	Standby Emergency Generators	Diesel fuel use by emergency generators

Table 2
Baseline Operational Energy Usage
Parkline
Menlo Park, California

Source	Natural Gas[1]	Electricity Generated for Onsite Use[2]	Electricity Exported[2]	Total Electricity Produced[2]
	MMBTU	MWh	MWh	MWh
Cogen (to be demolished)	457,514	19,806	8,076	27,882

Source	Natural Gas from PG&E[1]	Electricity Imported from PG&E[2]	Total Electricity Used[3]
	MMBTU	MWh	MWh
Existing Building Use (to be demolished)	252	629	20,434
Existing Building Use (to be retained for continued operations by SRI; Buildings P, S, T)[4]	-6,810	-4,114	-4,114

Notes:

[1] Natural gas usage for baseline operational conditions was obtained from utility bills provided by the Project Applicant. Natural gas usage for Buildings P, S, and T was calculated using CalEEMod 2022.1.1.3 factors for annual energy use for Research & Development land uses in EDFZ 1, as reported in Table G-28 in Appendix G of the CalEEMod User Guide.

[2] Electricity usages for existing conditions were obtained from utility information provided by SRI International on October 13, 2022 for the time period between September 2021 and August 2022. Under baseline conditions, the existing site exports electricity to PG&E grid when the on-site cogeneration plant generates excess electricity, and imports electricity from PG&E grid when there's greater electricity demand on campus than the cogeneration plan could generate. In the absence of the cogeneration plant, PG&E grid would need to generate additional electricity to replace the electricity that would no longer be exported from the cogeneration plant.

[3] Total electricity used by the building is equal to electricity imported from PG&E and electricity generated by the cogen for onsite use

[4] Electricity usage for Buildings P, S, and T after removal of the cogeneration plant was accounted for by multiplying the electricity generated at the cogeneration plant for the campus by the ratio of the square footage of Buildings P,S, and T to the total existing site square footage. The electricity generated at the cogeneration plant for the campus was obtained from utility information provided by SRI International on October 13, 2022

Abbreviations:

MWh - Megawatt Hours

MMBTU - Million British Thermal Units

Table 3
Water Energy Use for Project Operations and Baseline Uses
Parkline
Menlo Park, California

Water Use Scenario	Location	Water Use[1,2]	Energy Use
		MGY	MWh/yr
Baseline	Indoor	39	249.9
	Outdoor	5.3	26.3
Project	Indoor	73	476
	Outdoor	22	109.8

Electricity Intensity Factor[3]	kWh/Mgal
Supply	1,182
Treat	754
Distribute	2,998
Wastewater Treatment	1,542
Sum	**6,476**

Notes:

[1] Existing water use was calculated using utility statements from Menlo Park Municipal Water provided to Ramboll on October 13, 2022. Existing conditions outdoor water use was calculated by multiplying the full buildout outdoor water use by the ratio of existing landscaping area and project landscaping area. Existing conditions indoor water use was calculated by subtracting the outdoor water use from the total water use from utility statements.

[2] Water usage for the proposed project was obtained from the Building Energy Preliminary Estimate Memo dated June 29, 2023 (updated: December 2023).

[3] Energy use for Baseline conditions and the Project were calculated by multiplying the Electricity Intensity Factor and the water use. Electricity Intensity Factors by activity are CalEEMod defaults obtained from Appendix G. Indoor water use utilizes Electricitiy Intensity Factors for all activities and outdoor water use utilizies Electricity Intensity Factors for all activities except for wastewater treatment, which is not applicable to outdoor water use.

Abbreviations:

Mgal - million gallons
kWh - kilowatt hour
MGY - Million Gallons per Year
MWh - Megawatt-hour
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 4
Operational Mobile Fuel Consumption
Parkline
Menlo Park, California

Year	Fleet Type	Annual VMT[1]	Gasoline		Diesel		Electricity		Plug-in Hybrid				Annual Fuel Consumption[3]		
		VMT/year	Percent Gasoline Vehicle Miles[2]	Gasoline Miles per Gallon[2]	Percent Diesel Vehicle Miles[2]	Diesel Miles per Gallon[2]	Percent Electric Vehicle Miles[2]	Miles per Electric kWh[3,4]	Percent Plug-in Hybrid Electric Vehicle Miles[2]	Plug-in Hybrid Miles per Electric kWh[2,4]	Percent Plug-in Hybrid Gasoline Vehicle Miles[2]	Plug-in Hybrid Gasoline Miles per Gallon[2]	Gallons of Gasoline	Gallons of Diesel	kWh
2022	Existing	1,725,705	91.5%	24	3.4%	10	3.4%	2.6	0.9%	3.3	0.9%	30	65,283	6,006	27,008
2031	Full Buildout	34,660,800	87.4%	28	3.5%	11	6.4%	2.3	1.5%	3.3	1.1%	29	1,107,380	111,110	1,139,365

Notes:

[1] The VMT and fleet mixes are based on data provided by Hexagon, for detailed VMT calculations see Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report.

[2] The percent of each fuel type for a given fleet and the fuel efficiency (miles per gallon, diesel miles per gallon) were calculated based on EMFAC2021 for San Mateo County. Plug-in hybrid vehicles are calculated into gasoline and electric fuel percentages by fleet and fuel economy by considering both fuel and energy consumption from plug-in hybrids. Fuel efficiency for electric and gas employees fleets are weighted by the plug-in hybrid electric or combustion VMT against the VMT from all electric or all gasoline vehicles in the employees fleet.

[3] Fuel consumption is calculated by multiplying the VMT by the fuel efficiency and percent of vehicles for each fuel type.

[4] EMFAC is showing advances in technology will allow for penetration of larger vehicles using alternative power sources into the fleet mix, which decreases the average miles per kWh on a fleetwide average basis from 2022 to 2031.

Abbreviations:

VMT - Vehicle miles traveled	kWh - Kilowatt hour

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 5
Operational Emergency Generator Fuel Consumption
Parkline
Menlo Park, California

Fuel Consumption Parameters for Large Stationary Diesel Generators[1]

Parameter	Value	Unit
Density of Diesel	7.1	lb/gal
HHV of Diesel	19,300	Btu/lb
Brake Specific Fuel Consumption (BSFC)	7,000	Btu/hp-hr

Emergency Generator Parameters[2]

Scenario	Generators Type	Number	Load Factor	Horsepower	Annual Hours of Operation	Fuel Consumption
				hp	hrs/yr	gal/yr
Baseline	Tier 2	1	0.73	755	50	1,408
	Tier 2	1	0.73	402	50	750
	Tier 2	1	0.73	536	50	1,000
Project	Tier 4	5	0.73	2,012	50	18,753
	Tier 2	1	0.73	402	50	750
	Tier 2	7	0.73	268	50	3,501

Notes:

1. Density and HHV of diesel and average BSFC for large stationary diesel generators used from USEPA AP-42, Table 3.4-1.
2. Project and baseline emergency generator parameters such as generator type, load factor, horsepower and annual hours of operation provided by the Project Applicant.

Abbreviations:

Btu - British Thermal Unit
gal - gallon
HHV - high heating value
hp - horsepower
hr - hour
lb - pound
yr - year

References:

USEPA. AP-42, Vol. I, 3.4: Large Stationary Diesel and All Stationary Dual Fuel

Table 6
Construction Off-Road Equipment Energy Use
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Equipment Type[1,2]	Fuel	Number[1]	Horsepower[1]	Load Factor	Utilization	Hours/Day[1]	Number of Equipment Days[1]	Gallons of Diesel[3]	Electricity Usage (MWh)[4]
Project Preparation	Demolition	Concrete/Industrial Saws	Electric	2	33	0.73	0.05	8	178	--	3
		Excavators	Diesel	3	36	0.38	0.90	8	178	2,687	--
		Rubber Tired Dozers	Diesel	2	367	0.40	0.90	8	178	19,222	--
		Water Truck	Diesel	1	--	1.00	1.00	2	178	3,637	--
	Site Preparation	Rubber Tired Dozers	Diesel	2	367	0.40	0.55	8	135	8,909	--
		Tractors/Loaders/Backhoes	Diesel	6	84	0.37	0.70	8	135	7,202	--
		Water Truck	Diesel	1	--	1.00	1.00	2	135	2,759	--
	Grading	Excavators	Diesel	2	36	0.38	0.70	8	100	0,783	--
		Graders	Diesel	1	148	0.41	0.75	8	100	1,860	--
		Rubber Tired Dozers	Diesel	1	367	0.40	0.25	8	100	1,500	--
		Scrapers	Diesel	2	423	0.48	0.45	8	100	7,468	--
		Tractors/Loaders/Backhoes	Diesel	2	84	0.37	0.60	8	100	1,524	--
		Water Truck	Diesel	1	--	1.00	1.00	2	100	2,043	--
Phase 1	Building Construction	Cranes	Diesel	3	367	0.29	0.95	7	419	45,447	--
		Forklifts	Diesel	3	82	0.20	0.35	8	419	2,949	--
		Generator Sets	Diesel	4	14	0.74	0.45	8	419	3,193	--
		Tractors/Loaders/Backhoes	Diesel	3	84	0.37	0.50	7	419	6,985	--
		Drill Rigs	Diesel	3	221	0.50	0.15	8	419	8,515	--
		Welders	Diesel	4	46	0.45	0.45	8	419	6,380	--
		Water Truck	Diesel	1	--	1.00	1.00	2	419	8,562	--
	Paving	Pavers	Diesel	2	81	0.42	0.85	8	48	1,134	--
		Paving Equipment	Diesel	2	89	0.36	0.85	8	48	1,068	--
		Rollers	Diesel	2	36	0.38	0.20	8	48	107	--
		Water Truck	Diesel	1	--	1.00	1.00	2	48	981	--
	Architectural Coating	Industrial Saws	Electric	1	81	0.73	0.65	6	199	--	34
		Aerial Lifts	Diesel	1	62	0.31	0.85	6	199	996	--
		Water Truck	Diesel	1	--	1.00	1.00	2	199	4,066	--

Table 6
Construction Off-Road Equipment Energy Use
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Equipment Type[1,2]	Fuel	Number[1]	Horsepower[1]	Load Factor	Utilization	Hours/Day[1]	Number of Equipment Days[1]	Gallons of Diesel[3]	Electricity Usage (MWh)[4]
Phase 2	Demolition	Concrete/Industrial Saws	Electric	1	33	0.73	0.05	8	22	--	0.2
		Excavators	Diesel	1	36	0.38	0.90	8	22	111	--
		Rubber Tired Dozers	Diesel	1	367	0.40	0.90	8	22	1,188	--
		Water Truck	Diesel	1	--	1.00	1.00	2	22	450	--
	Building Construction	Cranes	Diesel	3	367	0.29	0.95	7	180	19,524	--
		Forklifts	Diesel	4	82	0.20	0.35	8	180	1,689	--
		Generator Sets	Diesel	5	14	0.74	0.45	8	180	1,715	--
		Tractors/Loaders/Backhoes	Diesel	5	84	0.37	0.50	7	180	5,001	--
		Welders	Diesel	5	46	0.45	0.45	8	180	3,426	--
		Water Truck	Diesel	1	--	1.00	1.00	2	180	3,678	--
	Paving	Pavers	Diesel	2	81	0.42	0.85	8	75	1,773	--
		Paving Equipment	Diesel	2	89	0.36	0.85	8	75	1,669	--
		Rollers	Diesel	2	36	0.38	0.20	8	75	168	--
		Water Truck	Diesel	1	--	1.00	1.00	2	75	1,533	--
	Architectural Coating	Industrial Saws	Electric	1	81	0.73	0.65	6	275	--	47
		Aerial Lifts	Diesel	3	62	0.31	0.85	6	275	4,131	--
		Water Truck	Diesel	1	--	1.00	1.00	2	275	5,619	--
Phase 3	Demolition	Concrete/Industrial Saws	Electric	1	33	0.73	0.05	8	22	--	0.2
		Excavators	Diesel	1	36	0.38	0.90	8	22	111	--
		Rubber Tired Dozers	Diesel	1	367	0.40	0.75	8	22	990	--
	Building Construction	Cranes	Diesel	1	367	0.29	0.95	7	200	7,231	--
		Forklifts	Diesel	2	82	0.20	0.35	8	200	938	--
		Generator Sets	Diesel	2	14	0.74	0.20	8	200	339	--
		Tractors/Loaders/Backhoes	Diesel	3	84	0.37	0.30	7	200	2,000	--
		Welders	Diesel	2	46	0.45	0.45	8	200	1,523	--

Table 6
Construction Off-Road Equipment Energy Use
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Equipment Type[1,2]	Fuel	Number[1]	Horsepower[1]	Load Factor	Utilization	Hours/Day[1]	Number of Equipment Days[1]	Gallons of Diesel[3]	Electricity Usage (MWh)[4]
Phase 3	Paving	Pavers	Diesel	1	81	0.42	0.85	8	30	355	--
		Paving Equipment	Diesel	1	89	0.36	0.85	8	30	334	--
		Rollers	Diesel	1	36	0.38	0.20	8	30	34	--
	Architectural Coating	Industrial Saws	Electric	1	81	0.73	0.65	6	220	--	38
		Aerial Lifts	Diesel	2	62	0.31	0.40	6	220	1,037	--
									Total	**216,540**	**122**

Notes:

1. All construction equipment information provided by the Project Sponsor.
2. The water truck is assumed to be a heavy heavy-duty diesel truck (HHDT).
3. Gasoline usage is calculated by taking the horsepower-hours for each piece of equipment (calculated as horsepower * usage hours * load factor) and multiplying it by the gallons of diesel consumption per horsepower-hour consistent with USEPA AP-42 diesel fuel data in Table 3.4.1, which cites an average brake-specific fuel consumption (BSFC) of 7,000 Btu/hp-hr, a heating value of 19,300 Btu/lb, and density of 7.1 lb/gal.
4. Electricity usage is calculated by taking the horsepower-hours for each piece of equipment (calculated as horsepower * usage hours * load factor) and converting to megawatt-hours.

Abbreviations:

Btu - British Thermal Units

CalEEMod - CALifornia Emissions Estimator Model

gal - gallon

hp-hr - horsepower-hour

lb - pound

MWh - Megawatt-hour

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

USEPA. AP-42, Vol. I, 3.4: Large Stationary and All Stationary Dual Fuel Engines. Available at: https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s04.pdf

Table 7
Construction On-Road Vehicle Fuel Use
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Year	One-Way Trips Per Subphase[1]			Annual VMT[1]			Gallons of Fuel Consumption[2]		
			Worker	Vendor	Hauling	Worker	Vendor	Hauling	Worker (Gasoline)	Vendor (Diesel)	Hauling (Diesel)
Project Preparation	Demolition	2025	1,686	0	3,750	19,725	0	59,195	718	0	10,925
	Demolition	2026	450	0	3,750	5,266	0	15,805	188	0	2,868
	Site Preparation	2026	3,915	675	0	45,806	5,670	0	1,634	847	0
	Grading	2026	2,000	1,000	8,920	23,400	8,400	178,400	835	1,255	32,377
Phase 1	Building Construction	2026	26,928	1,331	23,105	315,062	11,177	69,879	11,238	1,670	12,682
	Building Construction	2027	105,687	5,222	23,105	1,236,535	43,866	274,254	43,293	6,472	48,903
	Building Construction	2028	45,460	2,246	23,105	531,880	18,868	117,967	18,312	2,747	20,651
	Architectural Coating	2028	14,391	1,007	0	168,379	8,462	0	5,797	1,232	0
	Architectural Coating	2029	5,509	386	0	64,451	3,239	0	2,185	466	0
	Paving	2029	720	576	0	8,424	4,838	0	286	696	0
Phase 2	Demolition	2029	88	0	555	1,030	0	11,100	35	0	1,909
	Building Construction	2029	44,293	2,158	4,305	518,226	18,126	54,325	17,572	2,606	9,343
	Building Construction	2030	25,907	1,262	4,305	303,114	10,602	31,775	10,139	1,505	5,369
	Architectural Coating	2030	19,429	1,360	0	227,314	11,424	0	7,603	1,621	0
	Architectural Coating	2031	8,071	565	0	94,436	4,746	0	3,126	665	0
	Paving	2031	600	675	0	7,020	5,670	0	232	794	0
Phase 3	Demolition	2030	88	0	88	1,030	0	1,760	34	0	297
	Building Construction	2030	24,000	3,000	1,500	280,800	25,200	30,000	9,392	3,577	5,069
	Architectural Coating	2030	1,425	105	0	16,673	882	0	558	125	0
	Architectural Coating	2031	19,475	1,435	0	227,858	12,054	0	7,542	1,688	0
	Paving	2031	240	150	0	2,808	1,260	0	93	176	0
								Totals	**140,814**	**28,143**	**150,394**

Notes

[1] Total miles based on trip generation provided by Project Applicant and CalEEMod default trip distance by trip type as calculated in the Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report.

[2] Fuel usage based on VMT data and fleet-average fuel consumption in gallons per mile from EMFAC2021 for CY 2025 through 2031 in San Mateo County. Consistent with CalEEMod, Hauling assumes 100% HHDT, Vendor assumes 50% HHDT and 50% MHDT, and Worker assumes 25% LDA, 50% LDT1, and 25% LDT2 vehicles. It is assumed that worker vehicles use gasoline while vendor and hauling vehicles use diesel. LDT1 refers to light-duty trucks with a loaded vehicle weight of 3,750 pounds while LDT2 refers to light-duty trucks with a loaded vehicle weight over 3,750 pounds.

Abbreviations:

CalEEMod - California Emissions Estimator Model
EMFAC2021 - California Air Resources Board EMission FACtor m
LDA - light duty auto
LDT - light duty truck
MHDT - medium-heavy duty truck
HHDT - heavy-heavy duty truck
VMT - vehicle miles traveled
CY - calendar year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 8
Summary of Total Construction Energy Use
Parkline
Menlo Park, California

Source		Units	Project Construction Usage	MMBtu[3]
Electricity	Off-Road Construction Equipment[1]	MWh	122	417
Diesel	On-Road Construction Trips[2]	gallons	178,538	24,528
	Off-Road Construction Equipment[1]	gallons	216,540	29,748
Gasoline	On-Road Construction Trips[2]	gallons	140,814	16,938
			Total	**71,631**

Notes:

[1] Off-road equipment diesel fuel usage was calculated using a fuel usage rate of 0.051 gallons of diesel per horsepower (hp)-hour, consistent with diesel conversion factors given in USEPA AP-42 Table 3.4.1. See Table 6 for more details on the methodology.

[2] On-road mobile source fuel use based on vehicle miles traveled (VMT) for all years of construction and fleet-average fuel consumption in gallons per mile from EMFAC2021 for CY 2025 through 2031 in San Mateo County. See Table 7 for more details on the methodology.

[3] MWh of electricity, gallons of diesel, and gallons of gasoline were converted to MMBtu using a factor of 3.412 MMBtu/MWh, 0.14 MMBtu/gallon diesel, 0.12 MMBtu/gallon gasoline respectively.

Abbreviations:

CY - calendar year
EMFAC2021 - California Air Resources Board EMission FACtor model
hp - horsepower
MMBtu - metric million British thermal unit
MWh - megawatt-hour
USEPA - United States Environmental Protection Agency
VMT - vehicle miles traveled

References:

USEPA. 1996. AP 42. Compilation of Air Pollutant Emission Factors, Volume 1. Fifth Edition. Chapter 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines. Available online at: http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s04.pdf. Accessed March 2019.

Table 9
Operational Energy Use
Parkline
Menlo Park, California

Proposed Project

Land Use Type	Electricity Use[2]
	MWh/yr
Commercial - Office/R&D	47,167
Residential Apartments	5,229
Residential Townhome	312
Retail	47
Non-Residential Parking Garage[3]	1,650
Residential Parking Garage[3]	1,582
Non-Residential Surface Parking[3]	282
Residential Surface Parking[3]	407
Recreational	0
Full Buildout	56,675
Baseline[4]	20,434

Notes:

1. The Project would not construct natural gas infrastructure or use natural gas for operations; therefore, no natural gas usage is expected for Project operations
2. Electricity usages for the proposed project were obtained from the Building Energy Preliminary Estimate Memo dated June 29, 2023 (updated: December 2023).
3. Electricity usages for parking land use types account for both building energy use and EV charging, as described in the Building Energy Preliminary Estimate Memo dated June 29, 2023 (updated: December 2023). EV charging accounts for 58.8% of the parking electricity usage, which is subject to change depending on demand.
4. Baseline electricity usage for the site is shown for reference.

Abbreviations:

MWh - Megawatt hours
yr - year
EV - electric vehicle

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 10
Summary of Baseline and Operational Energy Use
Parkline
Menlo Park, California

Summary Operational Energy Usage

Operational Energy Use	Baseline				Project				Net Operational Energy Use[1]			
	Electricity	Natural Gas	Gasoline	Diesel	Electricity	Natural Gas	Gasoline	Diesel	Electricity	Natural Gas	Gasoline	Diesel
	MWh	MMBtu	gallon	gallons	MWh	MMBtu	gallons	gallons	MWh	MMBtu	gallons	gallons
Building Energy Use[2]	-3,486	450,956	--	--	56,675	--	--	--	60,161	-450,956	--	--
Water Energy Use[3]	276	--	--	--	585	--	--	--	309	--	--	--
Mobile Energy Use[4]	27	--	65,283	6,006	1,139	--	1,107,380	111,110	1,112	--	1,042,098	105,104
Stationary Source Energy Use[5]	--	--	--	3,158	--	--	--	23,004	--	--	--	19,846
Total	**-3,182**	**450,956**	**65,283**	**9,164**	**58,400**	**0**	**1,107,380**	**134,114**	**61,582**	**-450,956**	**1,042,098**	**124,950**

Summary Operational Energy Usage in MMBtu[6]

Operational Energy Use	Baseline				Project				Net Operational Energy Use[1]			
	Electricity	Natural Gas	Gasoline	Diesel	Electricity	Natural Gas	Gasoline	Diesel	Electricity	Natural Gas	Gasoline	Diesel
	MMBtu											
Building Energy Use[2]	-11,893	450,956	--	--	193,376	--	--	--	205,268	-450,956	--	--
Water Energy Use[3]	942	--	--	--	1,997	--	--	--	1,055	--	--	--
Mobile Energy Use[4]	92	--	7,849	825	3,888	--	133,149	15,264	3,795	--	125,300	14,439
Stationary Source Energy Use[5]	--	--	--	434	--	--	--	3,160	--	--	--	2,726
All Sources	**449,206**				**350,834**				**-98,372**			

Notes:

1. Net operational energy use is calculated as Project energy use minus Baseline energy use.
2. Energy use values are obtained from utility bills provided by the Project Applicant for existing use. Natural gas usage for the baseline is from the cogenerator and existing buildings that would be demolished. Natural gas usage for the cogenerator includes electricity that is generated for onsite use and electricity that is exported to PG&E. Existing electricity usage also includes electricity imported from PG&E. Existing electricity and natural gas usage account for energy that buildings P, S, and T would need to import from PG&E after removal of the cogeneration plant. Electricity usages for the proposed Project were obtained from the Building Energy Preliminary Estimate Memo dated June 29, 2023 (updated: December 2023). Baseline energy use is summarized in Table 2 in the Project energy memorandum and Project operational energy use is summarized in Table 9.
3. Energy use from water for both the Baseline and Project conditions were calculated using the Electricity Intensity Factors (kWh/Mgal) from CalEEMod. Baseline water usage (MGY) was calculated using utility statements from Menlo Park Municipal Water provided to Ramboll on October 13, 2022. Project water usage was obtained from the Building Energy Preliminary Estimate Memo dated June 29, 2023 (updated: December 2023). The energy use in kWh was converted to MWh, as shown in Table 3.
4. Mobile energy use calculations are summarized in Table 4.
5. Stationary sources include 3 emergency generators for the baseline that would be removed as part of the Project and 13 emergency generators for the Project. Diesel usage is based on emergency generators hours of operation, horsepower, and USEPA default parameters for large stationary diesel generators, as summarized in Table 5.
6. MWh of electricity, gallons of diesel, and gallons of gasoline were converted to MMBtu using a factor of 3.412 MMBtu/MWh, 0.14 MMBtu/gallon diesel, 0.12 MMBtu/gallon gasoline respectively.

Abbreviations

CalEEMod - California Emissions Estimator Model
kWh - kilowatt-hour
Mgal - million gallons
MMBtu - Metric Million British Thermal Units
MWh - Megawatt-hour
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

ATTACHMENT A

Instructions: Please fill in all cells highlighted in yellow.

Daily Trips Rates and VMT for Existing Conditions

Land Use[1]		Land Use Quantity[2]	Land Use Unit	Daily Project Trip Rates (Weekday) (trips/1,000 s.f.) or (trips/d.u.)	Daily Project VMT (Weekday) (including reductions for passby and diverted trips)	TDM Reduction %	Fleet type if available[4]
Existing Conditions	General Office	1,094	1,000 sq.ft.	0.47	6,263	--	--

Existing VMT does not include Buildings P, S, T

Daily Trips Rates and VMT for Proposed Project

Land Use[1]		Land Use Quantity[2]	Land Use Unit	Daily Project Trip Rates (Weekday) (trips/1,000 s.f.) or (trips/d.u.)	Daily Project VMT (Weekday) (including reductions for passby and diverted trips)	TDM Reduction %	Fleet type if available[4]
		Full Buildout (Phases 1, 2 & 3)		Full Buildout (Phases 1, 2 & 3)	Full Buildout (Phases 1, 2 & 3)		
Proposed Project	Assumed as 100% R&D	1,094	1,000 sq.ft.	7.92	104,729	25%	--
	Multifamily Housing (Mid-Rise)	431	D.U.	3.25	12,323	25%	--
	Single-Family Attached Housing	19	D.U.	5.17	866	25%	--
	Affordable Housing	100	D.U.	3.44	3,026	25%	--
	Soccer Complex	1	field	68.00	--	--	--

Project VMT does not include Buildings P, S, T; The Office/R&D portion is assumed as 100% R&D for a conservative analysis.

Daily trip rates and VMT estimates already included the 25% TDM reduction

Daily Trips Rates and VMT for Increased Residential Variant[5]

Land Use[1]		Land Use Quantity[2]	Land Use Unit	Daily Project Trip Rates (Weekday) (trips/1,000 s.f.) or (trips/d.u.)	Daily Project VMT (Weekday) (including reductions for passby and diverted trips)	TDM Reduction %	Fleet type if available[4]
		Full Buildout (Phases 1, 2 & 3)		Full Buildout (Phases 1, 2 & 3)	Full Buildout (Phases 1, 2 & 3)		
Increased Residential Variant[5]	Assumed as 100% R&D	1,094	1,000 sq.ft.	7.92	104,729	25%	--
	Multifamily Housing (Mid-Rise)	700	D.U.	3.25	20,014	25%	--
	Affordable Housing	100	D.U.	3.44	3,026	25%	--
	Soccer Complex	1	field	68.00	--	--	--

Project VMT does not include Buildings P, S, T; The Office/R&D portion is assumed as 100% R&D for a conservative analysis.

Daily trip rates and VMT estimates already included the 25% TDM reduction

Notes:

1. Land use types identified from project description and Notice of Preparation. Add additional land use types as applicable.
2. Please fill in the land use sizes used to derive daily trips and daily VMT.
3. Trip rates for end of Phase 1 or Phase 2 only required if Hexagon is analyzing phased trip rates. If phased trips are not considered in transportation, we will assume the full buildout trip generation rates apply at the end of Phase
4. If fleet type information is known (e.g., 100% passenger vehicles, or 5% trucks) please provide.
5. Increased Residential Variant refers to the 700-unit residential scenario.

Instructions

Please provide <u>background</u> traffic volumes for any roadway with over 10,000 vehicles per day in the vicinity of the project.

Roadway[1]	**Segment Limit**[2]		**Posted Speed Limit (mph)**	**Vehicles Per Day**	**Fleet type if available**[3]
Middlefield Road	Willow Road	Ravenswood Avenue	35	21,233	99% Passenger Vehicles and 1% Trucks
Middlefield Road	Woodland Avenue	Willow Road	25	23,531	98% Passenger Vehicles and 2% Trucks
Willow Road	Gilbert Avenue	Coleman Avenue	25	26,099	98% Passenger Vehicles and 2% Trucks
Willow Road	Coleman Avenue	Durham Street	25	28,043	98% Passenger Vehicles and 2% Trucks
Willow Road	Durham Street	Bay Road	25	32,340	99% Passenger Vehicles and 1% Trucks
El Camino Real	Sand Hill Road	Middle Avenue	35	51,922	99% Passenger Vehicles and 1% Trucks
El Camino Real	Middle Avenue	Ravenswood Avenue	35	54,777	99% Passenger Vehicles and 1% Trucks
El Camino Real	Ravenswood Avenue	Oak Grove Avenue	35	41,268	99% Passenger Vehicles and 1% Trucks
El Camino Real	Oak Grove Avenue	Valparaiso Avenue	35	39,093	99% Passenger Vehicles and 1% Trucks
El Camino Real	Valparaiso Avenue	Encinal Avenue	35	44,891	99% Passenger Vehicles and 1% Trucks
Marsh Road	Bay Road	Bohannan Drive	35	33,321	99% Passenger Vehicles and 1% Trucks
Marsh Road	Bohannan Drive	Scott Drive	35	37,598	99% Passenger Vehicles and 1% Trucks
Marsh Road	US 101 SB Ramps	US 101 NB Ramps	35	62,184	99% Passenger Vehicles and 1% Trucks
San Hill Road	Santa Cruz Avenue	Oak Avenue	40	32,452	99% Passenger Vehicles and 1% Trucks
US 101 NB	University Avenue	Willow Road	65	124,035	97% Passenger Vehicles and 3% Trucks
US 101 NB	Willow Road	Marsh Road	65	152,084	98% Passenger Vehicles and 2% Trucks
US 101 NB	Marsh Road	Woodside Road	65	126,176	98% Passenger Vehicles and 2% Trucks
US 101 SB	Woodside Road	Marsh Road	65	124,327	98% Passenger Vehicles and 2% Trucks
US 101 SB	Marsh Road	Willow Road	65	129,565	98% Passenger Vehicles and 2% Trucks
US 101 SB	Willow Road	University Avenue	65	107,446	98% Passenger Vehicles and 2% Trucks
Ravenswood Avenu	Laurel Street	Middlefield Road	30	9,959	99% Passenger Vehicles and 1% Trucks
Laurel Street	Ravenswood Avenue	Burgess Drive	25	6,495	99% Passenger Vehicles and 1% Trucks

Note from Hexagon: fleet type estimated using the travel demand model

<u>Notes:</u>

[1] If additional link locations (i.e. modeled roadways) are needed, please add them in.

[2] Segment limits are the cross streets on each link. Please add additional rows to include all necessary segment limits.

[3] If fleet type information is known (e.g., 100% passenger vehicles, or 5% trucks) please provide.

Instructions:

Please provide segment limits for each link location listed below, in addition to traffic volumes at full buildout and the fleet make-up of the traffic. Please add additional link locations and rows as needed.

Roadway[1]	Segment Limits[2]			Net New Traffic Volumes Full Buildout (Vehicles/day)		Fleet make-up if available[4]
			Posted Speed Limit (mph)	Proposed Project	Increased Residential Variant[3]	
Middlefield Road	Willow Road	Ravenswood Avenue	35	3,432	3,544	--
Middlefield Road	Woodland Avenue	Willow Road	25	702	756	--
Willow Road	Gilbert Avenue	Coleman Avenue	25	3,250	3,517	--
Willow Road	Coleman Avenue	Durham Street	25	3,250	3,517	--
Willow Road	Durham Street	Bay Road	25	3,199	3,464	--
El Camino Real	Sand Hill Road	Middle Avenue	35	1,552	1,670	--
El Camino Real	Middle Avenue	Ravenswood Avenue	35	1,552	1,670	--
El Camino Real	Ravenswood Avenue	Oak Grove Avenue	35	798	866	--
El Camino Real	Oak Grove Avenue	Valparaiso Avenue	35	979	1,061	--
El Camino Real	Valparaiso Avenue	Encinal Avenue	35	984	1,064	--
Marsh Road	Bay Road	Bohannan Drive	35	950	1,044	--
Marsh Road	Bohannan Drive	Scott Drive	35	649	719	--
Marsh Road	US 101 SB Ramps	US 101 NB Ramps	35	500	552	--
San Hill Road	Santa Cruz Avenue	Oak Avenue	40	265	290	--
US 101 NB	University Avenue	Willow Road	65	1,104	1,190	--
US 101 NB	Willow Road	Marsh Road	65	202	204	--
US 101 NB	Marsh Road	Woodside Road	65	502	541	--
US 101 SB	Woodside Road	Marsh Road	65	502	541	--
US 101 SB	Marsh Road	Willow Road	65	353	374	--
US 101 SB	Willow Road	University Avenue	65	1,104	1,190	--
Ravenswood Avenue	Laurel Street	Middlefield Road	30	1,375	1,608	--
Laurel Street	Ravenswood Avenue	Burgess Drive	25	476	637	--

HEX: net project traffic already accounted for the 25% TDM reduciton

Notes:

1. If additional link locations (i.e. modeled roadways) are needed, please add them in.
2. Segment limits are the cross streets on each link. Please add additional rows to include all necessary segment limits.
3. If volumes for the increased residential variant is known, please populate this column.
4. If fleet type information is known (e.g., 100% passenger vehicles, or 5% trucks) please provide.

Appendix 3.5-2

Preliminary Building Energy Estimate

Memo

Date: February 20th, 2024
Project: Parkline Project
Project Number: 21-1438
To: Lane Partners
From: Matt Hyder (PAE)
Subject: Preliminary Building Energy Estimate [Update]

Preliminary Building Energy Estimate

This memo provides a preliminary estimate for the building energy usage for the Parkline project (SRI project). It is intended to provide information necessary to complete the annual carbon emissions calculation for the project as part of SB7 certification and to provide information to the City and its consultants in connection with environmental review for the Project pursuant to the California Environmental Quality Act (CEQA).

The estimated annual electricity, natural gas, and water consumption is summarized in Table 2 and Table 3 below. To clarify how these values were generated, PAE has provided Table 10 and Table 11, which contains information on the calculations and assumptions used in our analysis.

PROJECT DESCRIPTION

The Project site is currently SRI International's research and development (R&D) campus, consisting of 38 buildings totaling approximately 1.4 million gross square feet of office, R&D, amenity, and support land uses. Support facilities for the existing project site include a natural gas cogeneration power plant facility and the accessory back-up boiler, emergency diesel generator, and other support equipment.

The project would redevelop the project site with a mixed-use, transit-oriented development organized into two land use districts within the Project site, including an approximately 10-acre Residential District in the southwestern portion of the Project site and an approximately 53-acre Office/R&D District that would comprise the remainder of the Project site. In addition, the Project would also include approximately 25 acres of publicly accessible open space areas and supporting amenities, including a network of pedestrian and bicycle trails, open spaces and active/passive recreational areas.

The Office/R&D District would include five new office/R&D buildings totaling approximately 1.1 million square feet, a commercial amenity building of approximately 40,000 square feet, and a community amenity building of approximately 2,000 square feet. Approximately 2,800 parking spaces would be provided within three above-grade parking structures, surface parking areas, and underground parking areas.

The Residential District would include 450 new rental housing units of approximately 519,750 square feet on site, in a mix of multifamily buildings between three and six stories tall and two-story townhomes. The Residential District would include up to 469 parking spaces for the units within podium parking structures and surface parking areas. In addition, the Project includes up to an additional 100 units that would be developed in the future by an affordable housing developer. This affordable housing building would contain an additional 50 parking spaces for the units within podium parking structures.

Existing Buildings P, S, and T would remain on site and occupied by SRI International and its tenants. The Project would demolish the remaining 35 existing structures and decommission the existing natural gas cogeneration power plant facility.

PROJECT VARIANTS

The CEQA analysis for the project will evaluate an additional project variant. Project variant is a variation of the project at the same project site, with the same project objectives, background, and development controls, but with additions and changes to the project, the inclusion of which may or may not change environmental impacts.

> Increased Development Variant: This variant would increase the number of on-site residential units from 550 units up to 800 units (up to 154 of which would be affordable and developed by an affordable housing developer) subject to final confirmation by the City. This variant also includes two residential swimming pools, one on the R1 roof deck and another on R2 roof deck. Building heights along Laurel remain unchanged at two stories for the townhomes and three to four-stories for R1 and R2, while heights are increased along Ravenswood. One level of underground parking is proposed below office/R&D buildings O1 and O5. This variant would also add an approximately 2-million-gallon underground water reservoir and associated aboveground facilities to be implemented by the City at a later date if the site is selected by the City for that use. The emergency reservoir would be located in the northeastern corner of the Project site below the proposed recreational field and would be leased to the City for construction and operation. A generator may be required at the pump station to serve the emergency reservoir, to be determined by the City.

EXECUTIVE SUMMARY & METHODOLOGY

A summary of the estimated building energy and water consumption values are provided in Table 2 and Table 3 below. An energy modeling analysis has not currently been completed at this stage. This detailed building level energy modeling analysis is not typical for a project at this early entitlement phase. Therefore, these values were calculated using energy benchmarking data based on a large project portfolio of comparable projects.

SCENARIOS ANALYZED

For Office/R&D Buildings 1 through 5, this analysis evaluates two potential buildout schemes: (1) Buildout Scheme 1 (S1) analyzes the commercial buildings as programmed for 100% office, which represents a smaller energy and water usage consumption as compared to 100% R&D and (2) Buildout Scheme 2 (S2) analyzes the commercials buildings as R&D programming, which represents higher energy and water use consumption compared to 100% office.

Additionally, this analysis includes evaluation of the Increased Development Variant without the emergency water reservoir because the energy use associated with the reservoir (to be used only for preventative maintenance and emergencies) would be negligible.

Lastly, the estimated energy usage for the parking garages and commercial surface parking includes the Menlo Park code required electric vehicle charging at 10% of the total 2,800 commercial spaces for initial project operation. Residential uses are required per code to include 1 EV charger per residential unit. Campus site lighting (street lighting, landscape lighting, exterior signage, etc.) was not included in our estimate as additional energy demand for those uses are minimal.

Table 1 below details the schemes and variants analyzed in this memorandum.

Table 1. Schemes and Variants

Scheme / Variant	Alteration
Buildout Scheme 1 (S1)	All office for O1 through 5
Buildout Scheme 2 (S2)	R&D programming for O1 through 5 (60% lab and 40% office)
Base Scheme	550 total residential units
Increased Development Variant	800 total residential units and Emergency Water Reservoir [1]

Notes:

1: Energy and water use estimates for Energy Water Reservoir are assumed to be negligible based on equipment being used only during emergencies and preventative system testing.

METHODOLOGY

To calculate energy consumption, we multiplied the anticipated energy use intensity (EUI) for each program type by their respective building areas. For interior water consumption, we multiplied the anticipated water use intensity (WUI) for each program type by the respective building areas. Landscape water consumption is based on estimated values provided by OJB using the maximum applied water allowance for the site. Pool heating energy and water consumption has been estimated based on pool area and volume.

Where feasible, PAE sourced energy and water benchmarking data from our own project portfolio rather than generic public databases. PAE's inventory of projects contains new, higher-performing buildings located in California than the general energy databases available online. This project portfolio data is representative of efficient and modern new construction design and engineering in compliance with California building and energy standards, including CALGreen and Title 24 requirements. As such, data from PAE projects represent comparable energy consumption data that are indicative of the anticipated energy at the project.

For building water consumption estimates, PAE sourced WUIs from multiple sources. The EIA Commercial Buildings Energy Consumption Survey (CBECS) was used to determine water usage for office amenity buildings. For R&D buildings, the Labs 21 Laboratory Benchmarking Tool was used to estimate building water consumption. This water consumption estimation for R&D is similar to consumption estimates from the 1350 Adams Court and 777 Airport Boulevard EIR Water Supply Assessments. Residential building water consumption was estimated from HUD benchmarking data and matches the same consumption estimates from the Menlo Park Housing Element EIR Water Supply Assessment.

The benchmarked estimated values below include only the new proposed buildings included in the project proposal. All new buildings are anticipated to be all electric designs. There are three existing buildings set to remain, Buildings P, S, and T. Therefore, these existing buildings are excluded from these estimates and are assumed to continue the same energy and water usage.

Table 2. Summary of Annual Building Energy Usage Estimate Totals by Scheme and Variant

Building Type	Scheme 1: 100% Office and 550 Residential Units (kWh/year)	Scheme 2: R&D and 550 Residential Units (kWh/year)	Increased Development Variant: R&D and 800 Residential Units (kWh/year)
Office / R&D	14,639,200	46,229,053	46,229,053
Multifamily	5,540,687	5,540,687	8,993,769
Multifamily Pools	-	-	358,028
Amenities	984,878	984,878	984,878
Parking (surface and garage)	1,732,197	1,732,197	1,887,093
EV Charging (Transportation Energy)	2,188,310	2,188,310	2,427,484
Total	25,085,273	56,675,125	60,880,304

Table 3. Summary of Annual Water Usage Estimate Totals by Scheme and Variant

Building Type	Scheme 1: 100% Office and 550 Residential Units (gal/year)	Scheme 2: 100% R&D and 550 Residential Units (gal/year)	Increased Development Variant: 100% R&D and 800 Residential Units (gal/year)
Office / R&D	15,353,360	44,587,840	44,587,840
Multifamily	26,699,750	26,699,750	38,836,000
Multifamily Pools	-	-	479,878
Amenities	2,151,040	2,151,040	2,151,040
Landscaping[2]	22,259,730	22,259,730	19,433,440
Total	66,463,880	95,698,360	105,488,198

Notes:

1: Parking structures and lots assumed to have no water use and are not included in this table.

2: Landscaping water use estimation provided by OJB.

ANTICIPATED ENERGY AND WATER DEMAND FOR PROPOSED PROJECT

The energy and water calculations are detailed in Table 4 through Table 9 below. These calculations make use of gross floor area for each building on the campus as well as program-based EUIs and WUIs. Information on the EUIs and WUIs is provided in the following Assumptions section. For these calculations, PAE assumed all new buildings to be all-electric. As such, only kWh values have been provided for these buildings.

Table 4. 100% Office vs. R&D Building Energy and Water Estimate Calculation

Office / R&D Building		Annual Electricity Consumption (kWh)		Annual Water Consumption (gal)	
	Gross Floor Area (ft^2)	S1: Office	S2: R&D	S1: Office	S2: R&D
O1	184,000	2,561,442	8,088,765	2,686,400	7,801,600
O2	227,300	3,164,217	9,992,263	3,318,580	9,637,520
O3	227,300	3,164,217	9,992,263	3,318,580	9,637,520
O4	229,000	3,187,882	10,066,996	3,343,400	9,709,600
O5	184,000	2,561,442	8,088,765	2,686,400	7,801,600
Total	1,051,600	14,639,200	46,229,053	15,353,360	44,587,840

Table 5. Multifamily Building Energy and Water Estimate Calculation for the Base Scheme vs. Increased Development Variant

Multifamily Building		# of Units		Gross Floor Area (ft^2)		Annual Electricity Consumption (kWh)		Annual Water Consumption (gal)	
Base	Variant	Base	Variant	Base	Variant	Base	Variant	Base	Variant
R1	R1	150	300	180,000	398,000	1,477,079	3,265,986	7,281,750	14,563,500
R2	R2	150	300	180,000	393,000	1,477,079	3,224,956	7,281,750	14,563,500
R3	R3-Aff.	131	154	157,200	178,000	1,289,982	1,460,667	6,359,395	7,475,930
R4-Aff.	TH1	100	19	120,000	55,000	984,719	451,330	4,854,500	922,355
TH	TH2	19	27	38,000	72,000	311,828	590,832	922,355	1,310,715
Total		550	800	675,200	1,096,000	5,540,687	8,993,769	26,699,750	38,836,000

Table 6. Pool Energy and Water Estimate Calculation for Increased Development Variant

Pools	Gross Pool Area (ft^2) [1]		Annual Electricity Consumption (kWh)		Annual Water Consumption (gal/year)	
	Base	Variant	Base	Variant	Base	Variant
R1 Pool	-	1,500	-	179,014	-	239,939
R2 Pool	-	1,500	-	179,014	-	239,939
Total	-	3,000	-	358,028	-	479,878

Notes:

1. Pool dimensions are 60’W x 25’L x 4.5’D average. Base residential includes no pools.

Table 7. Amenities Building Energy and Water Estimate Calculation

Amenity Building	Gross Floor Area (ft^2)	Annual Electricity Consumption (kWh/year)	Annual Water Consumption (gal/year)
Commercial Amenity	40,000	937,934	2,048,512
Public Amenity [1]	2,002	46,944	102,528
Total	42,002	984,878	2,151,040

Notes:

1. Public Amenity space to be located in ground level of R3 building.

Table 8. Landscaping/ Irrigation Water Estimate Calculation

Landscaping	Gross Landscaped Area (ft^2)		Annual Water Consumption (gal/year)	
	Base	Variant	Base	Variant
Landscaped Area	1,150,671	1,060,309	22,259,730	19,433,440
Total	1,150,671	1,060,309	22,259,730	19,433,440

Table 9. Parking Energy Estimate[1] Calculation

Parking Structure		Gross Floor Area (ft^2)		Annual Electricity Consumption, (kWh/year)		Annual Electricity Consumption, EV Charging (kWh/year) [1]	
Base	Variant	Base	Variant	Base	Variant	Base	Variant
PG1	PG1	239,700	264,200	351,246	387,147	139,917	154,218
PG2	PG2	242,700	326,500	355,642	478,439	141,669	190,584
PG3	PG3	218,400	210,800	320,034	308,897	127,484	123,048
Office Basement parking	Office Basement parking	104,400	88,900	152,983	130,270	60,940	51,893
R1 Parking	R1 Parking	72,000	139,893	105,506	204,993	426,669	829,000
R2 Parking	R2 Parking	78,000	120,255	114,298	176,216	462,225	712,626
R3 Parking	R3 Parking	64,000	26,697	93,783	39,121	379,261	158,205
R4 Parking	TH1 Parking	24,000	9,460	35,169	13,862	142,223	56,060
R5 Parking	TH2 Parking	9,000	10,800	13,188	15,826	53,334	64,000
Residential Surface Parking	Residential Surface Parking	24,000	-	21,101	-	142,223	-
Commercial Surface Parking	Commercial Surface Parking	192,500	150,500	169,249	132,322	112,366	87,850
Total		1,268,700	1,348,005	1,732,197	1,887,093	2,188,310	2,427,484

Notes:

1: Electric vehicle (EV) charging is based on 10% of commercial parking spaces (2,800 total parking spaces) and 1 charging station per residential unit for residential uses (550 for the base scheme and 800 for variant).

ASSUMPTIONS

The calculations for estimating the energy and water demand as described in Table 4 through Table 9 above are based on the following data sources and assumptions as shown in Table 10 and Table 11.

Table 10. Energy Use Intensity (EUI) Assumptions Summary

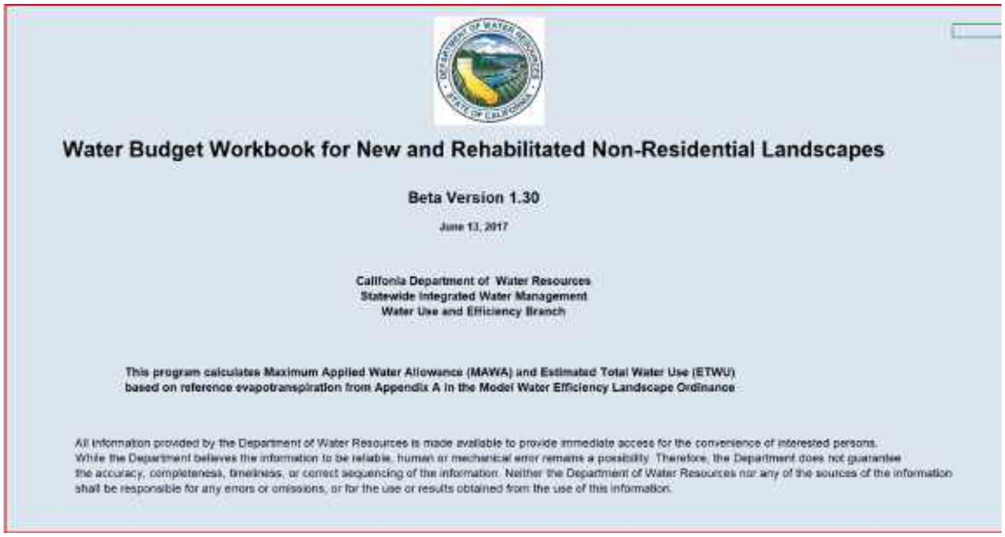
Building Type	EUI (kBtu/ft^2/year)	Source
R&D (Office / Lab)	150	PAE Project Portfolio representing highest energy use scenario of R&D program with 60% laboratory, 40% office
Office	47.5	PAE Project Portfolio representing typical office use building
Multifamily	28	PAE Project Portfolio
Pools	407	PAE Pool calculations, pool heating to 80F with air-source heat pump
Amenities	80	Combination between Office, Fitness, and Restaurant EUIs • Program Split: 57% Office, 24% Fitness, 19% Restaurant Split (per Project Amenity Floor Plans issued on 08/01/22) • Office EUI: 47.5 kBtu/ft^2/yr (PAE Project Portfolio) • Fitness EUI: 47 kBtu/ft^2/yr (Building Performance Database filtering for data on recreation buildings built between 2000 and 2020 in the Bay Area – median value) • Restaurant EUI: 220 kBtu/ft^2/yr (PAE Project Portfolio)
Parking Garage	5	PAE Project Portfolio
Surface Parking	3	EnergyStar Portfolio Manager
Commercial EV charging	1.9	PAE Project Portfolio (based on 10% of spaces per Menlo Park code)
Residential EV charging	20.2	PAE Project Portfolio (based on 1 charger per residential unit per Menlo Park code)

Table 11. Water Use Intensity (WUI) and Gallons Per Day (GPD) Assumptions Summary

Building Type	WUI (gal/ft^2/yr)	GPD (gal/day/ft^2)	# of days	Source
R&D (Office / Lab)	42.4	0.162	261	Labs 21 Laboratory Benchmarking Tool for R&D lab, 777 Airport Blvd EIR Water Supply Assessment
All Office	14.6	0.056	261	US Energy Information Administration (EIA) Commercial Buildings Energy Consumption Survey (CBECS) for office
Multifamily	40.0	0.110 (133 GPD/unit)	365	HUD benchmarking data, Menlo Park 2022 Housing Element EIR Water Supply Assessment
Pools	160.0	0.44	365	PAE Pool calculations, includes make-up water from evaporation and annual drain and re-fill of entire pool.
Commercial Amenities	51.2	0.196	261	Combination between Office, Fitness, and Restaurant WUIs • Program Split: 57% Office, 24% Fitness, 19% Restaurant Split (per SRI Office Amenity Floor Plans issued on 08/01/22) • Office WUI: 14.6 gal/ft^2/yr (0.056 GPD/ft^2) (EIA CBECS data) • Fitness WUI: 21.0 gal/ft^2/yr (0.08 GPD/ft^2) (Based on water use from Willow Village Water Supply Assessment) • Cafeteria/Kitchen WUI: 200 gal/ft^2/yr (0.77 GPD/ft^2) (Based on water use from Willow Village Water Supply Assessment)
Landscaping / Irrigation	19.6	0.053	365	Data provided from OJB calculations
Parking and EV charging	-	-	-	No water usage assumed at parking garages or surface parking lots

ATTACHMENT A: LANDSCAPING IRRIGATION WATER DEMAND DATA

Note: Data in this Attachment A has been prepared by OJB Landscape Architecture for both the Project Buildout Schemes 1/2 and the Increased Development Variant by utilizing "Water budget Workbook for New and Rehabilitated Non-Residential Landscapes" developed by the California Department of Water Resources (Version 1.30; June 12, 2017).



Water Budget Workbook for New and Rehabilitated Non-Residential Landscapes

Beta Version 1.30

June 13, 2017

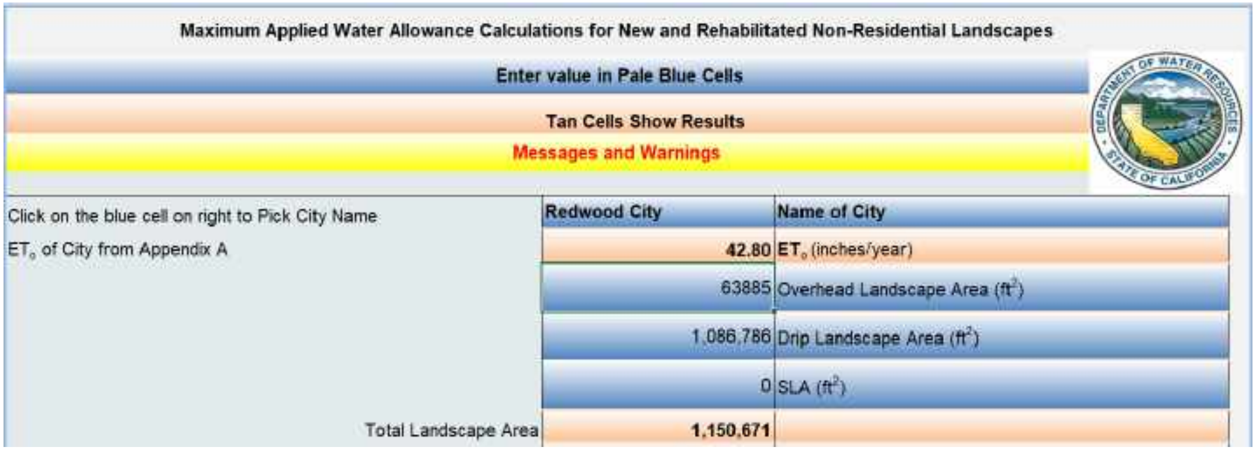
Califonia Department of Water Resources
Statewide Integrated Water Management
Water Use and Efficiency Branch

This program calculates Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU) based on reference evapotranspiration from Appendix A in the Model Water Efficiency Landscape Ordinance

All information provided by the Department of Water Resources is made available to provide immediate access for the convenience of interested persons. While the Department believes the information to be reliable, human or mechanical error remains a possibility. Therefore, the Department does not guarantee the accuracy, completeness, timeliness, or correct sequencing of the information. Neither the Department of Water Resources nor any of the sources of the information shall be responsible for any errors or omissions, or for the use or results obtained from the use of this information.

ATTACHMENT A: LANDSCAPING IRRIGATION WATER DEMAND DATA

1. PROJECT BUILDOUT SCHEMES 1/2



Maximum Applied Water Allowance Calculations for New and Rehabilitated Non-Residential Landscapes

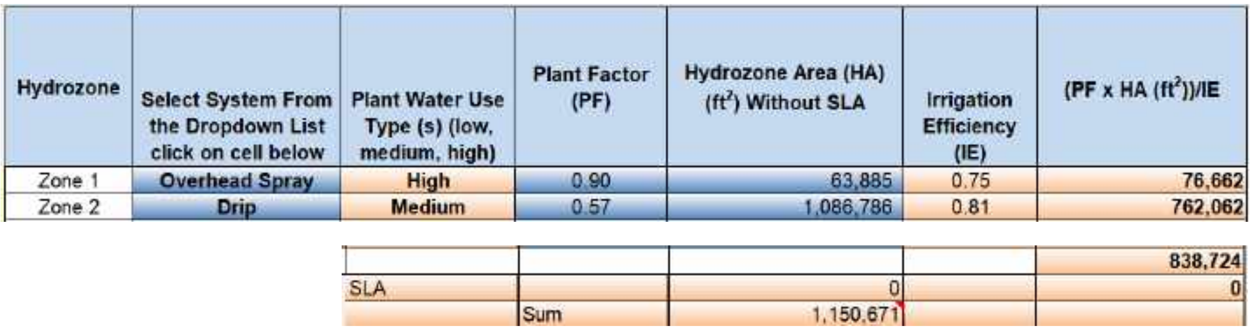
Enter value in Pale Blue Cells

Tan Cells Show Results

Messages and Warnings

DEPARTMENT OF WATER RESOURCES · STATE OF CALIFORNIA

Click on the blue cell on right to Pick City Name	**Redwood City**	**Name of City**
ET_o of City from Appendix A	**42.80**	**ET_o** (inches/year)
	63885	Overhead Landscape Area (ft^2)
	1,086,786	Drip Landscape Area (ft^2)
	0	SLA (ft^2)
Total Landscape Area	**1,150,671**	

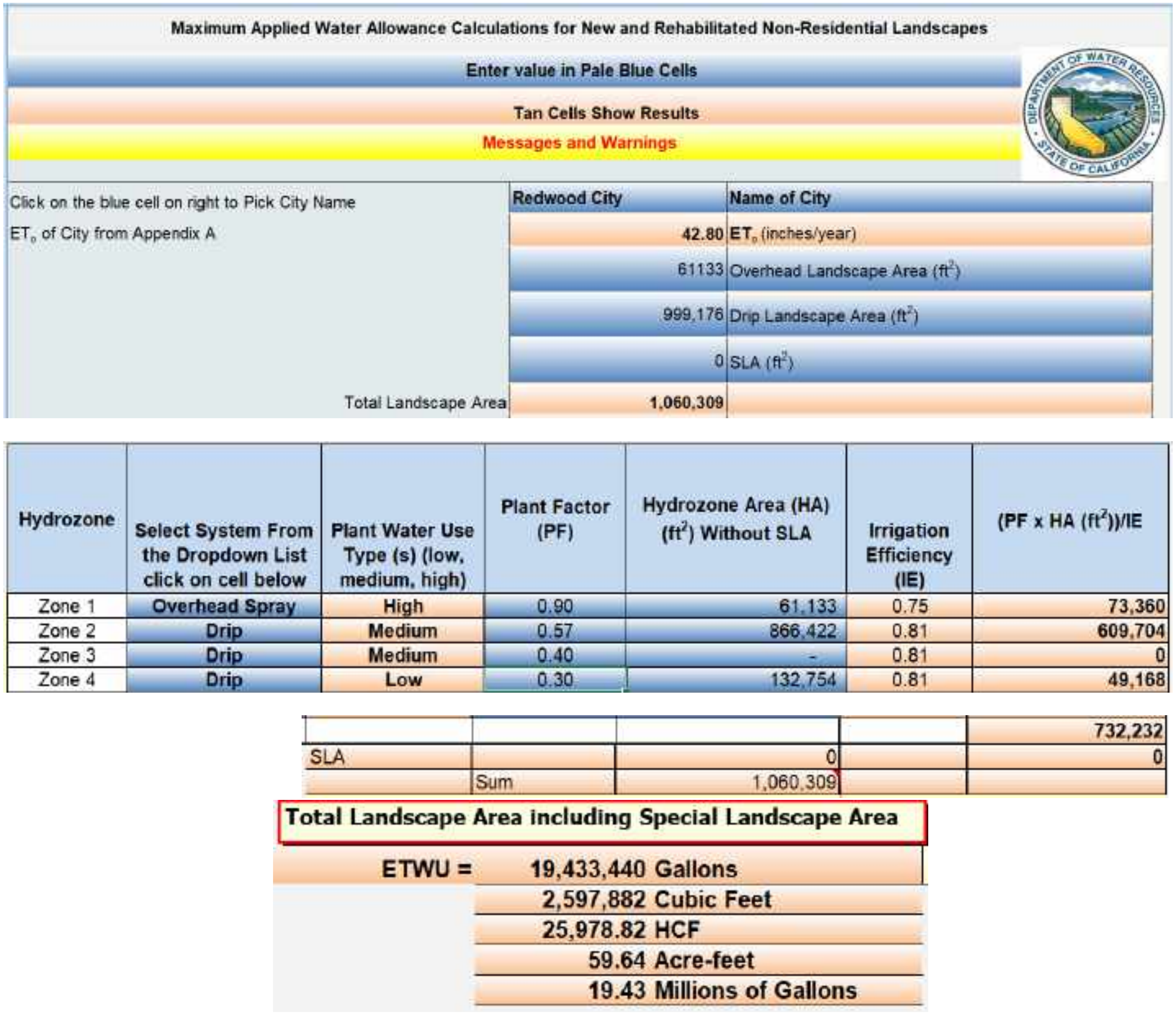


Hydrozone	**Select System From the Dropdown List click on cell below**	**Plant Water Use Type (s) (low, medium, high)**	**Plant Factor (PF)**	**Hydrozone Area (HA) (ft^2) Without SLA**	**Irrigation Efficiency (IE)**	**(PF x HA (ft^2))/IE**
Zone 1	**Overhead Spray**	**High**	0.90	63,885	0.75	**76,662**
Zone 2	**Drip**	**Medium**	0.57	1,086,786	0.81	**762,062**
						838,724
		SLA		0		0
			Sum	1,150,671		

Total Landscape Area including Special Landscape Area

ETWU =	**22,259,730 Gallons**
	2,975,703 Cubic Feet
	29,757.03 HCF
	68.31 Acre-feet
	22.26 Millions of Gallons

2. INCREASED DEVELOPMENT VARIANT [UPDATED 2024]



Maximum Applied Water Allowance Calculations for New and Rehabilitated Non-Residential Landscapes

Enter value in Pale Blue Cells

Tan Cells Show Results

Messages and Warnings

Click on the blue cell on right to Pick City Name	**Redwood City**	**Name of City**
ET_o of City from Appendix A	**42.80**	**ET_o** (inches/year)
	61133	Overhead Landscape Area (ft^2)
	999,176	Drip Landscape Area (ft^2)
	0	SLA (ft^2)
Total Landscape Area	**1,060,309**	

Hydrozone	Select System From the Dropdown List click on cell below	Plant Water Use Type (s) (low, medium, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft^2) Without SLA	Irrigation Efficiency (IE)	(PF x HA (ft^2))/IE
Zone 1	**Overhead Spray**	**High**	0.90	61,133	0.75	**73,360**
Zone 2	**Drip**	**Medium**	0.57	866,422	0.81	**609,704**
Zone 3	**Drip**	**Medium**	0.40	-	0.81	**0**
Zone 4	**Drip**	**Low**	0.30	132,754	0.81	**49,168**

				732,232
SLA		0		0
	Sum	1,060,309		

Total Landscape Area including Special Landscape Area

ETWU =	**19,433,440 Gallons**
	2,597,882 Cubic Feet
	25,978.82 HCF
	59.64 Acre-feet
	19.43 Millions of Gallons

Appendix 3.7-1

Noise Technical Memorandum

Memorandum

To:	Corinna Sandmeier, Principal Planner, City of Menlo Park
From:	Cory Matsui, Noise Specialist, ICF Noah Schumaker, Noise Specialist, ICF
Cc:	Heidi Mekkelson, Project Director, ICF Jessica Viramontes, Project Manager, ICF
Date:	June 13, 2024
Re:	**Parkline – Noise Technical Memorandum**

Introduction

This memorandum identifies and evaluates the potential impacts related to noise and vibration for Parkline (Proposed Project). This memorandum also describes existing conditions in the project area and the regulatory framework for this analysis. Feasible mitigation measures, where applicable, are also described and cumulative impacts are evaluated.

Project Location and Description

The 63.2-acre Project Site is located at 333 Ravenswood Avenue[1] in the city of Menlo Park (city). The Project Site is between El Camino Real and Middlefield Road, near the downtown area and Menlo Park Caltrain station (as shown in Figure 1). The Project Site consists of five parcels (Assessor's Parcel Numbers 062-390-660, 062-390-670, 062-390-730, 062-390-760, and 062-390-780).

Lane Partners (Project Sponsor) is proposing to redevelop SRI International's existing 63.2-acre research campus adjacent to city hall and near Menlo Park's downtown and Caltrain station (Project Site). The Proposed Project would include a new office/research and development (R&D) campus with no increase in office/R&D square footage; up to 550 new dwelling units at a range of affordability levels (comprised of 450 multi-family units and townhomes, and a proposed land dedication to an affordable housing developer that could accommodate up to 100 affordable

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[1] The Project Site also includes the addresses 301 Ravenswood Avenue and 555 and 565 Middlefield Road.

units); new bicycle and pedestrian connections; approximately 26.4 acres of open space on the Project Site; the removal of approximately 708 existing trees, including 198 heritage trees, and the planting of approximately 873 new trees; and decommissioning of a 6 megawatt natural gas cogeneration plant. In total, the Proposed Project would result in approximately 1,768,802 square feet (sf) of mixed-use development, with approximately 1,093,602 sf of office/R&D uses and approximately 675,200 sf of residential uses. The Proposed Project would demolish all buildings on SRI International's Campus, excluding Buildings P, S, and T, which would remain onsite and be operated by SRI International. Figure 2 depicts the conceptual site plan for the Proposed Project.

Project Variant

In addition to the Proposed Project, this memorandum evaluates the Increased Development Variant (Project Variant). The Project Variant is a variation of the Proposed Project at the same Project Site (although the Project Site would be slightly expanded to include 201 Ravenswood Avenue), generally with the same objectives, background, and development controls but with the following differences:

1) The site for the Project Variant would include the Project Site and the parcel at 201 Ravenswood Avenue, creating a continuous Project frontage area along Ravenswood Avenue and increasing the overall Project Site by approximately 43,762 sf (approximately 1.0 acre), for a total of approximately 64.2 acres;

2) The Project Variant would include up to 250 additional residential rental dwelling units compared to the Proposed Project (an increase from 550 to 800 units, inclusive of the up to 154 units that would be developed by an affordable housing developer);

3) The Project Variant would reduce the underground parking footprint within the site, both by removing underground parking from the multi-family residential buildings in the residential area and removing the underground parking connection between office/R&D Building O1 and Building O5. As a result, the height and square footage of Parking Garage (PG) 1 and PG2 would increase compared to the Proposed Project and the number of structured spaces would increase by 400 but with no change in the total number of parking spaces proposed for the office/R&D buildings; and

4) The Project Variant would include a 2- to 3-million-gallon emergency water reservoir that would be buried below grade in the northeast area of the Project Site, in addition to a small pump station, an emergency well, and related improvements that would be built at and below grade (i.e., emergency generator, disinfection system, surge tank) (referred to as "reservoir" throughout this document). It would be built and operated by the city of Menlo Park.

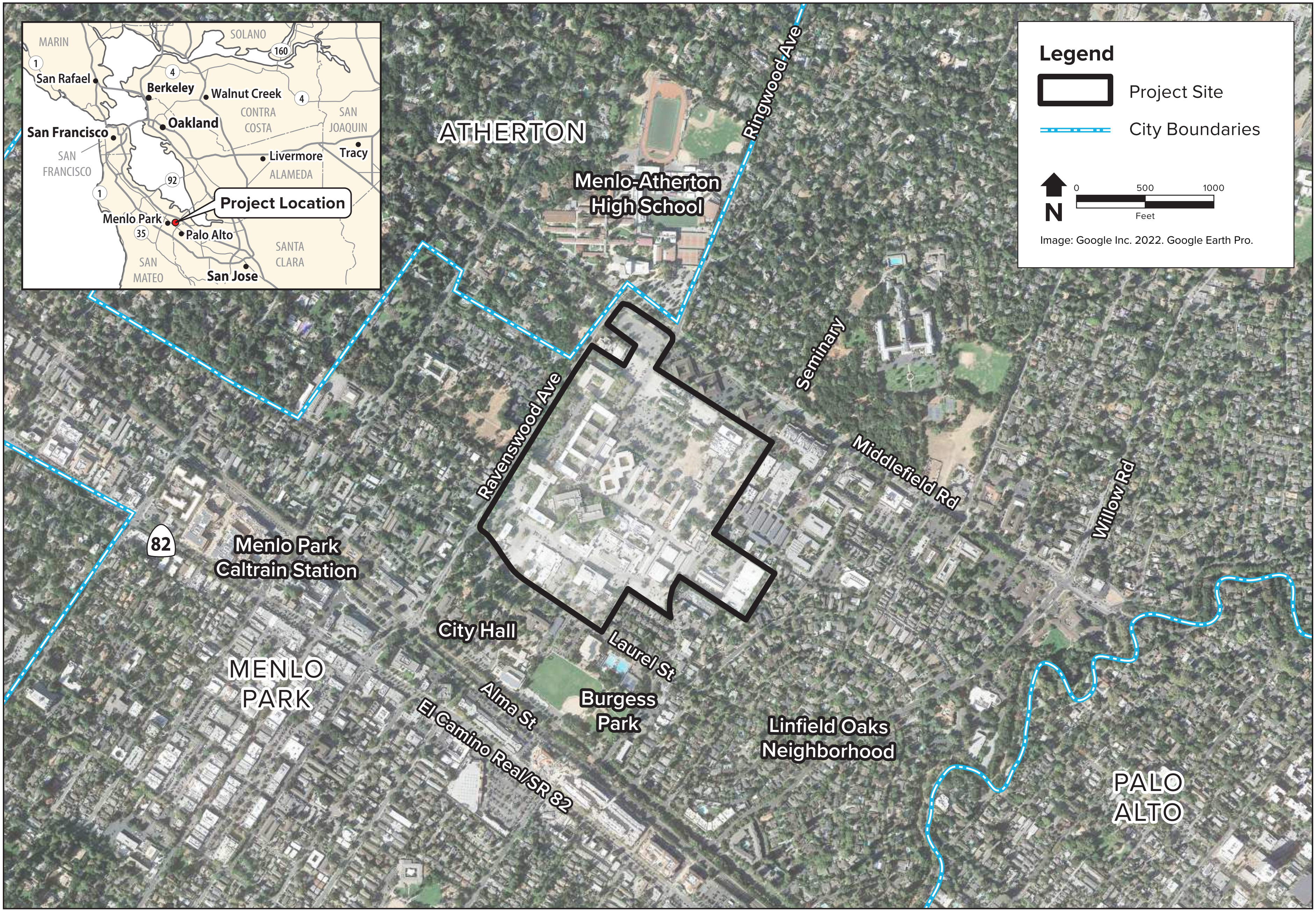
The basic characteristics of the Project Variant would not differ from many of the basic characteristics of the Proposed Project, particularly with respect to the commercial component. For example, total office/R&D development would remain the same as under the Proposed Project. Certain residential uses, including the affordable housing units and a limited number of townhomes, would shift to the corner of the site near the intersection of Middlefield Road and Ravenswood Avenue. In addition, the existing buildings associated with First Church of Christ, Scientist and Alpha Kids Academy at 201 Ravenswood Avenue would be demolished.

The Project Variant would be available for selection by the Project Sponsor and decision-makers as part of an approval action. The city could approve a modified version of the Project Variant with either or both of these components (i.e., additional dwelling units and no emergency water reservoir, emergency water reservoir and no additional dwelling units, or additional dwelling units and emergency water reservoir). Figure 3 depicts the conceptual site plan for the Project Variant.

Existing Noise Environment

Existing Noise Sources

The existing ambient noise levels in the vicinity of the Project Site are dominated by traffic on major roadways in the area, including Ravenswood Avenue, Middlefield Road, and El Camino Real. In the residential neighborhoods near the Project Site, noise sources are typical of those in residential areas, with sounds of occasional landscaping equipment, children's voices, music, and car-related noises. In addition, the recreational facilities west of the Project Site are area sources that result in intermittent noise, such as voices yelling and cheering, water splashing at the public pool, shoes and bouncing balls screeching at the public tennis court, etc.



ICF

Figure 1
Project Location
Parkline

Note: The combined utility yard (CUY), which is directly east of Building S, and the associated changes to the parking layout that are shown as existing in this figure are part of a separate architectural control application currently under review by the City for the proposed tenant improvements in Buildings P, S, and T. The proposed tenant improvements in Buildings P, S, and T are not part of the Proposed Project but are included in the cumulative analysis.

Source: Studios Architecture, OJB, Kier+Wright, 2024.

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Figure 2
Conceptual Site Plan for the Proposed Project

Source: Studios Architecture, OJB, Kier+Wright, 2024.

Note: The combined utility yard (CUY), which is directly east of Building S, and the associated changes to the parking layout that are shown as existing in this figure are part of a separate architectural control application currently under review by the City for the proposed tenant improvements in Buildings P, S, and T. The proposed tenant improvements in Buildings P, S, and T are not part of the Proposed Project but are included in the cumulative analysis.

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Figure 3
Conceptual Site Plan for the Project Variant
Parkline

Railroad tracks that traverse through Menlo Park are another source of intermittent noise that influences the ambient environment. The tracks are used by multiple rail services, most frequently Caltrain, and are located approximately 800 feet west of the site. Although not in the immediate vicinity of the Project Site, Caltrain horns and engine noise affect some residential neighborhoods in Menlo Park.

Noise- and Vibration-Sensitive Land Uses

The existing environment comprises several types of land uses, including noise-sensitive land uses. Such uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect use of the land. The vicinity of the Project Site generally consists of residential neighborhoods, public facilities, and office uses. The land uses in the Project vicinity are described below by cardinal direction. Figure 4 depicts the location of noise- and vibration-sensitive land uses in the vicinity of the Project Site.

North of the Project Site

- North of Ravenswood Avenue, there are multiple single-family and multi-family residences. In addition, Trinity Church, located north of the Project Site, is a noise-sensitive land use when church services are occurring. The church campus comprises an early childhood program and a family service center. For these land uses north of Ravenswood Avenue, the distance from the boundary of the Project Site is approximately 60 feet. At the boundary of the Project Site, there are currently landscaped areas and driveways, with both existing buildings and proposed buildings set back from the boundary of the site.
- The First Church of Christ, Scientist is also north of the Project Site but adjacent to and surrounded on three sides by the site (the fourth side of the church property borders Ravenswood Avenue). This church site is also home to the Alpha Kids Academy, which is a preschool facility. The distance from the church building to the Project Site boundary is, at the nearest point, approximately 25 feet.

East of the Project Site

- East of the Project Site are Menlo-Atherton High School (200 feet to the nearest campus building) and single-family residences (170 feet), all of which are east of Middlefield Road. Adjacent to the Project Site are three unaffiliated office buildings, approximately 40 feet from the nearest boundary. Office buildings are generally not considered noise-sensitive land uses.

South of the Project Site

- South of the Project site is a series of office buildings, part of the U.S. Geological Survey campus. The closest building is approximately 50 feet from the Project boundary. Office buildings are generally not considered to be sensitive to noise.
- The southern boundary of the Project Site is not a straight line. Single-family residences are adjacent to different sections of the border, including the homes on Waverley Street and Kent Place (i.e., the Linfield Oaks neighborhood) and the homes on Thurlow Street and Barron Street (i.e., the Classics of Burgess Park neighborhood). As noted, the Project boundary is adjacent to

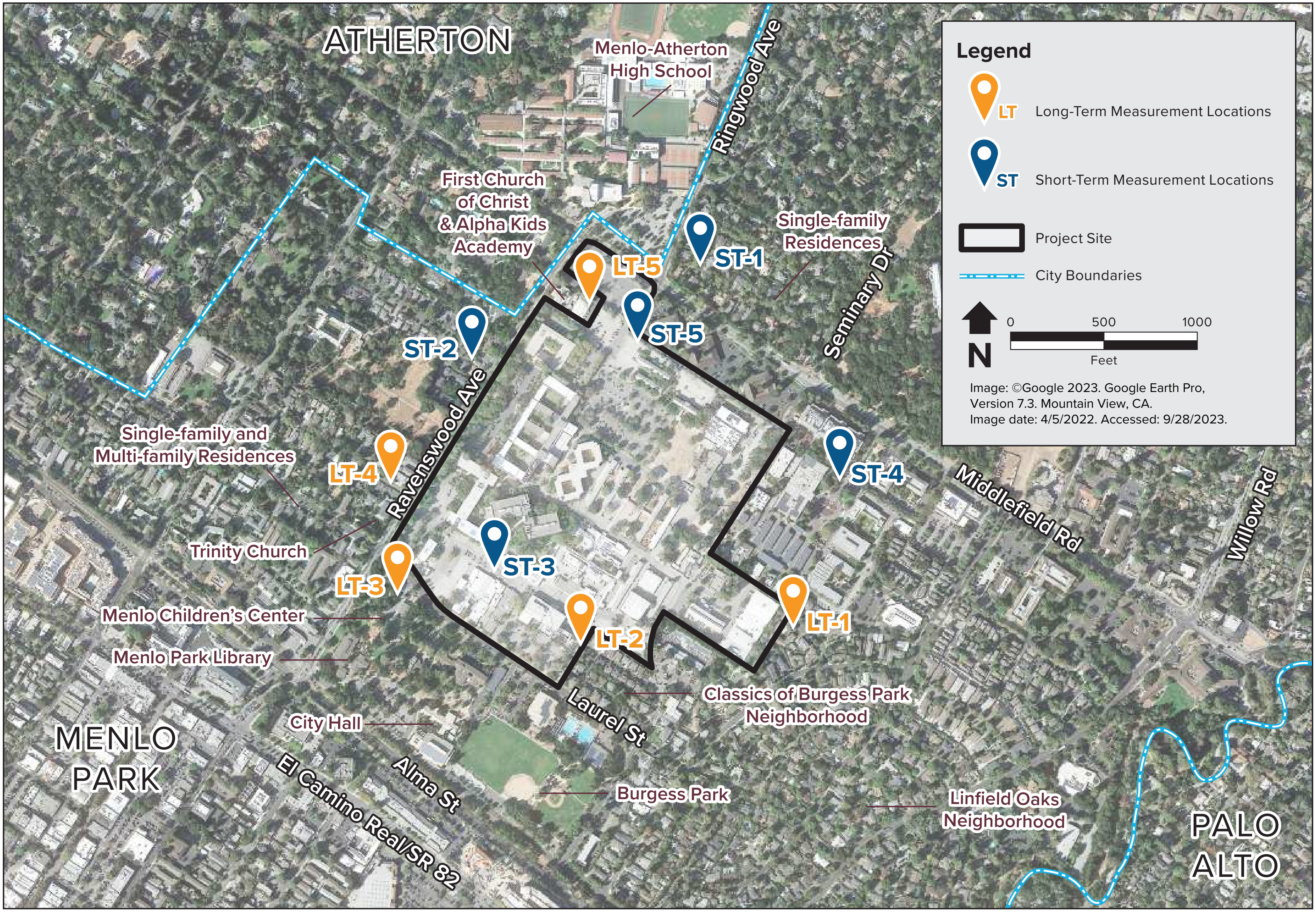

Image: ©Google 2023. Google Earth Pro, Version 7.3. Mountain View, CA. Image date: 4/5/2022. Accessed: 9/28/2023.

Graphics ... 104631 (10-11-2023) JC

Figure 4
Sensitive Receptors and Noise Measurement Locations
Parkline

these homes, and thus, the backyards of these residential properties share a border with the Project Site. The distance from the Project boundary to the actual homes is, at the nearest point, approximately 15 feet.

West of the Project Site

- West of the Project Site is a combination of public facilities and other resources, including a public library, the Menlo Children's Center, City Hall, recreational facilities, and Burgess Park. Of these facilities, the Menlo Children's Center is very likely the most noise sensitive, being located approximately 120 feet from the Project Site. The public library is also a noise-sensitive use, located approximately 450 feet from the Project Site. The other facilities in this area are similar to office uses (e.g., City Hall) or are recreational and, thus, less sensitive to noise.

Ambient Noise Monitoring

Ambient noise is often monitored or measured to characterize ambient noise levels in the vicinity of a project. To quantify existing ambient noise levels near the Project Site, ambient noise measurements were conducted on Wednesday, April 19, and Thursday, April 20, 2023. The noise measurements were conducted to document existing noise levels in the area with use of integrating sound level meters (SLMs). These included both short-term (ST) measurements conducted over a period of 15 minutes and long-term (LT) noise measurements, which logged hourly data over a period of at least 24 hours. The instrument used to obtain the ST noise measurements was a Type 1 Larson Davis SLM (Model LxT). The instruments used to obtain the LT noise measurements were one Type 2 Piccolo-I SLMs and four Type 2 Piccolo-II SLMs. All SLMs were field calibrated by a Larson Davis CAL200 acoustical calibrator prior to each measurement to ensure accuracy.

During the ST measurements, weather conditions were generally clear, with slight cloud cover at times. Wind speeds were approximately 1 to 2 miles per hour and temperatures ranged from approximately 50 to 68 degrees Fahrenheit.

The analysis of impacts provided in this technical memo focuses on the noise-sensitive land uses in the vicinity of the Project Site. Analyzing impacts at uses closest to the Project Site provides a reasonable worst-case assessment. The measurement locations were distributed throughout the area, with an emphasis on locations that are representative of one or more noise-sensitive receptors (i.e., residential dwellings) near the Project Site. Figure 4 depicts the locations of the noise measurements.

Table 1 summarizes the noise measurement results. Field noise survey sheets and the complete field measurement dataset are included in Attachment A of this memorandum. Noise measurements indicate that the hourly ambient noise levels in the vicinity of the Project Site were between 50.2 and 74.1 A-weighted decibels (dBA), equivalent nose level (L_{eq}), during the daytime; between 50.6 and 57.9 dBA L_{eq} during the evening; and between 45.8 and 58.3 dBA L_{eq} during the nighttime. The LT noise measurements indicate that the average daily noise level ranged from approximately 57 to 64 dBA, day-night average sound level (L_{dn}), in the area.

Table 1. Measured Existing Noise Levels in the Project Vicinity

			Noise Levels, dBA		
Measurement Location Number: Description	**Date(s)**	**Time[a]**	**L_{eq} Range (Average)**	**L_{max} Range**	**L_{dn}**
LT-1: 31 Kent Place	04/19/2023 to 04/20/2023	Daytime	50.2–55.8 (53.5)	67.8–82.9	59
		Evening	50.6–52.4 (51.3)	67.8–70.7	
		Nighttime	47.4–56.9 (51.1)	50.7–65.5	
LT-2: 585 Barron Street	04/19/2023 to 04/20/2023	Daytime	50.2–56.1 (53.7)	66.5–77.2	57
		Evening	50.8–52.5 (51.9)	65.5–70.0	
		Nighttime	45.8–54.5 (49.6)	49.4–65.6	
LT-3: 801 Laurel Street	04/19/2023 to 04/20/2023	Daytime	57.9–62.7 (59.6)	70.6–87.4	62
		Evening	56.8–57.7 (57.2)	69.4–79.5	
		Nighttime	48.6–58.2 (52.8)	64.0–73.0	
LT-4: 1020 Pine Street	04/19/2023 to 04/20/2023	Daytime	56.6–74.1 (65.2)	69.9–89.1	64
		Evening	54.7–57.9 (56.1)	67.2–85.7	
		Nighttime	46.6–58.3 (51.1)	63.7–69.3	
LT-5: 201 Ravenswood Avenue	04/19/2023 to 04/20/2023	Daytime	55.4–63.3 (57.8)	67.8–82.4	59
		Evening	54.0–54.9 (54.4)	71.5–75.1	
		Nighttime	47.4–55.4 (50.7)	63.8–77.1	
ST-1: 200 Gloria Circle	4/19/2023	12:06 p.m.	49.6	66.0	N/A
ST-2: 1025 Marcussen Drive	4/19/2023	11:01 a.m.	55.9	68.7	N/A
ST-3: Onsite (D Street and West 4th Street)	4/19/2023	10:28 a.m.	55.3	67.1	N/A
ST-4: 345 Middlefield Road	4/20/2023	7:42 a.m.	49.3	63.4	N/A
ST-5: 545 Middlefield Road	4/20/2023	11:16 a.m.	52.5	60.8	N/A

Notes:

[a] Daytime hours are 7 a.m. to 7 p.m., evening hours are 7 p.m. to 10 p.m., and nighttime hours are 10 p.m. to 7 a.m.

Short-term measurements = ST; long-term measurements = LT; L_{max} = maximum sound level

Regulatory Framework

Federal

No federal laws, regulations, or policies for construction-related noise and vibration apply to the Proposed Project. The State of California (State) and local regulatory framework for noise and vibration is discussed below.

State

Governor's Office of Planning and Research

The State of California General Plan Guidelines, published and updated by the Governor's Office of Planning and Research, provides guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. These are guidelines for general land use planning that describe noise acceptability categories for different types of land uses considered by the State. California also requires each local government entity to perform noise studies and implement a noise element as part of its general plan. The purpose of the noise element is to limit the exposure of the community to excessive noise levels; the noise element must be used to guide decisions concerning land use. A discussion of relevant noise-related policies in the City of Menlo Park (City) General Plan is included below.

California Green Building Standards Code

There are no State noise and vibration standards that apply directly to the Proposed Project. However, Section 5.507.4.1.1 of the California Green Building Standards Code (i.e., non-residential mandatory measures) discusses exterior noise exposure for buildings when noise contours are not readily available. In these situations, the California Green Building Standards Code states that buildings may be exposed to a 1-hour noise level of 65 dB L_{eq} before additional noise abatement features (e.g., exterior walls, floor/ceiling assemblies, exterior windows) are required to achieve a composite Sound Transmission Class (STC) rating of 45 or a minimum STC of 40 with exterior windows. Implementation of these measures would need to reduce exterior noise to an hourly equivalent noise level (L_{eq} 1 hour) of 50 dBA in occupied areas during any hour of operation.

California Department of Transportation

As noted below, there are no quantitative local standards that can be used to assess project-related vibration. Although the Proposed Project would not be subject to California Department of Transportation (Caltrans) oversight, guidance published by the agency nonetheless provides ground-borne vibration criteria that are useful in establishing thresholds for impact determinations. Caltrans' widely referenced Transportation and Construction Vibration Guidance Manual2 provides guidance for two types of potential impact: (1) damage to structures and (2) annoyance to people. Guideline criteria for each are provided in Tables 2 and 3.

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[2] California Department of Transportation. 2020. *Transportation and Construction Vibration Guidance Manual.* Sacramento, CA: Noise, Division of Environmental Analysis. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed: February 24, 2023.

Table 2. Caltrans Guidelines for Vibration-Related Damage[3]

	Maximum PPV (in/sec)[a]	
Structure and Condition	**Transient Sources**	**Continuous/ Frequent Intermittent Sources**
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes:

[a.] Transient sources create a single, isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include pile drivers (impact and vibratory), crack-and-seat equipment, and vibratory compaction equipment.

PPV = peak particle velocity (i.e., vibration level) in inches per second.

Table 3. Caltrans Guideline for Vibration-Related Annoyance[4]

	Maximum PPV (in/sec)[a]	
Human Response	**Transient Sources**	**Continuous/ Frequent Intermittent Sources**
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Notes:

[a.] Transient sources create a single, isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include pile drivers (impact and vibratory), crack-and-seat equipment, and vibratory compaction equipment.

PPV = peak particle velocity (i.e., vibration level) in inches per second.

Local

City of Menlo Park General Plan

The current city General Plan, most recently amended in January 2023 and January 2024 to incorporate updates to the Housing Element and Land Use Element, consists of the Open

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[3] Ibid.

[4] Ibid.

Space/Conservation, Noise, and Safety Elements; the 2023–2031 Housing Element; and the Circulation and Land Use Elements. The city General Plan includes goals and policies associated with noise and vibration.

The city General Plan contains general goals, policies, and programs that require local planning and development decisions to consider noise impacts. The Noise and Safety Element sets goals, policies, and implementing programs that work to achieve acceptable noise levels. In addition, the Noise and Safety Element sets land use compatibility noise standards for new developments. The following goal and policies from the Noise and Safety Element related to noise and vibration were adopted to avoid or minimize environmental impacts and are relevant to the Proposed Project:

Goal N1: Achieve Acceptable Noise Levels

Policy N1.1: Compliance with Noise Standards**.** Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans. Require new projects to comply with the noise standards of local, regional, and building code regulations, including, but not limited to, the Menlo Park Municipal Code, Title 24 of the California Code of Regulations, and subdivision and zoning codes.

Policy N1.2: Land Use Compatibility Noise Standards. Protect people in new development from excessive noise by applying the City's Land Use Compatibility Noise Standards for New Development to the siting and required mitigation for new uses in existing noise environments. (See the City General Plan Noise Element compatibility standards in Table 4.)

Policy N1.4: Noise-Sensitive Uses. Protect existing residential neighborhoods and noise-sensitive uses from unacceptable noise levels and vibration impacts. Noise-sensitive uses include, but are not limited to, hospitals, schools, religious facilities, convalescent homes, and businesses with highly sensitive equipment. Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL [Community Noise Equivalent Level] without appropriate mitigation, and locate noise-sensitive uses away from noise sources unless mitigation measures are included in development plans.

Table 4. Land Use Compatibility Noise Standards for New Development

INTERPRETATION

🟦	Normally Acceptable	Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
🟩	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction; with closed windows, fresh air supply systems or air-conditioning will normally suffice.
🟥	Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
🟨	Clearly Unacceptable	New construction or development should not be undertaken.

Policy N1.6: Noise Reduction Measures. Encourage the use of construction methods, state-of-the-art noise-abating materials and technology, and creative site design, including, but not limited to, open spaces, earthen berms, parking areas, accessory buildings, and landscaping, to buffer new and existing development from noise and reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.

Policy N1.7: Noise and Vibration from New Non-Residential Development. Design non-residential development to minimize noise impacts on nearby uses. Where vibration impacts may occur, reduce impacts on residences and businesses through the use of setbacks and/or structural design features that reduce vibration to levels at or below the guidelines of the Federal Transit Administration near rail lines and industrial uses.

Policy N1.8: Potential Annoying or Harmful Noise. Preclude the generation of annoying or harmful noise from stationary noise sources, such as construction, property maintenance, and mechanical equipment.

Policy N1.10: Nuisance Noise. Minimize impacts from noise levels that exceed community sound levels through enforcement of the City's Noise Ordinance. Control unnecessary, excessive, and annoying noises within the city where not preempted by federal and State control by implementing and updating the noise ordinance.

Program N1.D: Minimize Construction Activity Noise. Minimize the exposure of nearby properties to excessive noise levels from construction-related activity through CEQA [California Environmental Quality Act] review, conditions of approval, and enforcement of the City's Noise Ordinance.

Land use compatibility noise standards are included in the City General Plan Noise and Safety Element (refer to Table 4). According to the Noise and Safety Element, noise levels of up to 60 dBA Ldn are considered normally acceptable for single-family residential land uses; noise levels are conditionally acceptable up to 70 dBA Ldn for such uses as long as noise insulation is included in the design to reduce interior noise levels. For multi-family residential uses and hotels, noise levels of up to 65 dBA Ldn are considered normally acceptable; noise levels of 70 dBA Ldn are considered conditionally acceptable. For office buildings and commercial uses, noise levels of up to 70 dBA Ldn are considered normally acceptable; noise levels of up to 77.5 dBA Ldn are considered conditionally acceptable. For industrial uses, noise levels up to 75 dBA Ldn are considered normally acceptable; noise levels of up to 80 dBA Ldn are considered conditionally acceptable. For schools and churches, playgrounds, and neighborhood parks, noise levels up to 70 dBA Ldn are considered normally acceptable; there are no separate conditionally acceptable noise limits for these uses.

Menlo Park Municipal Code

In addition to the City General Plan, the Menlo Park Municipal Code also contains noise regulations. Chapter 8.06 of the Menlo Park Municipal Code contains noise limitations and exclusions for land uses within Menlo Park. The code focuses on noise that constitutes a disturbance, primarily as measured at residential land uses. The regulations below from the Menlo Park Municipal Code would be applicable to the Proposed Project.

8.06.030, Noise Limitations

a. Except as otherwise permitted in this chapter, any source of sound in excess of the sound-level limits set forth in Section 8.06.030 shall constitute a noise disturbance. For purposes of determining sound levels from any source of sound, sound level measurements shall be made at the point on the receiving property nearest to where the sound source at issue generates the highest sound level.

    1. For all sources of sound measured from any residential property:

        A. Nighttime hours (10:00 p.m. to 7:00 a.m.): 50 dBA

        B. Daytime hours (7:00 a.m. to 10:00 p.m.): 60 dBA

8.06.040, Exceptions

a. Construction Activities

    1. Construction activities between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday.

    4. Notwithstanding any other provision set forth above, all powered equipment shall comply with the limits set forth in Section 8.06.040(b).

b. Powered Equipment

    1. Powered equipment used on a temporary, occasional, or infrequent basis and operated between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday. No piece of equipment shall generate noise in excess of 85 dBA at 50 feet.

d. Deliveries

    1. Deliveries to food retailers and restaurants.

    2. Deliveries to other commercial and industrial businesses between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and between the hours of 9:00 a.m. and 5:00 p.m. Saturdays, Sundays, and holidays.

e. Occasional Social Gatherings. Occasional social gatherings between 11:00 a.m. and 11:30 p.m., provided the noise level for the occasional social gathering measured from any adjacent residential property does not exceed 65 dBA.

8.06.050, Exemptions

a. Sound Generated by Motor Vehicles. Sound generated by motor vehicles, trucks, and buses operated on streets and highways; aircraft; trains; and other public transport.

    1. This exemption shall not apply to the operation of any vehicle, including any equipment attached to any vehicle (such as attached refrigeration and/or heating units or any attached auxiliary equipment), for a period in excess of 10 minutes in any hour while the vehicle is stationary for reasons other than traffic congestion.

b. Emergency repairs that deal with a health or safety risk and emergency generators or powered equipment used during a power outage or other emergency.

Furthermore, the zoning ordinance contains regulations related to roof-mounted equipment.

16.08.095, Roof-mounted Equipment

Mechanical equipment, such as air-conditioning equipment, ventilation fans, vents, ducting, or similar equipment, may be placed on the roof of a building, provided that such equipment is screened from view, as observed at an eye level horizontal to the top of the roof-mounted equipment, except for the SP-ECR/D district, which has unique screening requirements, and all sounds emitted by such equipment shall not exceed 50 dB [decibels] at a distance of 50 feet from such equipment.

Methodology and Results

Methodology

Construction Noise – Off-Road Equipment

Phase-specific construction noise modeling was conducted for the loudest phases of construction at the Project Site, using the assumption that the three loudest pieces of equipment per phase of construction would be operating simultaneously and in proximity on the Project Site. Combining the noise level from the three loudest pieces of equipment and assuming proximity during operation results in a reasonably representative worst-case combined noise level. Construction activities are expected to occur between 6:00 a.m. and 3:30 p.m. on weekdays, excluding holidays. Construction will begin at 6:00 a.m. only for concrete pouring, which will occur twice a week for approximately 14 months. Therefore, this analysis compares construction noise to the thresholds that apply during the typical daytime construction hours of 8:00 a.m. to 6:00 p.m. and the early morning hours of 6:00 a.m. to 8:00 a.m. (i.e., prior to the start of the daytime construction noise exemption period).

In addition to the general noise limits defined in the Menlo Park Municipal Code, and described above, noise from the temporary, occasional, or infrequent use of individual powered equipment between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday is limited to 85 dBA at a distance of 50 feet. This analysis also determines if the equipment proposed for construction would comply with this threshold.

Despite the exemption for daytime construction noise, construction activities that are exempt from specified noise limitations in the Menlo Park Municipal Code could still result in a significant physical impact on the environment if the noise increase is considered substantial. Therefore, construction noise is compared to the existing ambient noise level at nearby noise-sensitive land uses to estimate the temporary increases in noise that could occur, a threshold of 10 dB is used for that purpose. An evaluation is conducted to determine if an increase of 10 dB or more over the existing ambient noise level, perceived as a doubling of loudness[5], would be expected to occur at noise-sensitive land uses.

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[5] Similarly, a decrease of 10 dB is perceived as a halving of the sound level.

Construction Noise – Haul Trucks

Noise from construction haul trucks has been analyzed separately for the construction noise analysis. The Project Sponsor provided the number of haul truck trips for each construction subphase. The highest truck volumes per day would occur during the grading subphase. To conduct this analysis, the number of haul truck trips for the grading subphase was divided by the number of days for this subphase to estimate a reasonable number of daily haul truck trips during the worst-case phase for hauling. These volumes were modeled relative to existing conditions to determine the potential noise impacts from the addition of construction truck traffic on existing roadways. The construction haul truck route, as indicated by the Project Sponsor, involves trucks exiting either U.S. 101 or State Route (SR) 84 onto Willow Road and traveling south. When reaching Middlefield Road, the trucks would turn west and continue on Middlefield Road until reaching the Project Site. Trucks leaving the Project Site would take a nearly identical route to get to either U.S. 101 or SR-84 but would exit the Project Site on Ravenswood Drive just south of Middlefield Road and then turn east onto Middlefield Road.

Modeling was conducted to estimate the increase in traffic noise levels by comparing noise from existing conditions to noise from existing conditions plus Proposed Project construction trucks to determine if a 3 dB, or "barely perceptible," increase in noise would occur along any modeled roadway segment in areas where the existing noise levels exceed the "normally acceptable" level, based on the land use compatibility chart. In areas where existing noise levels do not exceed the "normally acceptable" compatibility standard, the analysis identifies roadways where a 5 dB increase would occur.

Operational Stationary Equipment and Area-Source Noise

Thirteen emergency generators are proposed to be installed at the Project Site. [6] Although operating noise from generators is typically exempt in the case of an emergency, periodic testing of generators is not considered to be exempt. During testing, generator noise must meet the allowable noise levels, as established in the Menlo Park Municipal Code. The analysis of generator noise is based on noise levels from manufacturer data for the generator models anticipated to be used at the Proposed Project site, provided by the Project Sponsor. Additionally, estimated generator locations were provided by the Project Sponsor. Estimated noise levels were compared to the allowable noise levels in Menlo Park, which are 60 dBA during daytime hours and 50 dBA during nighttime hours, when measured from any residential property.

Mechanical equipment would be installed throughout the Project Site. Proposed equipment would include rooftop heating, ventilation, and air-conditioning (HVAC) equipment as well as building-specific heating plant equipment. A general list of equipment types was provided by the Project Sponsor. To evaluate the noise levels resulting from operation of the Proposed Project's mechanical equipment, typical noise levels were used for HVAC and mechanical equipment; the information

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[6] There are six existing generators along with a cogeneration power facility in place today, with one additional generator proposed to be installed by SRI in connection with its separate tenant improvements prior to Parkline project buildout (subject to separate City review and approval). The Parkline Project would remove 3 of the 6 existing SRI generators along with the cogeneration power facility and would install 13 new generators onsite, yielding a total of 17 generators at Project buildout, inclusive of the one additional generator proposed to be installed by SRI in connection with its separate tenant improvements.

came from manufacturers that specialize in mechanical equipment. Estimated noise levels were then compared to the allowable noise levels in the City of Menlo Park. In addition, noise levels from rooftop equipment were compared to the City Zoning Ordinance limit of 50 dBA at 50 feet.

Noise from amplified music or voices at events resulting from implementation of the Proposed Project was analyzed based on information about the expected future events provided by the Project Sponsor as well as noise-source data from similar events. Estimated noise levels from events were compared to the allowable noise levels in Menlo Park, which are 60 dBA during daytime hours, when measured from any residential property.

Operational Traffic Noise

To determine if the Proposed Project would result in a substantial permanent increase in traffic noise, direct noise impacts associated with increased traffic volumes from build-out conditions were quantitatively evaluated for three scenarios:

- Existing year (i.e., the baseline year for purposes of CEQA),
- Background year (i.e., the project buildout year), and
- Cumulative year (i.e., 2040, the horizon year for the City/County Association of Governments-Santa Clara Valley Transportation Authority [C/CAG-VTA] Travel Demand Model).

For the background year and cumulative year, two sub-scenarios were analyzed: with Project and no project. For the project-level analysis, traffic noise was evaluated with respect to background-year no-project conditions to isolate the Proposed Project's contribution to traffic noise. Comparing traffic noise under the with-project scenario to existing conditions does not isolate the contribution of the Proposed Project because traffic noise will increase in the absence of the Proposed Project due to background growth in region. Thus, comparing with-project conditions to existing conditions would not allow readers to determine what the project-only increase in traffic noise would be.

In the analysis of cumulative impacts, the cumulative-year with-project scenario is compared to existing conditions to determine if a significant cumulative impact exists. Then, the cumulative-year with-project and no-project scenarios are also compared to determine if the Proposed Project's contribution to the existing cumulative impact would be cumulatively considerable.

Quantitative modeling of traffic noise was conducted using a spreadsheet tool, which is based on the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM), version 2.5. The spreadsheet calculates the traffic noise level at a fixed distance from the centerline of a roadway, according to traffic volumes, roadway speeds, and the types of vehicles that are predicted to occur under each condition. Traffic volumes for each scenario and the truck volume percentages were provided by Hexagon. Traffic data provided by the traffic engineer included average daily traffic volumes for intersection segments in the vicinity of the Proposed Project. The data also included volumes by vehicle type and posted speed limits. Traffic volumes with and without the Proposed Project were then compared to determine if traffic increases associated with the Proposed Project would result in noticeable increases in traffic noise. The roadway segments with the greatest increases in volume between the with-project and no-project scenarios were selected for modeling using the TNM methods. Attachment A provides the traffic volumes for all roadways.

As noted above, a change of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level as it increases or decreases. Consequently, an increase in traffic noise levels of 3 dB or more, which is considered "barely noticeable," along roadway segments is considered a potentially substantial increase. In areas where a 3 dB increase is predicted to occur, additional analysis is conducted to determine if background and resulting noise levels would be above or below the "normally acceptable" land use compatibility standard. If background and resulting noise levels would be below the land use compatibility standard, a noise increase of up to 5 dB is allowed before a significant traffic noise impact is identified.

Vibration – Building Damage and Annoyance/Sleep Disturbance

The evaluation of potential vibration-related effects on structures and people from construction of the Proposed Project was based on the construction equipment list provided by the Project Sponsor and the estimated construction equipment vibration levels contained in both the Federal Transit Administration's (FTA's) Transit *Noise and Vibration Impact Assessment* and Caltrans' *Transportation and Construction Vibration Guidance Manual*. Estimated vibration levels at sensitive uses from construction of the Proposed Project were then compared to the Caltrans damage and annoyance vibration criteria, as shown in Tables 2 and 3, to determine if a vibration impact would be expected.

Airport-Related Noise

To evaluate the potential for airport activities or aircraft to expose people residing or working in the area to excessive noise levels, the Proposed Project's location was compared to the existing noise contours for airports in the vicinity. Airport-reported noise is analyzed in accordance with the California Building Industry Association v. Bay Area Air Quality Management District case[7], which establishes that the effects of the environment on a project are not considered impacts, unless a project exacerbates the hazard or worsens the noise effect. Because development of the Project would not increase aircraft traffic and would thus not exacerbate airport-related noise, this analysis is provided for informational purposes and not for the purposes of determining impacts under CEQA.

Buildout Scenario Evaluated

The Proposed Project could be occupied by office tenants, research and development (R&D) tenants, or a combination of the two. Because future tenants have not been identified, two scenarios have been identified for purposes of the EIR analysis: a 100 percent office scenario and a 100 percent R&D scenario. Each impact analysis in the EIR evaluates the "worst-case" scenario for the impact being analyzed. The "worst-case" scenario is the scenario with the greatest potential to result in significant environmental impacts. This approach ensures that the EIR evaluates the Proposed Project's maximum potential impact and that any future tenant mix is within the scope of the EIR. The "worst-case" scenario can vary by resource topic and by impact. In some cases, both scenarios would result in the same level of impact; in those cases, the analysis does not identify a "worst-case" scenario.

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[7] California Building Industry Association v. Bay Area Air Quality Management District, Supreme Court Case No. S213478.

Building heights, building layouts, lighting plans, and building materials would be the same under either the 100 percent R&D scenario or the 100 percent office scenario. Overall, there would be no notable differences in construction or operational activities between the scenarios from a noise perspective, except that higher power generators (1,500 kW) would be required for the R&D scenario, which could result in higher generator-related noise levels. This analysis evaluates the impacts from operation of generators up to 1,500 kW; otherwise, all other impacts would be the same regardless of the scenario for the purposes of this discussion.

The R&D scenario would also require mechanical equipment that could be higher power or more intense than the 100 percent office scenario (i.e., heat pumps with greater cooling capacity); however, the analysis of mechanical equipment relies on generic reference noise levels for typical equipment, and thus minor changes in equipment power levels or functionality cannot be accounted for at the current stage of analysis.

Summary of Analysis in the ConnectMenlo EIR

The ConnectMenlo EIR analyzed the impacts listed below that would result from implementing the updates to the Land Use and Circulation Elements and the M-2 Area Zoning Update.[8]

- Construction and operational noise effects were analyzed in the ConnectMenlo EIR as Impact NOISE-1 (pages 4.10-19 to 4.10-24), Impact NOISE-3 (pages 4.10-29 to 4.10-36), and Impact NOISE-4 (pages 4.10-36 to 4.10-37). Impacts were determined to be less than significant with application of mitigation measures as well as compliance with City General Plan goals and policies. Projects that would result in the development of sensitive land uses must maintain an indoor L_{dn} of 45 dBA or less, as required by ConnectMenlo EIR **Mitigation Measure NOISE-1a** and existing regulations. Projects that could expose existing sensitive receptors to excessive noise must comply with ConnectMenlo EIR **Mitigation Measures NOISE-1b**, **NOISE-1c**, and **NOISE-4** to minimize both operational and construction-related noise. ConnectMenlo EIR **Mitigation Measure NOISE-1b** requires stationary noise sources and landscaping and maintenance activities to comply with Chapter 8.06, Noise, of the Menlo Park Municipal Code. ConnectMenlo EIR **Mitigation Measures NOISE-1c** and **NOISE-4** requires development projects in the city to minimize the exposure of nearby properties to excessive noise levels from construction-related activity through CEQA review, conditions of approval and/or enforcement of the City's Noise Ordinance.
- Potential traffic noise effects were discussed in the ConnectMenlo EIR as part of Impact NOISE-3 (pages 4.10-29 to 4.10-36). It was determined that implementation of ConnectMenlo would not result in a substantial permanent increase in ambient noise on any of the identified roadway segments. No mitigation measures were recommended.

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[8] City of Menlo Park. 2016a. *ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Area Zoning Update for the City of Menlo Park*. June 1. Prepared by Placeworks, Berkeley, CA. Menlo Park, CA. Available: https://menlopark.gov/files/sharedassets/public/v/1/community-development/documents/connectmenloprojectdeir_060116.pdf. Accessed: October 10, 2024;; City of Menlo Park. 2016b. *Response to Comments Document - ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Zoning Update for the City of Menlo Park*. (June 1.) Prepared by Placeworks, Berkeley, CA. Menlo Park, CA. Available: https://menlopark.gov/files/sharedassets/public/v/1/community-development/documents/connectmenloprojectdeir_060116.pdf. Accessed: June 7, 2024.

- Construction vibration impacts were analyzed in the ConnectMenlo EIR as Impact NOISE-2 (pages 4.10-25 to 4.10-29). The impact was determined to be potentially significant. With implementation of **Mitigation Measures NOISE-2a** and **NOISE-2b**, this impact was determined to be reduced to a less-than-significant level. The analysis concluded that, overall, vibration impacts related to construction would be short term, temporary, and generally restricted to areas in the immediate vicinity of construction activity. However, because project-specific information was not available, the analysis did not quantify construction-related vibration impacts on sensitive receptors. Implementation of **Mitigation Measure NOISE-2a** would reduce construction-related vibration impacts to a less-than-significant level through preparation of a vibration analysis to assess vibration levels and the use of alternate construction techniques to reduce vibration, if necessary. Specifically, according to **Mitigation Measure NOISE-2a** from the ConnectMenlo EIR, vibration levels must be limited to a PPV of 0.126 in/sec at the nearest workshop, 0.063 in/sec at the nearest office, and 0.032 in/sec at the nearest residence during daytime hours and 0.016 in/sec at the nearest residence during nighttime hours. Regarding long-term vibration impacts, ConnectMenlo requires projects to comply with **Mitigation Measure NOISE-2b**, which requires the City to implement best management practices as part of the project approval process.
- Aircraft noise from public use airports and private airstrips was discussed in the ConnectMenlo EIR as Impact NOISE-5 (page 4.10-38) and Impact NOISE-6 (page 4.10-38). It was determined that impacts regarding excessive aircraft noise levels would be less than significant and there would be no impact related to public airports or private airstrips.

Results

Construction Noise – Off-Road Equipment

The Proposed Project is anticipated to be constructed in one phase, with site preparation occurring over the course of 12 to 15 months and buildout of site infrastructure and vertical improvements occurring afterward over the course of 30 to 36 months. In total, construction is expected to occur over approximately 51 months. However, the ultimate construction dates may vary because of market conditions, the availability of financing, and tenancy requirements. Therefore, it is possible that the Proposed Project would be constructed in three phases, as discussed in more detail below. Assuming the Proposed Project is constructed in three phases, construction would take approximately 77 months.

During construction of the Proposed Project, working hours would be from 7:00 a.m. to 6:00 p.m. on weekdays. The range of construction activity in the early morning hours would vary, but concrete pours are anticipated to start as early as 7:00 a.m. twice a week (Tuesdays and Thursdays) for approximately 14 months. No nighttime or weekend construction would be required for the Proposed Project. Construction activities occurring outside the typical construction hours in Menlo Park of 8:00 a.m. to 6:00 p.m. Monday through Friday, such as the aforementioned concrete pours, would be required to comply with the noise levels set forth in Section 8.06.030 of the Menlo Park Municipal Code, whereas construction activities taking place during the typical construction hours noted above are excepted from the application of the noise levels, pursuant to Section 8.06.040 of the Menlo Park Municipal Code.

As described in the *Methodology* section, the following analyses are included to evaluate the impacts of the Proposed Project's construction activities.

- Individual equipment noise levels are compared to the noise limit of 85 dBA at 50 feet for powered equipment used on a temporary, occasional, or infrequent basis between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday. This noise limit is specified in the Menlo Park Municipal Code.
- Construction noise levels from activities occurring between 6:00 p.m. and 8:00 a.m. (i.e., outside the normal construction hours specified in the Menlo Park Municipal Code) are compared to the Menlo Park Municipal Code noise thresholds of 60 dBA L_{eq}, which applies during daytime hours (7:00 a.m. to 10:00 p.m.), and 50 dBA L_{eq}, which applies during nighttime hours (10:00 p.m. to 7:00 a.m.).
- Construction noise from activities occurring between the hours of 8:00 a.m. and 6:00 p.m. weekdays, which is considered exempt from the noise limitations in the Menlo Park Municipal Code, is compared to the existing ambient noise level to estimate temporary increases in noise. The temporary increase in noise resulting from construction may be considered substantial if the analysis predicts a 10 dB or greater increase in the ambient noise level compared to the existing ambient noise level. A 10 dB increase would be perceived as a doubling of loudness.

The Project Variant would require more individual pieces of equipment than the Proposed Project for the building construction and architectural coating phases during Phase 1 of construction. The equipment quantities for Phases 2 and 3 would be the same for both. For Phase 1 building construction, the Project Variant would require one to two more of each of the following types of equipment: crane, forklift, generator set, and a tractor, loader, or backhoe. For Phase 1 architectural coatings, the Project Variant would require an additional three aerial lifts. Despite the additional equipment that would be used, the analysis of the three loudest pieces of equipment would be the same (for building construction) or similar (for architectural coatings) for both. For architectural coatings, the Proposed Project would require only two pieces of equipment (an industrial saw and aerial lift), while the Project Variant would require five pieces of equipment (an industrial saw, and four aerial lifts). However, because the noise level from the industrial saw is substantially greater than the noise level from the aerial lifts, the overall noise level for architectural coatings is the same for both the Proposed Project and Project Variant. The additional aerial lifts do not appreciably affect the overall noise level, because of the much louder noise level from the industrial saw.

The Project Variant would include an emergency water reservoir and associated emergency well, which are not included under the Proposed Project and thus not evaluated in Section 3.7, *Noise*. Daytime and nighttime noise impacts from construction of the emergency water reservoir, and in particular the emergency well component, are evaluated below. For all other components of the site development, there would be similarity between the Proposed Project and Project Variant's construction characteristics, in that they both would have the same three loudest pieces of construction equipment. As such, the construction analysis of the primary construction activities (e.g. demolition, site preparation, grading, building construction, paving, and architectural coatings) in this analysis applies to both the Proposed Project and the Project Variant.

Municipal Code – Powered Equipment Limit

As noted above in Menlo Park Municipal Code, individual equipment proposed for use during construction would need to comply with the limit of 85 dBA at 50 feet for powered equipment. The noise levels generated by the individual pieces of construction equipment planned for use during the Proposed Project's construction activities are shown in Table 5. The construction equipment inventory was provided by the Project Sponsor. As shown in Table 5, noise from the equipment for construction of the Proposed Project would not exceed 85 dBA L_{eq} at a distance of 50 feet. Thus, the Proposed Project would comply with the powered equipment limit from the Menlo Park Municipal Code.

Table 5. Individual Construction Equipment L_{eq} Noise Levels, Based on Standard Utilization Rates[a]

	Individual Equipment Noise Levels (dBA) at 50 Feet		
Equipment	**dBA L_{max}**	**Utilization Factor (%)**	**dBA L_{eq}[a]**
Aerial Lifts	75	20%	68
Compactor	83	20%	76
Concrete/Industrial Saws	90	20%	83
Concrete Pump	81	20%	74
Concrete Truck	79	40%	75
Cranes	81	16%	73
Drill Rigs	84	20%	77
Excavators	81	40%	77
Forklifts	84	40%	80
Generator Sets	81	50%	78
Graders	85	40%	81
Industrial Saws	90	20%	83
Pavers	77	50%	74
Paving Equipment	90	20%	83
Rollers	80	20%	73
Rubber-Tired Dozers	82	40%	78
Scrapers	84	40%	80
Tractors/Loaders/Backhoes	84	40%	80
Welders	74	40%	70

Source: Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide*. FHWA-HEP-05-054. January. Available: https://www.fhwa.dot.gov/ENVIRonment/noise/construction_noise/ rcnm/rcnm.pdf. Accessed: March 17, 2023.

[a] Based on standard estimated utilization rates from the Federal Highway Administration.

Daytime Construction Noise

To estimate the reasonable worst-case combined noise level resulting from construction of the Proposed Project at noise-sensitive uses, the noise analysis focuses on the three loudest equipment items expected to be used concurrently during construction. Construction noise has been evaluated for the three phases of construction of the Proposed Project (Phase 1, Phase 2, and Phase 3) and for each sub-phase of construction (e.g., demolition, site preparation, etc.). Although the Proposed Project may be constructed in one phase rather than three, the three-phase analysis provides comprehensive information to the reader in the event that three-phase construction proceeds. To analyze construction noise effects, the combined noise levels from simultaneous operation of the three loudest pieces of equipment used during a single construction sub-phase were calculated, which is similar to the approach recommended by FTA, which recommends evaluating the two loudest pieces of equipment). The combined noise level from the three loudest pieces of equipment represents a conservative worst-case scenario because it assumes all pieces will operate at the same time and in the same location at the edge of the project perimeter closest to sensitive uses. Realistically, noise levels would typically be lower, because the selected loudest pieces of equipment are unlikely to be operated simultaneously, and most construction activities will occur further from the property line. Combined construction noise levels for each sub-phase of construction were estimated using calculation methods from FHWA's Roadway Construction Noise Model. The modeling results are presented in Table 6 by construction sub-phase for Phase 1. Tables 7 and 8 present the noise levels by sub-phase for Phases 2 and 3, respectively. Attachment A includes additional details on the construction noise calculations.

Based on the values in Table 6, noise levels at the nearest sensitive land uses that could be affected by Phase 1 of construction are summarized below. The noise-sensitive land uses are identified above in *Noise- and Vibration-Sensitive Land Uses* and presented here in order of increasing distance from the Project Site.

- 15 feet or less from the Project Site – single-family residences in the Linfield Oaks and Classics of Burgess Park neighborhoods. Noise would be 94 to 97 dBA L_{eq} at a distance of 15 feet, and potentially higher if equipment operates less than 15 feet from the residences. At this worst-case distance, it should be noted that this range of noise levels would occur for a short duration, and, at all other times, noise levels would be less than this range. For example, it is expected that grading activities would only occur for a maximum of three to four days within the 15-foot proximity to the Linfield Oaks and Classics of Burgess Park neighborhoods. Although equipment could operate less than 15 feet from the property line and thus in the backyards of the residences, the distance to the actual homes is expected to not be less than 15 feet.
- 25 feet from the Project Site – First Church of Christ, Scientist. Noise would be 89 to 93 dBA L_{eq}. At this worst-case distance, noise would occur for only a short time; at other distances, noise levels would be below this range. Note that this land use would be removed for the Project Variant and would thus not be affected by noise during construction of the Project Variant.
- 60 feet from the Project Site – Single-family residences, multi-family residences, and Trinity Church north of Ravenswood Avenue. Noise would be 81 to 85 dBA L_{eq}. For the Project Variant, the emergency water reservoir and emergency well would be located at this distance.
- 120 feet from the Project Site – Menlo Children's Center west of the Project site. Noise would be 76 to 79 dBA $L_{eq.}$
- 170 feet from the Project Site – single-family residences east of Middlefield Road. Noise would be 73 to 76 dBA $L_{eq.}$

- 200 feet from the Project Site – Menlo-Atherton High School east of the Project Site. Noise would be 71 to 75 dBA $L_{eq.}$
- 450 feet from the Project Site – Menlo Public Library west of the Project Site. Noise would be 64 to 68 dBA $L_{eq.}$

The estimated construction noise levels from Phase 1 (shown above) are generally greater than the measured noise levels, as shown in Table 1, which range from 53.5 to 65.2 dBA L_{eq} during the daytime hours.

As noted above, construction activities occurring within the worst-case distance to the Linfield Oaks and Classics of Burgess Park neighborhoods would be infrequent. Grading activities would only occur for three to four days within the 15-foot proximity to the Linfield Oaks and Classics of Burgess Park neighborhoods. Construction of the townhomes at the Proposed Project site (i.e. the Building Construction phase) would occur approximately 50 feet, at the nearest, to the homes on Thurlow Street and Barron Street. Thus, the noise levels presented above for the 15-foot distance would occur for a short duration, and construction would occur at a greater distance for the majority of Proposed Project construction. The noise levels shown represent a conservative analysis, given that not all the construction activities will occur 15 feet away, and so the loudest noise-generating phases may occur at greater distances away. Additionally, activities that do occur at 15 feet away are anticipated to have a duration of three to four days, which is a small fraction of the total Proposed Project construction duration. Noise that occurs for that short of a duration is less intrusive on noise-sensitive individuals than if the noise were to occur for a prolonged duration.

Table 6. Phase 1 Noise Levels by Construction Sub-Phase[a]

Distance between Source and Receiver (feet)[b]	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Emergency Water Reservoir and Emergency Well Construction[c]
Noise Levels – L_{max}[d]							
15	104	99	100	99	104	101	97
25[e]	99	95	95	95	99	96	93
50	93	89	89	89	93	90	87
60	92	87	88	87	92	89	85
75	90	85	86	85	90	87	83
100	87	83	83	83	87	84	81
120	86	81	82	81	86	83	79
170	83	78	79	78	83	80	76
200	81	77	77	77	81	78	75
300	78	73	74	73	78	75	71
450	74	70	70	70	74	71	68
500	73	69	69	69	73	70	67
Noise Levels – L_{eq}[d]							
15	97	95	96	95	97	94	93
25[e]	93	91	91	91	92	89	88
50	87	85	85	85	86	83	82
60	85	83	84	83	85	82	81
75	83	81	82	81	83	80	79
100	81	79	79	79	80	77	76

120	79	77	78	77	79	76	75
170	76	74	75	74	76	73	72
200	75	73	73	73	74	71	70
300	71	69	70	69	71	68	67
450	68	66	66	66	67	64	63
500	67	65	65	65	66	63	62

Notes:

[a] Refer to Attachment A for the list of equipment modeled for each sub-phase of construction.

[b] Geometric attenuation based on 6 dB per doubling of distance. This calculation does not include the effects, if any, of local shielding. Distances shown in bold represent the distance between the Project Site and a noise-sensitive use.

[c] The emergency water reservoir would only be constructed for the Project Variant and not the Proposed Project. The emergency well would be located in the northeast portion of the Project Ssite, and the closest distance to existing sensitive land uses would be 60 feet.

[d] L_{max} and L_{eq} noise is presented in dBA units, which approximate the frequency response of the human ear.

[e] The land use at this distance (First Church of Christ, Scientist) is only affected by the Proposed Project, not the Project Variant, which would result in removal of the land use.

Table 7. Phase 2 Noise Levels by Construction Sub-Phase[a]

Distance between Source and Receiver (feet)[b]	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings
Noise Levels – L_{max}[c]						
25	97	—	—	95	99	96
50	91	—	—	89	93	90
100	85	—	—	83	87	84
200	79	—	—	77	81	78
250	77	—	—	75	79	76
400	73	—	—	71	75	72
500	71	—	—	69	73	70
575	70	—	—	68	72	69
600	70	—	—	67	72	69
700	68	—	—	66	70	67
800	67	—	—	65	69	66
900	66	—	—	64	68	65
Noise Levels – L_{eq}[c]						
25	91	—	—	91	92	89
50	85	—	—	85	86	83
100	79	—	—	79	80	77
200	73	—	—	73	74	71
250	71	—	—	71	72	69
400	67	—	—	67	68	65
500	65	—	—	65	66	63
575	64	—	—	64	65	62
600	63	—	—	63	65	62
700	62	—	—	62	63	60
800	61	—	—	61	62	59
900	60	—	—	60	61	58

Notes:

[a] Refer to Attachment A for the list of equipment modeled for each sub-phase of construction. For Phase 2 construction, site preparation and grading would not occur.

[b] Geometric attenuation based on 6 dB per doubling of distance. This calculation does not include the effects, if any, of local shielding. Distances shown in bold represent the distance between the Project Site and a noise-sensitive use.

[c] L_{max} and L_{eq} noise is presented in dBA units, which approximate the frequency response of the human ear.

Based on the values in Table 7, noise levels at the nearest sensitive land uses that could be affected by Phase 2 of construction are summarized below. These land uses would also be affected by Phase 1 construction; however, Phase 2 would result in generally lower noise levels because the Phase 2 buildings would be located in one portion of the Project Site and set back from the site boundary in some cases.

- 250 feet north of Parking Garage 1 and Office 2 – First Church of Christ, Scientist. Noise would be 69 to 71 dBA L_{eq}. Note that this land use would be removed for the Project Variant and would thus not be affected by noise during construction of the Project Variant.
- 400 feet east of Parking Garage 2 – single-family residences east of Middlefield Road; 400 feet west of Office 4 – onsite residences in the townhomes (Townhomes 1 for the Project Variant). Noise would be 65 to 67 dBA L_{eq}.
- 500 feet southwest of Office 4 – single-family residences in the Classics of Burgess Park neighborhood. Noise would be 63 to 66 dBA L_{eq}.
- 575 feet south of Loop Road, near Office 4 – single-family residences in the Linfield Oaks neighborhood. Noise would be 62 to 65 dBA L_{eq}.
- 700 feet east of Parking Garage 1 – Menlo-Atherton High School east of the Project Site. Noise would be 60 to 63 dBA L_{eq}.

As with Phase 1, the estimated construction noise levels from Phase 2, as shown above, are generally greater than the measured noise levels in the vicinity of the Project Site.

Based on the values in Table 8, noise levels at the nearest sensitive land uses that could be affected by Phase 3 of construction are summarized below. These land uses would also be affected by Phase 1 and Phase 2 construction; however, Phase 3 would generally result in the lowest noise levels because Phase 3 would be limited to one building, which would be set back from the site boundary.

- 50 feet north and south of Residential Building 4 – onsite residences in Residential Building 3 and the townhomes. Noise would be 83 to 85 dBA L_{eq}. Note that this land use would not be constructed for the Project Variant. Instead, Residential 3 would be constructed in the northeastern portion of the site, and Townhomes 2 would be located 50 feet south of this building, which is where the range of 83 to 85 dBA L_{eq} would apply.
- 300 feet south of Residential Building 4 – single-family residences in the Classics of Burgess Park neighborhood. Noise would be 68 to 69 dBA L_{eq}. Note that this land use would not be constructed for the Project Variant, and these noise levels would thus not apply during construction of the Project Variant.
- 450 feet northwest of Residential Building 4 – Menlo Children's Center west of the Project Site. Noise would be 64 to 66 dBA L_{eq}. Note that this land use would not be constructed for the Project Variant, and these noise levels would thus not apply during construction of the Project Variant.

As with Phases 1 and 2, the noise levels indicated here are generally greater than the measured noise levels in the vicinity of the Project Site.

Table 8. Phase 3 Noise Levels by Construction Sub-Phase[a]

Distance between Source and Receiver (feet)[b]	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings
Noise Levels – L_{max}[c]						
25	97	—	—	95	97	96
50	91	—	—	89	91	90
100	85	—	—	83	85	84
200	79	—	—	77	79	78
300	76	—	—	73	75	75
450	72	—	—	70	72	71
500	71	—	—	69	71	70
600	70	—	—	67	69	69
700	68	—	—	66	68	67
800	67	—	—	65	67	66
900	66	—	—	64	66	65
1,000	65	—	—	63	65	64
Noise Levels – L_{eq}[c]						
25	91	—	—	91	90	89
50	85	—	—	85	84	83
100	79	—	—	79	78	77
200	73	—	—	73	72	71
300	69	—	—	69	68	68
450	66	—	—	66	65	64
500	65	—	—	65	64	63
600	63	—	—	63	62	62
700	62	—	—	62	61	60
800	61	—	—	61	60	59
900	60	—	—	60	59	58
1,000	59	—	—	59	58	57

Notes:

[a.] Refer to Attachment A for the list of equipment modeled for each sub-phase of construction. For Phase 3 construction, site preparation and grading would not occur.

[b.] Geometric attenuation based on 6 dB per doubling of distance. This calculation does not include the effects, if any, of local shielding. Distances shown in bold represent the distance between the Project Site and a noise-sensitive use.

[c.] L_{max} and L_{eq} noise is presented in dBA units, which approximate the frequency response of the human ear.

Nighttime and Early-Morning Construction Noise

As indicated above, concrete pours would occur during construction, and this activity could start as early as 6:00 a.m. for approximately 14 months. The equipment that may be used during early-morning hours for concrete pours would include a concrete mixer truck and a concrete pump. Additionally, the Project Variant would require 24-hour construction activity for 10 days during construction of the emergency well at the emergency water reservoir, which would require a generator, an air compressor, and a drill rig. During the nighttime hours, construction noise would have a greater potential to disturb noise-sensitive land uses. Construction of the emergency water reservoir would occur during Phase 1 of construction and would thus not affect future residences or other onsite sensitive land uses. However, existing noise-sensitive land uses, such as the homes north of Ravenswood Avenue, would be affected by the nighttime construction activity.

Construction noise modeling was conducted for concrete pour activities, based on the assumption that the concrete truck and pump would operate simultaneously and in the same location. Noise modeling was also conducted for the emergency well that would be constructed for the Project Variant, assuming simultaneous operation of an air compressor, generator, and drill rig. Nighttime and early-morning construction noise levels were estimated using calculation methods from FHWA's Roadway Construction Noise Model, which are the same methods used to evaluate daytime construction noise.

Within the Project Site, concrete pours would occur adjacent to the locations of where structures would be erected (i.e., parking garages, office and residential buildings) and generally within the interior of the Project Site. As such, the analysis for concrete pours uses different distances to sensitive land uses than Phase 1 construction. The daytime distances, which were measured from the site boundary, represent a worst-case scenario. However, concrete pours during the early-morning hours are not represented by that worst-case scenario.

The exact location of the emergency well for the Project Variant is not yet known; however, if it is located at the boundary of the site, nighttime emergency well construction activity could occur as close as 60 feet from existing residences north of Ravenswood Avenue. Table 9 presents the noise levels by distance for the concrete pours that would begin during the early-morning hours and emergency well construction that would occur for 24 hours per day for 10 days.

Based on the values in Table 9, noise levels at the nearest sensitive land uses that could be affected by concrete pour activities and the emergency well are summarized below. Noise levels are presented for a range of distances, but sensitive land uses are primarily located at the distances shown below. These noise-sensitive land uses are introduced above in *Noise- and Vibration-Sensitive Land Uses* and presented here in order of increasing distance from the Project Site.

- 60 feet from the closest possible location of the emergency well – Single-family residences north of Ravenswood Avenue. Noise would be 80 dBA L_{eq}. Note that this activity is only applicable to the Project Variant and not the Proposed Project.
- 100 feet from the concrete pour locations – Single-family residences, and Trinity Church north of Ravenswood Avenue. Noise would be 72 dBA L_{eq}. Note that for the Project Variant, the shortest distance between the concrete pour locations and the residences north of Ravenswood Avenue

would be closer to 200 feet, and the noise level would be represented by the value shown below at 200 feet.

- 200 feet from the concrete pour locations – single-family residences in the Linfield Oaks and Classics of Burgess Park neighborhoods. Noise would be 66 dBA L_{eq}.
- 400 feet from the emergency well – Single-family residences east of Middlefield Road. Noise would be 63 dBA L_{eq}. Note that this activity is only applicable to the Project Variant and not the Proposed Project.

Table 9. Nighttime and Early-Morning Noise Levels during Construction

Distance between Source and Receiver (feet)[a]	Concrete Pours	Emergency Well Construction
Noise Levels – L_{max}[b]		
60	82	**85**
100	**77**	80
200[c]	**71**	74
300	68	71
400	65	**68**
Noise Levels – L_{eq}[b]		
60	76	**80**
100	**72**	75
200[c]	**66**	69
300	62	66
400	59	**63**

Notes:

[a] Geometric attenuation based on 6 dB per doubling of distance. This calculation does not include the effects, if any, of local shielding. Distances shown in bold represent the distance between the Project Site and a noise-sensitive use. Bold text indicates the noise level at a sensitive land use.

[b] L_{max} and L_{eq} noise is presented in dBA units, which approximate the frequency response of the human ear.

[c] For the Project Variant, the closest distance between the concrete pour locations and noise-sensitive land uses would be 200 feet.

The noise levels indicated above are greater than the measured noise levels shown in Table 1, which range from 49.6 to 52.8 dBA L_{eq} during nighttime hours and are used as a proxy for early-morning hours. During emergency well construction, which is the only component of the emergency water reservoir system that would be constructed outside of the typical construction hours in Menlo Park of 8:00 a.m. to 6:00 p.m., nighttime noise of 80 dBA L_{eq} would also exceed the existing noise levels during nighttime hours. The nighttime noise would affect noise-sensitive land uses near the emergency water reservoir (i.e., residences north of Ravenswood Avenue, near Middlefield Road). The nighttime and early-morning construction activity noise levels would also exceed the 50 dBA L_{eq} and 60 dBA L_{eq} noise limits that apply to nighttime and daytime hours, respectively. The nighttime limit would apply during emergency well construction and during the first hour of the concrete pours, from 6:00 a.m. to 7:00 a.m., and the daytime limit would apply during emergency well construction and during the second hour of the concrete pours, from 7:00 a.m. to 8:00 a.m. (i.e., before the construction exemption hours begin at 8:00 a.m.). For the sensitive land uses at 200 feet from the concrete pour location (single-family residences in the Linfield Oaks and Classics of Burgess Park neighborhoods), a noise barrier, as described in Mitigation Measure NOI-2, and intervening buildings would likely reduce noise from the concrete pours such that the noise limit would not be exceeded. However, noise from concrete pouring 100 feet from the homes north of Ravenswood Avenue would not be blocked by intervening buildings or a barrier.

Conclusion

As discussed above, construction equipment proposed for use during daytime hours would comply with the threshold of 85 dBA at 50 feet for individual pieces of powered equipment. Combined construction noise during daytime hours was modeled to result in noise that would be more than 10 dB greater than the ambient noise levels at several nearby noise-sensitive land uses. As noted above, noise during Phase 1, Phase 2, and Phase 3 construction could be a maximum of 97 dBA L_{eq}, 71 dBA L_{eq}, and 85 dBA L_{eq}, respectively, all of which are 10 dB over the daytime ambient noise levels in the area. In addition, Tables 6 through 8 show that noise levels would be 10 dB over the daytime ambient levels at distances beyond the worst-case distance. Furthermore, concrete pour activities and emergency well construction during early-morning and nighttime hours were modeled to result in a noise level of 72 dBA L_{eq} and 80 dBA L_{eq}, respectively, at the nearest sensitive land uses, which would be greater than applicable noise limit. Therefore, estimated construction noise levels during daytime and early-morning hours would exceed the applicable thresholds.

A construction noise reduction plan, per Mitigation Measure NOI-1, would be needed to reduce the noise levels from construction activities for the Proposed Project; however, such a plan may not be able to ensure that noise would be below the applicable thresholds in all circumstances. A noise barrier, outlined in Mitigation Measure NOI-2, would also be needed to further reduce construction noise levels for the Proposed Project and Project Variant. Unlike the Proposed Project, the Project Variant would include an emergency well. A construction noise reduction plan, per Mitigation Measure NOI-4, would be needed to reduce the noise levels from construction activities for the Project Variant; however, such a plan may not be able to ensure that noise would be below the applicable thresholds in all circumstances. Mitigation Measure NOI-1 would apply only to the Proposed Project and Mitigation Measure NOI-4 would apply only to the Project Variant.

Mitigation Measure NOI-1: Implement Noise Reduction Plan to Reduce Construction Noise

Prior to issuance of any demolition, grading and/or building permits for construction of the Proposed Project, the Project Sponsor and/or contractor(s) shall (i) develop a construction noise control plan to reduce noise levels and demonstrate how the Proposed Project will comply with Menlo Park Municipal Code daytime (i.e., during non-exempt hours) and nighttime noise standards to the extent feasible and practical, subject to review and determination by the Community Development Department, and (ii) a note shall be provided on all development plans that during on-going grading, demolition and construction, the Project Sponsor shall be responsible for requiring contractors to implement the measures to limit construction related noise as set forth in the plan and in this mitigation measure. The plan shall also include measures to reduce noise levels such that a 10-decibel (dB) increase over the ambient noise level does not occur at nearby noise-sensitive land uses to the extent feasible and practical, as determined by the City of Menlo Park (City). For concrete pouring activities occurring during the early-morning hours, the closest distance that concrete pouring equipment shall operate to noise-sensitive land uses is 100 feet, which applies to residential properties and the church property on the north side of Ravenswood Avenue. Concrete pouring equipment shall operate no closer than 200 feet from the property line of residential properties in the Classics of Burgess Park or Linfield Oaks neighborhoods. These distances are based on the anticipated locations for the concrete pouring activities.

The plan shall demonstrate that, to the extent feasible and practical, noise from concrete pour activities that occur daily between 6:00 and 8:00 a.m. will comply with the applicable City of Menlo Park noise limit of 50 A-weighted decibels (dBA) from 6:00 a.m. to 7:00 a.m. or 60 dBA after 7:00 a.m. to 10:00 p.m. at the nearest existing residential or noise-sensitive land use. The plan shall also demonstrate that, to the extent feasible and practical, as determined by the City, (i) noise from individual pieces of equipment proposed for use will not exceed the limit (85 dba Leq at 50 feet) for powered equipment and that combined noise from construction activities during all hours will not result in a 10 dB or greater increase over the ambient noise level at the nearest noise-sensitive land uses. Activities that would produce noise above applicable daytime or nighttime limits shall be scheduled only during normal daytime construction hours (i.e. 8:00 a.m. to 6:00 p.m., Monday through Friday). If it is concluded that a particular piece of equipment will not meet the requirements of this mitigation measure, that equipment shall not be used outside the normal daytime construction hours (i.e. 8:00 a.m. to 6:00 p.m., Monday through Friday). The plan shall be approved by the City prior to the issuance of building permits to confirm the precise noise minimization strategies that will be implemented and document that strategies will be employed to the extent feasible and practical.

Measures to help reduce noise from construction activity to these levels shall be incorporated into this plan and may include, but are not limited to, the following:

- Require all construction equipment to be equipped with mufflers and sound control devices (e.g., intake silencers, ducts, engine enclosures, acoustically attenuating shields, and noise shrouds) that are in good condition (at least as effective as those originally provided by the manufacturer) and appropriate for the equipment.
- Maintain all construction equipment to minimize noise emissions.
- Locate construction equipment as far as feasible from adjacent or nearby noise-sensitive receptors.
- Stockpiling shall be located as far as feasible from adjacent or nearby noise-sensitive receptors.
- Require all stationary equipment to be located so as to maintain the greatest possible distance to nearby existing buildings, where feasible and practical.
- Require stationary noise sources associated with construction (e.g., generators and compressors) in proximity to noise-sensitive land uses to be muffled and/or enclosed within temporary enclosures and shielded by barriers, to the extent feasible and practical.
- Install noise-reducing sound walls or fencing (e.g., temporary fencing with sound blankets) around noise-generating equipment, to the extent feasible and practical, where no perimeter wall is provided. See also Mitigation Measure NOI-2.
- Prohibit the idling of inactive construction equipment for prolonged periods (i.e., more than 2 minutes) during early-morning hours.
- Provide advance notification in the form of mailings/deliveries of notices to surrounding land uses regarding the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period.

- Provide the name and telephone number of an onsite construction liaison through onsite signage and the notices mailed/delivered to surrounding land uses. If construction noise is found to be intrusive to the community (i.e., if complaints are received), the construction liaison shall take reasonable efforts to investigate the source of the noise and require that reasonable measures be implemented to correct the problem.
- Use electric motors rather than gasoline- or diesel-powered engines to avoid noise associated with compressed air exhaust from pneumatically powered tools, to the extent feasible and practical (as determined by the City). Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust could be used; this muffler can lower noise levels from the exhaust by about 10 dB. External jackets on the tools themselves could be used, which could achieve a reduction of 5 dB.
- Limit the use of public address systems.
- Construction traffic shall be limited to the haul routes established by the city.

In addition, the Project Sponsor and/or the contractor(s) shall obtain a permit to complete work outside the normal daytime construction hours outlined in the Menlo Park Municipal Code (i.e. 8:00 a.m. to 6:00 p.m., Monday through Friday), which may be incorporated into the conditional development permit for Parkline (Proposed Project). Further, the plan shall require for verification that construction activities are conducted at adequate distances or otherwise shielded with sound barriers, as determined through analysis, from noise-sensitive receptors when working outside the normal daytime construction hours and verify compliance with the Menlo Park Municipal Code through measurement.

Mitigation Measure NOI-2: Install Sound Barrier

Prior to issuance of the first construction permit, a permanent or temporary noise barrier shall be erected along the property line immediately south of the townhomes (or, for the Project Variant, the 19 townhomes along Laurel Avenue, referred to as TH1). A temporary barrier shall not be removed until the barrier is no longer needed to reduce noise from construction activities to comply with the thresholds identified in this EIR. The barrier shall start at Laurel Street and be constructed perpendicularly to Laurel Street, along the property line, for a distance of approximately 330 feet.[9] The barrier shall continue, perpendicularly, parallel to Barron Street and along the property line for a distance of approximately 400 feet and end at Burgess Drive. The distances cited here are preliminary and based on the preliminary Project design. The actual distances shall be determined in a more precise manner during the design phase for the noise barrier. The temporary noise barriers should be at least 12 feet high and constructed of material with a minimum weight of 2 pounds per square foot, with no gaps of perforations. All noise control barrier walls shall be designed to preclude structural failure due to such factors as winds, shear, shallow soil failure, earthquakes, and erosion. The design and location of the sound barrier shall be supported by a technical analysis of the proposed design and installed prior to demolition/construction. The design of the sound barrier may be incorporated into the

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[9] The distances cited here are for illustrative purposes. The actual distances will be determined during the design phase of the noise barrier.

noise control plan in Mitigation Measure NOI-1 (or, for the Project Variant, Mitigation Measure NOI-4).

Mitigation Measure NOI-4: Implement Noise Reduction Plan to Reduce Construction Noise (Project Variant)

Prior to issuance of any demolition, grading and/or building permits for construction of the Proposed Project, the Project Sponsor and/or contractor(s) shall (i) develop a construction noise control plan to reduce noise levels and demonstrate how the Proposed Project will comply with Menlo Park Municipal Code daytime (i.e., during non-exempt hours) and nighttime noise standards to the extent feasible and practical, subject to review and determination by the Community Development Department, and (ii) a note shall be provided on all development plans that during on-going grading, demolition and construction, the Project Sponsor shall be responsible for requiring contractors to implement the measures to limit construction related noise as set forth in the plan and in this mitigation measure. The plan shall also include measures to reduce noise levels such that a 10-decibel (dB) increase over the ambient noise level does not occur at nearby noise-sensitive land uses to the extent feasible and practical, as determined by the City of Menlo Park (City). For concrete pouring activities occurring during the early-morning hours, the closest distance that concrete pouring equipment shall operate to noise-sensitive land uses is 100 feet, which applies to residential properties and the church property on the north side of Ravenswood Avenue. Concrete pouring equipment shall operate no closer than 200 feet from the property line of residential properties in the Classics of Burgess Park or Linfield Oaks neighborhoods. These distances are based on the anticipated locations for the concrete pouring activities.

The plan shall demonstrate that, to the extent feasible and practical, noise from concrete pour activities and emergency well construction that occur overnight and between 6:00 and 8:00 a.m. will comply with the applicable City of Menlo Park noise limit of 50 A-weighted decibels (dBA) from 10:00 p.m. to 7:00 a.m. or 60 dBA after 7:00 a.m. to 10:00 p.m. at the nearest existing residential or noise-sensitive land use. The plan shall also demonstrate that, to the extent feasible and practical, as determined by the City, (i) noise from individual pieces of equipment proposed for use will not exceed the limit (85 dba Leq at 50 feet) for powered equipment and that combined noise from construction activities during all hours will not result in a 10 dB or greater increase over the ambient noise level at the nearest noise-sensitive land uses. Activities that would produce noise above applicable daytime or nighttime limits shall be scheduled only during normal daytime construction hours (i.e. 8:00 a.m. to 6:00 p.m., Monday through Friday). If it is concluded that a particular piece of equipment will not meet the requirements of this mitigation measure, that equipment shall not be used outside the normal daytime construction hours (i.e. 8:00 a.m. to 6:00 p.m., Monday through Friday). The plan shall be approved by the City prior to the issuance of building permits to confirm the precise noise minimization strategies that will be implemented and document that strategies will be employed to the extent feasible and practical.

Measures to help reduce noise from construction activity to these levels shall be incorporated into this plan and may include, but are not limited to, the following:

- Require all construction equipment to be equipped with mufflers and sound control devices (e.g., intake silencers, ducts, engine enclosures, acoustically attenuating shields, and noise shrouds) that are in good condition (at least as effective as those originally provided by the manufacturer) and appropriate for the equipment.
- Maintain all construction equipment to minimize noise emissions.
- Locate construction equipment as far as feasible from adjacent or nearby noise-sensitive receptors.
- Stockpiling shall be located as far as feasible from adjacent or nearby noise-sensitive receptors.
- Require all stationary equipment to be located so as to maintain the greatest possible distance to nearby existing buildings, where feasible and practical.
- Require stationary noise sources associated with construction (e.g., generators and compressors) in proximity to noise-sensitive land uses to be muffled and/or enclosed within temporary enclosures and shielded by barriers, to the extent feasible and practical.
- Install noise-reducing sound walls or fencing (e.g., temporary fencing with sound blankets) around noise-generating equipment, to the extent feasible and practical, where no perimeter wall is provided. See also Mitigation Measure NOI-2.
- Prohibit the idling of inactive construction equipment for prolonged periods (i.e., more than 2 minutes) during early-morning hours.
- Provide advance notification in the form of mailings/deliveries of notices to surrounding land uses regarding the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period.
- Provide the name and telephone number of an onsite construction liaison through onsite signage and the notices mailed/delivered to surrounding land uses. If construction noise is found to be intrusive to the community (i.e., if complaints are received), the construction liaison shall take reasonable efforts to investigate the source of the noise and require that reasonable measures be implemented to correct the problem.
- Use electric motors rather than gasoline- or diesel-powered engines to avoid noise associated with compressed air exhaust from pneumatically powered tools, to the extent feasible and practical (as determined by the City). Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust could be used; this muffler can lower noise levels from the exhaust by about 10 dB. External jackets on the tools themselves could be used, which could achieve a reduction of 5 dB.
- Limit the use of public address systems.
- Construction traffic shall be limited to the haul routes established by the city.

In addition, the Project Sponsor and/or the contractor(s) shall obtain a permit to complete work outside the normal daytime construction hours outlined in the Menlo Park Municipal Code (i.e. 8:00 a.m. to 6:00 p.m., Monday through Friday), which may be incorporated into the conditional development permit for Parkline (Proposed Project). Further, the plan shall require for verification that construction activities are conducted at adequate distances or otherwise shielded with sound barriers, as determined through analysis, from noise-sensitive receptors when working outside the normal daytime construction hours and verify compliance with the Menlo Park Municipal Code through measurement.

Construction Noise – Haul Trucks

Construction of the Proposed Project would involve the use of haul trucks to move excavated material and deliver materials to the Project Site. Based on the data provided by the Project Sponsor, up to 100 daily haul truck trips could occur during the grading phase of Phase 1 construction for material off-haul. This number of hauling trips could occur for up to 30 days at the longest. For the Project Variant, it is anticipated that approximately 177 truck trips per day would occur under a worst-case scenario.[10]

The routes used by the haul trucks are described above in the *Methodology* section and assumed that trucks would use Willow Road and Middlefield Road to reach the site. This analysis does not evaluate haul truck noise on highways because traffic noise levels from highways such as U.S. 101 are already elevated. The introduction of haul trucks would most likely not influence the existing noise levels on highways. The construction haul truck noise analysis focuses on potential noise impacts along surface streets.

The temporary addition of up to 100 haul trucks trips per day, or 177 haul truck trips per day for the Project Variant, on the haul route roadway was analyzed to determine if construction truck activity would result in substantial increases in the ambient noise levels. The City does not specify noise thresholds pertaining to construction haul truck noise; therefore, in areas where the existing noise levels do not exceed the "normally acceptable" land use compatibility standard, an increase of more than 5 dB or more from construction haul trucks is considered a significant noise increase. In areas where the existing noise levels do exceed the "normally acceptable" level, based on the land use compatibility chart, a 3 dB or larger increase from construction haul trucks is considered a significant noise increase.

A 3 dB increase in noise over existing traffic noise levels is generally considered to be "barely perceptible." Modeling was conducted to estimate daily traffic noise levels with and without the addition of construction haul truck trips. Table 10 shows estimated traffic noise levels along the roadway segments for the existing year and for the existing year with the construction haul truck trips.

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[10] During the grading activity of Phase 1, 17,692 truck trips would occur over 100 days, which equals approximately 177 trips per day.

Table 10. Construction Haul Truck Noise Levels

Roadway	Segment	Existing Traffic Noise Levels (dBA L_{dn})	Proposed Project: Existing plus Construction Truck Noise Levels (dBA L_{dn})	Proposed Project: Noise Increase (dB)	Project Variant: Existing plus Construction Truck Noise Levels (dBA L_{dn})	Project Variant: Noise Increase (dB)
Willow Road	East of Bay Road	62.0	62.7	0.7	63.2	1.2
Willow Road	Between Bay Road and Durham Street	60.0	61.1	1.1	61.8	1.8
Willow Road	Between Durham Street and Coleman Avenue	59.8	61.0	1.2	61.7	1.9
Willow Road	Between Coleman Avenue and Gilbert Avenue	59.3	60.5	1.3	61.3	2.1
Willow Road	Between Gilbert Avenue and Middlefield Road	59.3	60.6	1.3	61.4	2.0
Middlefield Road	Between Willow Road and Seminary Drive	59.5	60.7	1.3	61.5	2.0
Middlefield Road	Between Seminary Drive and Ringwood Avenue	60.8	61.9	1.1	62.6	1.8
Middlefield Road	Between Ringwood Avenue and Ravenswood Avenue	61.9	62.7	0.8	63.3	1.4
Ravenswood Avenue	West of Middlefield Road	58.8	60.2	1.4	61.1	2.3

Based on the results in Table 10, noise increases from haul truck activity would not result in an increase of 3 dB at any roadways to be used for hauling for either the Proposed Project or Project Variant. For the Proposed Project, the maximum increase in noise would be 1.4 dB at Ravenswood Avenue west of Middlefield Road. For the Project Variant, the maximum increase in noise would be 2.3 dB at the same roadway. No substantial temporary increase in noise would occur.

Operational Stationary Equipment

Emergency Generators

The Proposed Project would include 13 emergency generators that would be located throughout the Project Site, with power ratings ranging from 200 kilowatts (kW) to 1,500 kW. The emergency generators would result in audible noise during periodic testing, which, in general, would occur for 30 minutes at each generator. Generator testing would occur once a month; it is likely that multiple generators, but not all generators, would be tested on the same day. Thus, generator testing would very likely occur on multiple days each month. In addition, each generator would undergo a 90-minute test once a year.

There are several generators currently on the Project Site, and some of them will continue to operate; however, other generators will be removed. The generators that will remain are part of the existing condition, and construction of the Proposed Project would not affect their operation. The generators that are removed will be replaced by newer generators that are likely to have lower operational noise; thus, in some instances, the replacement of older generators may result in lower noise levels experienced by surrounding land uses. However, the new generators added to the Project site are evaluated independently without consideration of the removed existing generator noise levels, which is a conservative assessment, because the City's noise limits must be met for new sources regardless of what sources they replace.

Noise from operation of emergency generators during an emergency is typically considered to be exempt from local noise limits. However, even though the testing of emergency generators is generally short term (i.e., 30 minutes per month per generator, except for the 90-minute annual test) and intermittent, noise resulting from generator testing must comply with local noise limits for operational equipment noise.

In Menlo Park, noise levels must be in compliance with Section 8.06.030 of the Menlo Park Municipal Code, which includes maximum allowable noise levels, as measured at a receiving residential property. Noise during daytime hours (7:00 a.m. to 10:00 p.m.) in Menlo Park is generally limited to 60 dBA; noise during nighttime hours (10:00 p.m. to 7:00 a.m.) is generally limited to 50 dBA. Section 8.06.040(b) of the Menlo Park Municipal Code states that noise from powered equipment used on a temporary, occasional, or infrequent basis during the hours of 8:00 a.m. to 6:00 p.m. Monday through Friday shall be limited to 85 dBA at a distance of 50 feet from the source. Emergency generators testing would take place during the weekday daytime hours listed above. Therefore, this analysis assesses the potential for noise from generator testing to exceed the 85 dBA threshold at a distance of 50 feet and the daytime 60 dBA threshold at a residential property line, or sensitive-use property line.

The analysis of generator noise levels is based on noise levels from manufacturer data for the generator models anticipated to be used at Proposed Project site as well as the estimated generator locations provided by the Project Sponsor. The Project sponsor has confirmed that sound enclosures would be used to reduce generator noise levels, and thus this analysis presents noise levels with inclusion of sound enclosures on the generators.

Generator noise levels vary, depending on the power rating of the generator. At a reference distance of 23 feet, noise levels could be up to 76 dBA for a 600 kW generator. Attachment A provides more information on the generator specifications and noise levels.

Table 11 shows the inventory of generators for the buildings on the Project Site, the power rating of the generators, the nearest land uses, the corresponding ambient noise level at the nearest land uses, and the estimated noise level from generator operation. The emergency generators would be distributed throughout the Project Site, with most new buildings having at least one accompanying generator.

Table 11. Emergency Generator Inventory, Power Rating, Nearest Land Use, and Corresponding Noise Level for the Proposed Project and Project Variant

Building	Generator Power Rating (kilowatts)	Nearest Land Uses (distance in feet)[a]	Nearest Measurement Site[b]	Ambient Noise Level at Nearest Land Uses (existing noise sources only)	Generator Noise Level (dBA)[c]
Proposed Project					
Office Building 1[d]	1,000 or 1,500	Alpha Kids Academy (240)*	LT-5	59 (L_{dn})	45
		Residences on Ravenswood (330)*	ST-2	55.9 (L_{eq})	42
Office Building 2 [d]	1,000 or 1,500	Office Buildings (200)	ST-5	52.5 (L_{eq})	46
		Alpha Kids Academy (360)*	LT-5	59 (L_{dn})	41
Office Building 3 [d]	1,000 or 1,500	Office Buildings (320)	ST-5	52.5 (L_{eq})	42
		Residential Backyards at Gloria Circle (650)*	ST-1	49.6 (L_{eq})	36
Office Building 4 [d]	1,000 or 1,500	Lab Buildings (175 feet)	ST-4	49.3 (L_{eq})	47
		Onsite Residences, Townhomes/Town Homes 1 (750)*	LT-2	57 (L_{dn})	35
Office Building 5 [d]	1,000 or 1,500	Onsite Residences, Residential 1 (450)*	ST-3	55.3 (L_{eq})	39
		Residences on Barron Street (675)*	LT-2	57 (L_{dn})	36
Office Amenities	300	Onsite Residences, Townhomes (150)*	LT-2	57 (L_{dn})	60
		Onsite Residences, Residential Building 4 (275)*	ST-3	55.3 (L_{eq})	54
Parking Garage 1	200	Office Buildings (200)	ST-5	52.5 (L_{eq})	55
		Alpha Kids Academy (400)*	LT-5	59 (L_{dn})	49
Parking Garage 2	200	Office Buildings (150)	ST-5	52.5 (L_{eq})	57
		Residential Backyards at Gloria Circle (450)*	ST-1	49.6 (L_{eq})	48
Parking Garage 3	200	City Government Buildings (220)	LT-2	57 (L_{dn})	54
		Residences on Barron Street (400)*	LT-2	57 (L_{dn})	48
Residential Building 1	200	Residential Building 1 (adjacent)*	ST-3	55.3 (L_{eq})	**74**
		Residences on Ravenswood (325)*	LT-4	64 (L_{dn})	51
Residential Building 2	200	Residential Building 2 (adjacent)*	ST-3	55.3 (L_{eq})	**74**
		Menlo Children's Center (210)*	LT-3	62 (L_{dn})	54
Residential Building 3	200	Residential Building 3 (adjacent)*	ST-3	55.3 (L_{eq})	**74**
		Menlo Park City Hall (270)	LT-3	62 (L_{dn})	52

Building	Generator Power Rating (kilowatts)	Nearest Land Uses (distance in feet)[a]	Nearest Measurement Site[b]	Ambient Noise Level at Nearest Land Uses (existing noise sources only)	Generator Noise Level (dBA)[c]
Residential Building 4	200	Residential Building 4 (adjacent)*	ST-3	55.3 (L_{eq})	**74**
(Not applicable to Project Variant)		Menlo Park City Hall (440)	LT-3	62 (L_{dn})	48
Project Variant (only differences from the Proposed Project are shown)					
Water Reservoir	450	Town Homes 2 (100)*	LT-5	59 (L_{dn})	**74**
		Residential 3 (150)*	ST-5	52.5 (L_{eq})	**74**
Parking Garage 1	200	Office Buildings (75)	ST-5	52.5 (L_{eq})	**63**
		Office Buildings (250)	ST-1	49.6 (L_{eq})	53
Parking Garage 2	200	Office Buildings (150)	ST-5	52.5 (L_{eq})	57
			ST-1	49.6 (L_{eq})	
Residential Building 1	400	Residential Building 1 (adjacent)*	LT-3	62 (L_{dn})	**76**
		Residences on Ravenswood (100)*	LT-4	64 (L_{dn})	**63**
Residential Building 2	400	Residential Building 2 (adjacent)*	ST-3	55.3 (L_{eq})	**76**
		Town Homes 1 (210)	LT-2	57 (L_{dn})	57
Residential Building 3	250	Residential Building 3 (adjacent)*	LT-5	59 (L_{dn})	**76**
		Residences on Ravenswood (100)*	ST-5	52.5 (L_{eq})	**63**

Notes:

[a] The nearest land uses shown here are the nearest offsite land uses, except if the nearest land use is an onsite residential building. Land uses marked with "*" are considered noise sensitive.

[b] Refer to Table 1 for more details on the monitoring locations.

[c] 1,000 and 1,500 kW generator noise levels are based on noise levels from Caterpillar 3512MUI and 3512B: 82 dBA at 1 meter; 200 kW generator noise levels are based on noise levels from Kohler 200REOZJF at 100 percent load with a sound enclosure: 73.7 dBA at 23 feet; 300 and 450 kW generator noise levels are based on noise levels from Kohler 600REOZVB at 100 percent load with a sound enclosure: 76.0 dBA at 23 feet; noise levels at each distance are based on geometric attenuation, based on 6 dB per doubling of distance. This calculation does not include the effects, if any, of local shielding. Values that are above the 60 dBA daytime limit are shown in bold text.

[d] For Office Buildings 1 through 5, the 1,000-kW generator applies to the Proposed Project's 100 percent office scenario, while the 1,500-kW generator applies to the Proposed Project's 100 percent R&D scenario and the Project Variant.

As shown in Table 11, noise from generator testing would lead to noise levels that would be greater than 60 dBA in some instances, such as at the future Project residential buildings that are located adjacent to the generators. However, none of the generators would exceed the City's threshold of 85 eBA at 50 feet for the temporary, occasional or infrequent operation of powered equipment.[11] Actual noise levels would be lower with intervening structures and ground attenuation, and, if a permanent noise barrier is constructed near the residential area of Classics at Burgess Park, noise at these residences would be lower than what is shown in Table 11.

There are some instances where noise-sensitive land uses near the future residential buildings could experience noise from the use of generators that would be above 60 dBA. In many cases, buildings associated with the Proposed Project, as well as non-project buildings, would provide additional shielding and block the line of sight between a generator and the nearest noise-sensitive land use; thus, it is very likely that noise levels would be lower with the shielding provided by intervening buildings.

Without further design considerations, noise from the testing of generators could exceed the City's criterion of 60 dBA at the nearest sensitive land uses; however, the Project Sponsor would be required to adhere to the Menlo Park Municipal Code noise limits when operating the generators. The noise limits could be met by using an enclosure, shielding, or other control device for the equipment, or, alternatively, intervening buildings or structures, which cannot be identified at this stage of Proposed Project design, may provide sufficient attenuation to meet the noise limits. Such adherence is a required condition of approval to construct the Project, and evidence of adherence would be required during the standard design review and permitting processes for the Proposed Project. The evidence submitted to the city will include documentation of measures and/or site design features that will be implemented to attenuate noise and result in compliance with the Menlo Park Municipal Code noise limits. Therefore, noise from the generators would not be allowed to exceed the 60 dBA at noise-sensitive land uses. The Project Sponsor will be required to provide evidence to the City upon request that the equipment on the site complies with the City's noise limits, and thus, to further reduce noise, additional design features for the generators will be needed after taking site specific conditions into account, such as shielding from walls and buildings, ground attenuation, etc. The additional design features may include screens, barriers, or other measures to reduce generator noise.

As such, the required condition of approval to construct the Project would ensure that noise from emergency generator testing would be in compliance with the noise limits outlined in Chapter 8.06 of the Menlo Park Municipal Code.

Other Mechanical Equipment

The Proposed Project would include both residential and office buildings, which would require various types of HVAC equipment for climate control. Specifically, the equipment is anticipated to include air-handling units, exhaust fans, hot-water pumps, battery energy storage systems, photovoltaic arrays, utility transformers, variable-refrigerant-flow (VRF) equipment, and dedicated outdoor air-system equipment. Most of this equipment would be located on the roof of the buildings; however, some of

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[11] Section 8.06.040 (b) (1) of Chapter 8.06 of Menlo Park Municipal Code.

it, such as the utility transformers, battery energy storage systems, and VRF units, may be located on the ground level in some instances. The roof-mounted mechanical and electrical equipment would be enclosed by exterior metal walls that would generally be the same height as the tallest piece of equipment, while ground-mounted mechanical and electrical equipment would be enclosed by walls or vertical landscaping.

Overall, the Proposed Project and Project Variant would result in a similar quantity and type of mechanical equipment. There may be some differences at the residential buildings, because the Proposed Project has more individual buildings, which would each require its own set of equipment. Additionally, the townhomes for the Proposed Project are expected to result in more pieces of mechanical equipment than Townhomes 1 for the Project Variant. The Project Variant would also result in more new equipment in the northeastern portion of the site than the Proposed Project, and this equipment would be located closer to homes north of Ravenswood Avenue (approximately 100 feet away). The equipment associated with the emergency water reservoir for the Project Variant is another difference relative to the Proposed Project and is discussed separately below.

The Project Sponsor has provided types of equipment that are expected to be used for exhaust and HVAC purposes. Based on the anticipated models to be used at the Project site, exhaust fans would generate noise levels in the range of 68 to 78 dBA at 50 feet. Exhaust fans would be used in kitchens, bathrooms, vivarium, and laboratories, and the hazardous exhaust fan would generate the loudest noise level (78 dBA at 500 feet).

For HVAC equipment such as air source heat pumps and chillers, manufacturer data indicates that noise levels will range from 55 dBA to 60 dBA at a distance of 50 feet. In addition, multiple pieces of equipment could occasionally operate simultaneously; the combined noise levels would be louder than the estimates for individual pieces of equipment. Further, as noted above, outdoor equipment would be enclosed by walls in some instances, which would partially attenuate the noise; some equipment would be located indoors and, thus, would not be likely to result in audible noise outside at surrounding land uses. Photovoltaic arrays are not known to generate notable noise levels, and any operational noise would most likely be minor relative to HVAC equipment noise. Regarding battery energy storage systems, the noise levels generated can vary widely, depending on the size and attributes of the system. Based on manufacturer data, the estimated noise level from one of the battery energy storage units would be 65 dBA at a distance of 3 feet, or 41 dBA at 50 feet. Attachment A provides more information on the equipment noise levels at the Project site. Although details regarding the utility transformers are not known, the noise level from an electrical substation has been found to range from 52 to 57 dBA at 50 feet, which is much less than the HVAC equipment noise levels cited above.[12]

The stationary equipment at the Project Site would be distributed throughout the site, with every new structure having multiple pieces of HVAC equipment and other mechanical equipment. Because of the extensive distribution of equipment across the Project site, many land uses, both within and external to the site, could be affected by noise from the equipment. For new residents living at the site, mechanical equipment would be in proximity to, or attached to, their building of residence. The shortest distance between equipment at the Project Site and offsite sensitive land uses is expected to

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[12] ICF. 2010. *PG&E Windsor Substation Project Proponent's Environmental Assessment – Section 12.0, Noise*. Available: https://ia.cpuc.ca.gov/Environment/info/aspen/windsorsub/pea/12_noise.pdf.

be approximately 50 feet, which is the distance between the townhomes and the single-family houses in the Classics of Burgess Park neighborhood. This shortest distance is also applicable to the Project Variant because the equipment would be located in the same general area of Townhomes 1. This estimate is approximate, however, because the location of the equipment has not been precisely determined and is conservative, because the actual equipment is not likely to be placed at the closest possible distance between the buildings.

As noted above, the Project Variant would include an emergency reservoir where equipment unique from the rest of the noise-generating equipment would be present, such as a pumping station.[13] Pumps can produce noise levels of approximately 78 dBA at a distance of 50 feet.[14] There would be a future noise-sensitive land use located approximately 100 feet from the pumping equipment (Townhomes 2), and this would be the shortest distance between the pumping equipment and any noise-sensitive land use (off-site or on-site). At 100 feet, the estimate of 78 dBA at 50 feet is equal to approximately 72 dBA but does not account for any shielding, such as a building enclosure, which would likely be constructed around the pumping station. Additionally, the pumping station would only operate intermittently.

All sources of sound, including stationary noise sources are regulated by Chapter 8.06 of the Menlo Park Municipal Code, which states daytime noise levels are limited to 60 dBA and nighttime noise levels are limited to 50 dBA, for all sources of sound as measured from any residential property.[15] In addition, noise levels from rooftop equipment are limited to 50 dBA at 50 feet.

There are many unknown variables in this evaluation of noise from stationary equipment at the Project Site, such as the types of screening and/or shielding present, intervening structures or barriers, and the number of individual pieces of equipment operating simultaneously. However, as noted above in the discussion of emergency generators, the Project Sponsor would be required to adhere to the Menlo Park Municipal Code noise limits when operating equipment. Such adherence is a required condition of approval to construct the Project, and thus noise from stationary equipment would not be allowed to exceed the 60 dBA or 50 dBA limits at noise-sensitive land uses. The Project Sponsor will be required to provide evidence to the City, upon request, that the equipment on the site complies with the City's noise limits, and thus, to further reduce noise, additional design features for the equipment will be needed after taking site specific conditions into account, such as shielding from walls and buildings, ground attenuation, etc. The additional design features may include screens, barriers, or other measures to reduce equipment noise. Although both onsite and offsite land uses would very likely be located within 50 feet of HVAC equipment operating during daytime and nighttime hours, the noise levels indicated above for the equipment categories could be feasibly reduced to comply with the noise limits, especially when accounting for building shielding, additional enclosures, and other attenuation effects. As such, the required condition of approval to construct the Project would ensure noise from the Proposed Project's mechanical equipment would comply with the noise limits outlined in Chapter 8.06 of the Menlo Park Municipal Code.

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[13] An emergency generator would also be present. Noise from emergency generators is evaluated above.

[14] Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide*. FHWA-HEP-05-054. January. Available: https://www.fhwa.dot.gov/ENVIRonment/noise/construction_noise/rcnm/rcnm.pdf.

[15] Section 8.06.030 (a) (1) of Chapter 8.06 of Menlo Park Municipal Code.

Operational Traffic Noise

The Proposed Project would result in increased traffic volumes on existing roadways in the area because new residences would be added to the site. Future residents, employees, and visitors would travel to and from the site on existing roadways, thereby increasing traffic noise levels in the area. Traffic noise levels have been estimated for three scenarios: existing year (i.e., the baseline year for purposes of CEQA), background year (i.e., the project buildout year), and cumulative year (i.e., 2040, the horizon year for the C/CAG-VTA Travel Demand Model). For the Proposed Project's background-year and cumulative-year conditions, two sub-scenarios were analyzed: with project and no project. The difference in noise between the no-project and with-project scenarios represents the Proposed Project's incremental contribution to noise levels in the area.

This section focuses on the Proposed Project's background-year condition in 2031, which is representative of impacts that would occur when the Proposed Project begins operations. The cumulative-year condition is also evaluated. Table 12 shows the results of the noise modeling analysis for evaluated roadway segments for the background year, while Table 13 shows the results for the cumulative year.

Table 12. Project-Level Traffic Noise Impacts for the Proposed Project and Project Variant

Roadway Segment	Background No Project (L_{dn})	Background with Project (L_{dn})	Increase (dB)	3 dB or Greater Project-Related Increase[a]
Proposed Project				
Middlefield Road north of Willow Road	60.2	61.2	1.0	No
Willow Road east of Coleman Avenue	60.4	61.2	0.7	No
Willow Road east of Gilbert Avenue	59.9	60.7	0.8	No
Willow Road east of Middlefield Road	60.5	61.2	0.8	No
Willow Road between Laurel Street and Middlefield Road	53.2	53.8	0.6	No
Ravenswood Avenue east of Project Driveway B1 East	57.7	58.6	0.9	No
Ravenswood Avenue east of Project Driveway B1 West	57.7	58.6	0.9	No
Ravenswood Avenue east of Pine Street	58.1	59.1	1.0	No
Ravenswood Avenue between Laurel Street and Pine Street	58.3	59.2	0.9	No
Middlefield Road between Ravenswood Avenue and Ringwood Avenue	63.0	63.8	0.8	No
Middlefield Road between Ringwood Avenue and Seminary Drive	62.0	62.9	0.9	No
Middlefield Road south of Seminary Drive	61.6	62.6	0.9	No
Pine Street south of Ravenswood Avenue	46.0	48.8	2.8	No
Willow Road west of Gilbert Avenue	59.8	60.6	0.8	No

Roadway Segment	**Background No Project (L_{dn})**	**Background with Project (L_{dn})**	**Increase (dB)**	**3 dB or Greater Project-Related Increase**[a]
D Street west of Middlefield Road	**48.9**	**55.8**	**6.9**	**Yes**
Seminary Drive west of Middlefield Road	**45.3**	**52.6**	**7.3**	**Yes**
Ravenswood Avenue west of Project Driveway B1 East	58.9	59.9	1.0	No
Ravenswood Avenue west of Project Driveway B1 West	58.9	60.1	1.3	No
Ravenswood Avenue west of Pine Street	58.9	60.1	1.2	No
Ravenswood Avenue west of Laurel Street	59.3	60.3	1.1	No
Project Variant				
Middlefield Road north of Willow Road	60.2	61.4	1.2	No
Willow Road east of Coleman Avenue	60.4	61.2	0.8	No
Willow Road east of Gilbert Avenue	59.9	60.8	0.9	No
Willow Road east of Middlefield Road	60.5	61.3	0.8	No
Willow Road between Laurel Street and Middlefield Road	60.6	61.4	0.8	No
Ravenswood Avenue east of Project Driveway B1 East	53.2	53.9	0.7	No
Ravenswood Avenue east of Project Driveway B1 West	57.7	58.6	0.9	No
Ravenswood Avenue east of Pine Street	57.7	58.7	1.0	No
Ravenswood Avenue between Laurel Street and Pine Street	58.1	59.3	1.2	No
Middlefield Road between Ravenswood Avenue and Ringwood Avenue	58.3	59.5	1.1	No
Middlefield Road between Ringwood Avenue and Seminary Drive	63.0	63.7	0.8	No
Middlefield Road south of Seminary Drive	62.0	62.9	0.9	No
Willow Road west of Gilbert Avenue	59.8	60.6	0.8	No
D Street west of Middlefield Road	48.9	56.2	7.3	**Yes**
Seminary Drive west of Middlefield Road	45.3	53.1	7.8	**Yes**
Ravenswood Avenue west of Project Driveway B1 East	58.9	59.9	1.0	No
Ravenswood Avenue west of Project Driveway B1 West	58.9	60.1	1.2	No
Ravenswood Avenue west of Pine Street	58.9	60.1	1.2	No
Ravenswood Avenue west of Laurel Street	59.3	60.4	1.1	No

Notes:

[a] A change of 3 dB or less in traffic noise levels would not constitute a significant impact because such a change is considered just noticeable. A change of more than 3 dB may be significant depending on the no-project noise levels.

In areas where the background and resulting noise levels (background with Proposed Project) do not exceed the "normally acceptable" land use compatibility standard, an increase of more than 5 dB is considered a significant traffic noise increase. In areas where the background and background with-project noise levels do exceed the “normally acceptable” level, based on the land use compatibility chart, a 3 dB or larger increase from baseline to baseline plus-project conditions is considered a significant traffic noise increase. An exceedance of the 3 dB or 5 dB thresholds may not constitute a significant impact in certain circumstances, such as in areas where there are no noise-sensitive land uses as well as areas where the applicable compatibility standard has not been exceeded. As shown in Table 12, a 3 dB increase, or greater, would occur under the Proposed Project and Project Variant at the following segments, indicating additional analysis is warranted.

- D Street west of Middlefield Road
- Seminary Drive west of Middlefield Road

At D Street west of Middlefield Road and Seminary Drive west of Middlefield Road, the background with-project noise level would be less than the compatibility standards for all uses in Menlo Park; however, the increase in noise ranging from 6.9 to 7.8 dB for the Proposed Project and Project Variant would be greater than the 5 dB threshold. It should be noted that these roadway segments are at the driveway entry points to the Project Site; there are currently no noise-sensitive land uses adjacent to these segments. As such, the increase at these segments is likely to be less of a concern than a noise increase occurring in an area with noise-sensitive land uses. Commercial and office uses are typically less affected by increases in noise than residences or schools. Thus, although the increase in noise is above the identified thresholds, the land use context (i.e., commercial and office uses and no sensitive land uses) should also be taken into consideration.

Traffic noise levels, in general, can be reduced by reducing the number of vehicles or installing intervening barriers. Reducing vehicle volumes would require changing the proposed land uses; any proposed changes would need to be feasible and consistent with the project objectives. A sound wall would need to be of such a height, approximately 8 feet, that it would very likely be visually intrusive. In addition, to be effective at reducing exterior noise levels, a sound wall would need to obstruct access to the Project Site driveway, which would not be feasible.

To determine cumulative noise increases as a result of the Proposed Project, existing volumes were compared to cumulative-year with-Project volumes. Additionally, cumulative-year no-project vehicular traffic volumes are compared to cumulative-year with-project volumes to isolate the effect of the Proposed Project. Refer to Table 13 for the modeling results of the cumulative traffic noise assessment.

Table 13. Cumulative-Level Traffic Noise Impacts for the Proposed Project and Project Variant

Roadway Segment	Existing (L_{dn})	Cumulative No Project (L_{dn})	Cumulative Plus Project (L_{dn})	Increase Relative to Existing (dB)	Increase Relative to Cumulative (dB)	3 dB or Greater Project-Related Increase[a]
Proposed Project						
Middlefield Road north of Willow Road	59.4	60.8	61.7	2.3	0.9	No
Willow Road east of Durham Street	60.1	59.9	60.7	0.6	0.8	No
Willow Road east of Coleman Avenue	59.7	59.7	60.5	0.8	0.8	No
Willow Road east of Gilbert Avenue	59.1	59.0	59.9	0.8	1.0	No
Willow Road east of Middlefield Road	60.0	59.8	60.6	0.6	0.9	No
Ravenswood Avenue east of Project Driveway B1 East	57.7	57.1	58.2	0.5	1.1	No
Ravenswood Avenue east of Project Driveway B1 West	57.7	57.1	58.2	0.5	1.1	No
Ravenswood Avenue east of Pine Street	58.1	57.4	58.6	0.6	1.2	No
Ravenswood Avenue between Laurel Street and Pine Street	58.3	57.8	58.9	0.6	1.1	No
Ravenswood Avenue east of El Camino	57.4	58.4	59.1	1.7	0.7	No
Middlefield Road between Ravenswood Avenue and Ringwood Avenue	62.4	62.7	63.6	1.1	0.9	No
Middlefield Road between Ringwood Avenue and Seminary Drive	61.3	61.7	62.7	1.4	0.9	No
Middlefield Road south of Seminary Drive	61.2	61.4	62.4	1.2	1.0	No
Willow Road west of Durham Street	60.2	60.0	60.7	0.5	0.7	No
Willow Road west of Coleman Avenue	59.8	59.8	60.6	0.8	0.8	No
Willow Road west of Gilbert Avenue	59.3	59.5	60.3	1.0	0.8	No
D Street west of Middlefield Road[b]	**48.9**	**N/A**	**55.1**	**6.3**	**N/A**	**N/A**

Roadway Segment	Existing (L_{dn})	Cumulative No Project (L_{dn})	Cumulative Plus Project (L_{dn})	Increase Relative to Existing (dB)	Increase Relative to Cumulative (dB)	3 dB or Greater Project-Related Increase[a]
Seminary Drive west of Middlefield Road[b]	**45.3**	**N/A**	**52.6**	**7.4**	**N/A**	**N/A**
Ravenswood Avenue west of Project Driveway B1 East	58.9	57.5	58.9	0.0	1.3	No
Ravenswood Avenue west of Project Driveways B1 West	58.9	57.1	58.9	0.0	1.8	No
Ravenswood Avenue west of Pine Street	58.9	57.1	58.9	0.0	1.7	No
Ravenswood Avenue west of Laurel Street	59.0	57.9	59.3	0.2	1.4	No
Project Variant						
Middlefield Road north of Willow Road	59.4	60.8	61.9	2.5	1.1	No
Willow Road east of Durham Street	60.1	59.9	60.7	0.6	0.8	No
Willow Road east of Coleman Avenue	59.7	59.7	60.6	0.9	0.9	No
Willow Road east of Gilbert Avenue	59.1	59.0	60.0	0.8	1.0	No
Willow Road east of Middlefield Road	60.0	59.8	60.7	0.7	0.9	No
Ravenswood Avenue east of Project Driveway B1 East	57.7	57.1	58.2	0.5	1.1	No
Ravenswood Avenue east of Project Driveway B1 West	57.7	57.1	58.4	0.7	1.3	No
Ravenswood Avenue east of Pine Street	58.1	57.4	58.9	0.8	1.5	No
Ravenswood Avenue between Laurel Street and Pine Street	58.3	57.8	59.1	0.9	1.4	No
Ravenswood Avenue east of El Camino	57.4	58.4	59.1	1.8	0.7	No
Middlefield Road between Ravenswood Avenue and Ringwood Avenue	62.4	62.7	63.5	1.1	0.8	No
Middlefield Road between Ringwood Avenue and Seminary Drive	61.3	61.7	62.7	1.4	1.0	No
Middlefield Road south of Seminary Drive	61.2	61.4	62.5	1.3	1.1	No

Roadway Segment	**Existing (L_{dn})**	**Cumulative No Project (L_{dn})**	**Cumulative Plus Project (L_{dn})**	**Increase Relative to Existing (dB)**	**Increase Relative to Cumulative (dB)**	**3 dB or Greater Project-Related Increase[a]**
Willow Road west of Durham Street	60.2	60.0	60.7	0.5	0.7	No
Willow Road west of Coleman Avenue	59.8	59.8	60.6	0.8	0.8	No
Ravenswood Avenue west of Project Driveway B1 East	58.9	57.5	58.9	0.0	1.3	No
Ravenswood Avenue west of Project Driveways B1 West	58.9	57.1	58.8	0.0	1.8	No
Ravenswood Avenue west of Pine Street	58.9	57.1	58.8	0.0	1.7	No
Ravenswood Avenue west of Laurel Street	59.0	57.9	59.4	0.3	1.5	No
D Street west of Middlefield Road[b]	**45.3**	**N/A**	**53.1**	**7.8**	**N/A**	**Yes**
Seminary Drive west of Middlefield Road[b]	**48.9**	**N/A**	**55.6**	**6.7**	**N/A**	**Yes**
Willow Road between Laurel Street and Middlefield Road	51.6	54.1	54.7	3.1	0.6	No

Notes:

[a] A change of 3 dB or less in traffic noise levels would not constitute a significant impact because such a change is considered just noticeable. A change of more than 3 dB may be significant depending on the existing noise levels.

[b] For these segments, it is not possible to calculate an increase relative to cumulative no project conditions, because there would be volumes of zero at these segments.

As shown in Table 13, which presents the results for roadway segments in the cumulative year, traffic noise increases between existing-year and cumulative-year with-project conditions would be a maximum of 7.4 dB for the Proposed Project and 7.8 dB for the Project Variant and would be greater than 3 dB at two segments (Proposed Project) and three segments (Project Variant). Although these increases would be considered noticeable, there are no sensitive land uses in proximity to the roadway segments where these two highest increases would occur for both the Proposed Project and Project Variant. Additionally, for cumulative plus-Project conditions, the noise level at these segments would be a maximum of 55.6 Ldn for either the Proposed Project or Project Variant, which is within or below the compatibility standard for what is considered “normally acceptable” for all land uses. As such, the increases of 6.3 dB to 7.8 dB are not considered to be a significant cumulative impact, because there are no sensitive land uses near the roadways and the overall noise levels would be below the compatibility standards.

The increase of 3.1 dB at Willow Road between Laurel Street and Middlefield Road that would occur for the Project Variant would be noticeable relative to existing conditions, and this would be considered a significant cumulative impact. However, much of the increase (2.5 dB) is from background traffic volumes that are unrelated to the Project Variant. The increase in noise at this segment between cumulative-year no-Project conditions and cumulative-year with-Project conditions is 0.6 dB, which would not be noticeable. Consequently, the Project Variant's contribution at Willow Road between Laurel Street and Middlefield Road would not be cumulatively considerable.

Other Sources of Operational Noise

At the Central Commons and recreational area, occasional outdoor events with 200 to 250 people may occur a maximum of four times a year. At the recreational area, a typical use is anticipated to attract 20 to 50 people. These events may result in temporary use of portable audio-visual equipment for amplified sound and music, but no permanent sound equipment would be installed at either the Central Commons or recreational area. These events would result in noise levels from amplified music and voices that could affect noise-sensitive land uses. The events at the Central Commons would occur within the Project Site, at approximate distances of 400 feet to onsite residences (Residential Building 1) and 500 feet to offsite residences north of Ravenswood Avenue. The events in the recreational area would be at the boundary of the site, with the closest noise-sensitive land use being the First Church of Christ, Scientist, approximately 50 feet from the boundary of the recreational area. For the Project Variant, this church land use would be removed, and the closest off-site noise-sensitive land use would be the homes north of Ravenswood Avenue, which have 100 feet between the property line of these homes and the recreational area. On-site residential uses (Residential 3 and Townhomes 2) would be about the same distance away from the recreational area as the off-site homes north of Ravenswood. The recreational area for the Project Variant would also be farther away from Middlefield Road than for the Proposed Project and thus farther from Menlo-Atherton High School. Because the Proposed Project and Project Variant would both include the Central Commons and recreational area, there would be no appreciable differences in noise at these uses between the Proposed Project and Project Variant; however, the Project Variant may result in lower noise levels at the noise-sensitive land uses because of the greater distances.

Noise levels from small events with amplified voices would generally be lower than noise levels from events with amplified recorded music. For example, voices amplified by a single loudspeaker have been measured in the range of approximately 56 to 58 dBA L_{eq} at 100 feet,[16] whereas sound from a small live band, with a guitar, vocalists, and a single amplifier, has been measured to be approximately 65 dBA L_{eq} at 100 feet.[17] Based on these estimated levels, noise from such events at a distance of 50 feet (i.e., the distance to the nearest noise-sensitive land use) would be approximately 62 to 64 dBA for amplified voices and 71 dBA for amplified sound from a small band. These estimates do not account for intervening buildings or structures that could provide additional shielding and block the line of sight between the events and the nearest noise-sensitive land uses;

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[16] Wedding Noise: Noise measured at approximately 140 feet from an individual officiating over a wedding (i.e., a single speaker) was measured to be between approximately 55 and 56 dBA L_{eq}, equating to a noise level of 58 to 59 dBA L_{eq} at 100 feet.

[17] Acoustic Band Noise: Noise measured at approximately 73 feet from a small live band that included a guitar, vocalists, and a single amplifier was measured to be 67.5 dBA L_{eq}, equating to 64.8 dBA L_{eq} at 100 feet.

thus, it is possible that noise levels would be lower than these values. Based on the estimated noise levels, it is possible that noise levels from events may exceed the City's daytime (i.e., 7:00 a.m. to 10:00 p.m.) noise limit of 60 dBA. Smaller events are unlikely to result in noise levels greater than this limit.

In Menlo Park, a special event application must be filed if a proposed gathering would have 150 or more attendees. As noted above, there may be occasional events with more than 150 people, and thus, the Project Sponsor or event host would need to obtain a permit on these occasions. For smaller, routine events that would not require a special permit, it is reasonable to conclude that event noise would not exceed the limits in the Menlo Park Municipal Code. However, it is possible that larger events could result in noise levels in excess of Menlo Park Municipal Code noise standards at the nearest sensitive land use. Larger events would be required to obtain an event permit and comply with the stipulations of the permit, which would include adherence to the applicable Menlo Park Municipal Code limits or measures to reduce noise effects from the event. Further, Menlo Park Municipal Code Section 8.60.050, Review Process, stipulates that the police chief or designee shall issue permits only if it is determined that the events do not present substantial noise hazards. Because larger events with amplified music or voices would comply with the requirements of the applicable permit, noise from such events would be in compliance with local regulations and would not result in substantial noise increases.

Construction Vibration – Building Damage

During construction, vibration-generating construction equipment may be operated in proximity to existing buildings and structures. The distance between the construction equipment and the existing buildings would depend on the specific construction activity occurring and the location at the Project Site. For example, demolition activities would occur at the footprints of existing buildings within the campus and thus farther from the boundary of the site where the existing offsite buildings are located.

The most vibration-intensive pieces of equipment that would operate near existing sensitive land uses during construction of the Proposed Project are excavators and loaded trucks. Although auger drills may be used in the footprint of proposed buildings, these generate approximately the same vibration level as excavators and would not be operating near the perimeter of the Project Site close to off-site buildings. In addition, pile driving would not occur during construction. Therefore, the vibration analysis focuses on the use of excavators. Typical vibration levels associated with heavy-duty construction equipment at a reference distance of 25 feet are shown in Table 14, based on the FTA's *Transit Noise and Vibration Impact Assessment Manual.*[18] The equipment that would be used would be similar or the same for both the Proposed Project and Project Variant's construction activities; thus, vibration levels and analysis of vibration-related impacts would be approximately the same for both.

Table 2, above, presents the damage thresholds for several types of structures. In the vicinity of the Proposed Site, buildings can be characterized as either older residential structures, newer residential structures, or modern industrial/commercial buildings. As shown in Table 2, damage

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[18] Ibid.

thresholds for these types of buildings are 0.3 inch per second (in/sec) (i.e., for older residential structures) and 0.5 in/sec (i.e., for newer residential structures, modern industrial/commercial buildings).

The shortest distance between construction equipment and existing buildings is expected to be approximately 15 feet, which could occur at the Linfield Oaks or Classics of Burgess Park neighborhoods. The length of time that equipment would operate within 15 feet of residences in these neighborhoods would be limited because the equipment would also be operating in other areas throughout the Project Site and thus at much greater distances from these structures for most of the duration of the Proposed Project. Nevertheless, because equipment could be as close as 15 feet, this distance is conservatively used in the vibration evaluation. At that distance, the most vibration-intensive equipment proposed for use (i.e., a large bulldozer) would generate a vibration level of up to approximately 0.191 in/sec, as shown in Table 14. With the Project Variant, a vibration-sensitive land use (First Church of Christ, Scientist and Alpha Kids Academy) would be removed during Phase 1 of construction. Regardless, the closest sensitive land use for the Proposed Project and Project Variant are the homes in the Classics of Burgess Park neighborhood.

The nearby commercial and school structures in this area would be classified as "modern industrial/commercial buildings," which have a Caltrans damage criterion of a PPV of 0.5 in/sec. Regarding the nearest residences, nearby residential land uses would either be categorized as "new residential structures" or "older residential structures" under the Caltrans guidelines, which have applicable damage criterion of PPV of 0.5 and 0.3 in/sec, respectively. It is conservatively assumed that all residential structures in this area would be similar to "older residential structures," which have an applicable damage criterion of 0.3 in/sec. Table 2 presents the damage thresholds for each building type.

Table 14. Vibration Levels for Construction Equipment at Various Distances[19]

Equipment	PPV at 15 feet	PPV at 25 Feet	PPV at 50 Feet	PPV at 60 Feet	PPV at 75 Feet	PPV at 100 Feet	PPV at 150 Feet	PPV at 200 Feet
Large bulldozer[a]	0.191	0.089	0.031	0.024	0.016	0.011	0.006	0.004
Caisson drilling[b]	0.191	0.089	0.031	0.024	0.016	0.011	0.006	0.004
Loaded trucks	0.164	0.076	0.027	0.020	0.013	0.010	0.005	0.004

Notes:
[a.] Representative of an excavator.
[b.] Representative of a drill rig
PPV = peak particle velocity

As shown in Table 14, vibration from construction at the nearest residential land uses (i.e., single-family residences in the Classics of Burgess Park and Linfield Oaks neighborhoods) could have a PPV of up to 0.191 in/sec. This scenario would occur in very limited circumstances, however, because it is anticipated that equipment be 15-feet from these receptors for only three to four days during

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[19] Federal Transit Administration. 2018. *Transit Noise and Vibration Impact Assessment*. FTA Report No. 0123. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: September 20, 2023.

grading activities for landscaping-related construction. Construction activities associated with new buildings, which would be longer in duration, would occur at greater distances from these existing residential neighborhoods, such as distances of 50 feet for the townhomes and 200 feet for the parking garage. The vibration level of 0.191 in/sec would thus occur rarely and would be less than the applicable damage criterion with a PPV of 0.3 in/sec that would apply to this structure. If construction equipment is used within 15 feet of existing commercial structures, vibration would also be below the damage criterion because, as noted above, the threshold is a PPV of 0.5 in/sec. for modern industrial/commercial buildings.

Based on the assessment presented above, vibration from construction activities associated with the Proposed Project would not be expected to result in damage effects at buildings near the Project Site**.**

Construction Vibration – Annoyance/Sleep Disturbance

People are typically considered more sensitive to vibration that occurs during nighttime hours because of potential disturbances during the typical hours of sleep. However, schools and places of work may also be considered sensitive to daytime vibration because it may affect a person's ability to complete work or focus on certain tasks. For this analysis, a significant vibration impact would be considered to occur when construction activities generate vibration levels that are strongly perceptible (i.e., PPV of 0.1 in/sec) at surrounding land uses during daytime or nighttime hours, or when vibration levels exceed the criteria outlined in ConnectMenlo EIR Mitigation Measure NOISE-2a. Although the Proposed Project is not tiering from the ConnectMenlo EIR, the thresholds of significance from that document are still applicable to vibration generated during construction because the thresholds characterize the significance of physical impacts on the environment. As discussed above in *Summary of Analysis in the ConnectMenlo EIR*, ConnectMenlo EIR Mitigation Measure NOISE-2a specifies that vibration levels must be limited to a PPV of 0.126 in/sec at the nearest workshop, 0.063 in/sec at the nearest office, 0.032 in/sec at the nearest residence during daytime hours, and 0.016 in/sec at the nearest residence during nighttime hours.

During construction, vibration-generating construction equipment may be operated approximately 15 feet from single-family residences. As shown in Table 14, the use of an excavator could result in a vibration level with a PPV of up to 0.191 in/sec at 15 feet. This vibration level would be above the "strongly perceptible" level (i.e., PPV of 0.1 in/sec), as shown in Table 3, and above the thresholds specified in Mitigation Measure Noise-2a from the *ConnectMenlo* EIR (0.032 in/sec at residential uses, during the daytime hours). At distances of 25 feet, however, the vibration level would be below the strongly perceptible level and considered distinctly perceptible, based on the value in Table 3 (i.e., PPV of 0.4 in/sec) but still above the *ConnectMenlo* EIR threshold of 0.032 in/sec). Most construction activities would occur more than 15 feet from offsite uses because construction along the perimeter of the site would be short term compared to the overall duration of construction. In addition, the vibration levels shown in Table 14 would occur during daytime hours and not during early-morning or nighttime hours. However, vibration levels could be above 0.032 in/sec at distances up to 50 feet, for a large bulldozer, based on Table 14. Construction using a large bulldozer or similar equipment would occur within 50 feet of existing residential uses, because the townhomes are located within 50 feet of the Classics of Burgess Park neighborhood.

Vibration levels from the early-morning concrete pours would have a PPV of less than 0.191 in/sec because a concrete truck is less vibration intensive than a large bulldozer and the concrete pours would occur more on the internal portions of the site and less at the perimeter. It is unlikely that a concrete truck would operate within 15 feet of residential structures, and thus vibration levels during the early-morning hours would not exceed the Caltrans "strongly perceptible" vibration criterion for annoyance (i.e., PPV of 0.1 in/sec). Other equipment used for the concrete pours would operate within the interior of the Project Site and not near existing residential uses. However, a loaded concrete truck traveling within approximately 70 feet of existing residential uses could generate vibration greater than the nighttime threshold specified in the *ConnectMenlo* EIR of 0.016 in/sec, and this scenario would be more likely to occur. Other equipment used for the concrete pours would operate within the interior of the Proposed Project site and not near existing residential uses. Additionally, construction of the emergency well, which would be included as part of the emergency water reservoir, would occur for 24 hours per day for 10 days and could be located as close as 60 feet to existing residences north of Ravenswood Avenue. During emergency well construction, the equipment with the greatest potential for vibration during the nighttime hours would be the drill rig. The vibration levels associated with a drill rig are shown in Table 14 and are the same as the vibration levels from a large bulldozer. At a distance of 60 feet, the drill rig would result in a PPV of 0.024 in/sec, which is above the nighttime threshold specified in the ConnectMenlo EIR of 0.016 in/sec.

Mitigation Measure NOI-3 would reduce vibration levels from construction activity. However, it may not be possible to ensure that vibration levels at all times and in all locations would be reduced to below the "strongly perceptible" level.

Mitigation Measure NOI-3: Vibration Control Measures for Annoyance from Construction Activities

Daytime construction activity involving an excavator or other equipment capable of generating similar vibration levels shall take place no closer than 50 feet from residential or other sensitive land uses, to the extent feasible and practical, subject to review and approval by the Community Development Department. Equipment smaller than excavators can operate less than 50 feet from residential land uses,. Jackhammers shall be further restricted to operate no closer than 30 feet from residential land uses. The distance of 50 feet may be greater for equipment that results in greater vibration levels than an excavator. Maintaining these distances between equipment and the nearest sensitive land uses would ensure vibration levels would be below a peak particle velocity (PPV) of 0.032 inch per second (in/sec). Early morning construction activity involving concrete trucks shall occur after 7 AM, when the daytime threshold from ConnectMenlo is applicable (0.032 in/sec) rather than the nighttime threshold (0.016 in/sec).

When construction requires the use of the aforementioned types of equipment closer to nearby sensitive uses or before the allowable hours, reduction measures shall be incorporated, to the extent feasible and practical, such as the use of smaller or less vibration-intensive equipment. The feasibility of reduction measures shall be subject to review and determination by the Community Development Department. In addition, the construction contractor shall appoint a vibration coordinator for the Proposed Project who will serve as the point of contact for vibration-related complaints during construction. Contact information for the vibration coordinator will be posted at the Project Site and on a publicly available website for the

Proposed Project. Should complaints be received, the vibration coordinator shall work with the construction team to adjust activities to the extent feasible and practical to reduce vibration or reschedule activities for a less sensitive time. The vibration coordinator shall notify the Community Development Department of all vibration-related complaints and actions taken to address the complaints.

Airport-Related Noise

Menlo Park is approximately 6 miles northwest of Moffett Federal Airfield, 14 miles northwest of San José International Airport, 15 miles southeast of San Francisco International Airport, and 18 miles south of Oakland International Airport. In addition, San Carlos Airport is almost 6 miles northwest of the Project Site. The closest airport to the Project Site is Palo Alto Airport, which is approximately 1.6 miles away. According to the General Plan and M-2 Area Zoning Update (ConnectMenlo) Environmental Impact Report, although Menlo Park does receive some noise from aircraft that use these facilities, Menlo Park, including the Project Site, does not fall within any airport land use planning areas, runway protection zones, or the 55 dBA CNEL noise contours of any of these airports. In addition, construction of the Proposed Project would not affect the generation of aircraft noise from any of these airports. Consequently, people residing or working in the area would not be exposed to excessive noise levels from airports or aircraft.

Attachment A: Supporting Materials for the Noise and Vibration Analysis

Noise Monitoring Survey

Long Term Measurement Data

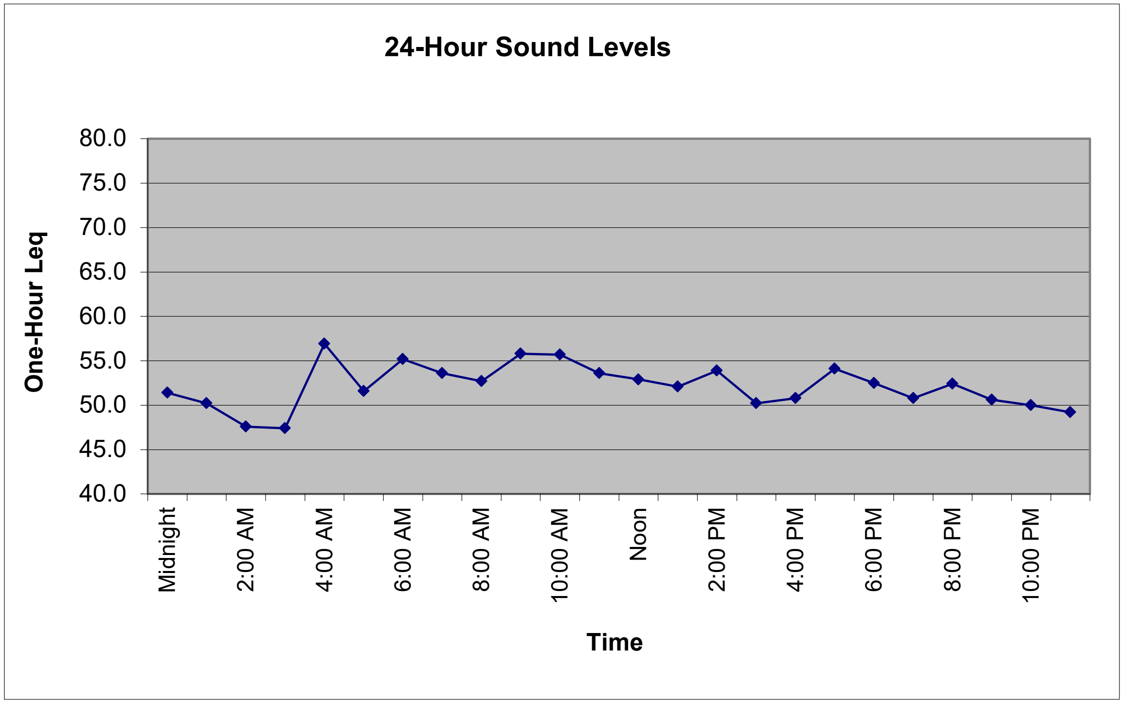
Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan

Date: 4/19/2023

Location: LT-1

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	51.4	52.8	58.8	59.0	56.9	1.9	0.2	Evening
1:00 AM	50.2		5.2	5.4				Night
2:00 AM	47.6							
3:00 AM	47.4							
4:00 AM	56.9							
5:00 AM	51.6							
6:00 AM	55.2							
7:00 AM	53.6							
8:00 AM	52.7							
9:00 AM	55.8							
10:00 AM	55.7							
11:00 AM	53.6							
Noon	52.9							
1:00 PM	52.1							
2:00 PM	53.9							
3:00 PM	50.2							
4:00 PM	50.8							
5:00 PM	54.1							
6:00 PM	52.5							
7:00 PM	50.8							
8:00 PM	52.4							
9:00 PM	50.6							
10:00 PM	50.0							
11:00 PM	49.2							

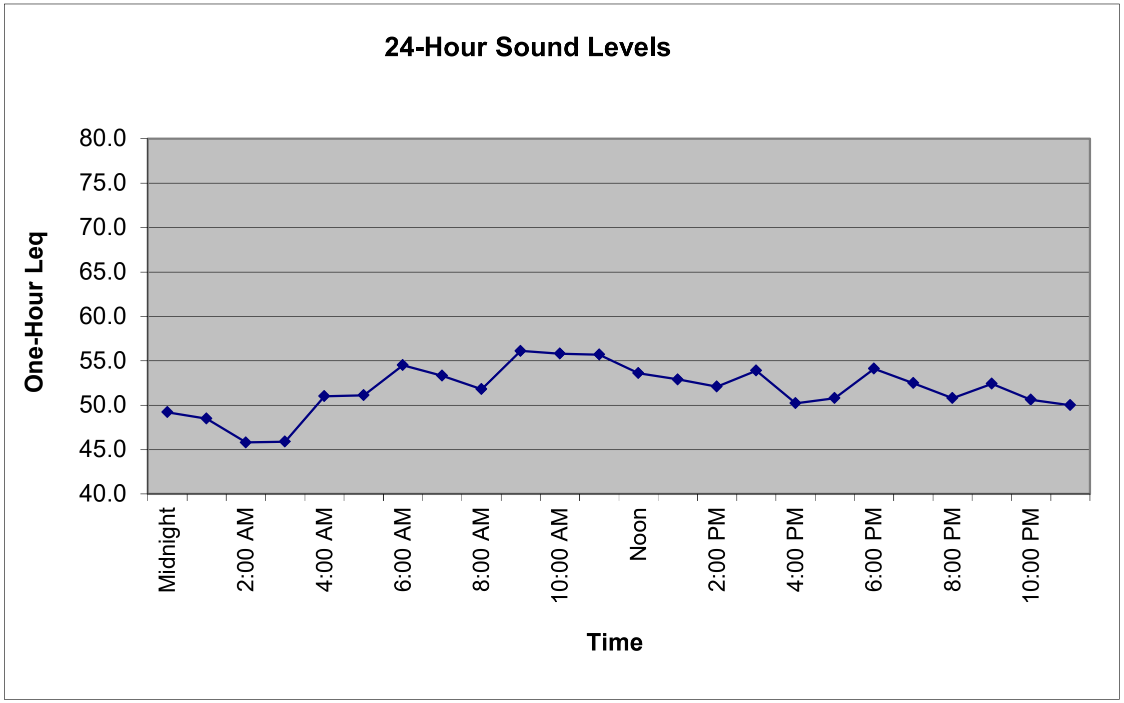


Ldn	58.8
Worst Hour Leq	56.9
Lowest Hour LEQ	47.4
Lowest Hour LEQ (daytime)	50.2
12-hour Leq	53.5

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023
Location: LT-2

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	49.2	52.5	57.4	57.7	56.1	1.3	0.3	Evening
1:00 AM	48.5		4.1	4.4				Night
2:00 AM	45.8							
3:00 AM	45.9							
4:00 AM	51.0							
5:00 AM	51.1							
6:00 AM	54.5							
7:00 AM	53.3							
8:00 AM	51.8							
9:00 AM	56.1							
10:00 AM	55.8							
11:00 AM	55.7							
Noon	53.6							
1:00 PM	52.9							
2:00 PM	52.1							
3:00 PM	53.9							
4:00 PM	50.2							
5:00 PM	50.8							
6:00 PM	54.1							
7:00 PM	52.5							
8:00 PM	50.8							
9:00 PM	52.4							
10:00 PM	50.6							
11:00 PM	50.0							

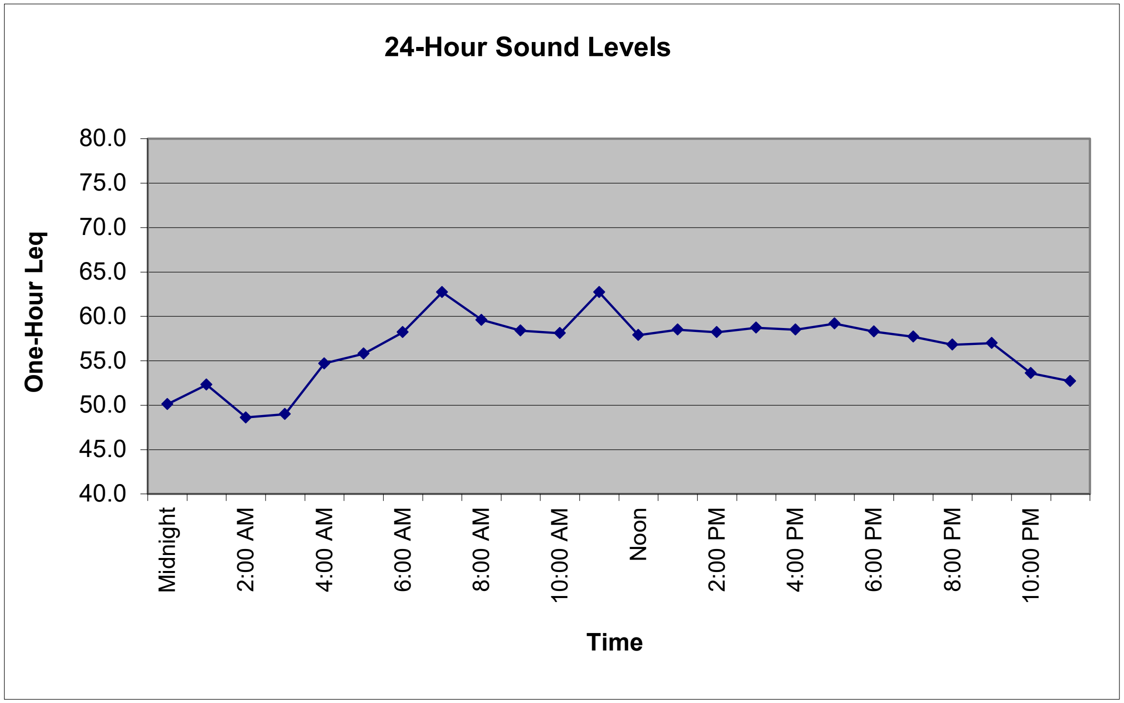


Ldn	57.4
Worst Hour Leq	56.1
Lowest Hour LEQ	45.8
Lowest Hour LEQ (daytime)	50.2
12-hour Leq	53.7

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023
Location: LT-3

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	
								Day
Midnight	50.1	57.9	61.5	62.0	62.7	-1.2	0.4	Evening
1:00 AM	52.3		-1.2	-0.7				Night
2:00 AM	48.6							
3:00 AM	49.0							
4:00 AM	54.7							
5:00 AM	55.8							
6:00 AM	58.2							
7:00 AM	62.7							
8:00 AM	59.6							
9:00 AM	58.4							
10:00 AM	58.1							
11:00 AM	62.7							
Noon	57.9							
1:00 PM	58.5							
2:00 PM	58.2							
3:00 PM	58.7							
4:00 PM	58.5							
5:00 PM	59.2							
6:00 PM	58.3							
7:00 PM	57.7							
8:00 PM	56.8							
9:00 PM	57.0							
10:00 PM	53.6							
11:00 PM	52.7							

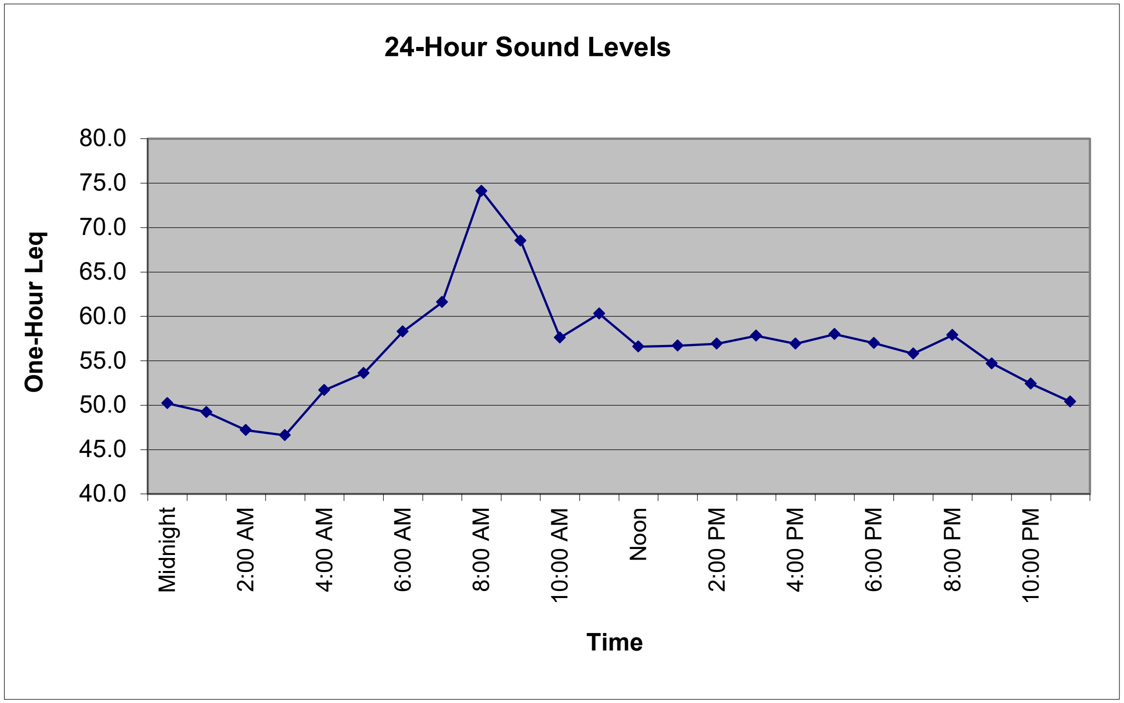


Ldn	61.5
Worst Hour Leq	62.7
Lowest Hour LEQ	48.6
Lowest Hour LEQ (daytime)	57.9
12-hour Leq	59.6

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023
Location: LT-4

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	50.2	62.5	63.8	64.0	74.1	-10.3	0.2	Evening
1:00 AM	49.2		2.2	2.4				Night
2:00 AM	47.2							
3:00 AM	46.6							
4:00 AM	51.7							
5:00 AM	53.6							
6:00 AM	58.3							
7:00 AM	61.6							
8:00 AM	74.1							
9:00 AM	68.5							
10:00 AM	57.6							
11:00 AM	60.3							
Noon	56.6							
1:00 PM	56.7							
2:00 PM	56.9							
3:00 PM	57.8							
4:00 PM	56.9							
5:00 PM	58.0							
6:00 PM	57.0							
7:00 PM	55.8							
8:00 PM	57.9							
9:00 PM	54.7							
10:00 PM	52.4							
11:00 PM	50.4							

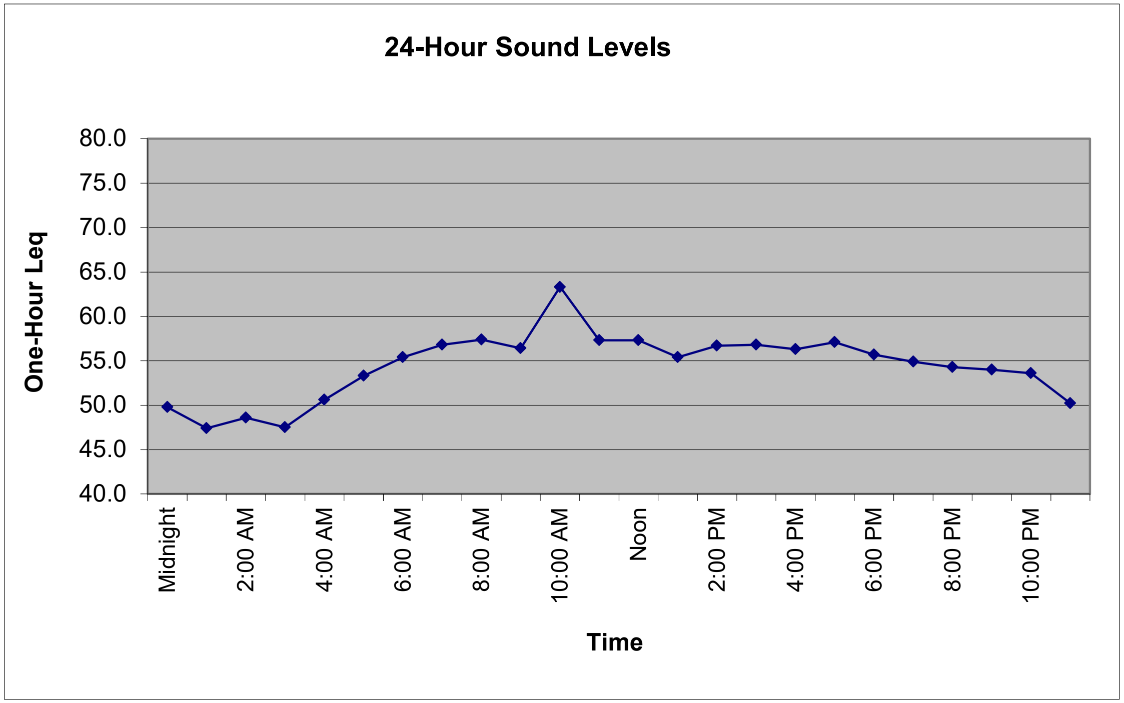


Ldn	63.8
Worst Hour Leq	74.1
Lowest Hour LEQ	46.6
Lowest Hour LEQ (daytime)	56.6
12-hour Leq	65.2

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023
Location: LT-5

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	49.8	55.9	59.4	59.8	63.3	-3.9	0.4	Evening
1:00 AM	47.4		2.6	3.0				Night
2:00 AM	48.6							
3:00 AM	47.5							
4:00 AM	50.6							
5:00 AM	53.3							
6:00 AM	55.4							
7:00 AM	56.8							
8:00 AM	57.4							
9:00 AM	56.4							
10:00 AM	63.3							
11:00 AM	57.3							
Noon	57.3							
1:00 PM	55.4							
2:00 PM	56.7							
3:00 PM	56.8							
4:00 PM	56.3							
5:00 PM	57.1							
6:00 PM	55.7							
7:00 PM	54.9							
8:00 PM	54.3							
9:00 PM	54.0							
10:00 PM	53.6							
11:00 PM	50.2							



Ldn	59.4
Worst Hour Leq	63.3
Lowest Hour LEQ	47.4
Lowest Hour LEQ (daytime)	55.4
12-hour Leq	57.8

LT-1 Meter Data

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAE	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	4/19/2023	8:53:04 AM	9:00:00 AM	0:06:56	13.36mV/I	70.6	88.9	48.4	96.8	120.2	84.4	81	76.1	73.2	71.9	65.6	58.9	49.9	49.1	48.7
2	4/19/2023	9:00:02 AM	10:00:00 AM	0:59:58	13.36mV/I	55.8	82.9	47.8	91.4	94.7	66.4	64.8	59.8	56.9	55.8	52.2	50.6	49.1	48.8	48.3
3	4/19/2023	10:00:02 AM	11:00:00 AM	0:59:58	13.36mV/I	55.7	75.4	46.6	91.3	91.3	68.5	63.5	59.5	57.7	56.7	52.5	50.4	48.5	48.1	47.6
4	4/19/2023	11:00:02 AM	12:00:00 PM	0:59:58	13.36mV/I	53.6	74.1	46.9	89.2	93.9	63.9	62.1	58.3	55.7	54.8	51.9	49.9	48	47.7	47.3
5	4/19/2023	12:00:02 PM	1:00:00 PM	0:59:58	13.36mV/I	52.9	76.2	46.3	88.5	95.1	62.8	60.1	57.3	55.5	54.5	50.9	49.2	47.6	47.2	46.7
6	4/19/2023	1:00:02 PM	2:00:00 PM	0:59:58	13.36mV/I	52.1	69.9	46	87.7	86.7	63	60.2	57	55.1	54.1	50.2	48.5	47.2	46.9	46.5
7	4/19/2023	2:00:02 PM	3:00:00 PM	0:59:58	13.36mV/I	53.9	73.6	46	89.5	91.4	66.4	62.6	57.8	55.1	53.9	50	48.4	47	46.7	46.4
8	4/19/2023	3:00:02 PM	4:00:00 PM	0:59:58	13.36mV/I	50.2	68.2	46.1	85.8	82.6	58.1	56.5	54.1	52.6	51.8	49.8	48.6	47.1	46.9	46.5
9	4/19/2023	4:00:02 PM	5:00:00 PM	0:59:58	13.36mV/I	50.8	67.8	46.3	86.4	86.3	60.5	58.1	55.3	53.6	52.6	49.8	48.4	47.2	47	46.6
10	4/19/2023	5:00:02 PM	6:00:00 PM	0:59:58	13.36mV/I	54.1	75.4	46.5	89.7	98.9	64.9	62.5	59.1	57.1	56.2	52.5	49.5	47.4	47.2	46.8
11	4/19/2023	6:00:02 PM	7:00:00 PM	0:59:58	13.36mV/I	52.5	73.7	46.5	88.1	87.2	61.7	59.7	57	55.6	55	51.7	49.3	47.7	47.4	46.9
12	4/19/2023	7:00:02 PM	8:00:00 PM	0:59:58	13.36mV/I	50.8	67.8	46.7	86.4	86.5	59.8	58.2	55.6	54	53.3	50.1	48.2	47.3	47.2	47
13	4/19/2023	8:00:02 PM	9:00:00 PM	0:59:58	13.36mV/I	52.4	68.4	46.9	88	90.9	63.3	61.1	57.4	55.6	54.8	50.9	48.3	47.4	47.3	47.2
14	4/19/2023	9:00:02 PM	10:00:00 PM	0:59:58	13.36mV/I	50.6	70.7	46.6	86.2	98.9	59.9	57.9	55.2	53.4	52.3	49.1	47.8	47.1	47	46.9
15	4/19/2023	10:00:02 PM	11:00:00 PM	0:59:58	13.36mV/I	50	65.5	46.4	85.6	92.1	61.2	57.9	53.6	51.7	50.9	48.1	47.3	46.9	46.9	46.7
16	4/19/2023	11:00:02 PM	12:00:00 AM	0:59:58	13.36mV/I	49.2	61.4	46.3	84.8	73.9	56.7	55.9	53.2	51.7	51	48.6	47.5	46.9	46.8	46.6
17	4/20/2023	12:00:02 AM	1:00:00 AM	0:59:58	13.36mV/I	51.4	71.7	46.2	87	85.1	65	60.1	51.3	48.8	48.3	47.4	47.1	46.7	46.6	46.5
18	4/20/2023	1:00:02 AM	2:00:00 AM	0:59:58	13.36mV/I	50.2	71.5	46.2	85.8	83.6	61.5	58.3	52	49.7	48.2	47.4	47.1	46.6	46.6	46.4
19	4/20/2023	2:00:02 AM	3:00:00 AM	0:59:58	13.36mV/I	47.6	59.3	46.5	83.2	77.9	48.8	48.5	48.3	48.2	48.1	47.8	47.5	47	46.9	46.7
20	4/20/2023	3:00:02 AM	4:00:00 AM	0:59:58	13.36mV/I	47.4	50.7	46.7	83	66.8	48.6	48.3	48.1	47.9	47.9	47.6	47.3	47	47	46.9
21	4/20/2023	4:00:02 AM	5:00:00 AM	0:59:58	13.36mV/I	56.9	87.1	46.8	92.5	100.6	63.1	60.7	49.4	48.8	48.6	48.1	47.8	47.3	47.2	47
22	4/20/2023	5:00:02 AM	6:00:00 AM	0:59:58	13.36mV/I	51.6	66.4	47.5	87.2	78.6	60.4	58.9	55.3	53.3	52.2	50.7	50.1	48.9	48.2	47.9
23	4/20/2023	6:00:02 AM	7:00:00 AM	0:59:58	13.36mV/I	55.2	76.8	49	90.8	88.4	64.8	63	59.9	57.9	56.8	52.6	51.2	49.9	49.6	49.3
24	4/20/2023	7:00:02 AM	8:00:00 AM	0:59:58	13.36mV/I	53.6	76.9	47	89.2	89	64.1	60.2	56.6	55.2	54.6	50.9	49.5	48	47.7	47.3
25	4/20/2023	8:00:02 AM	9:00:00 AM	0:59:58	13.36mV/I	52.7	69.9	45.7	88.3	85.6	64.5	62	57.1	54.5	53.7	50.8	48.5	46.9	46.7	46.3
26	4/20/2023	9:00:01 AM	9:38:41 AM	0:38:40	13.36mV/I	56.5	76.6	45.6	90.2	108.9	70.1	66.2	61.2	58.3	56.9	53.4	49.3	46.6	46.4	46
27	4/20/2023	9:41:22 AM	9:43:01 AM	0:01:39	13.36mV/I	73.4	88.5	47.4	93.4	123.7	85.4	84	81	78.2	77.1	72.8	69.1	54.5	51.6	47.6

LT-2 Meter Data

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAE	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	4/19/2023	9:05:10 AM	10:00:00 AM	0:54:50	16.44mV/I	64	93.1	47.2	99.2	127.2	74.5	71	66.2	63.6	61.8	54	49.9	48.2	48	47.7
2	4/19/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.44mV/I	53.6	71.6	45.9	89.2	91.5	65.2	62.8	58.5	56.5	55.6	51.8	49.4	47.5	47.3	46.9
3	4/19/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.44mV/I	52.8	72	46.4	88.4	85.1	62.6	60.1	57.2	55.7	55.1	51.8	49.3	47.6	47.3	46.9
4	4/19/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.44mV/I	52	72.9	46.2	87.6	91.3	61.2	59.3	56.3	54.8	54.2	51.3	49.2	47.3	47	46.7
5	4/19/2023	1:00:02 PM	2:00:00 PM	0:59:58	16.44mV/I	51.9	69.9	45.7	87.5	88.1	62.6	60.6	56.6	54.4	53.4	50.2	48.2	46.8	46.5	46.1
6	4/19/2023	2:00:02 PM	3:00:00 PM	0:59:58	16.44mV/I	52.7	70.4	45.8	88.3	86.1	65.1	61.2	57.1	54.8	53.7	50.2	48.4	46.9	46.6	46.3
7	4/19/2023	3:00:02 PM	4:00:00 PM	0:59:58	16.44mV/I	51.9	77.2	45.1	87.5	96.6	61.1	58.2	55.3	53.8	53	50.2	48.2	46.6	46.3	45.8
8	4/19/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.44mV/I	51	67.7	45.6	86.6	97	62.1	59.7	55.4	53.5	52.6	49.3	47.7	46.4	46.2	45.9
9	4/19/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.44mV/I	54.2	74.9	45.3	89.8	89.8	64.8	62.4	59.8	57.5	56.5	52.4	49.4	46.8	46.5	46
10	4/19/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.44mV/I	51.5	69.7	45.3	87.1	88.3	60.9	58.9	56.1	54.4	53.7	50.5	48.1	46.6	46.3	46
11	4/19/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.44mV/I	50.6	66.5	45.3	86.2	91.8	59.4	57.9	55.3	54.2	53.6	50.3	47.9	46.1	45.9	45.7
12	4/19/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.44mV/I	51.6	70	44.9	87.2	83.2	62.6	60.4	56.9	54.3	53.6	50.3	47.2	45.8	45.6	45.3
13	4/19/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.44mV/I	49.4	69.6	45	85	82.9	57.4	55.6	53.1	51.8	51.1	48.1	46.5	45.6	45.5	45.3
14	4/19/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.44mV/I	48.3	65.5	45.1	83.9	77.5	57.6	56.2	51.9	50.4	49.7	47	46.3	45.6	45.5	45.3
15	4/19/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.44mV/I	48.1	63.7	44.7	83.7	82	56.2	54.5	52.2	50.9	50.2	47.4	46.1	45.3	45.1	44.9
16	4/20/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.44mV/I	49.2	65.6	44.4	84.8	78.7	62.1	59.3	51.1	48.3	47.6	46.2	45.7	45	44.9	44.7
17	4/20/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.44mV/I	48.5	69	44.3	84.1	81.1	58.8	56.4	50.8	48.6	47.8	46.4	45.6	44.8	44.7	44.6
18	4/20/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.44mV/I	45.8	49.4	44.5	81.4	79.4	47.3	46.9	46.6	46.5	46.4	46.1	45.7	45.2	45.1	44.9
19	4/20/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.44mV/I	45.9	50.3	44.8	81.5	77.9	48.2	47.4	46.9	46.6	46.5	46	45.7	45.2	45.2	45
20	4/20/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.44mV/I	51	75.4	45.5	86.6	89.5	60.7	57.2	48.9	48.4	48.2	47.5	46.7	45.9	45.8	45.6
21	4/20/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.44mV/I	51.1	60.5	47.2	86.7	73.6	57.1	56.2	53.6	52.7	52.4	51.4	50.5	48.9	48.4	47.9
22	4/20/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.44mV/I	54.5	69	48.7	90.1	83.5	63.5	62	59.6	58	57.2	53.7	51.6	49.9	49.6	49.3
23	4/20/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.44mV/I	53.3	71.2	47.1	88.9	90.3	61.7	60.1	58	56.8	56.1	53.1	51	48.5	48.2	47.6
24	4/20/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.44mV/I	51.8	66.7	45.1	87.4	86.3	62.5	60.4	56.9	54.8	54	50.6	48.2	46.2	45.9	45.5
25	4/20/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.44mV/I	56.1	76.5	45	91.7	91.4	68.8	66.2	61.6	58.6	57.2	51.4	47.9	46	45.7	45.3
26	4/20/2023	9:59:59 AM	10:09:21 AM	0:09:22	16.44mV/I	63.1	83.8	45.2	90.6	116.5	77.3	74	67.5	63.4	60.8	53.9	48.7	45.8	45.6	45.3

LT-3 Meter Data

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAE	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	4/19/2023	9:20:01 AM	10:00:00 AM	0:39:59	16.82mV/I	65.5	91.2	51.6	99.3	120.9	74.3	72.4	69	67.1	65.7	62.1	60.5	57.1	55.7	52.7
2	4/19/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.82mV/I	58.1	70.6	49.7	93.7	89.7	65.7	64	61.9	60.8	60.4	58.8	56.8	53.5	52.7	50.9
3	4/19/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.82mV/I	62.7	87.4	50.5	98.3	100.2	71.1	65.6	62	60.9	60.5	58.7	56.9	53.9	53.1	51.8
4	4/19/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.82mV/I	57.9	73.3	49.7	93.5	100.9	64.6	63.1	61.6	60.7	60.3	58.4	56.6	53.3	52.6	51.3
5	4/19/2023	1:00:02 PM	2:00:00 PM	0:59:58	16.82mV/I	58.5	74.8	48.5	94.1	96.9	67.5	65.1	62.7	61.3	60.8	58.6	56.4	52.5	51.7	50.4
6	4/19/2023	2:00:02 PM	3:00:00 PM	0:59:58	16.82mV/I	58.2	73.1	48.9	93.8	93.9	65.2	64	62	61	60.6	58.8	56.9	53	52	50.2
7	4/19/2023	3:00:02 PM	4:00:00 PM	0:59:58	16.82mV/I	58.7	81.6	48.9	94.3	92.5	66	64.2	62	61.1	60.7	58.6	56.7	53.2	52.2	50.3
8	4/19/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.82mV/I	58.5	79	49.1	94.1	91.9	66.3	63.7	61.5	60.7	60.3	58.5	56.7	52.9	51.7	50.4
9	4/19/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.82mV/I	59.2	77.9	49	94.8	91.1	66.8	64.9	62.6	61.8	61.3	59.2	57.3	53.7	52.6	51.3
10	4/19/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.82mV/I	58.3	77.1	47.8	93.9	92.3	66.9	64.6	62.1	61.1	60.7	58.6	56.5	52.5	51.3	49.5
11	4/19/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.82mV/I	57.7	76.5	46.3	93.3	88.4	65.9	63.6	61.2	60.3	59.9	58	55.7	51.2	50.2	48.2
12	4/19/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.82mV/I	56.8	75.3	47.8	92.4	87.3	64.8	62.6	60.5	59.4	59.1	57	54.9	50.9	49.7	48.3
13	4/19/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.82mV/I	57	79.5	47.2	92.6	90.7	65	61.4	59.1	58.2	57.8	55.6	53.1	49.1	48.4	47.8
14	4/19/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.82mV/I	53.6	69.4	47.4	89.2	82.1	61.5	59.7	57.7	56.9	56.5	54.2	51.2	48.5	48.2	47.8
15	4/19/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.82mV/I	52.7	73	46.6	88.3	86.3	62.4	59.8	55.9	54.5	53.9	51.3	49.4	47.3	47.1	46.8
16	4/20/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.82mV/I	50.1	64	45.9	85.7	79	59.9	58	54.8	52.9	52	49.1	47.4	46.5	46.4	46.2
17	4/20/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.82mV/I	52.3	78.3	45.6	87.9	90.7	59.9	57	53.6	51.7	50.8	47.9	46.8	46.2	46.1	45.9
18	4/20/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.82mV/I	48.6	69.8	45.8	84.2	86	57.1	54.6	51.5	49.9	49	47.3	46.8	46.3	46.2	46.1
19	4/20/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.82mV/I	49	66.5	45.9	84.6	82.1	57	55.5	53.1	51.3	50.3	47.9	47.3	46.4	46.3	46.2
20	4/20/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.82mV/I	54.7	83.1	46.5	90.3	98	62.5	60.8	56.9	55.4	54.6	51.2	49.5	47.6	47.4	47
21	4/20/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.82mV/I	55.8	68	49.3	91.4	83.2	63.1	62	60.5	59.4	58.7	56.3	53.9	50.9	50.5	49.9
22	4/20/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.82mV/I	58.2	73.6	51.3	93.8	86.8	65.8	63.8	61.9	61.1	60.7	58.7	56.4	53.3	52.7	52
23	4/20/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.82mV/I	62.7	87.4	52	98.3	100.5	71.4	67.9	64	62.8	62.3	60.5	58.6	55	54.2	53.1
24	4/20/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.82mV/I	59.6	73.9	50.3	95.2	86.9	67.5	65.9	63.5	62.5	62	59.9	58	54.9	54	52.4
25	4/20/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.82mV/I	58.4	71.9	48.5	94	91.8	66.3	64.4	62.6	61.6	61	58.8	56.9	53	51.8	49.7
26	4/20/2023	10:00:00 AM	10:19:06 AM	0:19:06	16.82mV/I	63.5	85.5	50.1	94.1	114.5	76.3	72.5	66.6	63.2	62.4	59.8	57.7	53.9	52.7	50.7

LT-4 Meter Data

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAE	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	4/19/2023	9:30:33 AM	10:00:00 AM	0:29:27	16.63mV/l	65.3	85.9	49.4	97.8	121.5	77.5	74.5	69.8	67.6	66.2	62	59.6	55.3	53.6	51.2
2	4/19/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.63mV/l	57.6	77.3	44.5	93.2	95.1	66.1	64.2	62.1	61.2	60.7	58.3	55.3	48.4	47.3	45.3
3	4/19/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.63mV/l	60.3	87.5	45.3	95.9	99.6	67.1	65.4	63	61.5	60.9	58.4	55.7	48.9	47.4	46.1
4	4/19/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.63mV/l	56.6	69.9	45	92.2	86.8	66.1	64.4	61.6	60.2	59.5	57	54.1	47.7	46.9	45.8
5	4/19/2023	1:00:02 PM	2:00:00 PM	0:59:58	16.63mV/l	56.7	75.4	44.4	92.3	97.3	65.4	63.5	61.3	60.3	59.9	57.4	54.1	48	46.8	45.6
6	4/19/2023	2:00:02 PM	3:00:00 PM	0:59:58	16.63mV/l	56.9	74	43.9	92.5	90.8	65.6	63.7	61.4	60.3	59.8	57.7	54.6	47.1	46.3	44.9
7	4/19/2023	3:00:02 PM	4:00:00 PM	0:59:58	16.63mV/l	57.8	85.8	44.1	93.4	97	65.2	62.8	60.6	59.9	59.4	57.4	54.5	46.9	46.1	45.4
8	4/19/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.63mV/l	56.9	70.4	44.2	92.5	95.7	64.6	63.6	61.6	60.8	60.4	58.2	54.9	47.1	46	44.8
9	4/19/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.63mV/l	58	78.2	44	93.6	95.5	67.5	65.2	62.3	61.1	60.5	58.6	55.5	48.4	47.6	46.4
10	4/19/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.63mV/l	57	72.1	44	92.6	89.2	64.7	63.6	61.8	60.9	60.4	58.3	54.9	47.1	46.3	45
11	4/19/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.63mV/l	55.8	70.5	42.8	91.4	95.5	63.6	61.9	60.3	59.6	59.2	57.2	53.6	45.8	44.8	43.4
12	4/19/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.63mV/l	57.9	85.7	43.5	93.5	97.6	64.8	63	60.9	59.9	59.4	57.1	53	46.3	45.4	44.4
13	4/19/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.63mV/l	54.7	69.3	43.6	90.3	85.3	63.6	62.2	60.4	59.4	58.9	55.5	49.7	45.3	44.6	44
14	4/19/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.63mV/l	52.4	67.2	43.7	88	91.9	61.5	60.5	58.7	57.6	57	51.7	47.1	44.7	44.5	44.1
15	4/19/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.63mV/l	50.4	66.6	42.9	86	78.9	60.1	59	57	55.2	54.1	49	45.6	43.8	43.6	43.2
16	4/20/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.63mV/l	50.2	69.3	42.7	85.8	81.4	61.9	60.1	56.8	53.2	51.2	45.4	44.1	43.4	43.2	42.9
17	4/20/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.63mV/l	49.2	71.9	42.5	84.8	85.7	60.2	56.9	53.6	51.2	50.2	45	43.8	43.1	43	42.7
18	4/20/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.63mV/l	47.2	69.4	42.9	82.8	82	58.4	56.4	48.9	45.9	45.4	44.3	43.9	43.4	43.3	43.1
19	4/20/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.63mV/l	46.6	63.7	42.3	82.2	78	58.4	56.2	48.5	46.2	45.6	44.3	43.7	43.1	42.9	42.5
20	4/20/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.63mV/l	51.7	74.2	43.3	87.3	88.2	64.6	60.5	56.7	52.4	50.5	46.4	45.3	43.8	43.7	43.5
21	4/20/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.63mV/l	53.6	67.3	45.6	89.2	83.7	62.4	61.4	59.9	58.7	57.9	52.7	49.5	47.2	46.7	46.2
22	4/20/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.63mV/l	58.3	80.5	47.2	93.9	98.4	66.3	64.1	62.4	61.5	61	58.1	53.8	49.4	48.9	48.3
23	4/20/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.63mV/l	61.6	82.3	46.1	97.2	100.4	72.5	70	67	64.1	63.3	60.5	56.7	49.7	48.7	46.9
24	4/20/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.63mV/l	74.1	89.1	49.2	109.7	101.2	86.3	84.3	80.4	78.1	77.2	72.1	68.4	59.1	56	51.5
25	4/20/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.63mV/l	68.5	79.3	48.9	104.1	99.5	75.4	74.6	73.6	72.9	72.5	70.1	66.9	55.9	54.4	52.1
26	4/20/2023	10:00:01 AM	10:29:16 AM	0:29:15	16.63mV/l	69.1	98.3	44.8	101.5	132.1	77.2	73.3	69.6	68.5	68.1	65.9	62.9	54.2	52	47.2
27	4/20/2023	10:29:17 AM	10:29:20 AM	0:00:03	16.63mV/l	62.2	64.9	57.9	67	95.1	64.9	64.8	64.6	64.4	64.3	63.6	62.4	58.8	58.5	58.1

LT-5 Meter Data

Rec 3 to 28 Slow Response dBA weighting 1.0 dB resolution stats

Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	L10%	L8%	L25%
4/19/2023 9:49	1.0 hour	70.1	105.7	99	48.7	81	66	61	55	51	50	49	61	63	58
4/19/2023 10:49	1.0 hour	57.3	92.9	82.4	48.7	65	60	59	54	51	50	49	59	59	56
4/19/2023 11:49	1.0 hour	57.3	92.9	79.2	48.3	64	60	58	54	51	50	49	58	59	56
4/19/2023 12:49	1.0 hour	55.4	91	67.8	47	62	59	58	54	50	49	48	58	58	55
4/19/2023 13:49	1.0 hour	56.7	92.3	71.6	49.2	64	60	59	55	52	51	50	59	59	56
4/19/2023 14:49	1.0 hour	56.8	92.4	81.8	47.3	63	59	58	54	51	50	49	58	58	56
4/19/2023 15:49	1.0 hour	56.3	91.9	72.7	47.2	64	60	58	54	51	50	48	58	59	56
4/19/2023 16:49	1.0 hour	57.1	92.7	77.9	46.9	65	60	58	55	51	50	48	58	59	56
4/19/2023 17:49	1.0 hour	55.7	91.3	74	47	63	59	57	54	50	49	48	57	58	56
4/19/2023 18:49	1.0 hour	54.9	90.5	75.1	47.6	62	58	56	53	50	49	48	56	57	55
4/19/2023 19:49	1.0 hour	54.3	89.9	71.5	47	64	57	55	52	49	48	48	55	56	53
4/19/2023 20:49	1.0 hour	54	89.6	71.6	47.4	63	57	55	51	49	48	48	55	56	53
4/19/2023 21:49	1.0 hour	53.6	89.2	77.1	47.1	62	56	55	50	48	48	47	55	55	52
4/19/2023 22:49	1.0 hour	50.2	85.8	64.3	44.8	55	53	52	49	47	46	46	52	52	50
4/19/2023 23:49	1.0 hour	49.8	85.4	66.9	44.2	59	53	51	47	45	45	44	51	52	48
4/20/2023 0:49	1.0 hour	47.4	83	63.8	43.5	55	50	48	45	44	44	43	48	48	46
4/20/2023 1:49	1.0 hour	48.6	84.2	67.5	43.3	56	51	50	47	45	44	44	50	50	48
4/20/2023 2:49	1.0 hour	47.5	83.1	64.5	42.8	56	50	48	45	44	43	43	48	49	47
4/20/2023 3:49	1.0 hour	50.6	86.2	73.6	42.9	60	54	51	46	44	44	43	51	52	48
4/20/2023 4:49	1.0 hour	53.3	88.9	66.9	48.4	58	56	55	52	50	49	49	55	55	53
4/20/2023 5:49	1.0 hour	55.4	91	73.1	49.9	62	59	57	53	51	50	50	57	58	55
4/20/2023 6:49	1.0 hour	56.8	92.4	79.3	49.5	62	59	58	55	52	51	50	58	58	57
4/20/2023 7:49	1.0 hour	57.4	93	75.1	48	66	61	59	55	52	52	50	59	59	57
4/20/2023 8:49	1.0 hour	56.4	92	72.7	45.9	65	60	58	54	50	49	47	58	59	56
4/20/2023 9:49	1.0 hour	63.3	98.9	77.1	45.9	74	71	67	54	50	49	47	67	69	57
4/20/2023 10:49	2.6 min	73.1	95	86.9	48	83	80	77	64	52	50	48	77	78	71

Short Term Measurement Data

Incorrect timestamps were recorded during the following measurements:
LxT_Data.056
LxT_Data.055
LxT_Data.053

Below are the recorded (incorrect) and updated (correct) start/end timestamps.

LxT_Data.056
Recorded Start: 2020-09-15 03:29:00 PM
Recorded End: 2020-09-15 03:46:00 PM
Updated Start: 2023-04-19 12:06:00 PM
Updated End: 2023-04-19 12:21:00 PM

LxT_Data.055
Recorded Start: 2020-09-15 02:24:00 PM
Recorded End: 2020-09-15 02:39:00 PM
Updated Start: 2023-04-19 11:01:00 AM
Updated End: 2023-04-19 11:16:00 AM

LxT_Data.053
Recorded Start: 2020-09-15 01:51:00 PM
Recorded End: 2020-09-15 02:06:00 PM
Updated Start: 2023-04-19 10:28:00 AM
Updated End: 2023-04-19 10:43:00 AM

Summary

File Name on Meter	LxT_Data.056.s
File Name on PC	LxT_0004004-20200915 032900-LxT_Data.056.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	*The meter date and time was not correctly established during the measurement; as such, the date and times listed for this measurement do not reflect the actual date and time. The correct date and time are shown on the Time History output, and the incorrect date and times have been maintained with strike-through text.	
Start	~~2020-09-15 03:29:00~~	2023-04-19 12:06:00
Stop	~~2020-09-15 03:46:00~~	2023-04-19 12:23:00
Duration	00:17:00.5	
Run Time	00:16:28.3	
Pause	00:00:32.2	
Pre-Calibration	~~2020-09-15 03:26:57~~	2023-04-19 12:03:57
Post-Calibration	~~2020-09-15 03:48:54~~	2023-04-19 12:25:54
Calibration Deviation	-0.15 dB	

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	122.9 dB		
	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**24.4**	25.5	31.8 dB
Noise Floor	15.2	16.4	22.6 dB
	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	49.6 dB		
LAE	79.5 dB		
EA	10.015 µPa²h		
EA8	291.844 µPa²h		
EA40	1.459 mPa²h		
LApeak (max)	~~2020-09-15 03:38:32~~	2023-04-19 12:15:32	80.4 dB
LASmax	~~2020-09-15 03:45:57~~	2023-04-19 12:22:57	66.0 dB
LASmin	~~2020-09-15 03:41:59~~	2023-04-19 12:18:59	40.6 dB
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	59.6	-99.9	49.6	59.6	-99.9	-99.9

LCeq	61.6 dB
LAeq	49.6 dB
LCeq - LAeq	12.0 dB
LAIeq	52.2 dB
LAeq	49.6 dB
LAIeq - LAeq	2.6 dB

	A			**C**	
	dB	**Time Stamp**	**Corrected Time Stamp**	**dB**	**Time Stamp**
Leq	49.6			61.6	
Ls(max)	66.0	~~2020-09-15 03:45:57~~	2023-04-19 12:22:57		
Ls(min)	40.6	~~2020-09-15 03:41:59~~	2023-04-19 12:18:59		
LPeak(max)	80.4	~~2020-09-15 03:38:32~~	2023-04-19 12:15:32		

Overload Count	0
Overload Duration	0.0 s

Dose Settings			
Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results			
Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	35.0	35.0	dB

Statistics		
LA 1.00	58.8	dB
LA 10.00	52.3	dB
LA 25.00	49.1	dB
LA 50.00	46.2	dB
LA 90.00	43.2	dB
LA 99.00	41.3	dB

Calibration History

Preamp	Date	Corrected Date	dB re. 1V/Pa
PRMLxT1L	~~2020-09-15 03:48:48~~	2023-04-19 12:25:48	-29.20
PRMLxT1L	~~2020-09-15 03:26:54~~	2023-04-19 12:03:54	-29.04
PRMLxT1L	~~2020-09-15 02:41:17~~	2023-04-19 11:18:17	-29.15
PRMLxT1L	~~2020-09-15 02:19:48~~	2023-04-19 10:56:48	-29.09
PRMLxT1L	~~2020-09-15 02:07:44~~	2023-04-19 10:44:44	-29.06
PRMLxT1L	~~2020-09-15 01:48:13~~	2023-04-19 10:25:13	-29.04
PRMLxT1L	2020-07-29 00:01:50	N/A	-29.05
PRMLxT1L	2022-06-29 11:07:13	N/A	-28.98
PRMLxT1L	2022-06-29 10:17:28	N/A	-28.91
PRMLxT1L	2022-06-29 07:13:19	N/A	-28.89
PRMLxT1L	2022-06-02 12:37:15	N/A	-28.69

Summary

File Name on Meter	LxT_Data.055.s
File Name on PC	LxT_0004004-20200915 022401-LxT_Data.055.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	*The meter date and time was not correctly established during the measurement; as such, the date and times listed for this measurement do not reflect the actual date and time. The correct date and time are shown on the Time History output, and the incorrect date and times have been maintained with strike-through text.		
Start	~~2020-09-15 02:24:01~~	2023-04-19 11:01:01	
Stop	~~2020-09-15 02:39:02~~	2023-04-19 11:16:02	
Duration	00:15:01.4		
Run Time	00:15:01.4		
Pause	00:00:00.0		
Pre-Calibration	~~2020-09-15 02:19:48~~	2023-04-19 10:56:48	
Post-Calibration	~~2020-09-15 02:41:24~~	2023-04-19 11:18:24	
Calibration Deviation	-0.06	dB	

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	122.9 dB		
	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**24.4**	25.5	31.7 dB
Noise Floor	15.2	16.4	22.6 dB
	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	55.9	dB		
LAE	85.4	dB		
EA	38.965	µPa²h		
EA8	1.245	mPa²h		
EA40	6.225	mPa²h		
LApeak (max)	~~2020-09-15 02:24:20~~		2023-04-19 11:01:20	91.2 dB
LASmax	~~2020-09-15 02:26:34~~		2023-04-19 11:03:34	68.7 dB
LASmin	~~2020-09-15 02:34:41~~		2023-04-19 11:11:41	41.0 dB
SEA	-99.9	dB		

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	65.9	-99.9	55.9	65.9	-99.9	-99.9

LCeq	64.5	dB
LAeq	55.9	dB
LCeq - LAeq	8.6	dB
LAIeq	57.7	dB
LAeq	55.9	dB
LAIeq - LAeq	1.8	dB

	A			**C**	
	dB	**Time Stamp**	**Corrected Time Stamp**	**dB**	**Time Stamp**
Leq	55.9			64.5	
Ls(max)	68.7	~~2020-09-15 02:26:34~~	2023-04-19 11:03:34		
Ls(min)	41.0	~~2020-09-15 02:34:41~~	2023-04-19 11:11:41		
LPeak(max)	91.2	~~2020-09-15 02:24:20~~	2023-04-19 11:01:20		

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	40.9	40.9	dB

Statistics

LA 1.00	63.8	dB
LA 10.00	59.5	dB
LA 25.00	57.2	dB
LA 50.00	53.4	dB
LA 90.00	46.1	dB
LA 99.00	41.5	dB

Calibration History

Preamp	**Date**	**Corrected Date**	**dB re. 1V/Pa**
PRMLxT1L	~~2020-09-15 02:41:17~~	2023-04-19 11:18:17	-29.15
PRMLxT1L	~~2020-09-15 02:19:48~~	2023-04-19 10:56:48	-29.09
PRMLxT1L	~~2020-09-15 02:07:44~~	2023-04-19 10:44:44	-29.06
PRMLxT1L	~~2020-09-15 01:48:13~~	2023-04-19 10:25:13	-29.04
PRMLxT1L	2020-07-29 00:01:50	N/A	-29.05
PRMLxT1L	2022-06-29 11:07:13	N/A	-28.98
PRMLxT1L	2022-06-29 10:17:28	N/A	-28.91
PRMLxT1L	2022-06-29 07:13:19	N/A	-28.89
PRMLxT1L	2022-06-02 12:37:15	N/A	-28.69
PRMLxT1L	2022-06-02 11:51:50	N/A	-28.70
PRMLxT1L	2022-06-02 10:54:46	N/A	-28.77

Summary

File Name on Meter	LxT_Data.053.s
File Name on PC	LxT_0004004-20200915 015100-LxT_Data.053.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	*The meter date and time was not correctly established during the measurement; as such, the date and times listed for this measurement do not reflect the actual date and time. The correct date and time are shown on the Time History output, and the incorrect date and times have been maintained with strike-through text.	
Start	~~2020-09-15 01:51:00~~	2023-04-19 10:28:00
Stop	~~2020-09-15 02:06:02~~	2023-04-19 10:43:02
Duration	00:15:01.7	
Run Time	00:15:01.7	
Pause	00:00:00.0	
Pre-Calibration	~~2020-09-15 01:48:16~~	2023-04-19 10:25:16
Post-Calibration	~~2020-09-15 02:07:59~~	2023-04-19 10:44:59
Calibration Deviation	-0.01 dB	

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	122.8 dB		
	A	**C**	**Z**
Under Range Peak	**79.4**	76.4	81.4 dB
Under Range Limit	**24.3**	25.5	31.7 dB
Noise Floor	15.2	16.3	22.5 dB
	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	55.3 dB		
LAE	84.9 dB		
EA	33.948 µPa²h		
EA8	1.084 mPa²h		
EA40	5.422 mPa²h		
LApeak (max)	~~2020-09-15 02:03:46~~	2023-04-19 10:40:46	89.3 dB
LASmax	~~2020-09-15 01:59:41~~	2023-04-19 10:36:41	67.1 dB
LASmin	~~2020-09-15 02:05:54~~	2023-04-19 10:42:54	50.5 dB
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	65.3	-99.9	55.3	65.3	-99.9	-99.9

LCeq	67.0 dB
LAeq	55.3 dB
LCeq - LAeq	11.7 dB
LAIeq	57.2 dB
LAeq	55.3 dB
LAIeq - LAeq	1.9 dB

	A			**C**	
	dB	**Time Stamp**	**Corrected Time Stamp**	**dB**	**Time Stamp**
Leq	55.3			67.0	
Ls(max)	67.1	~~2020-09-15 01:59:41~~	2023-04-19 10:36:41		
Ls(min)	50.5	~~2020-09-15 02:05:54~~	2023-04-19 10:42:54		
LPeak(max)	89.3	~~2020-09-15 02:03:46~~	2023-04-19 10:40:46		

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	40.3	40.3	dB

Statistics

LA 1.00	65.9	dB
LA 10.00	57.8	dB
LA 25.00	53.6	dB
LA 50.00	52.3	dB
LA 90.00	51.6	dB
LA 99.00	51.1	dB

Calibration History

Preamp	**Date**	**Corrected Date**	**dB re. 1V/Pa**
PRMLxT1L	~~2020-09-15 02:07:44~~	2023-04-19 10:44:44	-29.06
PRMLxT1L	~~2020-09-15 01:48:13~~	2023-04-19 10:25:13	-29.04
PRMLxT1L	2020-07-29 00:01:50	N/A	-29.05
PRMLxT1L	2022-06-29 11:07:13	N/A	-28.98
PRMLxT1L	2022-06-29 10:17:28	N/A	-28.91
PRMLxT1L	2022-06-29 07:13:19	N/A	-28.89
PRMLxT1L	2022-06-02 12:37:15	N/A	-28.69
PRMLxT1L	2022-06-02 11:51:50	N/A	-28.70
PRMLxT1L	2022-06-02 10:54:46	N/A	-28.77
PRMLxT1L	2022-06-02 09:45:41	N/A	-28.90
PRMLxT1L	2022-06-01 15:18:09	N/A	-28.75

Summary

File Name on Meter	LxT_Data.057.s
File Name on PC	LxT_0004004-20230420 074200-LxT_Data.057.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2023-04-20 07:42:00
Stop	2023-04-20 07:57:01
Duration	00:15:00.9
Run Time	00:15:00.9
Pause	00:00:00.0
Pre-Calibration	2023-04-20 07:38:41
Post-Calibration	2023-04-20 08:00:19
Calibration Deviation	-0.09 dB

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
Overload	122.9 dB

	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**24.4**	25.5	31.7 dB
Noise Floor	15.2	16.4	22.6 dB

	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	49.3 dB	
LAE	78.8 dB	
EA	8.520 µPa²h	
EA8	272.364 µPa²h	
EA40	1.362 mPa²h	
LApeak (max)	2023-04-20 07:42:34	89.2 dB
LASmax	2023-04-20 07:42:34	63.4 dB
LASmin	2023-04-20 07:55:42	45.0 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	49.3	49.3	-99.9	49.3	49.3	-99.9

LCeq	64.1 dB
LAeq	49.3 dB
LCeq - LAeq	14.8 dB
LAIeq	52.4 dB
LAeq	49.3 dB
LAIeq - LAeq	3.1 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	49.3		64.1			
Ls(max)	63.4	2023/04/20 7:42:34				
Ls(min)	45.0	2023/04/20 7:55:42				
LPeak(max)	89.2	2023/04/20 7:42:34				

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	34.3	34.3	dB

Statistics

LA 1.00	57.0	dB
LA 10.00	50.6	dB
LA 25.00	49.3	dB
LA 50.00	48.2	dB
LA 90.00	46.4	dB
LA 99.00	45.7	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
PRMLxT1L	2023-04-20 07:59:51	-29.16
PRMLxT1L	2023-04-20 07:38:38	-29.05
PRMLxT1L	2020-09-15 03:48:48	-29.20
PRMLxT1L	2020-09-15 03:26:54	-29.04
PRMLxT1L	2020-09-15 02:41:17	-29.15
PRMLxT1L	2020-09-15 02:19:48	-29.09
PRMLxT1L	2020-09-15 02:07:44	-29.06
PRMLxT1L	2020-09-15 01:48:13	-29.04
PRMLxT1L	2020-07-29 00:01:50	-29.05
PRMLxT1L	2022-06-29 11:07:13	-28.98
PRMLxT1L	2022-06-29 10:17:28	-28.91

Summary

File Name on Meter	LxT_Data.059.s
File Name on PC	LxT_0004004-20230420 111600-LxT_Data.059.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2023-04-20 11:16:00
Stop	2023-04-20 11:31:01
Duration	00:15:01.6
Run Time	00:15:01.6
Pause	00:00:00.0
Pre-Calibration	2023-04-20 11:14:41
Post-Calibration	2023-04-20 11:34:34
Calibration Deviation	0.06 dB

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	122.8 dB		
	A	**C**	**Z**
Under Range Peak	**79.4**	76.4	81.4 dB
Under Range Limit	**24.3**	25.5	31.7 dB
Noise Floor	15.2	16.3	22.5 dB
	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	52.5 dB	
LAE	82.1 dB	
EA	17.814 µPa²h	
EA8	569.049 µPa²h	
EA40	2.845 mPa²h	
LApeak (max)	2023-04-20 11:28:23	84.2 dB
LASmax	2023-04-20 11:16:09	60.8 dB
LASmin	2023-04-20 11:29:50	43.6 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	52.5	52.5	-99.9	52.5	52.5	-99.9

LCeq	65.4 dB
LAeq	52.5 dB
LCeq - LAeq	12.9 dB
LAIeq	54.0 dB
LAeq	52.5 dB
LAIeq - LAeq	1.5 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	52.5		65.4			
Ls(max)	60.8	2023/04/20 11:16:09				
Ls(min)	43.6	2023/04/20 11:29:50				
LPeak(max)	84.2	2023/04/20 11:28:23				

Overload Count	0
Overload Duration	0.0 s

Dose Settings			
Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results			
Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	37.5	37.5	dB

Statistics		
LA 1.00	59.0	dB
LA 10.00	56.6	dB
LA 25.00	53.6	dB
LA 50.00	49.9	dB
LA 90.00	46.9	dB
LA 99.00	44.4	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**
PRMLxT1L	2023-04-20 11:34:30	-29.07	45.63	50.67	57.51
PRMLxT1L	2023-04-20 11:14:36	-29.13	54.33	57.92	46.60
PRMLxT1L	2023-04-20 08:53:43	-28.99	50.80	48.42	55.98
PRMLxT1L	2023-04-20 08:40:11	-29.07	49.13	54.17	48.49
PRMLxT1L	2023-04-20 07:59:51	-29.16	54.22	55.44	47.80
PRMLxT1L	2023-04-20 07:38:38	-29.05	59.26	56.20	48.66
PRMLxT1L	2020-09-15 03:48:48	-29.20	59.26	46.36	59.78
PRMLxT1L	2020-09-15 03:26:54	-29.04	51.48	55.86	60.10
PRMLxT1L	2020-09-15 02:41:17	-29.15	47.36	47.94	48.60
PRMLxT1L	2020-09-15 02:19:48	-29.09	50.28	56.04	49.18
PRMLxT1L	2020-09-15 02:07:44	-29.06	56.36	50.24	52.04

Record #	Record Type	Date	Time	Corrected Date	Corrected Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Calibration Change	~~2020-09-15~~	~~3:26:57~~	2023-04-19	12:03:57							
2	Run	~~2020-09-15~~	~~3:29:00~~	2023-04-19	12:06:00							
3		~~2020-09-15~~	~~3:29:00~~	2023-04-19	12:06:00	47.9	75.6	49.4	46.3	No		
4		~~2020-09-15~~	~~3:29:10~~	2023-04-19	12:06:10	50.3	71.3	53.2	47.1	No		
5		~~2020-09-15~~	~~3:29:20~~	2023-04-19	12:06:20	50.8	70.6	52.1	48.9	No		
6		~~2020-09-15~~	~~3:29:30~~	2023-04-19	12:06:30	54.2	70.8	56.7	50.8	No		
7		~~2020-09-15~~	~~3:29:40~~	2023-04-19	12:06:40	55.6	72.1	58.8	52.6	No		
8		~~2020-09-15~~	~~3:29:50~~	2023-04-19	12:06:50	53.3	69.6	55.9	51.2	No		
9		~~2020-09-15~~	~~3:30:00~~	2023-04-19	12:07:00	52.5	68.6	55.0	49.1	No		
10		~~2020-09-15~~	~~3:30:10~~	2023-04-19	12:07:10	47.6	62.9	49.7	45.1	No		
11		~~2020-09-15~~	~~3:30:20~~	2023-04-19	12:07:20	44.2	71.8	45.2	43.1	No		
12		~~2020-09-15~~	~~3:30:30~~	2023-04-19	12:07:30	43.6	58.3	44.4	42.6	No		
13		~~2020-09-15~~	~~3:30:40~~	2023-04-19	12:07:40	43.9	70.8	44.9	43.1	No		
14		~~2020-09-15~~	~~3:30:50~~	2023-04-19	12:07:50	43.8	66.2	45.6	43.0	No		
15		~~2020-09-15~~	~~3:31:00~~	2023-04-19	12:08:00	43.3	64.8	44.4	42.5	No		
16		~~2020-09-15~~	~~3:31:10~~	2023-04-19	12:08:10	43.7	69.1	45.1	42.6	No		
17		~~2020-09-15~~	~~3:31:20~~	2023-04-19	12:08:20	43.5	66.7	44.8	42.4	No		
18		~~2020-09-15~~	~~3:31:30~~	2023-04-19	12:08:30	43.8	73.1	45.5	42.5	No		
19		~~2020-09-15~~	~~3:31:40~~	2023-04-19	12:08:40	43.8	66.4	45.3	43.0	No		
20		~~2020-09-15~~	~~3:31:50~~	2023-04-19	12:08:50	46.8	72.4	51.4	43.0	No		
21		~~2020-09-15~~	~~3:32:00~~	2023-04-19	12:09:00	48.7	65.5	51.9	43.8	No		
22		~~2020-09-15~~	~~3:32:10~~	2023-04-19	12:09:10	49.1	72.7	51.6	47.7	No		
23		~~2020-09-15~~	~~3:32:20~~	2023-04-19	12:09:20	48.1	64.4	50.8	45.4	No		
24		~~2020-09-15~~	~~3:32:30~~	2023-04-19	12:09:30	47.2	65.1	49.6	44.2	No		
25		~~2020-09-15~~	~~3:32:40~~	2023-04-19	12:09:40	44.4	59.3	47.1	42.3	No		
26		~~2020-09-15~~	~~3:32:50~~	2023-04-19	12:09:50	49.1	68.3	52.1	42.5	No		
27		~~2020-09-15~~	~~3:33:00~~	2023-04-19	12:10:00	43.9	62.6	45.0	42.7	No		
28		~~2020-09-15~~	~~3:33:10~~	2023-04-19	12:10:10	45.1	60.9	46.3	43.5	No		
29		~~2020-09-15~~	~~3:33:20~~	2023-04-19	12:10:20	43.9	67.5	45.8	42.4	No		
30		~~2020-09-15~~	~~3:33:30~~	2023-04-19	12:10:30	45.0	61.1	47.2	43.5	No		
31		~~2020-09-15~~	~~3:33:40~~	2023-04-19	12:10:40	45.1	61.9	46.6	43.0	No		
32		~~2020-09-15~~	~~3:33:50~~	2023-04-19	12:10:50	43.9	60.5	46.4	42.0	No		
33		~~2020-09-15~~	~~3:34:00~~	2023-04-19	12:11:00	45.3	60.8	46.7	43.3	No		
34		~~2020-09-15~~	~~3:34:10~~	2023-04-19	12:11:10	51.5	67.4	55.3	46.5	No		
35		~~2020-09-15~~	~~3:34:20~~	2023-04-19	12:11:20	52.2	71.2	55.3	48.9	No		
36		~~2020-09-15~~	~~3:34:30~~	2023-04-19	12:11:30	48.1	61.7	49.7	46.2	No		
37		~~2020-09-15~~	~~3:34:40~~	2023-04-19	12:11:40	52.0	67.5	55.2	47.7	No		
38		~~2020-09-15~~	~~3:34:50~~	2023-04-19	12:11:50	46.3	61.8	48.1	45.1	No		
39		~~2020-09-15~~	~~3:35:00~~	2023-04-19	12:12:00	45.9	68.0	46.9	44.7	No		
40		~~2020-09-15~~	~~3:35:10~~	2023-04-19	12:12:10	44.4	69.0	46.2	42.7	No		
41		~~2020-09-15~~	~~3:35:20~~	2023-04-19	12:12:20	42.3	60.7	42.9	41.9	No		
42		~~2020-09-15~~	~~3:35:30~~	2023-04-19	12:12:30	43.3	64.2	44.1	41.7	No		
43		~~2020-09-15~~	~~3:35:40~~	2023-04-19	12:12:40	47.0	70.7	49.2	44.1	No		
44		~~2020-09-15~~	~~3:35:50~~	2023-04-19	12:12:50	47.5	68.9	49.8	45.2	No		
45		~~2020-09-15~~	~~3:36:00~~	2023-04-19	12:13:00	47.6	64.1	48.3	46.2	No		
46		~~2020-09-15~~	~~3:36:10~~	2023-04-19	12:13:10	46.3	62.7	48.3	44.8	No		
47		~~2020-09-15~~	~~3:36:20~~	2023-04-19	12:13:20	49.2	73.3	51.5	47.1	No		
48		~~2020-09-15~~	~~3:36:30~~	2023-04-19	12:13:30	51.2	71.3	53.0	49.5	No		
49		~~2020-09-15~~	~~3:36:40~~	2023-04-19	12:13:40	52.1	69.4	54.4	47.6	No		
50		~~2020-09-15~~	~~3:36:50~~	2023-04-19	12:13:50	57.5	69.2	56.0	54.1	No		
51	Pause	~~2020-09-15~~	~~3:36:51~~	2023-04-19	12:13:51							
52	Resume	~~2020-09-15~~	~~3:37:23~~	2023-04-19	12:14:23							
53		~~2020-09-15~~	~~3:37:23~~	2023-04-19	12:14:23	47.3	69.1	49.4	44.9	No		
54		~~2020-09-15~~	~~3:37:33~~	2023-04-19	12:14:33	47.1	77.2	50.4	45.4	No		
55		~~2020-09-15~~	~~3:37:43~~	2023-04-19	12:14:43	47.4	66.1	48.5	45.1	No		
56		~~2020-09-15~~	~~3:37:53~~	2023-04-19	12:14:53	46.7	71.2	49.4	43.7	No		
57		~~2020-09-15~~	~~3:38:03~~	2023-04-19	12:15:03	43.6	69.9	44.2	42.8	No		
58		~~2020-09-15~~	~~3:38:13~~	2023-04-19	12:15:13	43.8	64.2	44.7	43.2	No		
59		~~2020-09-15~~	~~3:38:23~~	2023-04-19	12:15:23	44.7	80.4	49.1	43.1	No		
60		~~2020-09-15~~	~~3:38:33~~	2023-04-19	12:15:33	46.5	68.6	50.8	44.8	No		
61		~~2020-09-15~~	~~3:38:43~~	2023-04-19	12:15:43	46.8	65.1	51.1	45.5	No		
62		~~2020-09-15~~	~~3:38:53~~	2023-04-19	12:15:53	50.8	68.1	53.6	46.5	No		
63		~~2020-09-15~~	~~3:39:03~~	2023-04-19	12:16:03	53.8	72.3	57.3	49.9	No		
64		~~2020-09-15~~	~~3:39:13~~	2023-04-19	12:16:13	50.1	68.4	53.0	47.7	No		
65		~~2020-09-15~~	~~3:39:23~~	2023-04-19	12:16:23	49.9	68.3	53.3	46.7	No		
66		~~2020-09-15~~	~~3:39:33~~	2023-04-19	12:16:33	48.9	65.0	51.2	46.7	No		
67		~~2020-09-15~~	~~3:39:43~~	2023-04-19	12:16:43	47.1	67.8	50.6	45.3	No		
68		~~2020-09-15~~	~~3:39:53~~	2023-04-19	12:16:53	52.1	72.4	55.9	45.7	No		
69		~~2020-09-15~~	~~3:40:03~~	2023-04-19	12:17:03	49.1	64.7	52.5	47.8	No		
70		~~2020-09-15~~	~~3:40:13~~	2023-04-19	12:17:13	53.5	71.4	57.4	49.1	No		
71		~~2020-09-15~~	~~3:40:23~~	2023-04-19	12:17:23	57.6	75.9	62.2	48.3	No		
72		~~2020-09-15~~	~~3:40:33~~	2023-04-19	12:17:33	47.1	61.5	48.9	45.7	No		
73		~~2020-09-15~~	~~3:40:43~~	2023-04-19	12:17:43	44.4	65.5	46.4	43.3	No		
74		~~2020-09-15~~	~~3:40:53~~	2023-04-19	12:17:53	45.1	60.3	46.1	43.2	No		
75		~~2020-09-15~~	~~3:41:03~~	2023-04-19	12:18:03	45.8	67.3	48.4	43.4	No		
76		~~2020-09-15~~	~~3:41:13~~	2023-04-19	12:18:13	48.8	80.3	51.4	47.2	No		
77		~~2020-09-15~~	~~3:41:23~~	2023-04-19	12:18:23	44.8	71.4	47.2	43.5	No		
78		~~2020-09-15~~	~~3:41:33~~	2023-04-19	12:18:33	42.7	66.4	45.7	41.2	No		
79		~~2020-09-15~~	~~3:41:43~~	2023-04-19	12:18:43	43.1	69.2	44.8	41.3	No		
80		~~2020-09-15~~	~~3:41:53~~	2023-04-19	12:18:53	41.0	64.5	44.4	40.6	No		
81		~~2020-09-15~~	~~3:42:03~~	2023-04-19	12:19:03	43.0	58.8	44.2	41.2	No		
82		~~2020-09-15~~	~~3:42:13~~	2023-04-19	12:19:13	43.6	56.9	44.2	43.1	No		
83		~~2020-09-15~~	~~3:42:23~~	2023-04-19	12:19:23	45.5	68.6	47.2	43.6	No		
84		~~2020-09-15~~	~~3:42:33~~	2023-04-19	12:19:33	46.2	63.0	48.4	44.5	No		
85		~~2020-09-15~~	~~3:42:43~~	2023-04-19	12:19:43	46.0	61.7	47.6	44.4	No		

86		~~2020-09-15~~	~~3:42:53~~	2023-04-19	12:19:53	47.0	65.0	49.4	45.7	No
87		~~2020-09-15~~	~~3:43:03~~	2023-04-19	12:20:03	46.8	66.2	47.8	46.0	No
88		~~2020-09-15~~	~~3:43:13~~	2023-04-19	12:20:13	45.9	61.0	47.6	44.7	No
89		~~2020-09-15~~	~~3:43:23~~	2023-04-19	12:20:23	44.8	75.1	47.4	43.5	No
90		~~2020-09-15~~	~~3:43:33~~	2023-04-19	12:20:33	43.6	72.5	44.5	43.1	No
91		~~2020-09-15~~	~~3:43:43~~	2023-04-19	12:20:43	45.8	59.9	47.5	43.7	No
92		~~2020-09-15~~	~~3:43:53~~	2023-04-19	12:20:53	44.2	63.1	45.7	43.2	No
93		~~2020-09-15~~	~~3:44:03~~	2023-04-19	12:21:03	45.0	66.3	46.0	44.4	No
94		~~2020-09-15~~	~~3:44:13~~	2023-04-19	12:21:13	47.6	68.5	50.7	44.4	No
95		~~2020-09-15~~	~~3:44:23~~	2023-04-19	12:21:23	51.5	66.2	53.4	48.0	No
96		~~2020-09-15~~	~~3:44:33~~	2023-04-19	12:21:33	56.8	72.3	59.7	52.6	No
97		~~2020-09-15~~	~~3:44:43~~	2023-04-19	12:21:43	53.4	73.8	58.8	49.6	No
98		~~2020-09-15~~	~~3:44:53~~	2023-04-19	12:21:53	49.0	65.5	51.8	46.2	No
99		~~2020-09-15~~	~~3:45:03~~	2023-04-19	12:22:03	44.4	65.3	47.3	42.1	No
100		~~2020-09-15~~	~~3:45:13~~	2023-04-19	12:22:13	46.6	71.4	50.8	42.0	No
101		~~2020-09-15~~	~~3:45:23~~	2023-04-19	12:22:23	49.5	78.7	53.2	43.4	No
102		~~2020-09-15~~	~~3:45:33~~	2023-04-19	12:22:33	42.0	58.5	43.5	41.0	No
103		~~2020-09-15~~	~~3:45:43~~	2023-04-19	12:22:43	49.5	73.2	51.7	41.1	No
104		~~2020-09-15~~	~~3:45:53~~	2023-04-19	12:22:53	62.5	79.2	66.0	51.7	No
105	Stop	~~2020-09-15~~	~~3:46:00~~	2023-04-19	12:23:00					
106	Calibration Change	~~2020-09-15~~	~~3:48:54~~	2023-04-19	12:25:54					

Record #	Record Type	Date	Time	Corrected Date	Corrected Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Run	~~2020-09-15~~	~~2:24:01~~	2023-04-19	11:01:01							
2		~~2020-09-15~~	~~2:24:01~~	2023-04-19	11:01:01	56.1	75.1	61.8	46.8	No		
3		~~2020-09-15~~	~~2:24:11~~	2023-04-19	11:01:11	52.4	91.2	60.1	45.8	No		
4		~~2020-09-15~~	~~2:24:21~~	2023-04-19	11:01:21	48.8	73.3	55.6	46.5	No		
5		~~2020-09-15~~	~~2:24:31~~	2023-04-19	11:01:31	60.3	86.5	64.1	52.8	No		
6		~~2020-09-15~~	~~2:24:41~~	2023-04-19	11:01:41	55.8	72.3	63.4	48.3	No		
7		~~2020-09-15~~	~~2:24:51~~	2023-04-19	11:01:51	56.4	82.1	61.0	47.8	No		
8		~~2020-09-15~~	~~2:25:01~~	2023-04-19	11:02:01	55.3	75.2	60.8	48.5	No		
9		~~2020-09-15~~	~~2:25:11~~	2023-04-19	11:02:11	49.6	62.7	50.7	48.0	No		
10		~~2020-09-15~~	~~2:25:21~~	2023-04-19	11:02:21	50.9	79.6	53.1	48.4	No		
11		~~2020-09-15~~	~~2:25:31~~	2023-04-19	11:02:31	52.9	75.0	54.7	49.4	No		
12		~~2020-09-15~~	~~2:25:41~~	2023-04-19	11:02:41	54.5	74.2	58.8	49.3	No		
13		~~2020-09-15~~	~~2:25:51~~	2023-04-19	11:02:51	57.9	75.2	61.4	49.3	No		
14		~~2020-09-15~~	~~2:26:01~~	2023-04-19	11:03:01	59.4	77.0	62.9	54.4	No		
15		~~2020-09-15~~	~~2:26:11~~	2023-04-19	11:03:11	55.4	71.8	59.1	51.5	No		
16		~~2020-09-15~~	~~2:26:21~~	2023-04-19	11:03:21	58.8	77.2	61.0	51.6	No		
17		~~2020-09-15~~	~~2:26:31~~	2023-04-19	11:03:31	63.2	81.8	68.7	57.2	No		
18		~~2020-09-15~~	~~2:26:41~~	2023-04-19	11:03:41	55.7	71.7	58.7	51.1	No		
19		~~2020-09-15~~	~~2:26:51~~	2023-04-19	11:03:51	46.9	65.6	51.0	46.4	No		
20		~~2020-09-15~~	~~2:27:01~~	2023-04-19	11:04:01	47.8	65.2	49.7	46.3	No		
21		~~2020-09-15~~	~~2:27:11~~	2023-04-19	11:04:11	57.9	80.7	62.9	49.7	No		
22		~~2020-09-15~~	~~2:27:21~~	2023-04-19	11:04:21	47.1	63.9	50.1	46.3	No		
23		~~2020-09-15~~	~~2:27:31~~	2023-04-19	11:04:31	54.4	71.2	58.2	47.6	No		
24		~~2020-09-15~~	~~2:27:41~~	2023-04-19	11:04:41	58.5	75.1	59.6	56.6	No		
25		~~2020-09-15~~	~~2:27:51~~	2023-04-19	11:04:51	56.8	71.8	58.9	54.4	No		
26		~~2020-09-15~~	~~2:28:01~~	2023-04-19	11:05:01	58.0	74.3	60.8	56.1	No		
27		~~2020-09-15~~	~~2:28:11~~	2023-04-19	11:05:11	53.6	69.3	56.5	49.9	No		
28		~~2020-09-15~~	~~2:28:21~~	2023-04-19	11:05:21	57.8	74.5	60.1	53.9	No		
29		~~2020-09-15~~	~~2:28:31~~	2023-04-19	11:05:31	57.7	72.7	60.6	54.5	No		
30		~~2020-09-15~~	~~2:28:41~~	2023-04-19	11:05:41	55.0	70.7	57.4	49.9	No		
31		~~2020-09-15~~	~~2:28:51~~	2023-04-19	11:05:51	47.5	67.7	50.1	46.4	No		
32		~~2020-09-15~~	~~2:29:01~~	2023-04-19	11:06:01	47.4	64.1	49.2	46.1	No		
33		~~2020-09-15~~	~~2:29:11~~	2023-04-19	11:06:11	54.2	70.9	58.5	47.5	No		
34		~~2020-09-15~~	~~2:29:21~~	2023-04-19	11:06:21	47.0	61.9	49.9	45.7	No		
35		~~2020-09-15~~	~~2:29:31~~	2023-04-19	11:06:31	46.8	64.1	49.2	45.1	No		
36		~~2020-09-15~~	~~2:29:41~~	2023-04-19	11:06:41	59.2	74.6	61.4	49.2	No		
37		~~2020-09-15~~	~~2:29:51~~	2023-04-19	11:06:51	58.0	73.9	61.6	52.9	No		
38		~~2020-09-15~~	~~2:30:01~~	2023-04-19	11:07:01	54.7	72.4	58.8	48.4	No		
39		~~2020-09-15~~	~~2:30:11~~	2023-04-19	11:07:11	53.4	71.6	57.7	48.1	No		
40		~~2020-09-15~~	~~2:30:21~~	2023-04-19	11:07:21	55.2	70.9	57.1	52.9	No		
41		~~2020-09-15~~	~~2:30:31~~	2023-04-19	11:07:31	59.5	76.1	62.0	55.2	No		
42		~~2020-09-15~~	~~2:30:41~~	2023-04-19	11:07:41	56.0	77.2	59.6	53.6	No		
43		~~2020-09-15~~	~~2:30:51~~	2023-04-19	11:07:51	52.5	70.1	57.5	50.0	No		
44		~~2020-09-15~~	~~2:31:01~~	2023-04-19	11:08:01	50.8	70.6	52.3	49.1	No		
45		~~2020-09-15~~	~~2:31:11~~	2023-04-19	11:08:11	49.2	63.6	51.0	47.6	No		
46		~~2020-09-15~~	~~2:31:21~~	2023-04-19	11:08:21	53.4	74.2	57.6	48.9	No		
47		~~2020-09-15~~	~~2:31:31~~	2023-04-19	11:08:31	49.1	70.7	51.2	48.2	No		
48		~~2020-09-15~~	~~2:31:41~~	2023-04-19	11:08:41	60.9	80.2	62.7	50.9	No		
49		~~2020-09-15~~	~~2:31:51~~	2023-04-19	11:08:51	55.5	74.7	62.6	47.5	No		
50		~~2020-09-15~~	~~2:32:01~~	2023-04-19	11:09:01	45.8	59.4	47.8	44.7	No		
51		~~2020-09-15~~	~~2:32:11~~	2023-04-19	11:09:11	46.0	67.7	48.9	44.4	No		
52		~~2020-09-15~~	~~2:32:21~~	2023-04-19	11:09:21	55.0	73.0	57.6	47.0	No		
53		~~2020-09-15~~	~~2:32:31~~	2023-04-19	11:09:31	55.3	69.4	57.5	53.5	No		
54		~~2020-09-15~~	~~2:32:41~~	2023-04-19	11:09:41	50.0	70.3	54.8	46.8	No		
55		~~2020-09-15~~	~~2:32:51~~	2023-04-19	11:09:51	56.3	74.2	60.8	49.3	No		
56		~~2020-09-15~~	~~2:33:01~~	2023-04-19	11:10:01	51.1	68.8	55.2	45.2	No		
57		~~2020-09-15~~	~~2:33:11~~	2023-04-19	11:10:11	54.4	72.7	58.5	44.6	No		
58		~~2020-09-15~~	~~2:33:21~~	2023-04-19	11:10:21	57.2	73.5	58.5	55.1	No		
59		~~2020-09-15~~	~~2:33:31~~	2023-04-19	11:10:31	52.1	68.5	56.2	45.6	No		
60		~~2020-09-15~~	~~2:33:41~~	2023-04-19	11:10:41	54.1	72.8	58.1	45.6	No		
61		~~2020-09-15~~	~~2:33:51~~	2023-04-19	11:10:51	53.4	68.8	56.8	47.8	No		
62		~~2020-09-15~~	~~2:34:01~~	2023-04-19	11:11:01	58.8	79.5	63.9	47.9	No		
63		~~2020-09-15~~	~~2:34:11~~	2023-04-19	11:11:11	52.4	68.9	55.9	47.8	No		
64		~~2020-09-15~~	~~2:34:21~~	2023-04-19	11:11:21	51.2	70.8	56.8	42.3	No		
65		~~2020-09-15~~	~~2:34:31~~	2023-04-19	11:11:31	41.5	60.6	42.4	41.0	No		
66		~~2020-09-15~~	~~2:34:41~~	2023-04-19	11:11:41	42.0	64.5	43.1	41.0	No		
67		~~2020-09-15~~	~~2:34:51~~	2023-04-19	11:11:51	47.9	64.8	51.8	42.5	No		
68		~~2020-09-15~~	~~2:35:01~~	2023-04-19	11:12:01	57.9	72.9	59.8	51.8	No		
69		~~2020-09-15~~	~~2:35:11~~	2023-04-19	11:12:11	58.4	73.6	60.2	55.7	No		
70		~~2020-09-15~~	~~2:35:21~~	2023-04-19	11:12:21	57.6	77.1	61.1	52.4	No		
71		~~2020-09-15~~	~~2:35:31~~	2023-04-19	11:12:31	54.8	73.3	59.7	48.1	No		
72		~~2020-09-15~~	~~2:35:41~~	2023-04-19	11:12:41	57.6	78.3	61.4	52.2	No		
73		~~2020-09-15~~	~~2:35:51~~	2023-04-19	11:12:51	53.0	71.0	60.9	48.3	No		
74		~~2020-09-15~~	~~2:36:01~~	2023-04-19	11:13:01	51.5	69.1	55.9	46.0	No		
75		~~2020-09-15~~	~~2:36:11~~	2023-04-19	11:13:11	49.8	67.5	54.6	44.5	No		
76		~~2020-09-15~~	~~2:36:21~~	2023-04-19	11:13:21	61.5	78.8	65.4	54.6	No		
77		~~2020-09-15~~	~~2:36:31~~	2023-04-19	11:13:31	56.3	74.7	61.9	51.3	No		
78		~~2020-09-15~~	~~2:36:41~~	2023-04-19	11:13:41	58.5	72.2	60.0	51.8	No		
79		~~2020-09-15~~	~~2:36:51~~	2023-04-19	11:13:51	53.1	71.6	56.6	51.8	No		
80		~~2020-09-15~~	~~2:37:01~~	2023-04-19	11:14:01	50.4	69.9	54.6	46.7	No		
81		~~2020-09-15~~	~~2:37:11~~	2023-04-19	11:14:11	61.4	82.9	67.1	54.4	No		
82		~~2020-09-15~~	~~2:37:21~~	2023-04-19	11:14:21	53.7	70.3	59.4	49.2	No		
83		~~2020-09-15~~	~~2:37:31~~	2023-04-19	11:14:31	58.8	76.4	62.6	54.6	No		
84		~~2020-09-15~~	~~2:37:41~~	2023-04-19	11:14:41	57.5	72.3	62.5	54.2	No		
85		~~2020-09-15~~	~~2:37:51~~	2023-04-19	11:14:51	55.4	73.7	58.8	48.9	No		

86		~~2020-09-15~~	~~2:38:01~~	2023-04-19	11:15:01	46.5	71.8	50.8	43.1	No
87		~~2020-09-15~~	~~2:38:11~~	2023-04-19	11:15:11	43.0	63.6	44.3	42.0	No
88		~~2020-09-15~~	~~2:38:21~~	2023-04-19	11:15:21	45.7	66.7	48.0	42.0	No
89		~~2020-09-15~~	~~2:38:31~~	2023-04-19	11:15:31	53.8	73.0	58.7	47.0	No
90		~~2020-09-15~~	~~2:38:41~~	2023-04-19	11:15:41	61.0	80.2	65.2	50.3	No
91		~~2020-09-15~~	~~2:38:51~~	2023-04-19	11:15:51	56.1	90.8	65.1	48.8	No
92		~~2020-09-15~~	~~2:39:01~~	2023-04-19	11:16:01	45.8	64.2	48.8	46.7	No
93	Stop	~~2020-09-15~~	~~2:39:02~~	2023-04-19	11:16:02					
94	Calibration Change	~~2020-09-15~~	~~2:41:24~~	2023-04-19	11:18:24					

Record #	Record Type	Date	Time	Corrected Date	Corrected Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Calibration Change	~~2020-07-29~~	~~0:01:51~~	N/A	N/A							
2	Calibration Change	~~2020-09-15~~	~~1:48:16~~	2023-04-19	10:25:16							
3	Run	~~2020-09-15~~	~~1:51:00~~	2023-04-19	10:28:00							
4		~~2020-09-15~~	~~1:51:00~~	2023-04-19	10:28:00	52.2	76.2	53.1	51.5	No		
5		~~2020-09-15~~	~~1:51:10~~	2023-04-19	10:28:10	52.0	75.3	53.1	51.6	No		
6		~~2020-09-15~~	~~1:51:20~~	2023-04-19	10:28:20	51.5	65.7	52.1	51.1	No		
7		~~2020-09-15~~	~~1:51:30~~	2023-04-19	10:28:30	52.1	77.5	53.4	51.4	No		
8		~~2020-09-15~~	~~1:51:40~~	2023-04-19	10:28:40	51.8	64.9	52.1	51.4	No		
9		~~2020-09-15~~	~~1:51:50~~	2023-04-19	10:28:50	51.8	77.3	52.3	51.2	No		
10		~~2020-09-15~~	~~1:52:00~~	2023-04-19	10:29:00	51.6	64.7	52.2	51.0	No		
11		~~2020-09-15~~	~~1:52:10~~	2023-04-19	10:29:10	52.1	64.9	52.4	51.8	No		
12		~~2020-09-15~~	~~1:52:20~~	2023-04-19	10:29:20	52.6	70.4	53.3	51.9	No		
13		~~2020-09-15~~	~~1:52:30~~	2023-04-19	10:29:30	54.9	83.2	60.2	52.7	No		
14		~~2020-09-15~~	~~1:52:40~~	2023-04-19	10:29:40	54.8	77.9	59.3	52.6	No		
15		~~2020-09-15~~	~~1:52:50~~	2023-04-19	10:29:50	53.4	69.0	54.5	52.2	No		
16		~~2020-09-15~~	~~1:53:00~~	2023-04-19	10:30:00	52.6	75.8	53.5	52.0	No		
17		~~2020-09-15~~	~~1:53:10~~	2023-04-19	10:30:10	52.1	72.9	52.4	51.8	No		
18		~~2020-09-15~~	~~1:53:20~~	2023-04-19	10:30:20	51.5	64.9	52.4	50.9	No		
19		~~2020-09-15~~	~~1:53:30~~	2023-04-19	10:30:30	51.7	65.4	52.0	51.3	No		
20		~~2020-09-15~~	~~1:53:40~~	2023-04-19	10:30:40	52.2	78.8	54.3	51.5	No		
21		~~2020-09-15~~	~~1:53:50~~	2023-04-19	10:30:50	51.9	75.2	53.0	51.2	No		
22		~~2020-09-15~~	~~1:54:00~~	2023-04-19	10:31:00	52.2	71.3	52.6	51.8	No		
23		~~2020-09-15~~	~~1:54:10~~	2023-04-19	10:31:10	52.0	66.2	52.5	51.3	No		
24		~~2020-09-15~~	~~1:54:20~~	2023-04-19	10:31:20	51.6	66.0	52.1	51.3	No		
25		~~2020-09-15~~	~~1:54:30~~	2023-04-19	10:31:30	51.6	64.3	51.8	51.2	No		
26		~~2020-09-15~~	~~1:54:40~~	2023-04-19	10:31:40	52.0	69.3	52.2	51.5	No		
27		~~2020-09-15~~	~~1:54:50~~	2023-04-19	10:31:50	51.4	63.5	51.8	51.2	No		
28		~~2020-09-15~~	~~1:55:00~~	2023-04-19	10:32:00	51.6	69.9	52.1	51.0	No		
29		~~2020-09-15~~	~~1:55:10~~	2023-04-19	10:32:10	51.9	65.7	52.2	51.6	No		
30		~~2020-09-15~~	~~1:55:20~~	2023-04-19	10:32:20	52.4	65.7	53.1	51.6	No		
31		~~2020-09-15~~	~~1:55:30~~	2023-04-19	10:32:30	52.0	65.9	52.4	51.8	No		
32		~~2020-09-15~~	~~1:55:40~~	2023-04-19	10:32:40	52.0	68.0	52.3	51.5	No		
33		~~2020-09-15~~	~~1:55:50~~	2023-04-19	10:32:50	51.8	68.9	52.3	51.1	No		
34		~~2020-09-15~~	~~1:56:00~~	2023-04-19	10:33:00	51.8	67.2	52.2	51.5	No		
35		~~2020-09-15~~	~~1:56:10~~	2023-04-19	10:33:10	51.9	74.8	52.3	51.5	No		
36		~~2020-09-15~~	~~1:56:20~~	2023-04-19	10:33:20	52.9	66.6	53.5	51.9	No		
37		~~2020-09-15~~	~~1:56:30~~	2023-04-19	10:33:30	54.2	70.1	56.2	52.5	No		
38		~~2020-09-15~~	~~1:56:40~~	2023-04-19	10:33:40	57.5	73.7	58.9	56.0	No		
39		~~2020-09-15~~	~~1:56:50~~	2023-04-19	10:33:50	59.2	74.1	60.8	56.4	No		
40		~~2020-09-15~~	~~1:57:00~~	2023-04-19	10:34:00	54.2	74.1	59.4	52.9	No		
41		~~2020-09-15~~	~~1:57:10~~	2023-04-19	10:34:10	52.7	72.0	53.3	52.4	No		
42		~~2020-09-15~~	~~1:57:20~~	2023-04-19	10:34:20	54.4	72.2	55.3	52.5	No		
43		~~2020-09-15~~	~~1:57:30~~	2023-04-19	10:34:30	60.8	80.8	65.5	54.3	No		
44		~~2020-09-15~~	~~1:57:40~~	2023-04-19	10:34:40	63.3	79.4	65.9	60.5	No		
45		~~2020-09-15~~	~~1:57:50~~	2023-04-19	10:34:50	56.7	75.9	60.9	53.7	No		
46		~~2020-09-15~~	~~1:58:00~~	2023-04-19	10:35:00	53.3	71.2	53.9	52.7	No		
47		~~2020-09-15~~	~~1:58:10~~	2023-04-19	10:35:10	57.5	79.3	59.3	53.2	No		
48		~~2020-09-15~~	~~1:58:20~~	2023-04-19	10:35:20	56.1	73.5	58.4	54.7	No		
49		~~2020-09-15~~	~~1:58:30~~	2023-04-19	10:35:30	54.3	68.0	55.5	53.0	No		
50		~~2020-09-15~~	~~1:58:40~~	2023-04-19	10:35:40	53.5	72.2	54.4	53.0	No		
51		~~2020-09-15~~	~~1:58:50~~	2023-04-19	10:35:50	55.2	73.7	58.8	52.5	No		
52		~~2020-09-15~~	~~1:59:00~~	2023-04-19	10:36:00	52.9	83.8	54.7	52.0	No		
53		~~2020-09-15~~	~~1:59:10~~	2023-04-19	10:36:10	54.1	71.0	56.3	52.3	No		
54		~~2020-09-15~~	~~1:59:20~~	2023-04-19	10:36:20	57.6	78.0	60.2	55.3	No		
55		~~2020-09-15~~	~~1:59:30~~	2023-04-19	10:36:30	65.9	82.1	66.9	60.2	No		
56		~~2020-09-15~~	~~1:59:40~~	2023-04-19	10:36:40	63.3	79.9	67.1	58.7	No		
57		~~2020-09-15~~	~~1:59:50~~	2023-04-19	10:36:50	57.0	73.9	61.2	54.6	No		
58		~~2020-09-15~~	~~2:00:00~~	2023-04-19	10:37:00	53.9	70.4	55.4	52.6	No		
59		~~2020-09-15~~	~~2:00:10~~	2023-04-19	10:37:10	51.7	65.6	52.6	50.9	No		
60		~~2020-09-15~~	~~2:00:20~~	2023-04-19	10:37:20	52.0	70.7	52.5	51.4	No		
61		~~2020-09-15~~	~~2:00:30~~	2023-04-19	10:37:30	51.5	65.4	51.8	51.1	No		
62		~~2020-09-15~~	~~2:00:40~~	2023-04-19	10:37:40	51.7	64.7	52.5	51.1	No		
63		~~2020-09-15~~	~~2:00:50~~	2023-04-19	10:37:50	52.2	76.6	53.0	51.5	No		
64		~~2020-09-15~~	~~2:01:00~~	2023-04-19	10:38:00	52.7	76.7	53.1	52.3	No		
65		~~2020-09-15~~	~~2:01:10~~	2023-04-19	10:38:10	53.9	75.8	56.5	52.7	No		
66		~~2020-09-15~~	~~2:01:20~~	2023-04-19	10:38:20	62.7	84.6	66.2	56.5	No		
67		~~2020-09-15~~	~~2:01:30~~	2023-04-19	10:38:30	53.1	76.8	57.0	52.6	No		
68		~~2020-09-15~~	~~2:01:40~~	2023-04-19	10:38:40	52.4	70.0	53.1	51.9	No		
69		~~2020-09-15~~	~~2:01:50~~	2023-04-19	10:38:50	52.1	66.9	52.8	51.7	No		
70		~~2020-09-15~~	~~2:02:00~~	2023-04-19	10:39:00	52.3	66.0	52.8	51.9	No		
71		~~2020-09-15~~	~~2:02:10~~	2023-04-19	10:39:10	52.3	68.7	52.7	52.0	No		
72		~~2020-09-15~~	~~2:02:20~~	2023-04-19	10:39:20	52.0	64.7	52.4	51.6	No		
73		~~2020-09-15~~	~~2:02:30~~	2023-04-19	10:39:30	52.2	68.2	52.6	51.8	No		
74		~~2020-09-15~~	~~2:02:40~~	2023-04-19	10:39:40	52.4	69.5	52.8	51.9	No		
75		~~2020-09-15~~	~~2:02:50~~	2023-04-19	10:39:50	51.9	67.0	52.3	51.5	No		
76		~~2020-09-15~~	~~2:03:00~~	2023-04-19	10:40:00	52.4	76.8	52.9	51.6	No		
77		~~2020-09-15~~	~~2:03:10~~	2023-04-19	10:40:10	52.0	65.8	52.4	51.6	No		
78		~~2020-09-15~~	~~2:03:20~~	2023-04-19	10:40:20	51.9	64.9	52.4	51.6	No		
79		~~2020-09-15~~	~~2:03:30~~	2023-04-19	10:40:30	51.4	66.1	51.8	50.8	No		
80		~~2020-09-15~~	~~2:03:40~~	2023-04-19	10:40:40	52.8	89.3	56.0	51.0	No		
81		~~2020-09-15~~	~~2:03:50~~	2023-04-19	10:40:50	52.1	68.1	52.4	51.7	No		
82		~~2020-09-15~~	~~2:04:00~~	2023-04-19	10:41:00	52.0	65.2	52.5	51.7	No		
83		~~2020-09-15~~	~~2:04:10~~	2023-04-19	10:41:10	54.0	80.0	54.8	51.3	No		
84		~~2020-09-15~~	~~2:04:20~~	2023-04-19	10:41:20	58.2	81.5	61.0	54.0	No		
85		~~2020-09-15~~	~~2:04:30~~	2023-04-19	10:41:30	54.3	75.9	56.4	53.5	No		

86		~~2020-09-15~~	~~2:04:40~~	2023-04-19	10:41:40	59.2	74.6	61.4	54.1	No
87		~~2020-09-15~~	~~2:04:50~~	2023-04-19	10:41:50	54.0	70.5	58.4	53.0	No
88		~~2020-09-15~~	~~2:05:00~~	2023-04-19	10:42:00	52.4	68.8	53.2	52.0	No
89		~~2020-09-15~~	~~2:05:10~~	2023-04-19	10:42:10	51.7	72.0	52.1	51.3	No
90		~~2020-09-15~~	~~2:05:20~~	2023-04-19	10:42:20	51.7	69.4	52.2	51.3	No
91		~~2020-09-15~~	~~2:05:30~~	2023-04-19	10:42:30	51.9	69.6	52.2	51.6	No
92		~~2020-09-15~~	~~2:05:40~~	2023-04-19	10:42:40	51.9	80.1	52.6	51.4	No
93		~~2020-09-15~~	~~2:05:50~~	2023-04-19	10:42:50	51.6	74.1	52.6	50.5	No
94		~~2020-09-15~~	~~2:06:00~~	2023-04-19	10:43:00	52.9	68.7	53.0	52.6	No
95	Stop	~~2020-09-15~~	~~2:06:02~~	2023-04-19	10:43:02					
96	Calibration Change	~~2020-09-15~~	~~2:07:59~~	2023-04-19	10:44:59					

Record #	Record Type	Date	Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Calibration Change	2023-04-20	7:38:41							
2	Run	2023-04-20	7:42:00							
3		2023-04-20	7:42:00	50.0	70.8	53.0	47.6	No		
4		2023-04-20	7:42:10	47.6	66.5	48.8	46.9	No		
5		2023-04-20	7:42:20	53.0	73.0	56.7	47.8	No		
6		2023-04-20	7:42:30	58.7	89.2	63.4	55.1	No		
7		2023-04-20	7:42:40	55.5	81.5	60.3	49.2	No		
8		2023-04-20	7:42:50	49.3	70.1	51.5	48.6	No		
9		2023-04-20	7:43:00	49.9	71.6	51.5	48.5	No		
10		2023-04-20	7:43:10	50.8	73.6	52.7	49.3	No		
11		2023-04-20	7:43:20	49.8	69.4	51.9	49.0	No		
12		2023-04-20	7:43:30	50.8	72.8	52.7	48.8	No		
13		2023-04-20	7:43:40	50.6	73.5	54.0	48.9	No		
14		2023-04-20	7:43:50	49.2	68.0	51.3	48.6	No		
15		2023-04-20	7:44:00	50.0	79.6	52.8	48.4	No		
16		2023-04-20	7:44:10	49.6	73.0	53.2	48.1	No		
17		2023-04-20	7:44:20	48.9	62.4	52.1	48.3	No		
18		2023-04-20	7:44:30	48.3	66.7	49.3	47.9	No		
19		2023-04-20	7:44:40	49.4	68.2	51.1	48.1	No		
20		2023-04-20	7:44:50	49.7	70.5	51.7	48.7	No		
21		2023-04-20	7:45:00	50.0	66.6	51.3	48.5	No		
22		2023-04-20	7:45:10	50.0	67.9	51.2	49.1	No		
23		2023-04-20	7:45:20	49.2	68.2	50.4	48.4	No		
24		2023-04-20	7:45:30	47.6	61.1	50.1	46.7	No		
25		2023-04-20	7:45:40	47.0	65.2	48.4	46.2	No		
26		2023-04-20	7:45:50	47.9	67.4	50.4	46.1	No		
27		2023-04-20	7:46:00	49.8	68.6	52.2	47.4	No		
28		2023-04-20	7:46:10	48.7	64.1	50.6	47.7	No		
29		2023-04-20	7:46:20	48.9	70.6	51.4	48.2	No		
30		2023-04-20	7:46:30	47.5	63.4	48.2	47.0	No		
31		2023-04-20	7:46:40	46.5	63.9	47.4	46.0	No		
32		2023-04-20	7:46:50	49.2	66.3	51.5	46.8	No		
33		2023-04-20	7:47:00	47.2	61.3	48.7	46.5	No		
34		2023-04-20	7:47:10	46.9	66.2	48.2	46.0	No		
35		2023-04-20	7:47:20	46.0	60.4	46.4	45.6	No		
36		2023-04-20	7:47:30	47.1	63.5	47.9	46.1	No		
37		2023-04-20	7:47:40	47.2	69.0	48.3	46.3	No		
38		2023-04-20	7:47:50	46.9	60.9	48.1	46.2	No		
39		2023-04-20	7:48:00	47.6	66.7	49.8	46.1	No		
40		2023-04-20	7:48:10	49.0	78.3	52.3	46.1	No		
41		2023-04-20	7:48:20	47.3	72.7	49.8	46.3	No		
42		2023-04-20	7:48:30	47.6	63.0	48.8	46.1	No		
43		2023-04-20	7:48:40	48.7	65.6	49.4	47.7	No		
44		2023-04-20	7:48:50	49.5	71.9	50.8	48.2	No		
45		2023-04-20	7:49:00	48.6	65.2	49.5	48.0	No		
46		2023-04-20	7:49:10	49.6	71.2	51.4	48.1	No		
47		2023-04-20	7:49:20	48.8	68.6	49.6	48.0	No		
48		2023-04-20	7:49:30	49.4	64.4	50.4	47.6	No		
49		2023-04-20	7:49:40	46.6	62.8	47.6	46.1	No		
50		2023-04-20	7:49:50	47.4	60.8	48.1	46.0	No		
51		2023-04-20	7:50:00	47.2	62.3	49.0	45.8	No		
52		2023-04-20	7:50:10	46.2	60.0	47.0	45.8	No		
53		2023-04-20	7:50:20	46.8	61.2	48.3	45.8	No		
54		2023-04-20	7:50:30	47.1	61.3	48.9	46.1	No		
55		2023-04-20	7:50:40	47.3	63.3	48.7	46.0	No		
56		2023-04-20	7:50:50	47.6	72.1	48.7	47.2	No		
57		2023-04-20	7:51:00	48.9	68.7	52.0	46.3	No		
58		2023-04-20	7:51:10	48.4	62.6	50.2	47.7	No		
59		2023-04-20	7:51:20	52.8	70.6	55.1	48.6	No		
60		2023-04-20	7:51:30	53.7	78.5	57.2	48.3	No		
61		2023-04-20	7:51:40	47.3	60.9	48.3	46.7	No		
62		2023-04-20	7:51:50	49.2	66.3	50.0	47.7	No		
63		2023-04-20	7:52:00	52.3	68.5	55.5	48.8	No		
64		2023-04-20	7:52:10	48.7	63.7	49.4	48.1	No		
65		2023-04-20	7:52:20	49.3	63.7	50.0	48.2	No		
66		2023-04-20	7:52:30	49.5	63.8	50.9	48.2	No		
67		2023-04-20	7:52:40	48.0	61.6	49.0	47.3	No		
68		2023-04-20	7:52:50	47.7	63.0	48.6	46.9	No		
69		2023-04-20	7:53:00	49.3	78.1	54.0	46.8	No		
70		2023-04-20	7:53:10	47.1	62.8	48.1	46.5	No		
71		2023-04-20	7:53:20	47.2	60.9	48.5	46.4	No		
72		2023-04-20	7:53:30	48.4	67.2	50.4	46.6	No		

73		2023-04-20	7:53:40	46.6	61.3	47.2	46.2	No
74		2023-04-20	7:53:50	48.5	64.1	50.4	46.5	No
75		2023-04-20	7:54:00	49.2	69.8	50.4	48.2	No
76		2023-04-20	7:54:10	49.4	65.4	51.5	47.7	No
77		2023-04-20	7:54:20	46.7	62.0	48.9	46.1	No
78		2023-04-20	7:54:30	47.4	61.4	48.6	46.0	No
79		2023-04-20	7:54:40	47.3	66.1	49.2	45.8	No
80		2023-04-20	7:54:50	49.3	65.1	52.3	47.4	No
81		2023-04-20	7:55:00	46.9	62.2	48.3	46.1	No
82		2023-04-20	7:55:10	48.8	71.0	51.1	47.5	No
83		2023-04-20	7:55:20	46.5	63.3	49.2	45.6	No
84		2023-04-20	7:55:30	45.8	59.1	47.0	45.2	No
85		2023-04-20	7:55:40	46.7	61.3	47.6	45.0	No
86		2023-04-20	7:55:50	48.0	62.6	48.9	47.2	No
87		2023-04-20	7:56:00	48.8	62.1	49.8	47.6	No
88		2023-04-20	7:56:10	48.8	63.1	50.5	47.2	No
89		2023-04-20	7:56:20	47.5	61.7	50.3	46.2	No
90		2023-04-20	7:56:30	47.5	64.4	48.9	46.5	No
91		2023-04-20	7:56:40	47.8	63.5	49.7	46.4	No
92		2023-04-20	7:56:50	46.8	70.4	47.4	46.1	No
93		2023-04-20	7:57:00	47.3	59.2	47.4	47.2	No
94	Stop	2023-04-20	7:57:01					
95	Calibration Change	2023-04-20	8:00:19					

Record #	Record Type	Date	Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Calibration Change	2023-04-20	11:14:41							
2	Run	2023-04-20	11:16:00							
3		2023-04-20	11:16:00	58.1	72.7	60.8	51.3	No		
4		2023-04-20	11:16:10	58.3	72.3	60.6	56.5	No		
5		2023-04-20	11:16:20	57.9	71.3	59.6	54.4	No		
6		2023-04-20	11:16:30	57.9	70.6	59.6	56.2	No		
7		2023-04-20	11:16:40	57.1	70.1	59.2	55.8	No		
8		2023-04-20	11:16:50	53.0	67.4	55.9	51.6	No		
9		2023-04-20	11:17:00	56.0	71.3	58.3	53.1	No		
10		2023-04-20	11:17:10	55.8	70.1	57.0	53.1	No		
11		2023-04-20	11:17:20	55.8	70.9	58.8	51.0	No		
12		2023-04-20	11:17:30	58.4	71.9	59.2	57.4	No		
13		2023-04-20	11:17:40	56.4	76.4	58.7	53.9	No		
14		2023-04-20	11:17:50	56.9	71.0	57.9	55.8	No		
15		2023-04-20	11:18:00	55.1	75.9	57.2	53.6	No		
16		2023-04-20	11:18:10	56.0	72.8	57.5	54.2	No		
17		2023-04-20	11:18:20	55.9	74.4	57.4	54.8	No		
18		2023-04-20	11:18:30	54.7	76.1	56.1	52.9	No		
19		2023-04-20	11:18:40	54.3	67.3	56.1	50.3	No		
20		2023-04-20	11:18:50	54.7	68.4	56.8	53.0	No		
21		2023-04-20	11:19:00	50.0	65.3	53.2	47.7	No		
22		2023-04-20	11:19:10	48.1	72.2	50.1	47.1	No		
23		2023-04-20	11:19:20	49.1	69.1	50.7	47.3	No		
24		2023-04-20	11:19:30	47.9	61.9	49.0	46.2	No		
25		2023-04-20	11:19:40	48.8	65.1	51.1	46.4	No		
26		2023-04-20	11:19:50	50.0	64.1	51.6	46.5	No		
27		2023-04-20	11:20:00	51.9	65.5	53.2	50.0	No		
28		2023-04-20	11:20:10	52.6	67.1	54.0	50.5	No		
29		2023-04-20	11:20:20	52.3	66.9	54.3	50.6	No		
30		2023-04-20	11:20:30	50.1	71.1	53.5	47.3	No		
31		2023-04-20	11:20:40	52.0	68.3	53.5	48.6	No		
32		2023-04-20	11:20:50	51.8	67.7	53.3	49.6	No		
33		2023-04-20	11:21:00	49.0	67.2	50.8	47.7	No		
34		2023-04-20	11:21:10	48.0	66.1	49.1	46.8	No		
35		2023-04-20	11:21:20	51.0	66.0	53.3	47.6	No		
36		2023-04-20	11:21:30	47.7	68.2	48.9	46.9	No		
37		2023-04-20	11:21:40	48.3	74.8	50.1	47.2	No		
38		2023-04-20	11:21:50	50.1	75.9	53.4	48.2	No		
39		2023-04-20	11:22:00	47.6	72.6	48.3	46.7	No		
40		2023-04-20	11:22:10	48.9	79.7	51.3	46.5	No		
41		2023-04-20	11:22:20	50.2	64.3	51.9	48.1	No		
42		2023-04-20	11:22:30	48.1	62.1	50.6	47.1	No		
43		2023-04-20	11:22:40	47.3	64.9	48.0	46.3	No		
44		2023-04-20	11:22:50	48.8	66.5	50.6	47.6	No		
45		2023-04-20	11:23:00	48.7	66.8	49.2	48.0	No		
46		2023-04-20	11:23:10	48.5	63.9	50.1	47.9	No		
47		2023-04-20	11:23:20	46.2	66.3	48.0	45.1	No		
48		2023-04-20	11:23:30	46.2	67.8	47.2	44.7	No		
49		2023-04-20	11:23:40	46.6	69.0	47.5	45.6	No		
50		2023-04-20	11:23:50	49.0	65.9	50.7	46.5	No		
51		2023-04-20	11:24:00	48.8	66.0	51.6	46.1	No		
52		2023-04-20	11:24:10	48.9	73.4	52.4	47.2	No		
53		2023-04-20	11:24:20	48.1	70.2	51.1	46.9	No		
54		2023-04-20	11:24:30	51.1	73.0	54.0	46.6	No		
55		2023-04-20	11:24:40	52.6	69.1	55.3	48.6	No		
56		2023-04-20	11:24:50	47.2	65.5	48.6	46.5	No		
57		2023-04-20	11:25:00	48.2	71.0	49.8	46.9	No		
58		2023-04-20	11:25:10	46.8	61.4	48.0	45.8	No		
59		2023-04-20	11:25:20	48.0	62.3	49.4	46.6	No		
60		2023-04-20	11:25:30	48.8	72.0	51.4	47.1	No		
61		2023-04-20	11:25:40	50.9	69.2	53.7	48.9	No		
62		2023-04-20	11:25:50	50.6	66.7	53.6	48.7	No		
63		2023-04-20	11:26:00	52.6	67.1	55.3	48.6	No		
64		2023-04-20	11:26:10	50.9	70.8	52.7	49.4	No		
65		2023-04-20	11:26:20	53.0	67.9	54.6	51.0	No		
66		2023-04-20	11:26:30	53.2	67.2	54.5	51.0	No		
67		2023-04-20	11:26:40	55.9	71.3	58.3	53.0	No		
68		2023-04-20	11:26:50	57.6	71.4	59.2	56.3	No		
69		2023-04-20	11:27:00	56.1	70.1	58.0	54.4	No		
70		2023-04-20	11:27:10	53.0	68.9	54.7	51.7	No		
71		2023-04-20	11:27:20	52.3	66.1	53.6	51.0	No		
72		2023-04-20	11:27:30	50.2	74.0	52.0	49.1	No		

73		2023-04-20	11:27:40	53.3	68.7	56.0	49.5	No
74		2023-04-20	11:27:50	48.3	66.9	54.3	46.9	No
75		2023-04-20	11:28:00	52.5	66.5	54.3	46.9	No
76		2023-04-20	11:28:10	51.6	72.8	53.9	50.1	No
77		2023-04-20	11:28:20	53.3	84.2	55.9	49.2	No
78		2023-04-20	11:28:30	54.0	69.7	56.3	50.3	No
79		2023-04-20	11:28:40	49.4	63.3	55.7	48.0	No
80		2023-04-20	11:28:50	48.7	64.9	49.8	48.0	No
81		2023-04-20	11:29:00	48.4	74.7	50.1	47.2	No
82		2023-04-20	11:29:10	47.2	76.6	49.7	46.0	No
83		2023-04-20	11:29:20	45.0	60.8	46.7	44.2	No
84		2023-04-20	11:29:30	44.6	58.8	45.6	43.8	No
85		2023-04-20	11:29:40	45.9	74.9	50.5	43.6	No
86		2023-04-20	11:29:50	46.5	61.2	47.5	43.6	No
87		2023-04-20	11:30:00	47.2	61.9	48.1	46.6	No
88		2023-04-20	11:30:10	47.9	62.0	48.4	47.0	No
89		2023-04-20	11:30:20	48.0	65.8	49.1	47.1	No
90		2023-04-20	11:30:30	47.9	63.0	48.4	47.4	No
91		2023-04-20	11:30:40	47.9	62.9	48.8	46.9	No
92		2023-04-20	11:30:50	47.4	69.1	48.2	46.1	No
93		2023-04-20	11:31:00	48.8	67.8	48.7	48.1	No
94	Stop	2023-04-20	11:31:01					
95	Calibration Change	2023-04-20	11:34:34					

Field Sheets

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: ST-1 Parkline

PROJECT #:

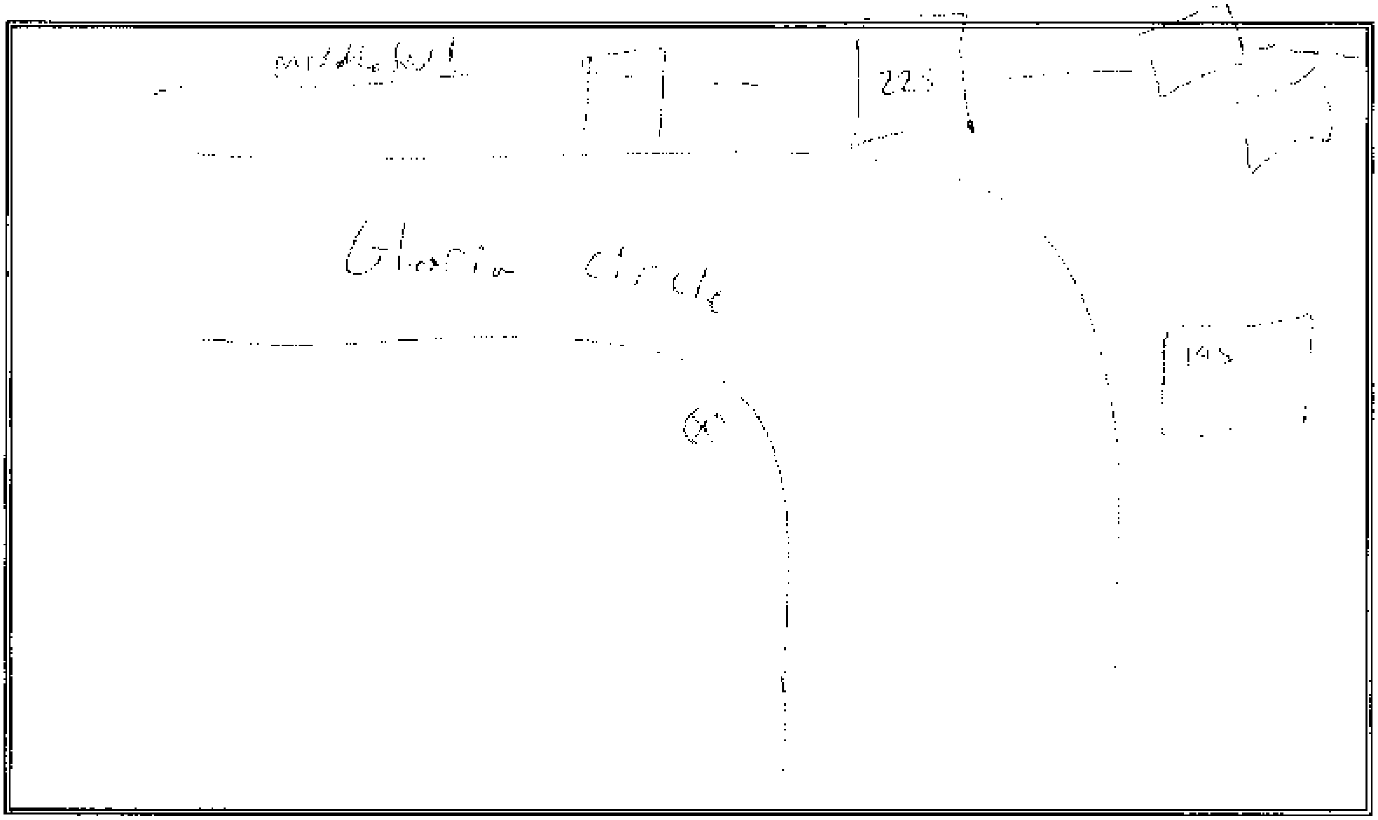
SITE NUMBER: ST-1

DATE/TIME: 20230419 3:29 (12:06pm)

LOCATION/ADDRESS: across from 195/215/225 200 Gloria Circle

ENGINEERS: Schumake

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

66.4 1.3mph Bluebird 68.5%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LxT Pre Post [illegible] Dec. 036

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:

COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: ParkLine
SITE NUMBER: ST-1
LOCATION/ADDRESS: 200 Gloria Circle

PROJECT #:
DATE/TIME: 7.23.2019 3:29 (Correct Start Time: 11:01 a.m.)
ENGINEERS: Schomaker

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)	
1	29						Jet overhead	
2	30							
3	31						[illegible] closes truck door, moving things in truck bed Jet overhead	
4	32						School bell (high school) Truck on middle field.	
5	33							
6	34						Jet	
7	35				distant honk of horn.		car passed ~~by~~ pulls into drive way opens garage door,	
8	36						Jet overhead Paused; neighbor asked what we were up to.	
9	37						garage door closes	
10	38						Jet	
11	39						car truck door closed (neighboring house) crow	
12	40						car pulls out of driveway and speeds off distant train horn	
13	41						Jet overhead Man walking by	
14	42						Jet overhead	Leq 49.6
15	43						Truck on middle field	Lmax 66.0
16	44						Jet overhead	Lmin 40.6
17	45						vehicle doors closed car pulls into driveway	L10 52.3
18				noise throughout!	Birds chirping		Fedex passby	L~~38~~ 25 49.1
19								L50 46.2
20								L90 43.2

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

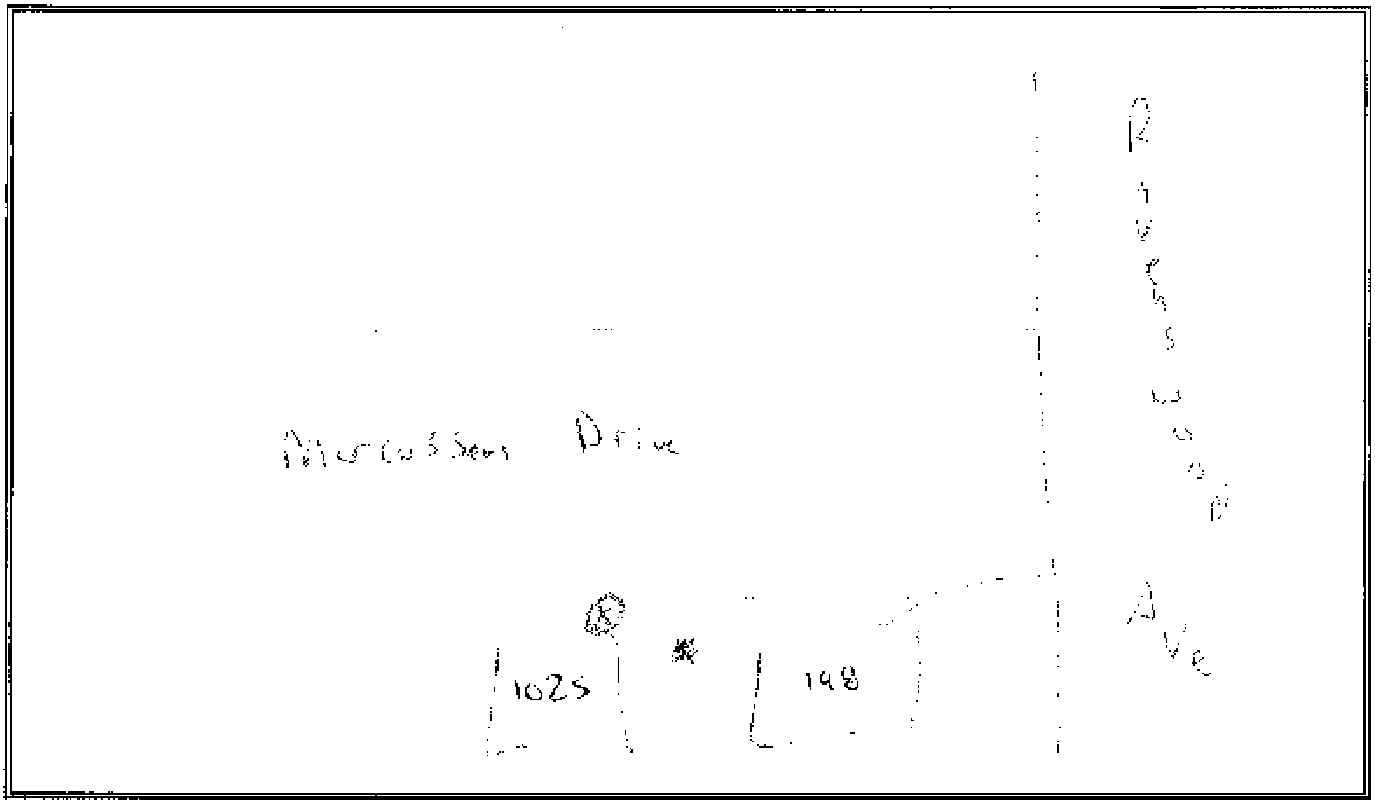
"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: Parklin
PROJECT #:
SITE NUMBER: ST-2
DATE/TIME: 20230414 2:24
LOCATION/ADDRESS: 1025 Marcusson
ENGINEERS: Schumacher

SITE SKETCH. Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

66 5.0 Overcast 44 %

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LxT
pre: -0.03 dB
post: -0.07 dB
[illegible]

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:
COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: Parkline
PROJECT #:
SITE NUMBER: ST-2
DATE/TIME: 20230414 2:24 (Correct Start Time: 10:28 a.m.)
LOCATION/ADDRESS: 1025 Marcusson
ENGINEERS: [illegible]

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (Include SLM equipment, Calibration Data)
1	24						[illegible]
2	25						[illegible]
3	26						car passes by [illegible] birds chirp [illegible]
4	27						~~[illegible]~~ [illegible] (2-4 lanes) [illegible] pass by
5	28						[illegible] [illegible]
6	29						[illegible] [illegible]
7	30						[illegible] pass by traffic noise [illegible]
8	31						Train horn (distant) [illegible] [illegible]
9	32					[illegible]	[illegible] [illegible]
10	33						[illegible]
11	34						[illegible]
12	35						[illegible] [illegible]
13	36						[illegible] pass by [illegible] [illegible]
14	37						[illegible] pass by [illegible]
15	38						[illegible] pass by [illegible] Traffic [illegible]
16							[illegible] pass by
17				[illegible]			
18				[illegible]			
19							
20							

Leq	55.4
Lmax	69.7
Lmin	42.0
L10	59.5
L33 25	57.2
L50	53.4
L90	46.1

Overall Leq (Include "O" minutes, Exclude "X" minutes) = ☐ dBA

Subset Leq (Exclude "O" and "X" minutes) = ☐ dBA

"O" = other characteristic sources that contributed to the Leq

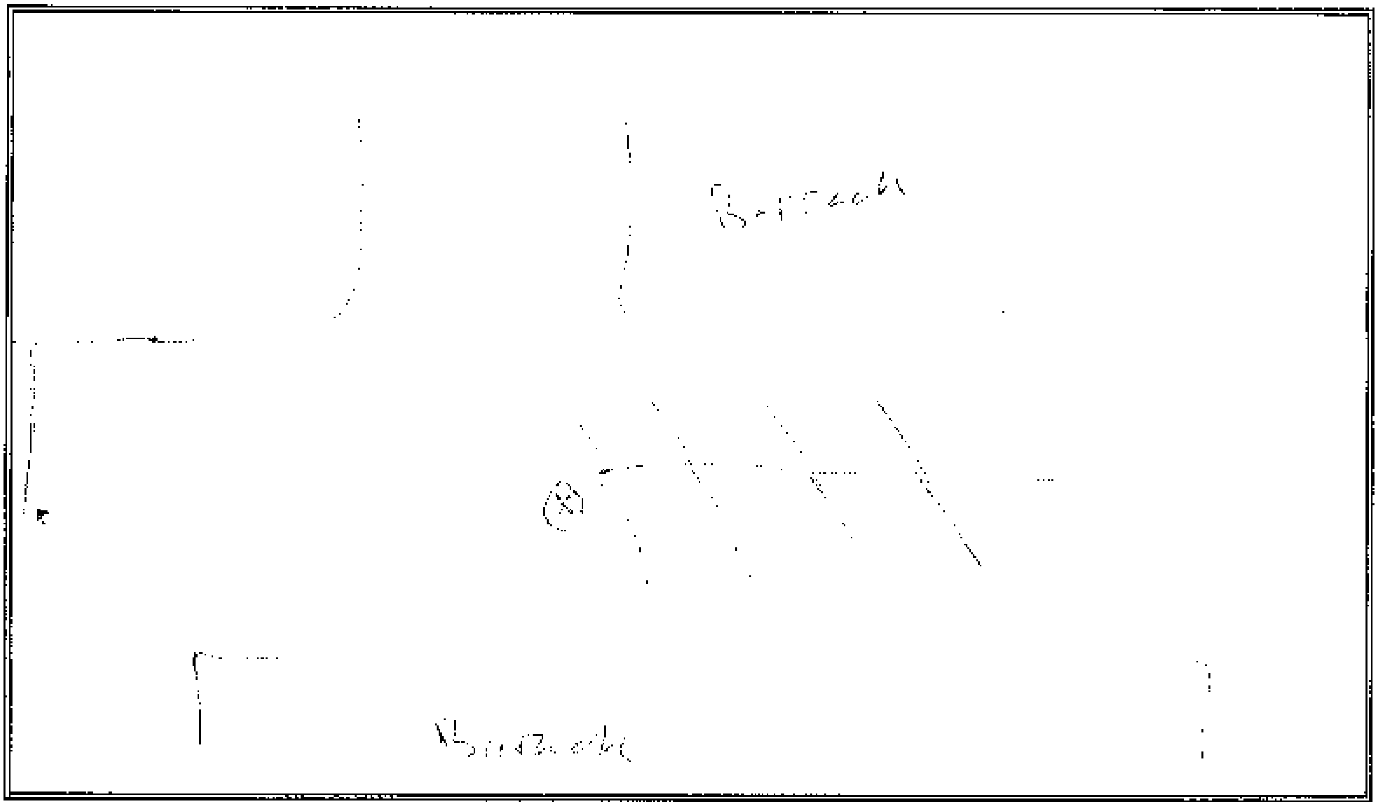
"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: Parkline
SITE NUMBER: ST-3
LOCATION/ADDRESS: On Site near Wetlands
PROJECT #:
DATE/TIME: 2023 04 19
ENGINEERS: [illegible]

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

60.2 °F
2.6 mph
Clear Blue Sky
58.3

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LxT
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:
COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: [illegible]
PROJECT #:
SITE NUMBER: ST 3
DATE/TIME: [illegible] [illegible]
LOCATION/ADDRESS: [illegible]
ENGINEERS: [illegible]

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	10:51						
2	10:52						[illegible]
3	10:53	31					[illegible]
4	10:54	32					
5	10:55	33					
6	10:56	34					[illegible]
7	10:57	10:35					[illegible]
8	10:58						[illegible] [illegible] 3 cars [illegible]
9	10:59						[illegible]
10	11:00						[illegible]
11	11:01						[illegible]
12	11:02						
13	11:03						
14	11:04						[illegible]
15	11:05						[illegible]
16							
17							
18							Overall noise / [illegible] ?
19							[illegible]
20							

Leq	55.3
Lmax	67.1
Lmin	50.5
L10	57.8
L~~20~~ 25	53.6
L50	52.3
L90	51.6

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA
Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

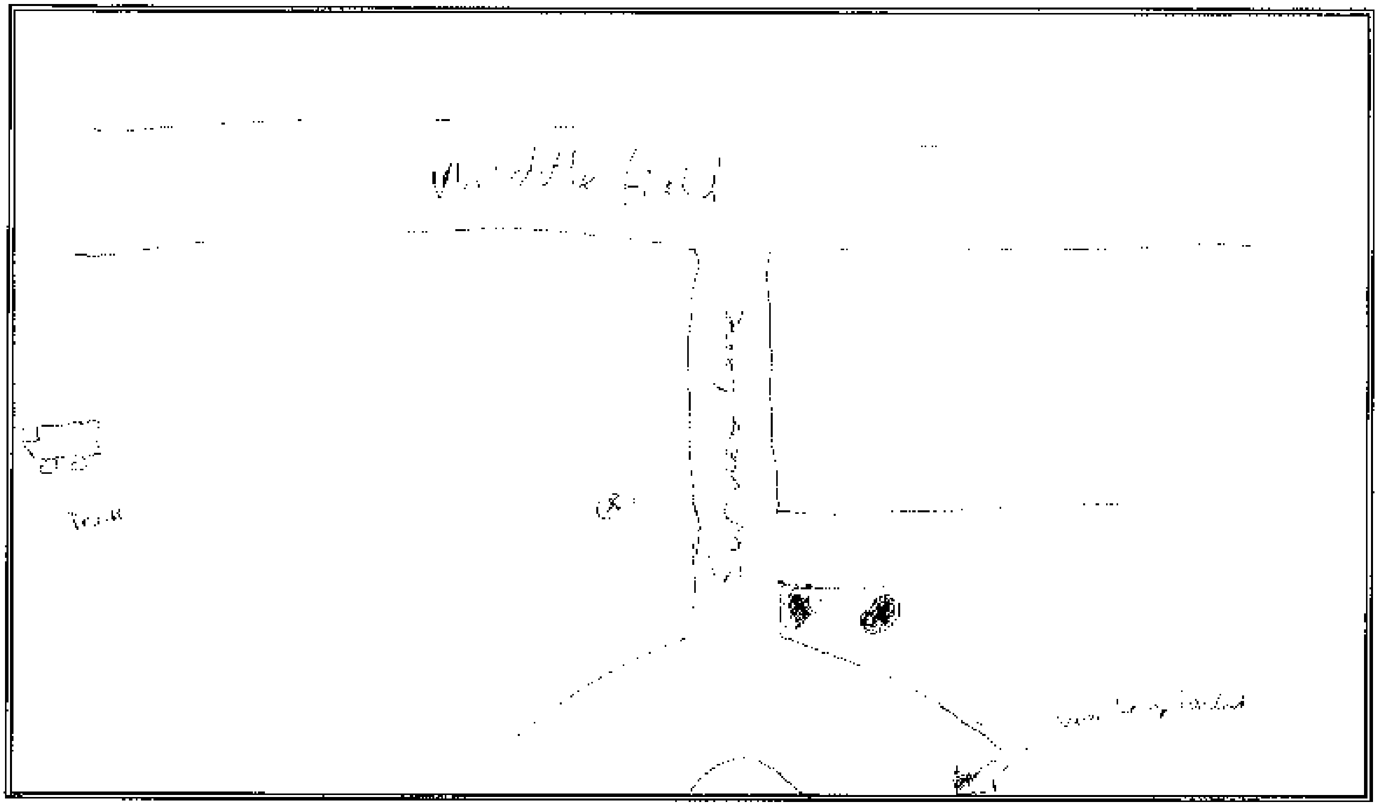
"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: [illegible]
PROJECT #:
SITE NUMBER: ST-4
DATE/TIME: 2023 0420 1:42:44
LOCATION/ADDRESS: near [illegible] building Sunny/Lane
ENGINEERS: Schumaker

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

[illegible] 0.8 mph [illegible] 68 %

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal, date) [illegible]

LxT pre [illegible] 0.1dB

post [illegible] 0.1dB

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: [illegible]
PROJECT #:
SITE NUMBER: ST-4
DATE/TIME: 20230420 7:42 am
LOCATION/ADDRESS: [illegible] / USGS ([illegible])
ENGINEERS: Schumacher

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	42						[illegible]
2	43						gulls [illegible]
3	44						
4	45						[illegible] stopped [illegible]
5	46						Seagull calling
6	47						[illegible] [illegible] ~60 yards
7	48						
8	49						[illegible]
9	50						[illegible] ?? seconds [illegible]
10	51						[illegible]
11	52						[illegible] Set up on wood.
12	53						[illegible] [illegible]
13	54						[illegible] (distant)
14	55					[illegible]	5 seconds [illegible]
15	56						Truck horn & [illegible]
16							
17				[illegible]			
18							[illegible]
19							
20							

Leq	49.3
Lmax	63.4
Lmin	45.0
L10	50.6
L25	49.3
L50	48.2
L90	46.4

Overall Leq (Include "O" minutes, Exclude "X" minutes) = ______ dBA

Subset Leq (Exclude "O" and "X" minutes) = ______ dBA

"O" = other characteristic sources that contributed to the Leq

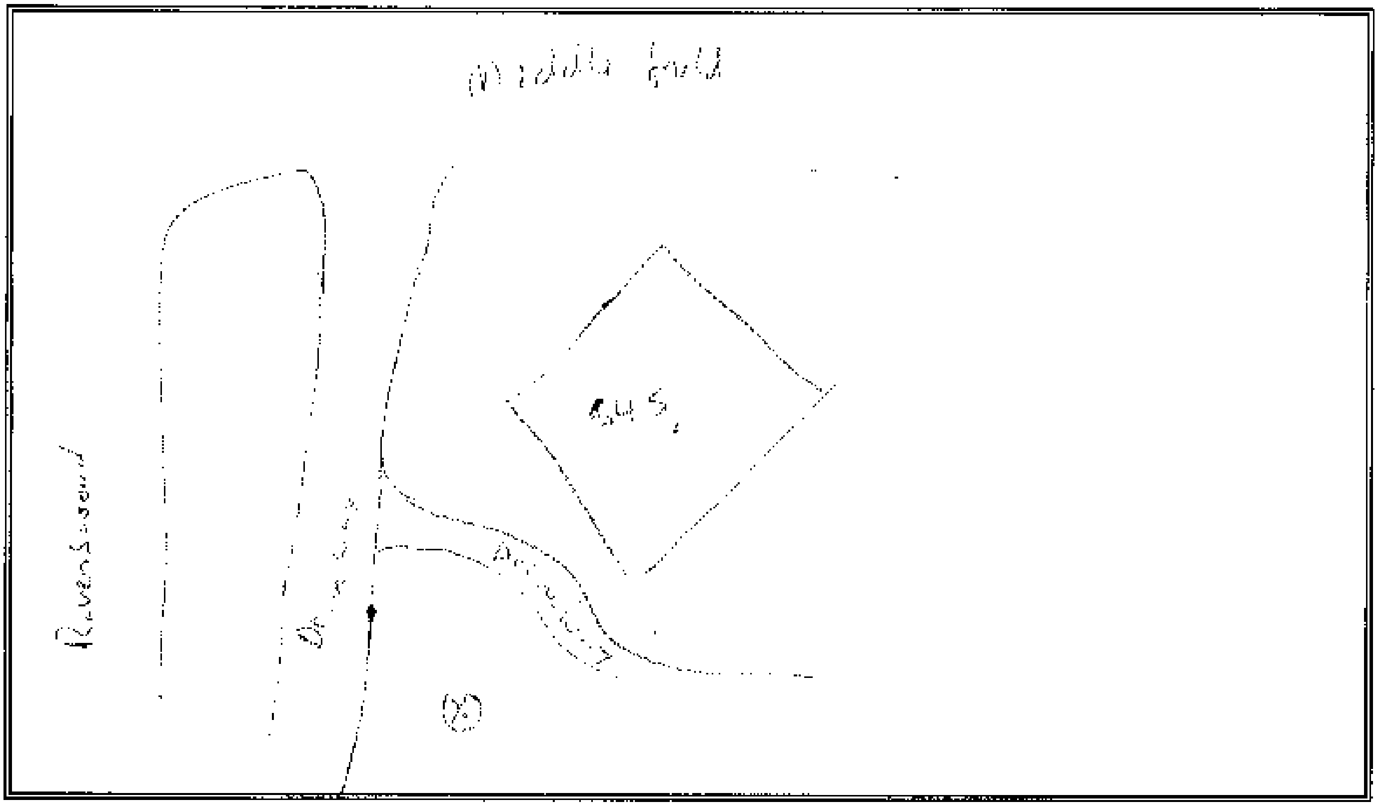
"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: Pejklina
PROJECT #:
SITE NUMBER: ST-5
DATE/TIME: 20230420 11:16
LOCATION/ADDRESS: 545 middlefield
ENGINEERS: Schumaker

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

67.4 1.2 sun, slight wind 47.3

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LxT [illegible] [illegible]
[illegible]

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:
COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: Parkline

PROJECT #:

SITE NUMBER: ST-5

DATE/TIME: 20080420 11:16

LOCATION/ADDRESS: 545 Middlefield

ENGINEERS: [illegible]

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	16						Leaf blowers @ [illegible]
2	17						Leaf blowers @ [illegible] [illegible]
3	18						Leaf blowers
4	19						Leaf blowers [illegible] [illegible]
5	20						[illegible] hydraulic [illegible] (middlefield) Leaf blower
6	21						Jet overhead prop plane [illegible] Leaf blowers [illegible]
7	22						[illegible] parked [illegible] ([illegible])
8	23				FRI [illegible]		[illegible]
9	24						Van [illegible] [illegible]
10	25						[illegible]
11	26						leaf blower Trash [illegible] [illegible] Jet
12	27						[illegible] prop plane [illegible] 585 driveway
13	28						leaf blower [illegible] middlefield
14	29						[illegible] leaf blowers [illegible] Shots.
15	30						[illegible] middlefield [illegible] Prop plane [illegible]
16							
17				Note: [illegible]			
18					Birds chirp Leaf blowers [illegible]		
19							
20							

Leq	52.5
Lmax	60.9
Lmin	42.6
L10	55.6
25 ~~L33~~	53.6
L50	49.9
L90	46.9

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Meter Locations

Site #	Meter #	Start Time	Start Date	Stop Time	Stop Date	Start Cal	End Cal	Lock #	Location Description
LT-1	A	8:50	2023 04/19	9:41	2023 04/20	13.36 mv/Pa	13.36 mv/Pa	[redacted]	End of tent court on Tree
LT-2	J	9:05	2023 04/19	10:11	2023 04/20	16.44 mv/Pa	16.44 mv/Pa	[redacted]	End of Barin on Tree
LT-3	I	9:20	2023 04/19	10:20	2023 04/20	16.82 mv/Pa	16.63 mv/Pa	[redacted]	Light pole across from childrens center
LT-4	D	9:30	2023 04/19	10:29	2023 04/20	16.63 mv/Pa	16.25 mv/Pa	[redacted]	First telephone pole along westbound Pine / Landscapers present at pickup
LT-5	#8	9:43	2023 04/19	10:49	2023 04/20	14.85 mv/Pa	14.75 mv/Pa	[redacted]	2nd redwood tree from southeast

Field Pictures

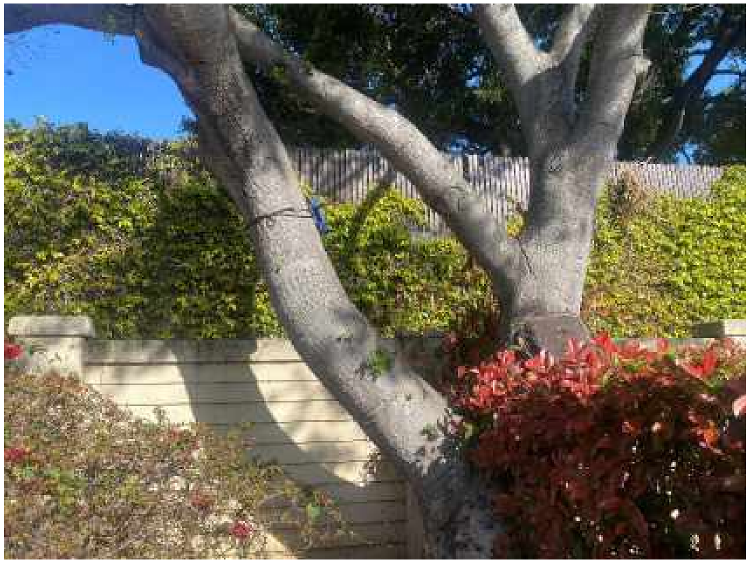
Noise Measurement Photographs

LT-1 Looking East

LT-1 Looking South

LT-1 Looking North

Noise Measurement Photographs


LT-2 Looking North


LT-2 Looking Northeast


LT-2 Looking North (from street)


LT-2 Looking Northwest (from street)

Noise Measurement Photographs

LT-3 Looking North

LT-3 Looking East

LT-3 Looking West

Noise Measurement Photographs


LT-4 Looking West

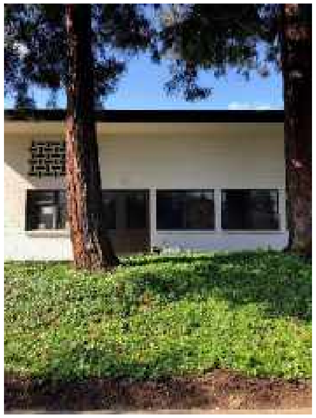

LT-4 Looking South


LT-4 Looking North

Noise Measurement Photographs


LT-5 Looking East


LT-5 Looking Northeast


LT-5 Looking West

Noise Measurement Photographs

ST-1 Looking Southwest

ST-1 Looking East

ST-1 Looking North

Noise Measurement Photographs


ST-2 Looking North


ST-2 Looking West

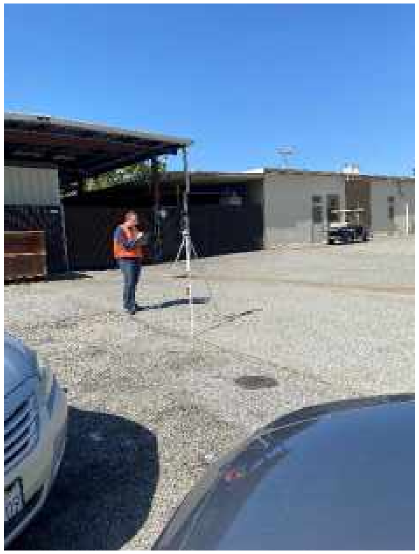

ST-2 Looking South

Noise Measurement Photographs


ST-3 Looking Northeast


ST-3 Looking Southeast


ST-3 Looking Southwest


ST-3 Looking Northwest

Noise Measurement Photographs


ST-4 Looking East


ST-4 Looking South

ST-4 Looking West


ST-4 Looking North

Noise Measurement Photographs


ST-5 Looking North


ST-5 Looking Northwest


ST-5 Looking Southwest


ST-5 Looking Northeast

Noise Measurement Photographs

Traffic Data and Calculations

Total Volumes			N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W
#	N/S street	E/W street	2022/2023 Existing Conditions				Year 2031 Background				Year 2040 Cumulative				Year 2031 Background + Project (550)				Year 2031 Background + new variant				Year 2040 Cumulative + Project (550)				Year 2040 Cumulative + new variant			
1	US 101 NB Off-Ramp	Marsh Road	-	20,435	9,545	20,255	-	26,755	12,942	23,996	-	33,622	15,798	27,365	-	26,855	12,980	24,397	-	26,864	12,978	24,438	-	33,722	15,836	27,766	-	33,731	15,834	27,807
2	US 101 SB Off-Ramp	Marsh Road	16,670	13,405	-	15,925	20,477	16,660	-	17,743	23,210	20,496	-	19,611	20,685	16,761	-	18,143	20,703	16,770	-	18,185	23,418	20,597	-	20,011	23,436	20,606	-	20,053
3	Scott Drive	Marsh Road	2,320	15,475	1,740	11,360	2,730	17,969	1,982	12,600	3,225	20,458	2,687	13,376	2,730	18,218	1,982	13,000	2,730	18,240	1,982	13,042	3,225	20,707	2,687	13,776	3,225	20,729	2,687	13,818
4	Florence Street/Bohannon Drive	Marsh Road	5,700	11,670	1,010	8,385	6,401	13,792	1,232	10,094	6,904	15,522	1,788	11,755	6,552	14,041	1,232	10,645	6,565	14,063	1,232	10,700	7,055	15,771	1,788	12,306	7,068	15,793	1,788	12,361
5	Bay Road	Marsh Road	1,015	9,475	1,830	7,400	1,605	11,774	2,604	7,954	2,077	14,101	3,780	8,248	1,605	12,173	2,653	8,456	1,605	12,209	2,657	8,507	2,077	14,500	3,829	8,750	2,077	14,536	3,833	8,801
6	Bay Road	Ringwood Avenue	2,815	780	3,000	3,690	3,786	782	3,505	3,890	5,251	787	3,909	3,847	3,835	782	3,854	4,259	3,839	782	3,883	4,353	5,300	787	4,258	4,216	5,304	787	4,287	4,310
7	US 101 NB Ramps	Willow Road (SR 114)	-	16,465	10,730	13,360	-	21,553	11,491	19,198	-	23,790	10,751	22,071	-	22,105	12,595	19,952	-	22,153	12,692	20,011	-	24,342	11,855	22,825	-	24,390	11,952	22,884
8	US 101 SB Ramps	Willow Road (SR 114)	6,880	16,530	-	14,140	10,579	19,845	-	16,402	12,277	20,325	-	16,756	10,932	21,501	-	18,260	10,963	21,646	-	18,416	12,630	21,981	-	18,614	12,661	22,126	-	18,770
9	Bay Road	Willow Road (SR 114)	3,370	13,775	-	12,280	4,041	15,664	-	13,977	4,458	15,430	-	13,919	4,361	17,674	-	15,515	4,451	17,848	-	15,580	4,778	17,440	-	15,457	4,868	17,614	-	15,522
10	Durham Street	Willow Road (SR 114)	500	8,170	1,050	8,890	673	9,153	1,651	9,789	915	8,242	2,559	9,023	673	10,814	1,677	11,353	673	10,959	1,679	11,420	915	9,903	2,585	10,587	915	10,048	2,587	10,654
11	Coleman Avenue	Willow Road (SR 114)	1,810	7,845	190	8,035	2,110	8,780	190	8,772	2,538	7,873	190	8,060	2,110	10,466	190	10,336	2,110	10,613	190	10,403	2,538	9,559	190	9,624	2,538	9,706	190	9,691
12	Gilbert Avenue	Willow Road (SR 114)	825	6,895	2,730	7,170	1,108	7,714	2,868	8,079	1,477	6,589	3,151	7,492	1,108	9,400	2,894	9,669	1,108	9,547	2,896	9,738	1,477	8,275	3,177	9,082	1,477	8,422	3,179	9,151
13	Middlefield Road	Willow Road (SR 114)	5,375	8,015	5,760	3,805	6,505	8,873	6,661	4,624	7,135	7,513	7,388	5,788	8,240	10,584	7,012	4,828	8,524	10,734	7,042	4,644	8,870	9,224	7,739	5,992	9,154	9,374	7,769	5,808
14	Laurel Street	Willow Road (SR 114)	1,375	1,395	5	2,480	1,689	2,139	5	2,742	1,629	2,472	5	3,163	1,893	2,504	5	2,742	1,709	2,546	5	2,742	1,833	2,837	5	3,163	1,649	2,879	5	3,163
15	Middlefield Road	Ravenswood Avenue	4,050	-	8,265	5,385	4,548	-	9,324	5,422	4,674	-	8,387	4,960	5,141	-	11,263	5,847	5,188	-	11,133	5,887	5,267	-	10,326	5,385	5,314	-	10,196	5,425
16	Middlefield Road	D Street/Ringwood Avenue	7,175	3,795	6,560	365	8,462	4,494	7,426	365	8,830	4,941	7,000	-	9,157	4,892	9,130	2,460	8,987	4,930	9,230	2,710	9,525	5,339	8,704	2,095	9,355	5,377	8,804	2,345
17	Middlefield Road	Seminary Drive	5,595	375	6,195	130	6,807	573	6,863	130	7,732	812	6,205	-	7,477	573	8,560	1,828	7,490	573	8,699	2,053	8,402	812	7,902	1,698	8,415	812	8,041	1,923
18	Proj Dwy B1 East	Ravenswood Avenue	-	4,105	-	5,460	-	4,146	-	5,497	-	3,264	-	3,959	-	5,097	12	6,998	-	5,088	297	7,005	-	4,215	12	5,460	-	4,206	297	5,467
19	Proj Dwy B1 West	Ravenswood Avenue	-	4,105	-	5,460	-	4,145	-	5,496	-	3,261	-	3,553	-	5,096	292	7,403	-	5,302	689	7,355	-	4,212	292	5,460	-	4,418	689	5,412
20	Proj Dwy/Pine Street	Ravenswood Avenue	300	4,510	200	5,450	314	4,565	200	5,490	351	3,483	-	3,602	314	5,746	618	7,338	314	6,054	200	7,289	351	4,664	418	5,450	351	4,972	-	5,401
21	Laurel Street	Encinal Avenue	-	2,750	1,620	2,445	-	3,060	1,919	3,252	-	3,163	2,204	4,379	-	3,375	2,080	3,353	-	3,411	2,087	3,376	-	3,478	2,365	4,480	-	3,514	2,372	4,503
22	Laurel Street	Glenwood Avenue	1,370	2,305	1,740	2,315	1,557	2,325	1,937	2,565	2,099	2,273	2,185	2,722	1,658	2,428	2,122	2,693	1,691	2,436	2,145	2,705	2,200	2,376	2,370	2,850	2,233	2,384	2,393	2,862
23	Laurel Street	Oak Grove Avenue	2,140	3,485	1,825	3,690	2,457	3,515	2,554	3,950	2,649	3,406	3,054	4,067	2,686	3,679	2,760	4,015	2,731	3,684	2,787	4,021	2,878	3,570	3,260	4,132	2,923	3,575	3,287	4,138
24	Laurel Street	Ravenswood Avenue	1,910	4,720	2,885	5,690	2,490	4,797	3,652	5,690	2,581	3,795	4,629	4,118	2,843	5,958	3,951	7,303	2,888	6,285	3,871	7,430	2,934	4,956	4,928	5,731	2,979	5,283	4,848	5,858
25	Laurel Street	Proj Dwy N	1,535	-	2,885	-	2,197	-	3,652	-	3,156	-	4,560	-	2,374	454	4,020	-	2,330	-	4,063	-	3,333	454	4,928	-	3,289	-	4,971	-
26	Laurel Street	Proj Dwy S	1,535	-	2,885	-	2,197	-	3,652	-	3,126	-	4,563	-	2,404	49	4,017	-	2,220	49	4,059	-	3,333	49	4,928	-	3,149	49	4,970	-
27	Laurel Street	Burgess Drive	1,375	175	2,205	725	2,007	175	2,954	749	2,949	177	3,830	813	2,211	175	3,319	749	2,027	175	3,361	749	3,153	177	4,195	813	2,969	177	4,237	813
28	El Camino Real	Encinal Avenue	13,505	3,105	12,670	450	16,208	3,778	13,846	913	17,798	4,331	15,300	450	16,986	4,248	14,153	913	17,054	4,288	14,181	913	18,576	4,801	15,607	450	18,644	4,841	15,635	450
29	El Camino Real	Valparaiso Avenue/Glenwood Avenue	11,435	2,820	11,930	4,720	13,388	3,209	13,086	5,092	14,893	3,241	14,267	5,606	14,065	3,335	13,392	5,216	14,110	3,359	13,407	5,227	15,570	3,367	14,573	5,730	15,615	3,391	14,588	5,741
30	El Camino Real	Oak Grove Avenue	10,465	3,605	11,700	4,205	12,115	4,395	13,105	4,205	13,395	4,702	14,243	4,577	12,788	4,513	13,293	4,205	12,833	4,536	13,286	4,205	14,068	4,820	14,431	4,577	14,113	4,843	14,424	4,577
31	El Camino Real	Santa Cruz Avenue	11,035	1,230	11,975	955	12,821	1,320	13,411	1,548	14,039	1,767	14,508	1,925	13,429	1,320	13,600	1,549	13,468	1,320	13,593	1,549	14,647	1,767	14,697	1,926	14,686	1,767	14,690	1,926
32	El Camino Real	Ravenswood Avenue/Menlo Avenue	10,790	5,935	16,715	4,010	13,059	6,595	18,400	4,664	14,797	6,546	19,062	5,221	13,668	7,789	19,203	4,865	13,707	7,868	19,273	4,883	15,406	7,740	19,865	5,422	15,445	7,819	19,935	5,440
33	El Camino Real	Roble Avenue	14,150	550	15,070	790	16,554	1,185	16,213	1,059	17,952	1,310	16,753	1,320	17,303	1,185	17,016	1,059	17,387	1,185	17,086	1,059	18,701	1,310	17,556	1,320	18,785	1,310	17,626	1,320
34	El Camino Real	Middle Avenue	13,280	30	15,655	3,965	15,208	30	16,822	3,965	16,558	30	17,740	3,965	15,957	30	17,625	3,965	16,041	30	17,695	3,965	17,307	30	18,543	3,965	17,391	30	18,613	3,965
35	El Camino Real	Cambridge Avenue	14,470	45	16,740	550	16,785	45	18,509	587	18,215	45	19,789	631	17,534	45	19,312	587	17,599	45	19,382	587	18,964	45	20,592	631	19,029	45	20,662	631
36	University Drive	Valparaiso Avenue	1,780	5,110	1,935	5,335	1,780	5,110	2,243	5,847	1,780	5,312	3,211	6,545	1,780	5,235	2,244	5,973	1,780	5,246	2,244	5,984	1,780	5,437	3,212	6,671	1,780	5,448	3,212	6,682
37	University Drive	Santa Cruz Avenue	-	3,880	3,330	6,625	-	4,049	3,540	7,009	-	4,565	3,983	7,298	-	4,050	3,677	7,109	1	4,050	3,689	7,118	-	4,566	4,120	7,398	1	4,566	4,132	7,407
38	Orange Avenue/Santa Cruz Avenue	Avy Avenue/Santa Cruz Avenue	1,430	4,535	4,995	2,220	1,565	4,953	5,490	2,233	1,910	5,139	6,049	2,252	1,565	5,090	5,590	2,233	1,565	5,102	5,599	2,233	1,910	5,276	6,149	2,252	1,910	5,288	6,158	2,252
39	Santa Cruz Avenue	Sand Hill Road	8,125	10,905	11,605	11,520	8,897	11,122	12,278	11,871	9,790	11,676	12,877	12,709	9,034	11,236	12,529	11,871	9,046	11,246	12,551	11,871	9,927	11,790	13,128	12,709	9,939	11,800	13,150	12,709
40	Santa Cruz Avenue/Alpine Road	Junipero Serra Boulevard	9,655	6,430	11,040	-	10,427	6,753	11,364	-	11,053	7,245	11,499	-	10,678	6,753	11,615	-	10,700	6,753	11,637	-	11,304	7,245	11,750	-	11,326	7,245	11,772	-
41	Bayfront Expressway	Willow Road (SR 114)	14,385	1,520	20,890	10,120	18,972	1,555	24,360	11,691	23,419	1,588	27,852	13,307	18,972	1,605	24,611	11,992	18,972	1,609	24,633	12,018	23,419	1,638	28,103	13,608	23,419	1,642	28,125	13,634
42	Hamilton Avenue	Willow Road (SR 114)	1,270	8,025	330	10,740	1,433	9,248	520	12,527	1,398	10,385	853	13,901	1,433	9,549	520	12,828	1,433	9,575	520	12,854	1,398	10,686	853	14,202	1,398	10,712	853	14,228
43	Ivy Drive	Willow Road (SR 114)	915	8,760	-	10,880	1,446	11,897	-	13,527	2,489	10,986	-	14,957	1,446	12,198	-	13,828	1,446	12,224	-	13,854	2,489	11,287	-	15,258	2,489	11,313	-	15,284
44	O'Brien Drive	Willow Road (SR 114)	-	9,800	3,225	13,080	-	12,043	5,136	18,191	-	9,520	7,326	20,788	-	12,344	5,186	18,542	-	12,370	5,190	18,572	-	9,821	7,376	21,139	-	9,847	7,380	21,169
45	Newbridge Street	Willow Road (SR 114)	4,670	12,535	4,420	17,110	5,826	16,148	5,487	22,259	7,746	15,622	6,135	24,784	5,876	16,499	5,638	22,811	5,880	16,530	5,651	22,859	7,796	15,973	6,286	25,336	7,800	16,004	6,299	25,384
46	Bayfront Expressway	University Avenue	22,615	-	28,770	9,560	25,454	-	33,088	11,916	29,095	-	37,167	14,135	25,705	-	33,339	11,916	25,727	-	33,361	11,916	29,346	-	37,418	14,135	29,368	-	37,440	14,135

Truck Volumes			N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W
1	US 101 NB Off-Ramp	Marsh Road	-	294	119	213	-	370	181	240	-	461	246	264	-	371	182	244	-	371	182	244	-	462	247	268	-	462	247	268
2	US 101 SB Off-Ramp	Marsh Road	146	189	-	130	180	236	-	135	211	309	-	154	182	238	-	138	182	238	-	139	213	311	-	157	213	311	-	157
3	Scott Drive	Marsh Road	17	144	30	83	20	154	34	85	28	203	27	95	20	156	34	88	20	156	34	88	28	205	27	98	28	205	27	98
4	Florence Street/Bohannon Drive	Marsh Road	29	104	4	60	29	112	5	66	30	158	7	76	29	114	5	70	29	114	5	70	30	160	7	79	31	161	7	80
5	Bay Road	Marsh Road	8	85	10	52	10	95	12	57	11	134	13	69	10	98	12	60	10	99	12	61	11	138	13	73	11	138	13	74
6	Bay Road	Ringwood Avenue	25	-	7	29	25	-	7	28	41	-	8	19	26	-	7	30	26	-	8	31	41	-	9	21	41	-	9	22
7	US 101 NB Ramps	Willow Road (SR 114)	-	328	166	137	-	404	178	205	-	460	168	241	-	415	195	213	-	416	196	214	-	471	185	249	-	472	187	249
8	US 101 SB Ramps	Willow Road (SR 114)	38	351	-	174	70	413	-	208	91	411	-	246	73	447	-	231	73	450	-	233	93	445	-	274	93	448	-	276
9	Bay Road	Willow Road (SR 114)	21	186	-	164	25	222	-	193	75	252	-	192	27	250	-	214	28	253	-	215	80	285	-	213	81	287	-	214
10	Durham Street	Willow Road (SR 114)	1	133	12	132	4	160	18	150	1	129	49	118	4	189	18	174	4	191	18	175	1	155	49	138	1	157	49	139
11	Coleman Avenue	Willow Road (SR 114)	2	127	3	124	3	152	3	142	2	120	3	120	3	181	3	168	3	184	3	169	2	146	3	143	2	148	3	144
12	Gilbert Avenue	Willow Road (SR 114)	1	111	1	110	4	133	1	129	10	102	3	107	4	162	1	154	4	165	1	155	10	129	3	129	10	131	3	130
13	Middlefield Road	Willow Road (SR 114)	68	140	82	10	80	166	100	13	112	126	106	25	101	198	105	13	104	201	105	13	140	155	111	26	144	158	111	25
14	Laurel Street	Willow Road (SR 114)	4	5	0	8	5	8	0	8	5	16	0	8	6	9	0	8	5	10	0	8	6	19	0	8	6	19	0	8
15	Middlefield Road	Ravenswood Avenue	16	-	41	28	20	-	48	33	36	-	53	28	23	-	58	35	23	-	57	36	41	-	65	31	41	-	64	31
16	Middlefield Road	D Street/Ringwood Avenue	41	42	24	2	51	51	30	2	55	72	37	-	55	55	37	16	54	55	38	18	60	78	46	17	58	78	46	19
17	Middlefield Road	Seminary Drive	36	0	29	1	48	0	36	1	79	0	41	-	52	0	44	10	53	0	45	12	86	0	52	14	86	0	53	15
18	Proj Dwy B1 East	Ravenswood Avenue	-	23	-	28	-	25	-	33	-	30	-	23	-	31	0	42	-	31	2	42	-	39	0	31	-	38	2	31
19	Proj Dwy B1 West	Ravenswood Avenue	-	23	-	28	-	25	-	33	-	30	-	20	-	31	2	45	-	32	4	44	-	39	2	31	-	40	5	31
20	Proj Dwy/Pine Street	Ravenswood Avenue	-	24	1	27	-	27	1	32	1	31	-	20	-	34	4	43	-	36	1	43	1	42	3	30	1	44	-	30
21	Laurel Street	Encinal Avenue	-	41	14	14	-	45	8	24	-	45	9	32	-	49	9	25	-	50	9	25	-	50	10	32	-	50	10	32
22	Laurel Street	Glenwood Avenue	15	1	9	2	17	1	6	2	21	1	6	9	18	1	7	2	19	1	7	2	22	1	7	9	22	1	7	9
23	Laurel Street	Oak Grove Avenue	10	3	3	25	12	3	5	16	14	3	8	14	14	3	5	16	14	3	5	16	16	3	9	14	16	3	9	14
24	Laurel Street	Ravenswood Avenue	7	25	18	34	10	28	22	38	9	34	44	29	11	35	24	49	11	37	23	50	11	44	47	41	11	47	46	42
25	Laurel Street	Proj Dwy N	7	-	18	-	10	-	22	-	22	-	43	-	11	2	24	-	11	-	25	-	24	4	47	-	23	-	47	-
26	Laurel Street	Proj Dwy S	7	-	18	-	10	-	22	-	22	-	43	-	11	0	24	-	10	0	25	-	24	0	47	-	22	0	47	-
27	Laurel Street	Burgess Drive	6	1	14	-	8	1	17	-	21	-	37	10	9	1	19	-	8	1	20	-	22	-	41	10	21	-	41	10
28	El Camino Real	Encinal Avenue	93	18	71	3	143	17	87	2	168	22	92	3	149	19	89	2	150	19	89	2	175	25	93	3	176	25	94	3
29	El Camino Real	Valparaiso Avenue/Glenwood Avenue	85	5	72	8	124	7	86	8	154	4	93	7	130	7	89	9	131	7	89	9	161	5	95	7	161	5	95	7
30	El Camino Real	Oak Grove Avenue	88	18	72	8	127	27	81	12	155	23	90	8	134	27	82	12	134	28	82	12	162	23	92	8	163	23	92	8
31	El Camino Real	Santa Cruz Avenue	92	12	74	8	134	4	82	16	162	19	92	8	141	4	83	16	141	4	83	16	169	19	93	8	169	19	93	8
32	El Camino Real	Ravenswood Avenue/Menlo Avenue	91	34	97	18	136	39	109	18	165	62	114	25	142	46	114	18	142	47	114	18	172	74	119	26	172	75	120	26
33	El Camino Real	Roble Avenue	114	4	89	3	163	9	97	3	217	10	102	3	171	9	101	3	171	9	102	3	226	10	107	3	227	10	107	3
34	El Camino Real	Middle Avenue	109	0	84	2	151	0	92	3	203	0	99	3	159	0	96	3	159	0	97	3	213	0	103	3	214	0	104	3
35	El Camino Real	Cambridge Avenue	109	0	82	1	153	0	94	1	207	0	102	1	160	0	98	1	161	0	98	1	216	0	106	1	216	0	106	1
36	University Drive	Valparaiso Avenue	2	7	2	6	2	8	2	6	3	8	6	9	2	9	2	6	2	9	2	6	3	8	6	9	3	8	6	9
37	University Drive	Santa Cruz Avenue	-	7	9	20	-	8	11	20	-	10	19	30	-	8	11	20	0	8	11	20	-	10	19	30	0	10	19	30
38	Orange Avenue/Santa Cruz Avenue	Avy Avenue/Santa Cruz Avenue	1	20	20	0	2	22	20	0	7	30	31	1	2	23	21	0	2	23	21	0	7	31	31	1	7	31	31	1
39	Santa Cruz Avenue	Sand Hill Road	28	152	44	125	33	161	44	138	46	204	59	173	33	163	45	138	33	163	45	138	47	206	60	173	47	206	60	173
40	Santa Cruz Avenue/Alpine Road	Junipero Serra Boulevard	32	38	36	-	35	36	35	-	44	39	56	-	36	36	36	-	36	36	36	-	45	39	57	-	45	39	57	-
41	Bayfront Expressway	Willow Road (SR 114)	251	46	528	208	339	47	626	232	419	43	745	283	339	48	633	238	339	48	633	238	419	44	752	289	419	45	752	290
42	Hamilton Avenue	Willow Road (SR 114)	1	211	10	205	1	221	19	219	2	270	27	269	1	228	19	224	1	229	19	225	2	278	27	275	2	279	27	275
43	Ivy Drive	Willow Road (SR 114)	0	220	-	195	1	261	-	212	12	254	-	256	1	268	-	217	1	269	-	217	12	261	-	261	12	262	-	261
44	O'Brien Drive	Willow Road (SR 114)	-	237	23	217	-	265	72	271	-	191	98	337	-	272	73	276	-	272	73	276	-	197	99	343	-	197	99	343
45	Newbridge Street	Willow Road (SR 114)	1	292	25	227	10	349	35	275	172	309	50	333	10	357	36	282	10	357	36	282	173	316	51	341	173	317	51	341
46	Bayfront Expressway	University Avenue	468	-	920	313	542	-	1,093	424	669	-	1,253	508	547	-	1,101	424	548	-	1,102	424	675	-	1,261	508	675	-	1,262	508

Construction Haul Truck Calculations

Segment Name	Segment Extents	Existing Volume	Existing Truck Volume	Existing Truck Percentage	Construction Trucks	New Volume	New Truck Percentage	Speed	Column lookup (for speeds)	Existing Noise Level (Ldn)	Existing + Construction Noise Level (Ldn)	Difference
Willow Road	East of Bay Road	13,775	186	1.4%	100	13,875	2.1%	25	5	62.0	62.7	0.7
Willow Road	Between Bay Road and Durham Street	12,280	164	1.3%	100	12,380	2.1%	25	7	61.4	62.2	0.8
Willow Road	Between Bay Road and Durham Street	8,170	133	1.6%	100	8,270	2.8%	25	5	60.0	61.1	1.1
Willow Road	Between Durham Street and Coleman Avenue	8,890	132	1.5%	100	8,990	2.6%	25	7	60.2	61.3	1.1
Willow Road	Between Durham Street and Coleman Avenue	7,845	127	1.6%	100	7,945	2.9%	25	5	59.8	61.0	1.2
Willow Road	Between Coleman Avenue and Gilbert Avenue	8,035	124	1.5%	100	8,135	2.8%	25	7	59.8	61.0	1.2
Willow Road	Between Coleman Avenue and Gilbert Avenue	6,895	111	1.6%	100	6,995	3.0%	25	5	59.3	60.5	1.3
Willow Road	Between Gilbert Avenue and Middlefield Road	7,170	110	1.5%	100	7,270	2.9%	25	7	59.3	60.6	1.3
Willow Road	Between Gilbert Avenue and Middlefield Road	8,015	140	1.7%	100	8,115	3.0%	25	5	60.0	61.2	1.2
Middlefield Road	Between Willow Road and Seminary Drive	5,375	68	1.3%	100	5,475	3.1%	30	4	59.5	60.7	1.3
Middlefield Road	Between Willow Road and Seminary Drive	6,195	29	0.5%	100	6,295	2.0%	35	6	61.2	62.2	0.9
Middlefield Road	Between Seminary Drive and Ringwood Avenue	5,595	36	0.6%	100	5,695	2.4%	35	4	60.8	61.9	1.1
Middlefield Road	Between Seminary Drive and Ringwood Avenue	6,560	24	0.4%	100	6,660	1.9%	35	6	61.4	62.3	1.0
Middlefield Road	Between Ringwood Avenue and Ravenswood Ave	7,175	41	0.6%	100	7,275	1.9%	35	4	61.9	62.7	0.8
Middlefield Road	Between Ringwood Avenue and Ravenswood Ave	8,265	41	0.5%	100	8,365	1.7%	35	6	62.4	63.2	0.8
Ravenswood Avenue	West of Middlefield Road	5,385	28	0.5%	100	5,485	2.3%	30	7	58.8	60.2	1.4

Construction Haul Truck Calculations - Project Variant

Segment Name	Segment Extents	Existing Volume	Existing Truck Volume	Existing Truck Percentage	Construction Trucks	New Volume	New Truck Percentage	Speed	Column lookup (for speeds)	Existing Noise Level (Ldn)	Existing + Construction Noise Level (Ldn)	Difference
Willow Road	East of Bay Road	13,775	186	1.4%	177	13,952	2.6%	25	5	62.0	63.2	1.2
Willow Road	Between Bay Road and Durham Street	12,280	164	1.3%	177	12,457	2.7%	25	7	61.4	62.8	1.4
Willow Road	Between Bay Road and Durham Street	8,170	133	1.6%	177	8,347	3.7%	25	5	60.0	61.8	1.8
Willow Road	Between Durham Street and Coleman Avenue	8,890	132	1.5%	177	9,067	3.4%	25	7	60.2	61.9	1.7
Willow Road	Between Durham Street and Coleman Avenue	7,845	127	1.6%	177	8,022	3.8%	25	5	59.8	61.7	1.9
Willow Road	Between Coleman Avenue and Gilbert Avenue	8,035	124	1.5%	177	8,212	3.7%	25	7	59.8	61.7	1.9
Willow Road	Between Coleman Avenue and Gilbert Avenue	6,895	111	1.6%	177	7,072	4.1%	25	5	59.3	61.3	2.1
Willow Road	Between Gilbert Avenue and Middlefield Road	7,170	110	1.5%	177	7,347	3.9%	25	7	59.3	61.4	2.0
Willow Road	Between Gilbert Avenue and Middlefield Road	8,015	140	1.7%	177	8,192	3.9%	25	5	60.0	61.8	1.8
Middlefield Road	Between Willow Road and Seminary Drive	5,375	68	1.3%	177	5,552	4.4%	30	4	59.5	61.5	2.0
Middlefield Road	Between Willow Road and Seminary Drive	6,195	29	0.5%	177	6,372	3.2%	35	6	61.2	62.8	1.6
Middlefield Road	Between Seminary Drive and Ringwood Avenue	5,595	36	0.6%	177	5,772	3.7%	35	4	60.8	62.6	1.8
Middlefield Road	Between Seminary Drive and Ringwood Avenue	6,560	24	0.4%	177	6,737	3.0%	35	6	61.4	63.0	1.6
Middlefield Road	Between Ringwood Avenue and Ravenswood Ave	7,175	41	0.6%	177	7,352	3.0%	35	4	61.9	63.3	1.4
Middlefield Road	Between Ringwood Avenue and Ravenswood Ave	8,265	41	0.5%	177	8,442	2.6%	35	6	62.4	63.7	1.3
Ravenswood Avenue	West of Middlefield Road	5,385	28	0.5%	177	5,562	3.7%	30	7	58.8	61.1	2.3

Speeds

	Intersection					
#	**N/S street**	**E/W street**	**North**	**East**	**South**	**West**
1	US 101 NB Off-Ramp	Marsh Road	0	35	25	35
2	US 101 SB Off-Ramp	Marsh Road	25	35	0	35
3	Scott Drive	Marsh Road	25	30	25	30
4	Florence Street/Bohannon Drive	Marsh Road	25	30	25	30
5	Bay Road	Marsh Road	25	30	30	30
6	Bay Road	Ringwood Avenue	30	25	30	30
7	US 101 NB Ramps	Willow Road (SR 114)	25	40	25	40
8	US 101 SB Ramps	Willow Road (SR 114)	25	40	25	40
9	Bay Road	Willow Road (SR 114)	30	25	0	25
10	Durham Street	Willow Road (SR 114)	25	25	25	25
11	Coleman Avenue	Willow Road (SR 114)	25	25	25	25
12	Gilbert Avenue	Willow Road (SR 114)	25	25	25	25
13	Middlefield Road	Willow Road (SR 114)	30	25	30	25
14	Laurel Street	Willow Road (SR 114)	25	25	25	25
15	Middlefield Road	Ravenswood Avenue	35	30	35	0
16	Middlefield Road	D Street/Ringwood Avenue	35	25	35	30
17	Middlefield Road	Seminary Drive	35	25	35	25
18	Proj Dwy B1 East	Ravenswood Avenue	0	30	25	30
19	Proj Dwy B1 West	Ravenswood Avenue	0	30	25	30
20	Proj Dwy/Pine Street	Ravenswood Avenue	25	30	25	30
21	Laurel Street	Encinal Avenue	25	25	25	25
22	Laurel Street	Glenwood Avenue	25	25	25	25
23	Laurel Street	Oak Grove Avenue	25	25	25	25
24	Laurel Street	Ravenswood Avenue	25	30	25	30
25	Laurel Street	Proj Dwy N	25	25	25	0
26	Laurel Street	Proj Dwy S	25	25	25	0
27	Laurel Street	Burgess Drive	25	25	25	25
28	El Camino Real	Encinal Avenue	35	25	35	25
29	El Camino Real	Valparaiso Avenue/Glenwood Avenue	35	30	35	25
30	El Camino Real	Oak Grove Avenue	35	25	35	25
31	El Camino Real	Santa Cruz Avenue	35	25	35	25
32	El Camino Real	Ravenswood Avenue/Menlo Avenue	35	25	35	30
33	El Camino Real	Roble Avenue	35	25	35	25
34	El Camino Real	Middle Avenue	35	25	35	25
35	El Camino Real	Cambridge Avenue	35	25	35	25
36	University Drive	Valparaiso Avenue	25	30	25	30
37	University Drive	Santa Cruz Avenue	25	25	25	25
38	Orange Avenue/Santa Cruz Avenue	Avy Avenue/Santa Cruz Avenue	25	25	30	25
39	Santa Cruz Avenue	Sand Hill Road	25	40	35	40
40	Santa Cruz Avenue/Alpine Road	Junipero Serra Boulevard	35	35	35	0
41	Bayfront Expressway	Willow Road (SR 114)	45	40	45	40
42	Hamilton Avenue	Willow Road (SR 114)	25	40	25	40
43	Ivy Drive	Willow Road (SR 114)	25	40	0	40
44	O'Brien Drive	Willow Road (SR 114)	0	40	30	40
45	Newbridge Street	Willow Road (SR 114)	25	40	25	40
46	Bayfront Expressway	University Avenue	45	35	45	0

N	4
E	5
S	6
W	7

Segment Names	**ID**
Middlefield Road north of Willow Road	13N
Willow Road east of Coleman Avenue	11E
Willow Road east of Gilbert Avenue	12E
Willow Road east of Middlefield Road	13E
Willow Road between Laurel Street and Middlefield Road	14E
Ravenswood Avenue east of Project Driveway B1 East	18E
Ravenswood Avenue east of Project Driveway B1 West	19E
Ravenswood Avenue east of Pine Street	20E
Ravenswood Avenue between Laurel Street and Pine Street	24E
Middlefield Road between Ravenswood Avenue and Ringwood Avenue	15S
Middlefield Road between Ringwood Avenue and Seminary Drive	16S
Middlefield Road south of Seminary Drive	17S
Pine Street south of Ravenswood Avenue	20S
Willow Road west of Gilbert Avenue	12W
D Street west of Middlefield Road	16W

Seminary Drive west of Middlefield Road	17W
Ravenswood Avenue west of Project Driveway B1 East	18W
Ravenswood Avenue west of Project Driveway B1 West	19W
Ravenswood Avenue west of Pine Street	20W
Ravenswood Avenue west of Laurel Street	24W
Willow Road east of Durham Street	10E
Ravenswood Avenue east of El Camino	32E
Willow Road west of Durham Street	10W
Willow Road west of Coleman Avenue	11W
Bay Road East of Marsh Road	5S
Seminary Drive west of Middlefield Road	17W

Truck Settings

Truck Percentage	**Setting #**
0.00%	1
0.25%	2
0.50%	3
0.75%	4
1.00%	5
1.25%	6
1.50%	7
1.75%	8
2.00%	9
2.25%	10
2.50%	11
2.75%	12
3.00%	13
3.25%	14
3.50%	15
3.75%	16
4.00%	17
4.25%	18
4.50%	19
4.75%	20

Existing

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	-	-	0.00%	1	25	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	-	-	0.00%	1	25	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
102	26	Laurel Street - Proj Dwy S	E	-	-	0.00%	1	25	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.25%	2	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.50%	3	25	44.2
68	17	Middlefield Road - Seminary Drive	W	130	1	0.50%	3	25	45.3
106	27	Laurel Street - Burgess Drive	E	175	1	0.50%	3	25	45.8
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.50%	7	25	46.5
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	200	1	0.50%	3	25	46.0
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	300	-	0.00%	1	25	46.5
167	42	Hamilton Avenue - Willow Road (SR 114)	S	330	10	3.25%	14	25	48.9
64	16	Middlefield Road - D Street/Ringwood Avenue	W	365	2	0.75%	4	30	48.9
66	17	Middlefield Road - Seminary Drive	E	375	0	0.00%	1	25	47.0
112	28	El Camino Real - Encinal Avenue	W	450	3	0.75%	4	25	48.1
37	10	Durham Street - Willow Road (SR 114)	N	500	1	0.25%	2	25	48.0
130	33	El Camino Real - Roble Avenue	E	550	4	0.75%	4	25	48.7
140	35	El Camino Real - Cambridge Avenue	W	550	1	0.00%	1	25	48.0
108	27	Laurel Street - Burgess Drive	W	725	-	0.00%	1	25	48.8
22	6	Bay Road - Ringwood Avenue	E	780	-	0.00%	1	25	49.0
132	33	El Camino Real - Roble Avenue	W	790	3	0.25%	2	25	49.4
45	12	Gilbert Avenue - Willow Road (SR 114)	N	825	1	0.00%	1	25	49.2
169	43	Ivy Drive - Willow Road (SR 114)	N	915	0	0.00%	1	25	49.5
124	31	El Camino Real - Santa Cruz Avenue	W	955	8	0.75%	4	25	50.5
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,010	4	0.25%	2	25	50.2
17	5	Bay Road - Marsh Road	N	1,015	8	0.75%	4	25	50.7
39	10	Durham Street - Willow Road (SR 114)	S	1,050	12	1.25%	6	25	51.4
122	31	El Camino Real - Santa Cruz Avenue	E	1,230	12	1.00%	5	25	51.7
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,270	1	0.00%	1	25	50.7
85	22	Laurel Street - Glenwood Avenue	N	1,370	15	1.00%	5	25	52.1
53	14	Laurel Street - Willow Road (SR 114)	N	1,375	4	0.25%	2	25	51.3
105	27	Laurel Street - Burgess Drive	N	1,375	6	0.50%	3	25	51.6
54	14	Laurel Street - Willow Road (SR 114)	E	1,395	5	0.50%	3	25	51.6
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,430	1	0.00%	1	25	51.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,520	46	3.00%	13	40	58.1
97	25	Laurel Street - Proj Dwy N	N	1,535	7	0.50%	3	25	52.0
101	26	Laurel Street - Proj Dwy S	N	1,535	7	0.50%	3	25	52.0
83	21	Laurel Street - Encinal Avenue	S	1,620	14	0.75%	4	25	52.5
11	3	Scott Drive - Marsh Road	S	1,740	30	1.75%	8	25	53.7
87	22	Laurel Street - Glenwood Avenue	S	1,740	9	0.50%	3	25	52.4
141	36	University Drive - Valparaiso Avenue	N	1,780	2	0.00%	1	25	51.9
41	11	Coleman Avenue - Willow Road (SR 114)	N	1,810	2	0.00%	1	25	51.9
91	23	Laurel Street - Oak Grove Avenue	S	1,825	3	0.25%	2	25	52.3
19	5	Bay Road - Marsh Road	S	1,830	10	0.50%	3	30	54.4
93	24	Laurel Street - Ravenswood Avenue	N	1,910	7	0.50%	3	25	52.8
143	36	University Drive - Valparaiso Avenue	S	1,935	2	0.00%	1	25	52.2
89	23	Laurel Street - Oak Grove Avenue	N	2,140	10	0.50%	3	25	53.2
107	27	Laurel Street - Burgess Drive	S	2,205	14	0.50%	3	25	53.4
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,220	0	0.00%	1	25	52.7
86	22	Laurel Street - Glenwood Avenue	E	2,305	1	0.00%	1	25	52.9
88	22	Laurel Street - Glenwood Avenue	W	2,315	2	0.00%	1	25	52.9
9	3	Scott Drive - Marsh Road	N	2,320	17	0.75%	4	25	53.9
84	21	Laurel Street - Encinal Avenue	W	2,445	14	0.50%	3	25	53.8
56	14	Laurel Street - Willow Road (SR 114)	W	2,480	8	0.25%	2	25	53.5
47	12	Gilbert Avenue - Willow Road (SR 114)	S	2,730	1	0.00%	1	25	53.5
82	21	Laurel Street - Encinal Avenue	E	2,750	41	1.50%	7	25	55.3
21	6	Bay Road - Ringwood Avenue	N	2,815	25	0.75%	4	30	56.3

114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	2,820	5	0.25%	2	30	55.9
95	24	Laurel Street - Ravenswood Avenue	S	2,885	18	0.75%	4	25	54.7
99	25	Laurel Street - Proj Dwy N	S	2,885	18	0.75%	4	25	54.7
103	26	Laurel Street - Proj Dwy S	S	2,885	18	0.75%	4	25	54.7
23	6	Bay Road - Ringwood Avenue	S	3,000	7	0.25%	2	30	56.2
110	28	El Camino Real - Encinal Avenue	E	3,105	18	0.50%	3	25	54.7
175	44	O'Brien Drive - Willow Road (SR 114)	S	3,225	23	0.75%	4	30	56.9
147	37	University Drive - Santa Cruz Avenue	S	3,330	9	0.25%	2	25	54.7
33	9	Bay Road - Willow Road (SR 114)	N	3,370	21	0.50%	3	30	56.9
90	23	Laurel Street - Oak Grove Avenue	E	3,485	3	0.00%	1	25	54.5
118	30	El Camino Real - Oak Grove Avenue	E	3,605	18	0.50%	3	25	55.3
24	6	Bay Road - Ringwood Avenue	W	3,690	29	0.75%	4	30	57.4
92	23	Laurel Street - Oak Grove Avenue	W	3,690	25	0.75%	4	25	55.7
62	16	Middlefield Road - D Street/Ringwood Avenue	E	3,795	42	1.00%	5	25	56.1
52	13	Middlefield Road - Willow Road (SR 114)	W	3,805	10	0.25%	2	25	55.2
146	37	University Drive - Santa Cruz Avenue	E	3,880	7	0.25%	2	25	55.3
136	34	El Camino Real - Middle Avenue	W	3,965	2	0.00%	1	25	55.0
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	4,010	18	0.50%	3	30	57.6
57	15	Middlefield Road - Ravenswood Avenue	N	4,050	16	0.50%	3	35	59.4
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	4,105	23	0.50%	3	30	57.7
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	4,105	23	0.50%	3	30	57.7
120	30	El Camino Real - Oak Grove Avenue	W	4,205	8	0.25%	2	25	55.6
179	45	Newbridge Street - Willow Road (SR 114)	S	4,420	25	0.50%	3	25	56.1
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	4,510	24	0.50%	3	30	58.1
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	4,535	20	0.50%	3	25	56.2
177	45	Newbridge Street - Willow Road (SR 114)	N	4,670	1	0.00%	1	25	55.7
94	24	Laurel Street - Ravenswood Avenue	E	4,720	25	0.50%	3	30	58.3
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	4,720	8	0.25%	2	25	56.1
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	4,995	20	0.50%	3	30	58.5
142	36	University Drive - Valparaiso Avenue	E	5,110	7	0.25%	2	30	58.4
144	36	University Drive - Valparaiso Avenue	W	5,335	6	0.00%	1	30	58.3
49	13	Middlefield Road - Willow Road (SR 114)	N	5,375	68	1.25%	6	30	59.4
60	15	Middlefield Road - Ravenswood Avenue	W	5,385	28	0.50%	3	-	57.2
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	5,450	27	0.50%	3	30	58.9
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	5,460	28	0.50%	3	30	58.9
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	5,460	28	0.50%	3	30	58.9
65	17	Middlefield Road - Seminary Drive	N	5,595	36	0.75%	4	35	60.9
96	24	Laurel Street - Ravenswood Avenue	W	5,690	34	0.50%	3	30	59.0
13	4	Florence Street/Bohannon Drive - Marsh Road	N	5,700	29	0.50%	3	25	57.2
51	13	Middlefield Road - Willow Road (SR 114)	S	5,760	82	1.50%	7	30	59.9
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	5,935	34	0.50%	3	25	57.4
67	17	Middlefield Road - Seminary Drive	S	6,195	29	0.50%	3	35	61.2
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	6,430	38	0.50%	3	35	61.4
63	16	Middlefield Road - D Street/Ringwood Avenue	S	6,560	24	0.25%	2	35	61.3
148	37	University Drive - Santa Cruz Avenue	W	6,625	20	0.25%	2	25	57.5
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	6,880	38	0.50%	3	25	58.0
46	12	Gilbert Avenue - Willow Road (SR 114)	E	6,895	111	1.50%	7	25	59.1
48	12	Gilbert Avenue - Willow Road (SR 114)	W	7,170	110	1.50%	7	25	59.3
61	16	Middlefield Road - D Street/Ringwood Avenue	N	7,175	41	0.50%	3	35	61.8
20	5	Bay Road - Marsh Road	W	7,400	52	0.75%	4	30	60.4
42	11	Coleman Avenue - Willow Road (SR 114)	E	7,845	127	1.50%	7	25	59.7
50	13	Middlefield Road - Willow Road (SR 114)	E	8,015	140	1.75%	8	25	60.0
166	42	Hamilton Avenue - Willow Road (SR 114)	E	8,025	211	2.75%	12	40	65.0
44	11	Coleman Avenue - Willow Road (SR 114)	W	8,035	124	1.50%	7	25	59.8
153	39	Santa Cruz Avenue - Sand Hill Road	N	8,125	28	0.25%	2	25	58.3
38	10	Durham Street - Willow Road (SR 114)	E	8,170	133	1.75%	8	25	60.1
59	15	Middlefield Road - Ravenswood Avenue	S	8,265	41	0.50%	3	35	62.4
16	4	Florence Street/Bohannon Drive - Marsh Road	W	8,385	60	0.75%	4	30	60.9
170	43	Ivy Drive - Willow Road (SR 114)	E	8,760	220	2.50%	11	40	65.3
40	10	Durham Street - Willow Road (SR 114)	W	8,890	132	1.50%	7	25	60.2
18	5	Bay Road - Marsh Road	E	9,475	85	1.00%	5	30	61.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	9,545	119	1.25%	6	25	60.3
184	46	Bayfront Expressway - University Avenue	W	9,560	313	3.25%	14	-	65.5
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	9,655	32	0.25%	2	35	62.9
174	44	O'Brien Drive - Willow Road (SR 114)	E	9,800	237	2.50%	11	40	65.8
164	41	Bayfront Expressway - Willow Road (SR 114)	W	10,120	208	2.00%	9	40	65.7
117	30	El Camino Real - Oak Grove Avenue	N	10,465	88	0.75%	4	35	63.6
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	10,730	166	1.50%	7	25	61.0
168	42	Hamilton Avenue - Willow Road (SR 114)	W	10,740	205	2.00%	9	40	66.0
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	10,790	91	0.75%	4	35	63.7
172	43	Ivy Drive - Willow Road (SR 114)	W	10,880	195	1.75%	8	40	65.9
154	39	Santa Cruz Avenue - Sand Hill Road	E	10,905	152	1.50%	7	40	65.8
121	31	El Camino Real - Santa Cruz Avenue	N	11,035	92	0.75%	4	35	63.8
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,040	36	0.25%	2	35	63.5
12	3	Scott Drive - Marsh Road	W	11,360	83	0.75%	4	30	62.2
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	11,435	85	0.75%	4	35	64.0

156	39	Santa Cruz Avenue - Sand Hill Road	W	11,520	125	1.00%	5	40	65.8
155	39	Santa Cruz Avenue - Sand Hill Road	S	11,605	44	0.50%	3	35	63.9
14	4	Florence Street/Bohannon Drive - Marsh Road	E	11,670	104	1.00%	5	30	62.5
119	30	El Camino Real - Oak Grove Avenue	S	11,700	72	0.50%	3	35	63.9
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	11,930	72	0.50%	3	35	64.0
123	31	El Camino Real - Santa Cruz Avenue	S	11,975	74	0.50%	3	35	64.0
36	9	Bay Road - Willow Road (SR 114)	W	12,280	164	1.25%	6	25	61.3
178	45	Newbridge Street - Willow Road (SR 114)	E	12,535	292	2.25%	10	40	66.7
111	28	El Camino Real - Encinal Avenue	S	12,670	71	0.50%	3	35	64.3
176	44	O'Brien Drive - Willow Road (SR 114)	W	13,080	217	1.75%	8	40	66.7
133	34	El Camino Real - Middle Avenue	N	13,280	109	0.75%	4	35	64.6
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	13,360	137	1.00%	5	40	66.5
6	2	US 101 SB Off-Ramp - Marsh Road	E	13,405	189	1.50%	7	35	65.1
109	28	El Camino Real - Encinal Avenue	N	13,505	93	0.75%	4	35	64.7
34	9	Bay Road - Willow Road (SR 114)	E	13,775	186	1.25%	6	25	61.8
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	14,140	174	1.25%	6	40	66.8
129	33	El Camino Real - Roble Avenue	N	14,150	114	0.75%	4	35	64.9
161	41	Bayfront Expressway - Willow Road (SR 114)	N	14,385	251	1.75%	8	45	68.6
137	35	El Camino Real - Cambridge Avenue	N	14,470	109	0.75%	4	35	65.0
131	33	El Camino Real - Roble Avenue	S	15,070	89	0.50%	3	35	65.0
10	3	Scott Drive - Marsh Road	E	15,475	144	1.00%	5	30	63.7
135	34	El Camino Real - Middle Avenue	S	15,655	84	0.50%	3	35	65.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	15,925	130	0.75%	4	35	65.4
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	16,465	328	2.00%	9	40	67.8
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	16,530	351	2.00%	9	40	67.8
5	2	US 101 SB Off-Ramp - Marsh Road	N	16,670	146	1.00%	5	25	62.4
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	16,715	97	0.50%	3	35	65.5
139	35	El Camino Real - Cambridge Avenue	S	16,740	82	0.50%	3	35	65.5
180	45	Newbridge Street - Willow Road (SR 114)	W	17,110	227	1.25%	6	40	67.6
4	1	US 101 NB Off-Ramp - Marsh Road	W	20,255	213	1.00%	5	35	66.6
2	1	US 101 NB Off-Ramp - Marsh Road	E	20,435	294	1.50%	7	35	66.9
163	41	Bayfront Expressway - Willow Road (SR 114)	S	20,890	528	2.50%	11	45	70.5
181	46	Bayfront Expressway - University Avenue	N	22,615	468	2.00%	9	45	70.6
183	46	Bayfront Expressway - University Avenue	S	28,770	920	3.25%	14	45	72.1

Background No Project

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	-	-	0.00%	1	25	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	-	-	0.00%	1	25	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
102	26	Laurel Street - Proj Dwy S	E	-	-	0.00%	1	25	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.25%	2	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
68	17	Middlefield Road - Seminary Drive	W	130	1	0.50%	3	25	45.3
106	27	Laurel Street - Burgess Drive	E	175	1	0.50%	3	25	45.8
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.75%	8	25	46.6
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	200	1	0.50%	3	25	46.0
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	314	-	0.00%	1	25	46.6
64	16	Middlefield Road - D Street/Ringwood Avenue	W	365	2	0.75%	4	30	48.9
167	42	Hamilton Avenue - Willow Road (SR 114)	S	520	19	3.50%	15	25	50.5
66	17	Middlefield Road - Seminary Drive	E	573	0	0.00%	1	25	48.1
140	35	El Camino Real - Cambridge Avenue	W	587	1	0.00%	1	25	48.2
37	10	Durham Street - Willow Road (SR 114)	N	673	4	0.50%	3	25	49.1
108	27	Laurel Street - Burgess Drive	W	749	-	0.00%	1	25	48.9
22	6	Bay Road - Ringwood Avenue	E	782	-	0.00%	1	25	49.0
112	28	El Camino Real - Encinal Avenue	W	913	2	0.25%	2	25	49.8
132	33	El Camino Real - Roble Avenue	W	1,059	3	0.25%	2	25	50.3
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,108	4	0.25%	2	25	50.5
130	33	El Camino Real - Roble Avenue	E	1,185	9	0.75%	4	25	51.3
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,232	5	0.50%	3	25	51.2
122	31	El Camino Real - Santa Cruz Avenue	E	1,320	4	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,433	1	0.00%	1	25	51.1
169	43	Ivy Drive - Willow Road (SR 114)	N	1,446	1	0.00%	1	25	51.1
124	31	El Camino Real - Santa Cruz Avenue	W	1,548	16	1.00%	5	25	52.6
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,555	47	3.00%	13	40	58.2
85	22	Laurel Street - Glenwood Avenue	N	1,557	17	1.00%	5	25	52.6
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,565	2	0.00%	1	25	51.4
17	5	Bay Road - Marsh Road	N	1,605	10	0.50%	3	25	52.1
39	10	Durham Street - Willow Road (SR 114)	S	1,651	18	1.00%	5	25	52.8
53	14	Laurel Street - Willow Road (SR 114)	N	1,689	5	0.25%	2	25	52.0
141	36	University Drive - Valparaiso Avenue	N	1,780	2	0.00%	1	25	51.9
83	21	Laurel Street - Encinal Avenue	S	1,919	8	0.50%	3	25	52.8
87	22	Laurel Street - Glenwood Avenue	S	1,937	6	0.25%	2	25	52.5
11	3	Scott Drive - Marsh Road	S	1,982	34	1.75%	8	25	54.3
105	27	Laurel Street - Burgess Drive	N	2,007	8	0.50%	3	25	53.0
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,110	3	0.25%	2	25	52.9
54	14	Laurel Street - Willow Road (SR 114)	E	2,139	8	0.50%	3	25	53.2
97	25	Laurel Street - Proj Dwy N	N	2,197	10	0.50%	3	25	53.3
101	26	Laurel Street - Proj Dwy S	N	2,197	10	0.50%	3	25	53.3
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,233	0	0.00%	1	25	52.7
143	36	University Drive - Valparaiso Avenue	S	2,243	2	0.00%	1	25	52.7
86	22	Laurel Street - Glenwood Avenue	E	2,325	1	0.00%	1	25	52.9
89	23	Laurel Street - Oak Grove Avenue	N	2,457	12	0.50%	3	25	53.8
93	24	Laurel Street - Ravenswood Avenue	N	2,490	10	0.50%	3	25	53.8
91	23	Laurel Street - Oak Grove Avenue	S	2,554	5	0.25%	2	25	53.6
88	22	Laurel Street - Glenwood Avenue	W	2,565	2	0.00%	1	25	53.3
19	5	Bay Road - Marsh Road	S	2,604	12	0.50%	3	30	55.8
9	3	Scott Drive - Marsh Road	N	2,730	20	0.75%	4	25	54.5
56	14	Laurel Street - Willow Road (SR 114)	W	2,742	8	0.25%	2	25	53.9
47	12	Gilbert Avenue - Willow Road (SR 114)	S	2,868	1	0.00%	1	25	53.7
107	27	Laurel Street - Burgess Drive	S	2,954	17	0.50%	3	25	54.5
82	21	Laurel Street - Encinal Avenue	E	3,060	45	1.50%	7	25	55.8
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,209	7	0.25%	2	30	56.4
84	21	Laurel Street - Encinal Avenue	W	3,252	24	0.75%	4	25	55.2

23	6	Bay Road - Ringwood Avenue	S	3,505	7	0.25%	2	30	56.8
90	23	Laurel Street - Oak Grove Avenue	E	3,515	3	0.00%	1	25	54.5
147	37	University Drive - Santa Cruz Avenue	S	3,540	11	0.25%	2	25	54.9
95	24	Laurel Street - Ravenswood Avenue	S	3,652	22	0.50%	3	25	55.4
99	25	Laurel Street - Proj Dwy N	S	3,652	22	0.50%	3	25	55.4
103	26	Laurel Street - Proj Dwy S	S	3,652	22	0.50%	3	25	55.4
110	28	El Camino Real - Encinal Avenue	E	3,778	17	0.50%	3	25	55.5
21	6	Bay Road - Ringwood Avenue	N	3,786	25	0.75%	4	30	57.5
24	6	Bay Road - Ringwood Avenue	W	3,890	28	0.75%	4	30	57.7
92	23	Laurel Street - Oak Grove Avenue	W	3,950	16	0.50%	3	25	55.7
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0
33	9	Bay Road - Willow Road (SR 114)	N	4,041	25	0.50%	3	30	57.6
146	37	University Drive - Santa Cruz Avenue	E	4,049	8	0.25%	2	25	55.4
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	4,145	25	0.50%	3	30	57.7
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	4,146	25	0.50%	3	30	57.7
120	30	El Camino Real - Oak Grove Avenue	W	4,205	12	0.25%	2	25	55.6
118	30	El Camino Real - Oak Grove Avenue	E	4,395	27	0.50%	3	25	56.1
62	16	Middlefield Road - D Street/Ringwood Avenue	E	4,494	51	1.00%	5	25	56.8
57	15	Middlefield Road - Ravenswood Avenue	N	4,548	20	0.50%	3	35	59.9
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	4,565	27	0.50%	3	30	58.1
52	13	Middlefield Road - Willow Road (SR 114)	W	4,624	13	0.25%	2	25	56.0
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	4,664	18	0.50%	3	30	58.2
94	24	Laurel Street - Ravenswood Avenue	E	4,797	28	0.50%	3	30	58.3
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	4,953	22	0.50%	3	25	56.6
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,092	8	0.25%	2	25	56.4
142	36	University Drive - Valparaiso Avenue	E	5,110	8	0.25%	2	30	58.4
175	44	O'Brien Drive - Willow Road (SR 114)	S	5,136	72	1.50%	7	30	59.4
60	15	Middlefield Road - Ravenswood Avenue	W	5,422	33	0.50%	3	-	57.3
179	45	Newbridge Street - Willow Road (SR 114)	S	5,487	35	0.75%	4	25	57.4
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	5,490	32	0.50%	3	30	58.9
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	5,490	20	0.25%	2	30	58.7
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	5,496	33	0.50%	3	30	58.9
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	5,497	33	0.50%	3	30	58.9
96	24	Laurel Street - Ravenswood Avenue	W	5,690	38	0.75%	4	30	59.3
177	45	Newbridge Street - Willow Road (SR 114)	N	5,826	10	0.25%	2	25	56.9
144	36	University Drive - Valparaiso Avenue	W	5,847	6	0.00%	1	30	58.7
13	4	Florence Street/Bohannon Drive - Marsh Road	N	6,401	29	0.50%	3	25	57.7
49	13	Middlefield Road - Willow Road (SR 114)	N	6,505	80	1.25%	6	30	60.2
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	6,595	39	0.50%	3	25	57.8
51	13	Middlefield Road - Willow Road (SR 114)	S	6,661	100	1.50%	7	30	60.5
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	6,753	36	0.50%	3	35	61.6
65	17	Middlefield Road - Seminary Drive	N	6,807	48	0.75%	4	35	61.8
67	17	Middlefield Road - Seminary Drive	S	6,863	36	0.50%	3	35	61.6
148	37	University Drive - Santa Cruz Avenue	W	7,009	20	0.25%	2	25	57.7
63	16	Middlefield Road - D Street/Ringwood Avenue	S	7,426	30	0.50%	3	35	62.0
46	12	Gilbert Avenue - Willow Road (SR 114)	E	7,714	133	1.75%	8	25	59.9
20	5	Bay Road - Marsh Road	W	7,954	57	0.75%	4	30	60.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	8,079	129	1.50%	7	25	59.8
61	16	Middlefield Road - D Street/Ringwood Avenue	N	8,462	51	0.50%	3	35	62.5
44	11	Coleman Avenue - Willow Road (SR 114)	W	8,772	142	1.50%	7	25	60.2
42	11	Coleman Avenue - Willow Road (SR 114)	E	8,780	152	1.75%	8	25	60.4
50	13	Middlefield Road - Willow Road (SR 114)	E	8,873	166	1.75%	8	25	60.5
153	39	Santa Cruz Avenue - Sand Hill Road	N	8,897	33	0.25%	2	25	58.7
38	10	Durham Street - Willow Road (SR 114)	E	9,153	160	1.75%	8	25	60.6
166	42	Hamilton Avenue - Willow Road (SR 114)	E	9,248	221	2.50%	11	40	65.5
59	15	Middlefield Road - Ravenswood Avenue	S	9,324	48	0.50%	3	35	63.0
40	10	Durham Street - Willow Road (SR 114)	W	9,789	150	1.50%	7	25	60.6
16	4	Florence Street/Bohannon Drive - Marsh Road	W	10,094	66	0.75%	4	30	61.7
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	10,427	35	0.25%	2	35	63.3
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	10,579	70	0.75%	4	25	60.1
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,122	161	1.50%	7	40	65.9
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,364	35	0.25%	2	35	63.6
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	11,491	178	1.50%	7	25	61.3
164	41	Bayfront Expressway - Willow Road (SR 114)	W	11,691	232	2.00%	9	40	66.3
18	5	Bay Road - Marsh Road	E	11,774	95	0.75%	4	30	62.3
156	39	Santa Cruz Avenue - Sand Hill Road	W	11,871	138	1.25%	6	40	66.1
170	43	Ivy Drive - Willow Road (SR 114)	E	11,897	261	2.25%	10	40	66.5
184	46	Bayfront Expressway - University Avenue	W	11,916	424	3.50%	15	-	66.7
174	44	O'Brien Drive - Willow Road (SR 114)	E	12,043	265	2.25%	10	40	66.6
117	30	El Camino Real - Oak Grove Avenue	N	12,115	127	1.00%	5	35	64.4
155	39	Santa Cruz Avenue - Sand Hill Road	S	12,278	44	0.25%	2	35	64.0
168	42	Hamilton Avenue - Willow Road (SR 114)	W	12,527	219	1.75%	8	40	66.5
12	3	Scott Drive - Marsh Road	W	12,600	85	0.75%	4	30	62.6
121	31	El Camino Real - Santa Cruz Avenue	N	12,821	134	1.00%	5	35	64.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	12,942	181	1.50%	7	25	61.8
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	13,059	136	1.00%	5	35	64.7

115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	13,086	86	0.75%	4	35	64.6
119	30	El Camino Real - Oak Grove Avenue	S	13,105	81	0.50%	3	35	64.4
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	13,388	124	1.00%	5	35	64.8
123	31	El Camino Real - Santa Cruz Avenue	S	13,411	82	0.50%	3	35	64.5
172	43	Ivy Drive - Willow Road (SR 114)	W	13,527	212	1.50%	7	40	66.7
14	4	Florence Street/Bohannon Drive - Marsh Road	E	13,792	112	0.75%	4	30	63.0
111	28	El Camino Real - Encinal Avenue	S	13,846	87	0.75%	4	35	64.8
36	9	Bay Road - Willow Road (SR 114)	W	13,977	193	1.50%	7	25	62.2
133	34	El Camino Real - Middle Avenue	N	15,208	151	1.00%	5	35	65.4
34	9	Bay Road - Willow Road (SR 114)	E	15,664	222	1.50%	7	25	62.6
178	45	Newbridge Street - Willow Road (SR 114)	E	16,148	349	2.25%	10	40	67.8
109	28	El Camino Real - Encinal Avenue	N	16,208	143	1.00%	5	35	65.6
131	33	El Camino Real - Roble Avenue	S	16,213	97	0.50%	3	35	65.3
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	16,402	208	1.25%	6	40	67.5
129	33	El Camino Real - Roble Avenue	N	16,554	163	1.00%	5	35	65.7
6	2	US 101 SB Off-Ramp - Marsh Road	E	16,660	236	1.50%	7	35	66.1
137	35	El Camino Real - Cambridge Avenue	N	16,785	153	1.00%	5	35	65.8
135	34	El Camino Real - Middle Avenue	S	16,822	92	0.50%	3	35	65.5
8	2	US 101 SB Off-Ramp - Marsh Road	W	17,743	135	0.75%	4	35	65.9
10	3	Scott Drive - Marsh Road	E	17,969	154	0.75%	4	30	64.2
176	44	O'Brien Drive - Willow Road (SR 114)	W	18,191	271	1.50%	7	40	68.0
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	18,400	109	0.50%	3	35	65.9
139	35	El Camino Real - Cambridge Avenue	S	18,509	94	0.50%	3	35	65.9
161	41	Bayfront Expressway - Willow Road (SR 114)	N	18,972	339	1.75%	8	45	69.8
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	19,198	205	1.00%	5	40	68.0
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	19,845	413	2.00%	9	40	68.6
5	2	US 101 SB Off-Ramp - Marsh Road	N	20,477	180	1.00%	5	25	63.2
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	21,553	404	2.00%	9	40	69.0
180	45	Newbridge Street - Willow Road (SR 114)	W	22,259	275	1.25%	6	40	68.8
4	1	US 101 NB Off-Ramp - Marsh Road	W	23,996	240	1.00%	5	35	67.3
163	41	Bayfront Expressway - Willow Road (SR 114)	S	24,360	626	2.50%	11	45	71.1
181	46	Bayfront Expressway - University Avenue	N	25,454	542	2.25%	10	45	71.2
2	1	US 101 NB Off-Ramp - Marsh Road	E	26,755	370	1.50%	7	35	68.1
183	46	Bayfront Expressway - University Avenue	S	33,088	1,093	3.25%	14	45	72.7

Cumulative No Project

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	-	-	0.00%	1	25	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	-	-	0.00%	1	25	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
102	26	Laurel Street - Proj Dwy S	E	-	-	0.00%	1	25	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
68	17	Middlefield Road - Seminary Drive	W	-	-	0.00%	1	25	
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	-	-	0.00%	1	25	
64	16	Middlefield Road - D Street/Ringwood Avenue	W	-	-	0.00%	1	30	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.50%	3	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
106	27	Laurel Street - Burgess Drive	E	177	-	0.00%	1	25	45.5
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.50%	7	25	46.5
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	351	1	0.25%	2	25	47.1
112	28	El Camino Real - Encinal Avenue	W	450	3	0.50%	3	25	47.9
140	35	El Camino Real - Cambridge Avenue	W	631	1	0.00%	1	25	48.4
22	6	Bay Road - Ringwood Avenue	E	787	-	0.00%	1	25	49.1
66	17	Middlefield Road - Seminary Drive	E	812	0	0.00%	1	25	49.2
108	27	Laurel Street - Burgess Drive	W	813	10	1.25%	6	25	50.5
167	42	Hamilton Avenue - Willow Road (SR 114)	S	853	27	3.25%	14	25	52.1
37	10	Durham Street - Willow Road (SR 114)	N	915	1	0.00%	1	25	49.5
130	33	El Camino Real - Roble Avenue	E	1,310	10	0.75%	4	25	51.7
132	33	El Camino Real - Roble Avenue	W	1,320	3	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,398	2	0.00%	1	25	51.0
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,477	10	0.75%	4	25	52.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,588	43	2.75%	12	40	58.2
53	14	Laurel Street - Willow Road (SR 114)	N	1,629	5	0.25%	2	25	51.9
122	31	El Camino Real - Santa Cruz Avenue	E	1,767	19	1.00%	5	25	53.1
141	36	University Drive - Valparaiso Avenue	N	1,780	3	0.25%	2	25	52.2
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,788	7	0.25%	2	25	52.2
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,910	7	0.25%	2	25	52.5
124	31	El Camino Real - Santa Cruz Avenue	W	1,925	8	0.50%	3	25	52.8
17	5	Bay Road - Marsh Road	N	2,077	11	0.50%	3	25	53.1
85	22	Laurel Street - Glenwood Avenue	N	2,099	21	1.00%	5	25	53.7
87	22	Laurel Street - Glenwood Avenue	S	2,185	6	0.25%	2	25	53.0
83	21	Laurel Street - Encinal Avenue	S	2,204	9	0.50%	3	25	53.4
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,252	1	0.00%	1	25	52.8
86	22	Laurel Street - Glenwood Avenue	E	2,273	1	0.00%	1	25	52.8
54	14	Laurel Street - Willow Road (SR 114)	E	2,472	16	0.75%	4	25	54.1
169	43	Ivy Drive - Willow Road (SR 114)	N	2,489	12	0.50%	3	25	53.8
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,538	2	0.00%	1	25	53.2
39	10	Durham Street - Willow Road (SR 114)	S	2,559	49	2.00%	9	25	55.5
93	24	Laurel Street - Ravenswood Avenue	N	2,581	9	0.25%	2	25	53.6
89	23	Laurel Street - Oak Grove Avenue	N	2,649	14	0.50%	3	25	54.1
11	3	Scott Drive - Marsh Road	S	2,687	27	1.00%	5	25	54.7
88	22	Laurel Street - Glenwood Avenue	W	2,722	9	0.25%	2	25	53.9
105	27	Laurel Street - Burgess Drive	N	2,949	21	0.75%	4	25	54.8
91	23	Laurel Street - Oak Grove Avenue	S	3,054	8	0.25%	2	25	54.3
101	26	Laurel Street - Proj Dwy S	N	3,126	22	0.75%	4	25	55.0
47	12	Gilbert Avenue - Willow Road (SR 114)	S	3,151	3	0.00%	1	25	54.1
97	25	Laurel Street - Proj Dwy N	N	3,156	22	0.75%	4	25	55.1
82	21	Laurel Street - Encinal Avenue	E	3,163	45	1.50%	7	25	55.9
56	14	Laurel Street - Willow Road (SR 114)	W	3,163	8	0.25%	2	25	54.4
143	36	University Drive - Valparaiso Avenue	S	3,211	6	0.25%	2	25	54.5
9	3	Scott Drive - Marsh Road	N	3,225	28	0.75%	4	25	55.2
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,241	4	0.25%	2	30	56.5
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	3,261	30	1.00%	5	30	57.1
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	3,264	30	1.00%	5	30	57.1
90	23	Laurel Street - Oak Grove Avenue	E	3,406	3	0.00%	1	25	54.4

78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	3,483	31	1.00%	5	30	57.4
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	3,553	20	0.50%	3	30	57.1
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	3,602	20	0.50%	3	30	57.1
19	5	Bay Road - Marsh Road	S	3,780	13	0.25%	2	30	57.1
94	24	Laurel Street - Ravenswood Avenue	E	3,795	34	1.00%	5	30	57.8
107	27	Laurel Street - Burgess Drive	S	3,830	37	1.00%	5	25	56.2
24	6	Bay Road - Ringwood Avenue	W	3,847	19	0.50%	3	30	57.4
23	6	Bay Road - Ringwood Avenue	S	3,909	8	0.25%	2	30	57.2
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	3,959	23	0.50%	3	30	57.5
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0
147	37	University Drive - Santa Cruz Avenue	S	3,983	19	0.50%	3	25	55.7
92	23	Laurel Street - Oak Grove Avenue	W	4,067	14	0.25%	2	25	55.5
96	24	Laurel Street - Ravenswood Avenue	W	4,118	29	0.75%	4	30	57.9
110	28	El Camino Real - Encinal Avenue	E	4,331	22	0.50%	3	25	56.1
84	21	Laurel Street - Encinal Avenue	W	4,379	32	0.75%	4	25	56.4
33	9	Bay Road - Willow Road (SR 114)	N	4,458	75	1.75%	8	30	59.0
99	25	Laurel Street - Proj Dwy N	S	4,560	43	1.00%	5	25	56.9
103	26	Laurel Street - Proj Dwy S	S	4,563	43	1.00%	5	25	56.9
146	37	University Drive - Santa Cruz Avenue	E	4,565	10	0.25%	2	25	55.9
120	30	El Camino Real - Oak Grove Avenue	W	4,577	8	0.25%	2	25	55.9
95	24	Laurel Street - Ravenswood Avenue	S	4,629	44	1.00%	5	25	56.9
57	15	Middlefield Road - Ravenswood Avenue	N	4,674	36	0.75%	4	35	60.2
118	30	El Camino Real - Oak Grove Avenue	E	4,702	23	0.50%	3	25	56.4
62	16	Middlefield Road - D Street/Ringwood Avenue	E	4,941	72	1.50%	7	25	57.7
60	15	Middlefield Road - Ravenswood Avenue	W	4,960	28	0.50%	3	-	56.9
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,139	30	0.50%	3	25	56.8
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	5,221	25	0.50%	3	30	58.7
21	6	Bay Road - Ringwood Avenue	N	5,251	41	0.75%	4	30	58.9
142	36	University Drive - Valparaiso Avenue	E	5,312	8	0.25%	2	30	58.5
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,606	7	0.00%	1	25	56.4
52	13	Middlefield Road - Willow Road (SR 114)	W	5,788	25	0.50%	3	25	57.3
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	6,049	31	0.50%	3	30	59.3
179	45	Newbridge Street - Willow Road (SR 114)	S	6,135	50	0.75%	4	25	57.8
67	17	Middlefield Road - Seminary Drive	S	6,205	41	0.75%	4	35	61.4
144	36	University Drive - Valparaiso Avenue	W	6,545	9	0.25%	2	30	59.4
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	6,546	62	1.00%	5	25	58.4
46	12	Gilbert Avenue - Willow Road (SR 114)	E	6,589	102	1.50%	7	25	59.0
13	4	Florence Street/Bohannon Drive - Marsh Road	N	6,904	30	0.50%	3	25	58.0
63	16	Middlefield Road - D Street/Ringwood Avenue	S	7,000	37	0.50%	3	35	61.7
49	13	Middlefield Road - Willow Road (SR 114)	N	7,135	112	1.50%	7	30	60.8
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	7,245	39	0.50%	3	35	61.9
148	37	University Drive - Santa Cruz Avenue	W	7,298	30	0.50%	3	25	58.2
175	44	O'Brien Drive - Willow Road (SR 114)	S	7,326	98	1.25%	6	30	60.7
51	13	Middlefield Road - Willow Road (SR 114)	S	7,388	106	1.50%	7	30	61.0
48	12	Gilbert Avenue - Willow Road (SR 114)	W	7,492	107	1.50%	7	25	59.5
50	13	Middlefield Road - Willow Road (SR 114)	E	7,513	126	1.75%	8	25	59.8
65	17	Middlefield Road - Seminary Drive	N	7,732	79	1.00%	5	35	62.5
177	45	Newbridge Street - Willow Road (SR 114)	N	7,746	172	2.25%	10	25	60.3
42	11	Coleman Avenue - Willow Road (SR 114)	E	7,873	120	1.50%	7	25	59.7
44	11	Coleman Avenue - Willow Road (SR 114)	W	8,060	120	1.50%	7	25	59.8
38	10	Durham Street - Willow Road (SR 114)	E	8,242	129	1.50%	7	25	59.9
20	5	Bay Road - Marsh Road	W	8,248	69	0.75%	4	30	60.8
59	15	Middlefield Road - Ravenswood Avenue	S	8,387	53	0.75%	4	35	62.7
61	16	Middlefield Road - D Street/Ringwood Avenue	N	8,830	55	0.75%	4	35	62.9
40	10	Durham Street - Willow Road (SR 114)	W	9,023	118	1.25%	6	25	60.0
174	44	O'Brien Drive - Willow Road (SR 114)	E	9,520	191	2.00%	9	40	65.5
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,790	46	0.50%	3	25	59.5
166	42	Hamilton Avenue - Willow Road (SR 114)	E	10,385	270	2.50%	11	40	66.0
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	10,751	168	1.50%	7	25	61.0
170	43	Ivy Drive - Willow Road (SR 114)	E	10,986	254	2.25%	10	40	66.2
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	11,053	44	0.50%	3	35	63.7
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,499	56	0.50%	3	35	63.9
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,676	204	1.75%	8	40	66.2
16	4	Florence Street/Bohannon Drive - Marsh Road	W	11,755	76	0.75%	4	30	62.3
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	12,277	91	0.75%	4	25	60.8
156	39	Santa Cruz Avenue - Sand Hill Road	W	12,709	173	1.25%	6	40	66.4
155	39	Santa Cruz Avenue - Sand Hill Road	S	12,877	59	0.50%	3	35	64.3
164	41	Bayfront Expressway - Willow Road (SR 114)	W	13,307	283	2.25%	10	40	67.0
12	3	Scott Drive - Marsh Road	W	13,376	95	0.75%	4	30	62.9
117	30	El Camino Real - Oak Grove Avenue	N	13,395	155	1.25%	6	35	65.0
168	42	Hamilton Avenue - Willow Road (SR 114)	W	13,901	269	2.00%	9	40	67.1
36	9	Bay Road - Willow Road (SR 114)	W	13,919	192	1.50%	7	25	62.1
121	31	El Camino Real - Santa Cruz Avenue	N	14,039	162	1.25%	6	35	65.2
18	5	Bay Road - Marsh Road	E	14,101	134	1.00%	5	30	63.3
184	46	Bayfront Expressway - University Avenue	W	14,135	508	3.50%	15	-	67.4
119	30	El Camino Real - Oak Grove Avenue	S	14,243	90	0.75%	4	35	64.9

115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	14,267	93	0.75%	4	35	64.9
123	31	El Camino Real - Santa Cruz Avenue	S	14,508	92	0.75%	4	35	65.0
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	14,797	165	1.00%	5	35	65.3
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	14,893	154	1.00%	5	35	65.3
172	43	Ivy Drive - Willow Road (SR 114)	W	14,957	256	1.75%	8	40	67.3
111	28	El Camino Real - Encinal Avenue	S	15,300	92	0.50%	3	35	65.1
34	9	Bay Road - Willow Road (SR 114)	E	15,430	252	1.75%	8	25	62.8
14	4	Florence Street/Bohannon Drive - Marsh Road	E	15,522	158	1.00%	5	30	63.7
178	45	Newbridge Street - Willow Road (SR 114)	E	15,622	309	2.00%	9	40	67.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	15,798	246	1.50%	7	25	62.7
133	34	El Camino Real - Middle Avenue	N	16,558	203	1.25%	6	35	65.9
131	33	El Camino Real - Roble Avenue	S	16,753	102	0.50%	3	35	65.5
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	16,756	246	1.50%	7	40	67.7
135	34	El Camino Real - Middle Avenue	S	17,740	99	0.50%	3	35	65.7
109	28	El Camino Real - Encinal Avenue	N	17,798	168	1.00%	5	35	66.0
129	33	El Camino Real - Roble Avenue	N	17,952	217	1.25%	6	35	66.2
137	35	El Camino Real - Cambridge Avenue	N	18,215	207	1.25%	6	35	66.3
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,062	114	0.50%	3	35	66.0
8	2	US 101 SB Off-Ramp - Marsh Road	W	19,611	154	0.75%	4	35	66.3
139	35	El Camino Real - Cambridge Avenue	S	19,789	102	0.50%	3	35	66.2
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	20,325	411	2.00%	9	40	68.7
10	3	Scott Drive - Marsh Road	E	20,458	203	1.00%	5	30	64.9
6	2	US 101 SB Off-Ramp - Marsh Road	E	20,496	309	1.50%	7	35	67.0
176	44	O'Brien Drive - Willow Road (SR 114)	W	20,788	337	1.50%	7	40	68.6
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	22,071	241	1.00%	5	40	68.6
5	2	US 101 SB Off-Ramp - Marsh Road	N	23,210	211	1.00%	5	25	63.8
161	41	Bayfront Expressway - Willow Road (SR 114)	N	23,419	419	1.75%	8	45	70.7
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	23,790	460	2.00%	9	40	69.4
180	45	Newbridge Street - Willow Road (SR 114)	W	24,784	333	1.25%	6	40	69.2
4	1	US 101 NB Off-Ramp - Marsh Road	W	27,365	264	1.00%	5	35	67.9
163	41	Bayfront Expressway - Willow Road (SR 114)	S	27,852	745	2.75%	12	45	71.8
181	46	Bayfront Expressway - University Avenue	N	29,095	669	2.25%	10	45	71.8
2	1	US 101 NB Off-Ramp - Marsh Road	E	33,622	461	1.25%	6	35	68.9
183	46	Bayfront Expressway - University Avenue	S	37,167	1,253	3.25%	14	45	73.2

Background With Project

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.25%	2	25	43.6
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	12	0	0.50%	3	25	43.7
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
102	26	Laurel Street - Proj Dwy S	E	49	0	0.50%	3	25	44.3
106	27	Laurel Street - Burgess Drive	E	175	1	0.50%	3	25	45.8
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.75%	8	25	46.6
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	292	2	0.50%	3	25	46.8
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	314	-	0.00%	1	25	46.6
98	25	Laurel Street - Proj Dwy N	E	454	2	0.50%	3	25	47.9
167	42	Hamilton Avenue - Willow Road (SR 114)	S	520	19	3.50%	15	25	50.5
66	17	Middlefield Road - Seminary Drive	E	573	0	0.00%	1	25	48.1
140	35	El Camino Real - Cambridge Avenue	W	587	1	0.00%	1	25	48.2
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	618	4	0.50%	3	25	48.8
37	10	Durham Street - Willow Road (SR 114)	N	673	4	0.50%	3	25	49.1
108	27	Laurel Street - Burgess Drive	W	749	-	0.00%	1	25	48.9
22	6	Bay Road - Ringwood Avenue	E	782	-	0.00%	1	25	49.0
112	28	El Camino Real - Encinal Avenue	W	913	2	0.25%	2	25	49.8
132	33	El Camino Real - Roble Avenue	W	1,059	3	0.25%	2	25	50.3
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,108	4	0.25%	2	25	50.5
130	33	El Camino Real - Roble Avenue	E	1,185	9	0.75%	4	25	51.3
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,232	5	0.50%	3	25	51.2
122	31	El Camino Real - Santa Cruz Avenue	E	1,320	4	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,433	1	0.00%	1	25	51.1
169	43	Ivy Drive - Willow Road (SR 114)	N	1,446	1	0.00%	1	25	51.1
124	31	El Camino Real - Santa Cruz Avenue	W	1,549	16	1.00%	5	25	52.6
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,565	2	0.00%	1	25	51.4
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,605	48	3.00%	13	40	58.3
17	5	Bay Road - Marsh Road	N	1,605	10	0.50%	3	25	52.1
85	22	Laurel Street - Glenwood Avenue	N	1,658	18	1.00%	5	25	52.8
39	10	Durham Street - Willow Road (SR 114)	S	1,677	18	1.00%	5	25	52.9
141	36	University Drive - Valparaiso Avenue	N	1,780	2	0.00%	1	25	51.9
68	17	Middlefield Road - Seminary Drive	W	1,828	10	0.50%	3	25	52.6
53	14	Laurel Street - Willow Road (SR 114)	N	1,893	6	0.25%	2	25	52.4
11	3	Scott Drive - Marsh Road	S	1,982	34	1.75%	8	25	54.3
83	21	Laurel Street - Encinal Avenue	S	2,080	9	0.50%	3	25	53.1
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,110	3	0.25%	2	25	52.9
87	22	Laurel Street - Glenwood Avenue	S	2,122	7	0.25%	2	25	52.9
105	27	Laurel Street - Burgess Drive	N	2,211	9	0.50%	3	25	53.4
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,233	0	0.00%	1	25	52.7
143	36	University Drive - Valparaiso Avenue	S	2,244	2	0.00%	1	25	52.8
97	25	Laurel Street - Proj Dwy N	N	2,374	11	0.50%	3	25	53.6
101	26	Laurel Street - Proj Dwy S	N	2,404	11	0.50%	3	25	53.7
86	22	Laurel Street - Glenwood Avenue	E	2,428	1	0.00%	1	25	53.1
64	16	Middlefield Road - D Street/Ringwood Avenue	W	2,460	16	0.75%	4	30	55.8
54	14	Laurel Street - Willow Road (SR 114)	E	2,504	9	0.50%	3	25	53.8
19	5	Bay Road - Marsh Road	S	2,653	12	0.50%	3	30	55.9
89	23	Laurel Street - Oak Grove Avenue	N	2,686	14	0.50%	3	25	54.1
88	22	Laurel Street - Glenwood Avenue	W	2,693	2	0.00%	1	25	53.5
9	3	Scott Drive - Marsh Road	N	2,730	20	0.75%	4	25	54.5
56	14	Laurel Street - Willow Road (SR 114)	W	2,742	8	0.25%	2	25	53.9
91	23	Laurel Street - Oak Grove Avenue	S	2,760	5	0.25%	2	25	53.9
93	24	Laurel Street - Ravenswood Avenue	N	2,843	11	0.50%	3	25	54.4
47	12	Gilbert Avenue - Willow Road (SR 114)	S	2,894	1	0.00%	1	25	53.7
107	27	Laurel Street - Burgess Drive	S	3,319	19	0.50%	3	25	55.0
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,335	7	0.25%	2	30	56.6
84	21	Laurel Street - Encinal Avenue	W	3,353	25	0.75%	4	25	55.3
82	21	Laurel Street - Encinal Avenue	E	3,375	49	1.50%	7	25	56.2

147	37	University Drive - Santa Cruz Avenue	S	3,677	11	0.25%	2	25	55.1
90	23	Laurel Street - Oak Grove Avenue	E	3,679	3	0.00%	1	25	54.7
21	6	Bay Road - Ringwood Avenue	N	3,835	26	0.75%	4	30	57.6
23	6	Bay Road - Ringwood Avenue	S	3,854	7	0.25%	2	30	57.2
95	24	Laurel Street - Ravenswood Avenue	S	3,951	24	0.50%	3	25	55.7
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0
92	23	Laurel Street - Oak Grove Avenue	W	4,015	16	0.50%	3	25	55.7
103	26	Laurel Street - Proj Dwy S	S	4,017	24	0.50%	3	25	55.7
99	25	Laurel Street - Proj Dwy N	S	4,020	24	0.50%	3	25	55.8
146	37	University Drive - Santa Cruz Avenue	E	4,050	8	0.25%	2	25	55.4
120	30	El Camino Real - Oak Grove Avenue	W	4,205	12	0.25%	2	25	55.6
110	28	El Camino Real - Encinal Avenue	E	4,248	19	0.50%	3	25	56.0
24	6	Bay Road - Ringwood Avenue	W	4,259	30	0.75%	4	30	58.0
33	9	Bay Road - Willow Road (SR 114)	N	4,361	27	0.50%	3	30	57.9
118	30	El Camino Real - Oak Grove Avenue	E	4,513	27	0.50%	3	25	56.2
52	13	Middlefield Road - Willow Road (SR 114)	W	4,828	13	0.25%	2	25	56.2
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	4,865	18	0.50%	3	30	58.4
62	16	Middlefield Road - D Street/Ringwood Avenue	E	4,892	55	1.00%	5	25	57.2
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,090	23	0.50%	3	25	56.7
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	5,096	31	0.50%	3	30	58.6
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	5,097	31	0.50%	3	30	58.6
57	15	Middlefield Road - Ravenswood Avenue	N	5,141	23	0.50%	3	35	60.4
175	44	O'Brien Drive - Willow Road (SR 114)	S	5,186	73	1.50%	7	30	59.5
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,216	9	0.25%	2	25	56.5
142	36	University Drive - Valparaiso Avenue	E	5,235	9	0.25%	2	30	58.5
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	5,590	21	0.25%	2	30	58.7
179	45	Newbridge Street - Willow Road (SR 114)	S	5,638	36	0.75%	4	25	57.5
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	5,746	34	0.50%	3	30	59.1
60	15	Middlefield Road - Ravenswood Avenue	W	5,847	35	0.50%	3	-	57.6
177	45	Newbridge Street - Willow Road (SR 114)	N	5,876	10	0.25%	2	25	57.0
94	24	Laurel Street - Ravenswood Avenue	E	5,958	35	0.50%	3	30	59.2
144	36	University Drive - Valparaiso Avenue	W	5,973	6	0.00%	1	30	58.8
13	4	Florence Street/Bohannon Drive - Marsh Road	N	6,552	29	0.50%	3	25	57.8
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	6,753	36	0.50%	3	35	61.6
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	6,998	42	0.50%	3	30	59.9
51	13	Middlefield Road - Willow Road (SR 114)	S	7,012	105	1.50%	7	30	60.7
148	37	University Drive - Santa Cruz Avenue	W	7,109	20	0.25%	2	25	57.8
96	24	Laurel Street - Ravenswood Avenue	W	7,303	49	0.75%	4	30	60.3
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	7,338	43	0.50%	3	30	60.1
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	7,403	45	0.50%	3	30	60.1
65	17	Middlefield Road - Seminary Drive	N	7,477	52	0.75%	4	35	62.2
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	7,789	46	0.50%	3	25	58.5
49	13	Middlefield Road - Willow Road (SR 114)	N	8,240	101	1.25%	6	30	61.2
20	5	Bay Road - Marsh Road	W	8,456	60	0.75%	4	30	60.9
67	17	Middlefield Road - Seminary Drive	S	8,560	44	0.50%	3	35	62.6
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,034	33	0.25%	2	25	58.8
63	16	Middlefield Road - D Street/Ringwood Avenue	S	9,130	37	0.50%	3	35	62.9
61	16	Middlefield Road - D Street/Ringwood Avenue	N	9,157	55	0.50%	3	35	62.9
46	12	Gilbert Avenue - Willow Road (SR 114)	E	9,400	162	1.75%	8	25	60.7
166	42	Hamilton Avenue - Willow Road (SR 114)	E	9,549	228	2.50%	11	40	65.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	9,669	154	1.50%	7	25	60.6
44	11	Coleman Avenue - Willow Road (SR 114)	W	10,336	168	1.50%	7	25	60.9
42	11	Coleman Avenue - Willow Road (SR 114)	E	10,466	181	1.75%	8	25	61.2
50	13	Middlefield Road - Willow Road (SR 114)	E	10,584	198	1.75%	8	25	61.2
16	4	Florence Street/Bohannon Drive - Marsh Road	W	10,645	70	0.75%	4	30	61.9
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	10,678	36	0.25%	2	35	63.4
38	10	Durham Street - Willow Road (SR 114)	E	10,814	189	1.75%	8	25	61.3
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	10,932	73	0.75%	4	25	60.3
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,236	163	1.50%	7	40	65.9
59	15	Middlefield Road - Ravenswood Avenue	S	11,263	58	0.50%	3	35	63.8
40	10	Durham Street - Willow Road (SR 114)	W	11,353	174	1.50%	7	25	61.3
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,615	36	0.25%	2	35	63.7
156	39	Santa Cruz Avenue - Sand Hill Road	W	11,871	138	1.25%	6	40	66.1
184	46	Bayfront Expressway - University Avenue	W	11,916	424	3.50%	15	-	66.7
164	41	Bayfront Expressway - Willow Road (SR 114)	W	11,992	238	2.00%	9	40	66.4
18	5	Bay Road - Marsh Road	E	12,173	98	0.75%	4	30	62.5
170	43	Ivy Drive - Willow Road (SR 114)	E	12,198	268	2.25%	10	40	66.6
174	44	O'Brien Drive - Willow Road (SR 114)	E	12,344	272	2.25%	10	40	66.7
155	39	Santa Cruz Avenue - Sand Hill Road	S	12,529	45	0.25%	2	35	64.1
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	12,595	195	1.50%	7	25	61.7
117	30	El Camino Real - Oak Grove Avenue	N	12,788	134	1.00%	5	35	64.6
168	42	Hamilton Avenue - Willow Road (SR 114)	W	12,828	224	1.75%	8	40	66.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	12,980	182	1.50%	7	25	61.8
12	3	Scott Drive - Marsh Road	W	13,000	88	0.75%	4	30	62.8
119	30	El Camino Real - Oak Grove Avenue	S	13,293	82	0.50%	3	35	64.5
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	13,392	89	0.75%	4	35	64.7

121	31	El Camino Real - Santa Cruz Avenue	N	13,429	141	1.00%	5	35	64.8
123	31	El Camino Real - Santa Cruz Avenue	S	13,600	83	0.50%	3	35	64.6
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	13,668	142	1.00%	5	35	64.9
172	43	Ivy Drive - Willow Road (SR 114)	W	13,828	217	1.50%	7	40	66.8
14	4	Florence Street/Bohannon Drive - Marsh Road	E	14,041	114	0.75%	4	30	63.1
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	14,065	130	1.00%	5	35	65.0
111	28	El Camino Real - Encinal Avenue	S	14,153	89	0.75%	4	35	64.9
36	9	Bay Road - Willow Road (SR 114)	W	15,515	214	1.50%	7	25	62.6
133	34	El Camino Real - Middle Avenue	N	15,957	159	1.00%	5	35	65.6
178	45	Newbridge Street - Willow Road (SR 114)	E	16,499	357	2.25%	10	40	67.9
6	2	US 101 SB Off-Ramp - Marsh Road	E	16,761	238	1.50%	7	35	66.1
109	28	El Camino Real - Encinal Avenue	N	16,986	149	1.00%	5	35	65.8
131	33	El Camino Real - Roble Avenue	S	17,016	101	0.50%	3	35	65.5
129	33	El Camino Real - Roble Avenue	N	17,303	171	1.00%	5	35	65.9
137	35	El Camino Real - Cambridge Avenue	N	17,534	160	1.00%	5	35	66.0
135	34	El Camino Real - Middle Avenue	S	17,625	96	0.50%	3	35	65.7
34	9	Bay Road - Willow Road (SR 114)	E	17,674	250	1.50%	7	25	63.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	18,143	138	0.75%	4	35	66.0
10	3	Scott Drive - Marsh Road	E	18,218	156	0.75%	4	30	64.2
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	18,260	231	1.25%	6	40	67.9
176	44	O'Brien Drive - Willow Road (SR 114)	W	18,542	276	1.50%	7	40	68.1
161	41	Bayfront Expressway - Willow Road (SR 114)	N	18,972	339	1.75%	8	45	69.8
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,203	114	0.50%	3	35	66.1
139	35	El Camino Real - Cambridge Avenue	S	19,312	98	0.50%	3	35	66.1
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	19,952	213	1.00%	5	40	68.2
5	2	US 101 SB Off-Ramp - Marsh Road	N	20,685	182	1.00%	5	25	63.3
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	21,501	447	2.00%	9	40	69.0
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	22,105	415	2.00%	9	40	69.1
180	45	Newbridge Street - Willow Road (SR 114)	W	22,811	282	1.25%	6	40	68.9
4	1	US 101 NB Off-Ramp - Marsh Road	W	24,397	244	1.00%	5	35	67.4
163	41	Bayfront Expressway - Willow Road (SR 114)	S	24,611	633	2.50%	11	45	71.2
181	46	Bayfront Expressway - University Avenue	N	25,705	547	2.25%	10	45	71.3
2	1	US 101 NB Off-Ramp - Marsh Road	E	26,855	371	1.50%	7	35	68.1
183	46	Bayfront Expressway - University Avenue	S	33,339	1,101	3.25%	14	45	72.8

Background With Project Variant

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
145	37	University Drive - Santa Cruz Avenue	N	1	0	0.25%	2	25	43.5
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.25%	2	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
102	26	Laurel Street - Proj Dwy S	E	49	0	0.50%	3	25	44.3
106	27	Laurel Street - Burgess Drive	E	175	1	0.50%	3	25	45.8
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.75%	8	25	46.6
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	200	1	0.50%	3	25	46.0
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	297	2	0.50%	3	25	46.9
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	314	-	0.00%	1	25	46.6
167	42	Hamilton Avenue - Willow Road (SR 114)	S	520	19	3.50%	15	25	50.5
66	17	Middlefield Road - Seminary Drive	E	573	0	0.00%	1	25	48.1
140	35	El Camino Real - Cambridge Avenue	W	587	1	0.00%	1	25	48.2
37	10	Durham Street - Willow Road (SR 114)	N	673	4	0.50%	3	25	49.1
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	689	4	0.50%	3	25	49.2
108	27	Laurel Street - Burgess Drive	W	749	-	0.00%	1	25	48.9
22	6	Bay Road - Ringwood Avenue	E	782	-	0.00%	1	25	49.0
112	28	El Camino Real - Encinal Avenue	W	913	2	0.25%	2	25	49.8
132	33	El Camino Real - Roble Avenue	W	1,059	3	0.25%	2	25	50.3
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,108	4	0.25%	2	25	50.5
130	33	El Camino Real - Roble Avenue	E	1,185	9	0.75%	4	25	51.3
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,232	5	0.50%	3	25	51.2
122	31	El Camino Real - Santa Cruz Avenue	E	1,320	4	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,433	1	0.00%	1	25	51.1
169	43	Ivy Drive - Willow Road (SR 114)	N	1,446	1	0.00%	1	25	51.1
124	31	El Camino Real - Santa Cruz Avenue	W	1,549	16	1.00%	5	25	52.6
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,565	2	0.00%	1	25	51.4
17	5	Bay Road - Marsh Road	N	1,605	10	0.50%	3	25	52.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,609	48	3.00%	13	40	58.3
39	10	Durham Street - Willow Road (SR 114)	S	1,679	18	1.00%	5	25	52.9
85	22	Laurel Street - Glenwood Avenue	N	1,691	19	1.00%	5	25	52.9
53	14	Laurel Street - Willow Road (SR 114)	N	1,709	5	0.25%	2	25	52.1
141	36	University Drive - Valparaiso Avenue	N	1,780	2	0.00%	1	25	51.9
11	3	Scott Drive - Marsh Road	S	1,982	34	1.75%	8	25	54.3
105	27	Laurel Street - Burgess Drive	N	2,027	8	0.50%	3	25	53.0
68	17	Middlefield Road - Seminary Drive	W	2,053	12	0.50%	3	25	53.1
83	21	Laurel Street - Encinal Avenue	S	2,087	9	0.50%	3	25	53.1
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,110	3	0.25%	2	25	52.9
87	22	Laurel Street - Glenwood Avenue	S	2,145	7	0.25%	2	25	52.9
101	26	Laurel Street - Proj Dwy S	N	2,220	10	0.50%	3	25	53.4
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,233	0	0.00%	1	25	52.7
143	36	University Drive - Valparaiso Avenue	S	2,244	2	0.00%	1	25	52.8
97	25	Laurel Street - Proj Dwy N	N	2,330	11	0.50%	3	25	53.6
86	22	Laurel Street - Glenwood Avenue	E	2,436	1	0.00%	1	25	53.1
54	14	Laurel Street - Willow Road (SR 114)	E	2,546	10	0.50%	3	25	53.9
19	5	Bay Road - Marsh Road	S	2,657	12	0.50%	3	30	55.9
88	22	Laurel Street - Glenwood Avenue	W	2,705	2	0.00%	1	25	53.5
64	16	Middlefield Road - D Street/Ringwood Avenue	W	2,710	18	0.75%	4	30	56.2
9	3	Scott Drive - Marsh Road	N	2,730	20	0.75%	4	25	54.5
89	23	Laurel Street - Oak Grove Avenue	N	2,731	14	0.50%	3	25	54.2
56	14	Laurel Street - Willow Road (SR 114)	W	2,742	8	0.25%	2	25	53.9
91	23	Laurel Street - Oak Grove Avenue	S	2,787	5	0.25%	2	25	53.9
93	24	Laurel Street - Ravenswood Avenue	N	2,888	11	0.50%	3	25	54.4
47	12	Gilbert Avenue - Willow Road (SR 114)	S	2,896	1	0.00%	1	25	53.7
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,359	7	0.25%	2	30	56.6
107	27	Laurel Street - Burgess Drive	S	3,361	20	0.50%	3	25	55.0
84	21	Laurel Street - Encinal Avenue	W	3,376	25	0.75%	4	25	55.4
82	21	Laurel Street - Encinal Avenue	E	3,411	50	1.50%	7	25	56.2

90	23	Laurel Street - Oak Grove Avenue	E	3,684	3	0.00%	1	25	54.7
147	37	University Drive - Santa Cruz Avenue	S	3,689	11	0.25%	2	25	55.1
21	6	Bay Road - Ringwood Avenue	N	3,839	26	0.75%	4	30	57.6
95	24	Laurel Street - Ravenswood Avenue	S	3,871	23	0.50%	3	25	55.6
23	6	Bay Road - Ringwood Avenue	S	3,883	8	0.25%	2	30	57.2
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0
92	23	Laurel Street - Oak Grove Avenue	W	4,021	16	0.50%	3	25	55.8
146	37	University Drive - Santa Cruz Avenue	E	4,050	8	0.25%	2	25	55.4
103	26	Laurel Street - Proj Dwy S	S	4,059	25	0.50%	3	25	55.8
99	25	Laurel Street - Proj Dwy N	S	4,063	25	0.50%	3	25	55.8
120	30	El Camino Real - Oak Grove Avenue	W	4,205	12	0.25%	2	25	55.6
110	28	El Camino Real - Encinal Avenue	E	4,288	19	0.50%	3	25	56.0
24	6	Bay Road - Ringwood Avenue	W	4,353	31	0.75%	4	30	58.1
33	9	Bay Road - Willow Road (SR 114)	N	4,451	28	0.50%	3	30	58.0
118	30	El Camino Real - Oak Grove Avenue	E	4,536	28	0.50%	3	25	56.2
52	13	Middlefield Road - Willow Road (SR 114)	W	4,644	13	0.25%	2	25	56.0
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	4,883	18	0.50%	3	30	58.4
62	16	Middlefield Road - D Street/Ringwood Avenue	E	4,930	55	1.00%	5	25	57.2
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	5,088	31	0.50%	3	30	58.6
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,102	23	0.50%	3	25	56.7
57	15	Middlefield Road - Ravenswood Avenue	N	5,188	23	0.50%	3	35	60.5
175	44	O'Brien Drive - Willow Road (SR 114)	S	5,190	73	1.50%	7	30	59.5
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,227	9	0.25%	2	25	56.5
142	36	University Drive - Valparaiso Avenue	E	5,246	9	0.25%	2	30	58.5
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	5,302	32	0.50%	3	30	58.7
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	5,599	21	0.25%	2	30	58.7
179	45	Newbridge Street - Willow Road (SR 114)	S	5,651	36	0.75%	4	25	57.5
177	45	Newbridge Street - Willow Road (SR 114)	N	5,880	10	0.25%	2	25	57.0
60	15	Middlefield Road - Ravenswood Avenue	W	5,887	36	0.50%	3	-	57.6
144	36	University Drive - Valparaiso Avenue	W	5,984	6	0.00%	1	30	58.8
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	6,054	36	0.50%	3	30	59.3
94	24	Laurel Street - Ravenswood Avenue	E	6,285	37	0.50%	3	30	59.5
13	4	Florence Street/Bohannon Drive - Marsh Road	N	6,565	29	0.50%	3	25	57.8
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	6,753	36	0.50%	3	35	61.6
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	7,005	42	0.50%	3	30	59.9
51	13	Middlefield Road - Willow Road (SR 114)	S	7,042	105	1.50%	7	30	60.8
148	37	University Drive - Santa Cruz Avenue	W	7,118	20	0.25%	2	25	57.8
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	7,289	43	0.50%	3	30	60.1
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	7,355	44	0.50%	3	30	60.1
96	24	Laurel Street - Ravenswood Avenue	W	7,430	50	0.75%	4	30	60.4
65	17	Middlefield Road - Seminary Drive	N	7,490	53	0.75%	4	35	62.2
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	7,868	47	0.50%	3	25	58.5
20	5	Bay Road - Marsh Road	W	8,507	61	0.75%	4	30	61.0
49	13	Middlefield Road - Willow Road (SR 114)	N	8,524	104	1.25%	6	30	61.4
67	17	Middlefield Road - Seminary Drive	S	8,699	45	0.50%	3	35	62.7
61	16	Middlefield Road - D Street/Ringwood Avenue	N	8,987	54	0.50%	3	35	62.8
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,046	33	0.25%	2	25	58.8
63	16	Middlefield Road - D Street/Ringwood Avenue	S	9,230	38	0.50%	3	35	62.9
46	12	Gilbert Avenue - Willow Road (SR 114)	E	9,547	165	1.75%	8	25	60.8
166	42	Hamilton Avenue - Willow Road (SR 114)	E	9,575	229	2.50%	11	40	65.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	9,738	155	1.50%	7	25	60.6
44	11	Coleman Avenue - Willow Road (SR 114)	W	10,403	169	1.50%	7	25	60.9
42	11	Coleman Avenue - Willow Road (SR 114)	E	10,613	184	1.75%	8	25	61.2
16	4	Florence Street/Bohannon Drive - Marsh Road	W	10,700	70	0.75%	4	30	61.9
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	10,700	36	0.25%	2	35	63.4
50	13	Middlefield Road - Willow Road (SR 114)	E	10,734	201	1.75%	8	25	61.3
38	10	Durham Street - Willow Road (SR 114)	E	10,959	191	1.75%	8	25	61.4
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	10,963	73	0.75%	4	25	60.3
59	15	Middlefield Road - Ravenswood Avenue	S	11,133	57	0.50%	3	35	63.7
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,246	163	1.50%	7	40	65.9
40	10	Durham Street - Willow Road (SR 114)	W	11,420	175	1.50%	7	25	61.3
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,637	36	0.25%	2	35	63.7
156	39	Santa Cruz Avenue - Sand Hill Road	W	11,871	138	1.25%	6	40	66.1
184	46	Bayfront Expressway - University Avenue	W	11,916	424	3.50%	15	-	66.7
164	41	Bayfront Expressway - Willow Road (SR 114)	W	12,018	238	2.00%	9	40	66.5
18	5	Bay Road - Marsh Road	E	12,209	99	0.75%	4	30	62.5
170	43	Ivy Drive - Willow Road (SR 114)	E	12,224	269	2.25%	10	40	66.6
174	44	O'Brien Drive - Willow Road (SR 114)	E	12,370	272	2.25%	10	40	66.7
155	39	Santa Cruz Avenue - Sand Hill Road	S	12,551	45	0.25%	2	35	64.1
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	12,692	196	1.50%	7	25	61.7
117	30	El Camino Real - Oak Grove Avenue	N	12,833	134	1.00%	5	35	64.6
168	42	Hamilton Avenue - Willow Road (SR 114)	W	12,854	225	1.75%	8	40	66.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	12,978	182	1.50%	7	25	61.8
12	3	Scott Drive - Marsh Road	W	13,042	88	0.75%	4	30	62.8
119	30	El Camino Real - Oak Grove Avenue	S	13,286	82	0.50%	3	35	64.5
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	13,407	89	0.75%	4	35	64.7

121	31	El Camino Real - Santa Cruz Avenue	N	13,468	141	1.00%	5	35	64.8
123	31	El Camino Real - Santa Cruz Avenue	S	13,593	83	0.50%	3	35	64.6
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	13,707	142	1.00%	5	35	64.9
172	43	Ivy Drive - Willow Road (SR 114)	W	13,854	217	1.50%	7	40	66.8
14	4	Florence Street/Bohannon Drive - Marsh Road	E	14,063	114	0.75%	4	30	63.1
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	14,110	131	1.00%	5	35	65.0
111	28	El Camino Real - Encinal Avenue	S	14,181	89	0.75%	4	35	64.9
36	9	Bay Road - Willow Road (SR 114)	W	15,580	215	1.50%	7	25	62.6
133	34	El Camino Real - Middle Avenue	N	16,041	159	1.00%	5	35	65.6
178	45	Newbridge Street - Willow Road (SR 114)	E	16,530	357	2.25%	10	40	67.9
6	2	US 101 SB Off-Ramp - Marsh Road	E	16,770	238	1.50%	7	35	66.1
109	28	El Camino Real - Encinal Avenue	N	17,054	150	1.00%	5	35	65.9
131	33	El Camino Real - Roble Avenue	S	17,086	102	0.50%	3	35	65.6
129	33	El Camino Real - Roble Avenue	N	17,387	171	1.00%	5	35	65.9
137	35	El Camino Real - Cambridge Avenue	N	17,599	161	1.00%	5	35	66.0
135	34	El Camino Real - Middle Avenue	S	17,695	97	0.50%	3	35	65.7
34	9	Bay Road - Willow Road (SR 114)	E	17,848	253	1.50%	7	25	63.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	18,185	139	0.75%	4	35	66.0
10	3	Scott Drive - Marsh Road	E	18,240	156	0.75%	4	30	64.2
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	18,416	233	1.25%	6	40	68.0
176	44	O'Brien Drive - Willow Road (SR 114)	W	18,572	276	1.50%	7	40	68.1
161	41	Bayfront Expressway - Willow Road (SR 114)	N	18,972	339	1.75%	8	45	69.8
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,273	114	0.50%	3	35	66.1
139	35	El Camino Real - Cambridge Avenue	S	19,382	98	0.50%	3	35	66.1
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	20,011	214	1.00%	5	40	68.2
5	2	US 101 SB Off-Ramp - Marsh Road	N	20,703	182	1.00%	5	25	63.3
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	21,646	450	2.00%	9	40	69.0
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	22,153	416	2.00%	9	40	69.1
180	45	Newbridge Street - Willow Road (SR 114)	W	22,859	282	1.25%	6	40	68.9
4	1	US 101 NB Off-Ramp - Marsh Road	W	24,438	244	1.00%	5	35	67.4
163	41	Bayfront Expressway - Willow Road (SR 114)	S	24,633	633	2.50%	11	45	71.2
181	46	Bayfront Expressway - University Avenue	N	25,727	548	2.25%	10	45	71.3
2	1	US 101 NB Off-Ramp - Marsh Road	E	26,864	371	1.50%	7	35	68.1
183	46	Bayfront Expressway - University Avenue	S	33,361	1,102	3.25%	14	45	72.8

Cumulative With Project

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.50%	3	25	43.6
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	12	0	0.75%	4	25	43.7
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
102	26	Laurel Street - Proj Dwy S	E	49	0	0.75%	4	25	44.3
106	27	Laurel Street - Burgess Drive	E	177	-	0.00%	1	25	45.5
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.50%	7	25	46.5
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	292	2	0.75%	4	25	47.0
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	351	1	0.25%	2	25	47.1
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	418	3	0.75%	4	25	47.9
112	28	El Camino Real - Encinal Avenue	W	450	3	0.50%	3	25	47.9
98	25	Laurel Street - Proj Dwy N	E	454	4	0.75%	4	25	48.2
140	35	El Camino Real - Cambridge Avenue	W	631	1	0.00%	1	25	48.4
22	6	Bay Road - Ringwood Avenue	E	787	-	0.00%	1	25	49.1
66	17	Middlefield Road - Seminary Drive	E	812	0	0.00%	1	25	49.2
108	27	Laurel Street - Burgess Drive	W	813	10	1.25%	6	25	50.5
167	42	Hamilton Avenue - Willow Road (SR 114)	S	853	27	3.25%	14	25	52.1
37	10	Durham Street - Willow Road (SR 114)	N	915	1	0.00%	1	25	49.5
130	33	El Camino Real - Roble Avenue	E	1,310	10	0.75%	4	25	51.7
132	33	El Camino Real - Roble Avenue	W	1,320	3	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,398	2	0.00%	1	25	51.0
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,477	10	0.75%	4	25	52.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,638	44	2.75%	12	40	58.3
68	17	Middlefield Road - Seminary Drive	W	1,698	14	0.75%	4	25	52.6
122	31	El Camino Real - Santa Cruz Avenue	E	1,767	19	1.00%	5	25	53.1
141	36	University Drive - Valparaiso Avenue	N	1,780	3	0.25%	2	25	52.2
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,788	7	0.25%	2	25	52.2
53	14	Laurel Street - Willow Road (SR 114)	N	1,833	6	0.25%	2	25	52.3
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,910	7	0.25%	2	25	52.5
124	31	El Camino Real - Santa Cruz Avenue	W	1,926	8	0.50%	3	25	52.8
17	5	Bay Road - Marsh Road	N	2,077	11	0.50%	3	25	53.1
64	16	Middlefield Road - D Street/Ringwood Avenue	W	2,095	17	0.75%	4	30	55.1
85	22	Laurel Street - Glenwood Avenue	N	2,200	22	1.00%	5	25	53.9
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,252	1	0.00%	1	25	52.8
83	21	Laurel Street - Encinal Avenue	S	2,365	10	0.50%	3	25	53.6
87	22	Laurel Street - Glenwood Avenue	S	2,370	7	0.25%	2	25	53.3
86	22	Laurel Street - Glenwood Avenue	E	2,376	1	0.00%	1	25	53.0
169	43	Ivy Drive - Willow Road (SR 114)	N	2,489	12	0.50%	3	25	53.8
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,538	2	0.00%	1	25	53.2
39	10	Durham Street - Willow Road (SR 114)	S	2,585	49	2.00%	9	25	55.5
11	3	Scott Drive - Marsh Road	S	2,687	27	1.00%	5	25	54.7
54	14	Laurel Street - Willow Road (SR 114)	E	2,837	19	0.75%	4	25	54.7
88	22	Laurel Street - Glenwood Avenue	W	2,850	9	0.25%	2	25	54.0
89	23	Laurel Street - Oak Grove Avenue	N	2,878	16	0.50%	3	25	54.4
93	24	Laurel Street - Ravenswood Avenue	N	2,934	11	0.25%	2	25	54.2
105	27	Laurel Street - Burgess Drive	N	3,153	22	0.75%	4	25	55.1
56	14	Laurel Street - Willow Road (SR 114)	W	3,163	8	0.25%	2	25	54.4
47	12	Gilbert Avenue - Willow Road (SR 114)	S	3,177	3	0.00%	1	25	54.1
143	36	University Drive - Valparaiso Avenue	S	3,212	6	0.25%	2	25	54.5
9	3	Scott Drive - Marsh Road	N	3,225	28	0.75%	4	25	55.2
91	23	Laurel Street - Oak Grove Avenue	S	3,260	9	0.25%	2	25	54.6
97	25	Laurel Street - Proj Dwy N	N	3,333	24	0.75%	4	25	55.3
101	26	Laurel Street - Proj Dwy S	N	3,333	24	0.75%	4	25	55.3
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,367	5	0.25%	2	30	56.6
82	21	Laurel Street - Encinal Avenue	E	3,478	50	1.50%	7	25	56.3
90	23	Laurel Street - Oak Grove Avenue	E	3,570	3	0.00%	1	25	54.6
19	5	Bay Road - Marsh Road	S	3,829	13	0.25%	2	30	57.2
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0

147	37	University Drive - Santa Cruz Avenue	S	4,120	19	0.50%	3	25	55.9
92	23	Laurel Street - Oak Grove Avenue	W	4,132	14	0.25%	2	25	55.5
107	27	Laurel Street - Burgess Drive	S	4,195	41	1.00%	5	25	56.5
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	4,212	39	1.00%	5	30	58.2
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	4,215	39	1.00%	5	30	58.2
24	6	Bay Road - Ringwood Avenue	W	4,216	21	0.50%	3	30	57.8
23	6	Bay Road - Ringwood Avenue	S	4,258	9	0.25%	2	30	57.6
84	21	Laurel Street - Encinal Avenue	W	4,480	32	0.75%	4	25	56.5
146	37	University Drive - Santa Cruz Avenue	E	4,566	10	0.25%	2	25	55.9
120	30	El Camino Real - Oak Grove Avenue	W	4,577	8	0.25%	2	25	55.9
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	4,664	42	1.00%	5	30	58.6
33	9	Bay Road - Willow Road (SR 114)	N	4,778	80	1.75%	8	30	59.3
110	28	El Camino Real - Encinal Avenue	E	4,801	25	0.50%	3	25	56.5
118	30	El Camino Real - Oak Grove Avenue	E	4,820	23	0.50%	3	25	56.5
95	24	Laurel Street - Ravenswood Avenue	S	4,928	47	1.00%	5	25	57.2
99	25	Laurel Street - Proj Dwy N	S	4,928	47	1.00%	5	25	57.2
103	26	Laurel Street - Proj Dwy S	S	4,928	47	1.00%	5	25	57.2
94	24	Laurel Street - Ravenswood Avenue	E	4,956	44	1.00%	5	30	58.9
57	15	Middlefield Road - Ravenswood Avenue	N	5,267	41	0.75%	4	35	60.7
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,276	31	0.50%	3	25	56.9
21	6	Bay Road - Ringwood Avenue	N	5,300	41	0.75%	4	30	59.0
62	16	Middlefield Road - D Street/Ringwood Avenue	E	5,339	78	1.50%	7	25	58.1
60	15	Middlefield Road - Ravenswood Avenue	W	5,385	31	0.50%	3	-	57.2
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	5,422	26	0.50%	3	30	58.8
142	36	University Drive - Valparaiso Avenue	E	5,437	8	0.25%	2	30	58.6
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	5,450	30	0.50%	3	30	58.9
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	5,460	31	0.50%	3	30	58.9
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	5,460	31	0.50%	3	30	58.9
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,730	7	0.00%	1	25	56.5
96	24	Laurel Street - Ravenswood Avenue	W	5,731	41	0.75%	4	30	59.3
52	13	Middlefield Road - Willow Road (SR 114)	W	5,992	26	0.50%	3	25	57.4
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	6,149	31	0.50%	3	30	59.4
179	45	Newbridge Street - Willow Road (SR 114)	S	6,286	51	0.75%	4	25	57.9
144	36	University Drive - Valparaiso Avenue	W	6,671	9	0.25%	2	30	59.5
13	4	Florence Street/Bohannon Drive - Marsh Road	N	7,055	30	0.50%	3	25	58.1
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	7,245	39	0.50%	3	35	61.9
175	44	O'Brien Drive - Willow Road (SR 114)	S	7,376	99	1.25%	6	30	60.8
148	37	University Drive - Santa Cruz Avenue	W	7,398	30	0.50%	3	25	58.3
51	13	Middlefield Road - Willow Road (SR 114)	S	7,739	111	1.50%	7	30	61.2
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	7,740	74	1.00%	5	25	59.1
177	45	Newbridge Street - Willow Road (SR 114)	N	7,796	173	2.25%	10	25	60.4
67	17	Middlefield Road - Seminary Drive	S	7,902	52	0.75%	4	35	62.4
46	12	Gilbert Avenue - Willow Road (SR 114)	E	8,275	129	1.50%	7	25	59.9
65	17	Middlefield Road - Seminary Drive	N	8,402	86	1.00%	5	35	62.8
63	16	Middlefield Road - D Street/Ringwood Avenue	S	8,704	46	0.50%	3	35	62.7
20	5	Bay Road - Marsh Road	W	8,750	73	0.75%	4	30	61.1
49	13	Middlefield Road - Willow Road (SR 114)	N	8,870	140	1.50%	7	30	61.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	9,082	129	1.50%	7	25	60.3
50	13	Middlefield Road - Willow Road (SR 114)	E	9,224	155	1.75%	8	25	60.6
61	16	Middlefield Road - D Street/Ringwood Avenue	N	9,525	60	0.75%	4	35	63.2
42	11	Coleman Avenue - Willow Road (SR 114)	E	9,559	146	1.50%	7	25	60.5
44	11	Coleman Avenue - Willow Road (SR 114)	W	9,624	143	1.50%	7	25	60.6
174	44	O'Brien Drive - Willow Road (SR 114)	E	9,821	197	2.00%	9	40	65.6
38	10	Durham Street - Willow Road (SR 114)	E	9,903	155	1.50%	7	25	60.7
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,927	47	0.50%	3	25	59.5
59	15	Middlefield Road - Ravenswood Avenue	S	10,326	65	0.75%	4	35	63.6
40	10	Durham Street - Willow Road (SR 114)	W	10,587	138	1.25%	6	25	60.7
166	42	Hamilton Avenue - Willow Road (SR 114)	E	10,686	278	2.50%	11	40	66.2
170	43	Ivy Drive - Willow Road (SR 114)	E	11,287	261	2.25%	10	40	66.3
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	11,304	45	0.50%	3	35	63.8
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,750	57	0.50%	3	35	63.9
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,790	206	1.75%	8	40	66.3
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	11,855	185	1.50%	7	25	61.5
16	4	Florence Street/Bohannon Drive - Marsh Road	W	12,306	79	0.75%	4	30	62.5
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	12,630	93	0.75%	4	25	60.9
156	39	Santa Cruz Avenue - Sand Hill Road	W	12,709	173	1.25%	6	40	66.4
155	39	Santa Cruz Avenue - Sand Hill Road	S	13,128	60	0.50%	3	35	64.4
164	41	Bayfront Expressway - Willow Road (SR 114)	W	13,608	289	2.25%	10	40	67.1
12	3	Scott Drive - Marsh Road	W	13,776	98	0.75%	4	30	63.0
117	30	El Camino Real - Oak Grove Avenue	N	14,068	162	1.25%	6	35	65.2
184	46	Bayfront Expressway - University Avenue	W	14,135	508	3.50%	15	-	67.4
168	42	Hamilton Avenue - Willow Road (SR 114)	W	14,202	275	2.00%	9	40	67.2
119	30	El Camino Real - Oak Grove Avenue	S	14,431	92	0.75%	4	35	65.0
18	5	Bay Road - Marsh Road	E	14,500	138	1.00%	5	30	63.5
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	14,573	95	0.75%	4	35	65.0
121	31	El Camino Real - Santa Cruz Avenue	N	14,647	169	1.25%	6	35	65.4

123	31	El Camino Real - Santa Cruz Avenue	S	14,697	93	0.75%	4	35	65.1
172	43	Ivy Drive - Willow Road (SR 114)	W	15,258	261	1.75%	8	40	67.4
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	15,406	172	1.00%	5	35	65.4
36	9	Bay Road - Willow Road (SR 114)	W	15,457	213	1.50%	7	25	62.6
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	15,570	161	1.00%	5	35	65.5
111	28	El Camino Real - Encinal Avenue	S	15,607	93	0.50%	3	35	65.2
14	4	Florence Street/Bohannon Drive - Marsh Road	E	15,771	160	1.00%	5	30	63.8
3	1	US 101 NB Off-Ramp - Marsh Road	S	15,836	247	1.50%	7	25	62.7
178	45	Newbridge Street - Willow Road (SR 114)	E	15,973	316	2.00%	9	40	67.7
133	34	El Camino Real - Middle Avenue	N	17,307	213	1.25%	6	35	66.1
34	9	Bay Road - Willow Road (SR 114)	E	17,440	285	1.75%	8	25	63.4
131	33	El Camino Real - Roble Avenue	S	17,556	107	0.50%	3	35	65.7
135	34	El Camino Real - Middle Avenue	S	18,543	103	0.50%	3	35	65.9
109	28	El Camino Real - Encinal Avenue	N	18,576	175	1.00%	5	35	66.2
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	18,614	274	1.50%	7	40	68.1
129	33	El Camino Real - Roble Avenue	N	18,701	226	1.25%	6	35	66.4
137	35	El Camino Real - Cambridge Avenue	N	18,964	216	1.25%	6	35	66.5
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,865	119	0.50%	3	35	66.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	20,011	157	0.75%	4	35	66.4
139	35	El Camino Real - Cambridge Avenue	S	20,592	106	0.50%	3	35	66.4
6	2	US 101 SB Off-Ramp - Marsh Road	E	20,597	311	1.50%	7	35	67.0
10	3	Scott Drive - Marsh Road	E	20,707	205	1.00%	5	30	65.0
176	44	O'Brien Drive - Willow Road (SR 114)	W	21,139	343	1.50%	7	40	68.7
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	21,981	445	2.00%	9	40	69.1
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	22,825	249	1.00%	5	40	68.8
5	2	US 101 SB Off-Ramp - Marsh Road	N	23,418	213	1.00%	5	25	63.8
161	41	Bayfront Expressway - Willow Road (SR 114)	N	23,419	419	1.75%	8	45	70.7
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	24,342	471	2.00%	9	40	69.5
180	45	Newbridge Street - Willow Road (SR 114)	W	25,336	341	1.25%	6	40	69.3
4	1	US 101 NB Off-Ramp - Marsh Road	W	27,766	268	1.00%	5	35	68.0
163	41	Bayfront Expressway - Willow Road (SR 114)	S	28,103	752	2.75%	12	45	71.8
181	46	Bayfront Expressway - University Avenue	N	29,346	675	2.25%	10	45	71.9
2	1	US 101 NB Off-Ramp - Marsh Road	E	33,722	462	1.25%	6	35	69.0
183	46	Bayfront Expressway - University Avenue	S	37,418	1,261	3.25%	14	45	73.3

Cumulative With Project Variant

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	-	-	0.00%	1	25	
145	37	University Drive - Santa Cruz Avenue	N	1	0	0.25%	2	25	43.5
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.50%	3	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
102	26	Laurel Street - Proj Dwy S	E	49	0	0.75%	4	25	44.3
106	27	Laurel Street - Burgess Drive	E	177	-	0.00%	1	25	45.5
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.50%	7	25	46.5
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	297	2	0.75%	4	25	47.0
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	351	1	0.25%	2	25	47.1
112	28	El Camino Real - Encinal Avenue	W	450	3	0.50%	3	25	47.9
140	35	El Camino Real - Cambridge Avenue	W	631	1	0.00%	1	25	48.4
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	689	5	0.75%	4	25	49.4
22	6	Bay Road - Ringwood Avenue	E	787	-	0.00%	1	25	49.1
66	17	Middlefield Road - Seminary Drive	E	812	0	0.00%	1	25	49.2
108	27	Laurel Street - Burgess Drive	W	813	10	1.25%	6	25	50.5
167	42	Hamilton Avenue - Willow Road (SR 114)	S	853	27	3.25%	14	25	52.1
37	10	Durham Street - Willow Road (SR 114)	N	915	1	0.00%	1	25	49.5
130	33	El Camino Real - Roble Avenue	E	1,310	10	0.75%	4	25	51.7
132	33	El Camino Real - Roble Avenue	W	1,320	3	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,398	2	0.00%	1	25	51.0
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,477	10	0.75%	4	25	52.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,642	45	2.75%	12	40	58.3
53	14	Laurel Street - Willow Road (SR 114)	N	1,649	6	0.25%	2	25	51.9
122	31	El Camino Real - Santa Cruz Avenue	E	1,767	19	1.00%	5	25	53.1
141	36	University Drive - Valparaiso Avenue	N	1,780	3	0.25%	2	25	52.2
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,788	7	0.25%	2	25	52.2
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,910	7	0.25%	2	25	52.5
68	17	Middlefield Road - Seminary Drive	W	1,923	15	0.75%	4	25	53.1
124	31	El Camino Real - Santa Cruz Avenue	W	1,926	8	0.50%	3	25	52.8
17	5	Bay Road - Marsh Road	N	2,077	11	0.50%	3	25	53.1
85	22	Laurel Street - Glenwood Avenue	N	2,233	22	1.00%	5	25	54.0
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,252	1	0.00%	1	25	52.8
64	16	Middlefield Road - D Street/Ringwood Avenue	W	2,345	19	0.75%	4	30	55.6
83	21	Laurel Street - Encinal Avenue	S	2,372	10	0.50%	3	25	53.6
86	22	Laurel Street - Glenwood Avenue	E	2,384	1	0.00%	1	25	53.0
87	22	Laurel Street - Glenwood Avenue	S	2,393	7	0.25%	2	25	53.3
169	43	Ivy Drive - Willow Road (SR 114)	N	2,489	12	0.50%	3	25	53.8
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,538	2	0.00%	1	25	53.2
39	10	Durham Street - Willow Road (SR 114)	S	2,587	49	2.00%	9	25	55.5
11	3	Scott Drive - Marsh Road	S	2,687	27	1.00%	5	25	54.7
88	22	Laurel Street - Glenwood Avenue	W	2,862	9	0.25%	2	25	54.1
54	14	Laurel Street - Willow Road (SR 114)	E	2,879	19	0.75%	4	25	54.7
89	23	Laurel Street - Oak Grove Avenue	N	2,923	16	0.50%	3	25	54.5
105	27	Laurel Street - Burgess Drive	N	2,969	21	0.75%	4	25	54.8
93	24	Laurel Street - Ravenswood Avenue	N	2,979	11	0.25%	2	25	54.2
101	26	Laurel Street - Proj Dwy S	N	3,149	22	0.75%	4	25	55.1
56	14	Laurel Street - Willow Road (SR 114)	W	3,163	8	0.25%	2	25	54.4
47	12	Gilbert Avenue - Willow Road (SR 114)	S	3,179	3	0.00%	1	25	54.1
143	36	University Drive - Valparaiso Avenue	S	3,212	6	0.25%	2	25	54.5
9	3	Scott Drive - Marsh Road	N	3,225	28	0.75%	4	25	55.2
91	23	Laurel Street - Oak Grove Avenue	S	3,287	9	0.25%	2	25	54.6
97	25	Laurel Street - Proj Dwy N	N	3,289	23	0.75%	4	25	55.2
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,391	5	0.25%	2	30	56.7
82	21	Laurel Street - Encinal Avenue	E	3,514	50	1.50%	7	25	56.3
90	23	Laurel Street - Oak Grove Avenue	E	3,575	3	0.00%	1	25	54.6
19	5	Bay Road - Marsh Road	S	3,833	13	0.25%	2	30	57.2
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0

147	37	University Drive - Santa Cruz Avenue	S	4,132	19	0.50%	3	25	55.9
92	23	Laurel Street - Oak Grove Avenue	W	4,138	14	0.25%	2	25	55.5
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	4,206	38	1.00%	5	30	58.2
107	27	Laurel Street - Burgess Drive	S	4,237	41	1.00%	5	25	56.6
23	6	Bay Road - Ringwood Avenue	S	4,287	9	0.25%	2	30	57.6
24	6	Bay Road - Ringwood Avenue	W	4,310	22	0.50%	3	30	57.9
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	4,418	40	1.00%	5	30	58.4
84	21	Laurel Street - Encinal Avenue	W	4,503	32	0.75%	4	25	56.5
146	37	University Drive - Santa Cruz Avenue	E	4,566	10	0.25%	2	25	55.9
120	30	El Camino Real - Oak Grove Avenue	W	4,577	8	0.25%	2	25	55.9
110	28	El Camino Real - Encinal Avenue	E	4,841	25	0.50%	3	25	56.5
118	30	El Camino Real - Oak Grove Avenue	E	4,843	23	0.50%	3	25	56.5
95	24	Laurel Street - Ravenswood Avenue	S	4,848	46	1.00%	5	25	57.1
33	9	Bay Road - Willow Road (SR 114)	N	4,868	81	1.75%	8	30	59.4
103	26	Laurel Street - Proj Dwy S	S	4,970	47	1.00%	5	25	57.2
99	25	Laurel Street - Proj Dwy N	S	4,971	47	1.00%	5	25	57.2
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	4,972	44	1.00%	5	30	58.9
94	24	Laurel Street - Ravenswood Avenue	E	5,283	47	1.00%	5	30	59.1
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,288	31	0.50%	3	25	56.9
21	6	Bay Road - Ringwood Avenue	N	5,304	41	0.75%	4	30	59.0
57	15	Middlefield Road - Ravenswood Avenue	N	5,314	41	0.75%	4	35	60.7
62	16	Middlefield Road - D Street/Ringwood Avenue	E	5,377	78	1.50%	7	25	58.1
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	5,401	30	0.50%	3	30	58.8
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	5,412	31	0.50%	3	30	58.8
60	15	Middlefield Road - Ravenswood Avenue	W	5,425	31	0.50%	3	-	57.3
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	5,440	26	0.50%	3	30	58.8
142	36	University Drive - Valparaiso Avenue	E	5,448	8	0.25%	2	30	58.6
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	5,467	31	0.50%	3	30	58.9
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,741	7	0.00%	1	25	56.5
52	13	Middlefield Road - Willow Road (SR 114)	W	5,808	25	0.50%	3	25	57.3
96	24	Laurel Street - Ravenswood Avenue	W	5,858	42	0.75%	4	30	59.4
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	6,158	31	0.50%	3	30	59.4
179	45	Newbridge Street - Willow Road (SR 114)	S	6,299	51	0.75%	4	25	57.9
144	36	University Drive - Valparaiso Avenue	W	6,682	9	0.25%	2	30	59.5
13	4	Florence Street/Bohannon Drive - Marsh Road	N	7,068	31	0.50%	3	25	58.1
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	7,245	39	0.50%	3	35	61.9
175	44	O'Brien Drive - Willow Road (SR 114)	S	7,380	99	1.25%	6	30	60.8
148	37	University Drive - Santa Cruz Avenue	W	7,407	30	0.50%	3	25	58.3
51	13	Middlefield Road - Willow Road (SR 114)	S	7,769	111	1.50%	7	30	61.2
177	45	Newbridge Street - Willow Road (SR 114)	N	7,800	173	2.25%	10	25	60.4
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	7,819	75	1.00%	5	25	59.1
67	17	Middlefield Road - Seminary Drive	S	8,041	53	0.75%	4	35	62.5
65	17	Middlefield Road - Seminary Drive	N	8,415	86	1.00%	5	35	62.8
46	12	Gilbert Avenue - Willow Road (SR 114)	E	8,422	131	1.50%	7	25	60.0
20	5	Bay Road - Marsh Road	W	8,801	74	0.75%	4	30	61.1
63	16	Middlefield Road - D Street/Ringwood Avenue	S	8,804	46	0.50%	3	35	62.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	9,151	130	1.50%	7	25	60.3
49	13	Middlefield Road - Willow Road (SR 114)	N	9,154	144	1.50%	7	30	61.9
61	16	Middlefield Road - D Street/Ringwood Avenue	N	9,355	58	0.75%	4	35	63.1
50	13	Middlefield Road - Willow Road (SR 114)	E	9,374	158	1.75%	8	25	60.7
44	11	Coleman Avenue - Willow Road (SR 114)	W	9,691	144	1.50%	7	25	60.6
42	11	Coleman Avenue - Willow Road (SR 114)	E	9,706	148	1.50%	7	25	60.6
174	44	O'Brien Drive - Willow Road (SR 114)	E	9,847	197	2.00%	9	40	65.6
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,939	47	0.50%	3	25	59.5
38	10	Durham Street - Willow Road (SR 114)	E	10,048	157	1.50%	7	25	60.7
59	15	Middlefield Road - Ravenswood Avenue	S	10,196	64	0.75%	4	35	63.5
40	10	Durham Street - Willow Road (SR 114)	W	10,654	139	1.25%	6	25	60.7
166	42	Hamilton Avenue - Willow Road (SR 114)	E	10,712	279	2.50%	11	40	66.2
170	43	Ivy Drive - Willow Road (SR 114)	E	11,313	262	2.25%	10	40	66.3
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	11,326	45	0.50%	3	35	63.8
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,772	57	0.50%	3	35	64.0
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,800	206	1.75%	8	40	66.3
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	11,952	187	1.50%	7	25	61.5
16	4	Florence Street/Bohannon Drive - Marsh Road	W	12,361	80	0.75%	4	30	62.6
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	12,661	93	0.75%	4	25	60.9
156	39	Santa Cruz Avenue - Sand Hill Road	W	12,709	173	1.25%	6	40	66.4
155	39	Santa Cruz Avenue - Sand Hill Road	S	13,150	60	0.50%	3	35	64.4
164	41	Bayfront Expressway - Willow Road (SR 114)	W	13,634	290	2.25%	10	40	67.1
12	3	Scott Drive - Marsh Road	W	13,818	98	0.75%	4	30	63.0
117	30	El Camino Real - Oak Grove Avenue	N	14,113	163	1.25%	6	35	65.2
184	46	Bayfront Expressway - University Avenue	W	14,135	508	3.50%	15	-	67.4
168	42	Hamilton Avenue - Willow Road (SR 114)	W	14,228	275	2.00%	9	40	67.2
119	30	El Camino Real - Oak Grove Avenue	S	14,424	92	0.75%	4	35	65.0
18	5	Bay Road - Marsh Road	E	14,536	138	1.00%	5	30	63.5
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	14,588	95	0.75%	4	35	65.0
121	31	El Camino Real - Santa Cruz Avenue	N	14,686	169	1.25%	6	35	65.4

123	31	El Camino Real - Santa Cruz Avenue	S	14,690	93	0.75%	4	35	65.1
172	43	Ivy Drive - Willow Road (SR 114)	W	15,284	261	1.75%	8	40	67.4
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	15,445	172	1.00%	5	35	65.4
36	9	Bay Road - Willow Road (SR 114)	W	15,522	214	1.50%	7	25	62.6
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	15,615	161	1.00%	5	35	65.5
111	28	El Camino Real - Encinal Avenue	S	15,635	94	0.50%	3	35	65.2
14	4	Florence Street/Bohannon Drive - Marsh Road	E	15,793	161	1.00%	5	30	63.8
3	1	US 101 NB Off-Ramp - Marsh Road	S	15,834	247	1.50%	7	25	62.7
178	45	Newbridge Street - Willow Road (SR 114)	E	16,004	317	2.00%	9	40	67.7
133	34	El Camino Real - Middle Avenue	N	17,391	214	1.25%	6	35	66.1
34	9	Bay Road - Willow Road (SR 114)	E	17,614	287	1.75%	8	25	63.4
131	33	El Camino Real - Roble Avenue	S	17,626	107	0.50%	3	35	65.7
135	34	El Camino Real - Middle Avenue	S	18,613	104	0.50%	3	35	65.9
109	28	El Camino Real - Encinal Avenue	N	18,644	176	1.00%	5	35	66.3
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	18,770	276	1.50%	7	40	68.2
129	33	El Camino Real - Roble Avenue	N	18,785	227	1.25%	6	35	66.4
137	35	El Camino Real - Cambridge Avenue	N	19,029	216	1.25%	6	35	66.5
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,935	120	0.50%	3	35	66.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	20,053	157	0.75%	4	35	66.4
6	2	US 101 SB Off-Ramp - Marsh Road	E	20,606	311	1.50%	7	35	67.0
139	35	El Camino Real - Cambridge Avenue	S	20,662	106	0.50%	3	35	66.4
10	3	Scott Drive - Marsh Road	E	20,729	205	1.00%	5	30	65.0
176	44	O'Brien Drive - Willow Road (SR 114)	W	21,169	343	1.50%	7	40	68.7
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	22,126	448	2.00%	9	40	69.1
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	22,884	249	1.00%	5	40	68.8
161	41	Bayfront Expressway - Willow Road (SR 114)	N	23,419	419	1.75%	8	45	70.7
5	2	US 101 SB Off-Ramp - Marsh Road	N	23,436	213	1.00%	5	25	63.8
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	24,390	472	2.00%	9	40	69.5
180	45	Newbridge Street - Willow Road (SR 114)	W	25,384	341	1.25%	6	40	69.3
4	1	US 101 NB Off-Ramp - Marsh Road	W	27,807	268	1.00%	5	35	68.0
163	41	Bayfront Expressway - Willow Road (SR 114)	S	28,125	752	2.75%	12	45	71.8
181	46	Bayfront Expressway - University Avenue	N	29,368	675	2.25%	10	45	71.9
2	1	US 101 NB Off-Ramp - Marsh Road	E	33,731	462	1.25%	6	35	69.0
183	46	Bayfront Expressway - University Avenue	S	37,440	1,262	3.25%	14	45	73.3

Construction Noise Calculation Sheets - Proposed Project

Summary Table - Phase 1		Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours
3 Loudest Pieces @ 50 Feet								
L_{max}		93	89	89	89	93	90	83
L_{eq}		87	85	85	85	86	83	78
L_{max} @ distances (feet):								
	15	104	99	100	99	104	101	94
	25	99	95	95	95	99	96	89
	50	93	89	89	89	93	90	83
	60	92	87	88	87	92	89	82
	75	90	85	86	85	90	87	80
	100	87	83	83	83	87	84	77
	120	86	81	82	81	86	83	76
	170	83	78	79	78	83	80	72
	200	81	77	77	77	81	78	71
	300	78	73	74	73	78	75	68
	450	74	70	70	70	74	71	64
	500	73	69	69	69	73	70	63
	600	72	67	68	67	72	69	62
	700	70	66	66	66	70	67	60
	800	69	65	65	65	69	66	59
	900	68	64	64	64	68	65	58
	1000	67	63	63	63	67	64	57
L_{eq} @ distances (feet):								
	15	97	95	96	95	97	94	88
	25	93	91	91	91	92	89	84
	50	87	85	85	85	86	83	78
	60	85	83	84	83	85	82	76
	75	83	81	82	81	83	80	74
	100	81	79	79	79	80	77	72
	120	79	77	78	77	79	76	70
	170	76	74	75	74	76	73	67
	200	75	73	73	73	74	71	66
	300	71	69	70	69	71	68	62
	450	68	66	66	66	67	64	58
	500	67	65	65	65	66	63	58
	600	65	63	64	63	65	62	56
	700	64	62	62	62	63	60	55
	800	63	61	61	61	62	59	53
	900	62	60	60	60	61	58	52
	1000	61	59	59	59	60	57	52

Summary Table - Phase 2	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours
3 Loudest Pieces @ 50 Feet							
L_{max}	93	89	89	89	93	90	83
L_{eq}	87	85	85	85	86	83	78
L_{max} @ distances (feet):							
25	97	0	0	95	99	96	89
50	91	0	0	89	93	90	83
100	85	0	0	83	87	84	77
200	79	0	0	77	81	78	71
250	77	0	0	75	79	76	69
400	73	0	0	71	75	72	65
500	71	0	0	69	73	70	63
575	70	0	0	68	72	69	62
600	70	0	0	67	72	69	62
700	68	0	0	66	70	67	60
800	67	0	0	65	69	66	59
900	66	0	0	64	68	65	58
1000	65	0	0	63	67	64	57
1100	64	0	0	62	66	63	56
1200	63	0	0	61	66	63	56
1300	63	0	0	60	65	62	55
1400	62	0	0	60	64	61	54
L_{eq} @ distances (feet):							
25	91	0	0	91	92	89	84
50	85	0	0	85	86	83	78
100	79	0	0	79	80	77	72
200	73	0	0	73	74	71	66
250	71	0	0	71	72	69	64
400	67	0	0	67	68	65	59
500	65	0	0	65	66	63	58
575	64	0	0	64	65	62	56
600	63	0	0	63	65	62	56
700	62	0	0	62	63	60	55
800	61	0	0	61	62	59	53
900	60	0	0	60	61	58	52
1000	59	0	0	59	60	57	52
1100	58	0	0	58	59	56	51
1200	57	0	0	57	59	56	50
1300	57	0	0	56	58	55	49
1400	56	0	0	56	57	54	49

Summary Table - Phase 3	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours
3 Loudest Pieces @ 50 Feet							
L_{max}	93	89	89	89	93	90	83
L_{eq}	87	85	85	85	86	83	78
L_{max} @ distances (feet):							
25	97	0	0	95	97	96	89
50	91	0	0	89	91	90	83
100	85	0	0	83	85	84	77
200	79	0	0	77	79	78	71
300	76	0	0	73	75	75	68
450	72	0	0	70	72	71	64
500	71	0	0	69	71	70	63
600	70	0	0	67	69	69	62
700	68	0	0	66	68	67	60
800	67	0	0	65	67	66	59
900	66	0	0	64	66	65	58
1000	65	0	0	63	65	64	57
1200	63	0	0	61	63	63	56
1400	62	0	0	60	62	61	54
1600	61	0	0	59	61	60	53
1800	60	0	0	58	59	59	52
2000	59	0	0	57	59	58	51
L_{eq} @ distances (feet):							
25	91	0	0	91	90	89	84
50	85	0	0	85	84	83	78
100	79	0	0	79	78	77	72
200	73	0	0	73	72	71	66
300	69	0	0	69	68	68	62
450	66	0	0	66	65	64	58
500	65	0	0	65	64	63	58
600	63	0	0	63	62	62	56
700	62	0	0	62	61	60	55
800	61	0	0	61	60	59	53
900	60	0	0	60	59	58	52
1000	59	0	0	59	58	57	52
1200	57	0	0	57	56	56	50
1400	56	0	0	56	55	54	49
1600	55	0	0	55	54	53	47
1800	54	0	0	54	53	52	46
2000	53	0	0	53	52	51	46

Off-Road Equipment Inventory

Sub Phase No.	Quantity - Phase 1	Quantity - Phase 2	Quantity - Phase 3	Description	HP	Usage Factor	Hours/day	Total Work Days	Sub-Phase Number	FHWA Equipment Name	Acoustical Use Factor	Lmax at 50 feet (dBA)	Leq at 50 feet (dBA)	Lmax Rank	Leq Rank	Top 3 Loudest Equipment Modeling Rank			Impact Equipment?
1				**Demolition**				**135**								**Phase 1**	**Phase 2**	**Phase 3**	
	2	1	1	Concrete/Industrial Saws	33	5%	8	6.75	1	Concrete Saw	20%	90	83	1	1	1	1	1	No
	3	1	1	Excavators	36	90%	8	121.5	1	Excavator	40%	81	77	3	3		3	3	No
	2	1	1	Rubber Tired Dozers	367	90%	8	121.5	1	Dozer	40%	82	78	2	2	2	2	2	No
2		-	-	**Site Preparation**															
	2	-	-	Rubber Tired Dozers	367	55%	8	0	2	Dozer	40%	82	78	2	2		n/a	n/a	No
	6	-	-	Tractors/Loaders/Backhoes	84	70%	8	0	2	Tractor	40%	84	80	1	1	1	n/a	n/a	No
3				**Grading**				**100**											
	2	-	-	Excavators	36	70%	8	70	3	Excavator	40%	81	77	5	5		n/a	n/a	No
	1	-	-	Graders	148	75%	8	75	3	Grader	40%	85	81	1	1	1	n/a	n/a	No
	1	-	-	Rubber Tired Dozers	367	25%	8	25	3	Dozer	40%	82	78	4	4		n/a	n/a	No
	2	-	-	Scrapers	423	45%	8	45	3	Scraper	40%	84	80	2	2		n/a	n/a	No
	2	-	-	Tractors/Loaders/Backhoes	84	60%	8	60	3	Tractor	40%	84	80	2	2	2	n/a	n/a	No
4				**Building Construction**				**406**											
	3	3	1	Cranes	367	95%	7	385.7	4	Crane	16%	81	73	4	5				No
	3	4	2	Forklifts	82	35%	8	142.1	4	Tractor	40%	84	80	1	1				No
	4	5	2	Generator Sets	14	45%	8	182.7	4	Generator	50%	81	78	4	3				No
	3	5	3	Tractors/Loaders/Backhoes	84	50%	7	203	4	Tractor	40%	84	80	1	1	1	1	1	No
	3	-		Drill Rigs	221	15%	8	57.855	4	Auger Drill Rig	20%	84	77	1	4				No
	4	5	2	Welders	46	45%	8	182.7	4	Welder / Torch	40%	74	70	6	6				No
5				**Paving**				**199**											
	2	2	1	Pavers	81	85%	8	169.15	5	Paver	50%	77	74	3	2			2	No
	2	2	1	Paving Equipment	89	85%	8	169.15	5	Pavement Scarafier	20%	90	83	1	1	1	1	1	No
	2	2	1	Rollers	36	20%	8	39.8	5	Roller	20%	80	73	2	3	2	2	3	No
6				**Architectural Coatings**				**48**											
	1	1	1	Industrial Saws	81	65%	6	31.2	6	Concrete Saw	20%	90	83	1	1	1	1	1	No
	1	3	2	Aerial Lifts	62	85%	6	40.8	6	Man Lift	20%	75	68	2	2	2	2	2	No
7				**Concrete Pours**				**48**											
	1	1	1	Concrete Truck				0	7	Concrete Mixer Trucl	40%	79	75	2	1	1	1	1	No
	1	1	1	Concrete Pump				0	7	Concrete Pump Trucl	20%	81	74	1	2	2	2	2	No

Construction Noise

Sub-Phase: **Demolition**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	93
All Sources Combined - Leq sound level (dBA) at 50 feet =	87

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	97
25	6	0.0	99	93
50	0	0.0	93	87
60	-2	0.0	92	85
75	-4	0.0	90	83
100	-6	0.0	87	81
120	-8	0.0	86	79
170	-11	0.0	83	76
200	-12	0.0	81	75
300	-16	0.0	78	71
450	-19	0.0	74	68
500	-20	0.0	73	67
600	-22	0.0	72	65
700	-23	0.0	70	64
800	-24	0.0	69	63
900	-25	0.0	68	62
1000	-26	0.0	67	61

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0
3	Excavators	81	40%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	91
50	0	0.0	91	85
100	-6	0.0	85	79
200	-12	0.0	79	73
250	-14	0.0	77	71
400	-18	0.0	73	67
500	-20	0.0	71	65
575	-21	0.0	70	64
600	-22	0.0	70	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1100	-27	0.0	64	58
1200	-28	0.0	63	57
1300	-28	0.0	63	57
1400	-29	0.0	62	56

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0
3	Excavators	81	40%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	91
50	0	0.0	91	85
100	-6	0.0	85	79
200	-12	0.0	79	73
300	-16	0.0	76	69
450	-19	0.0	72	66
500	-20	0.0	71	65
600	-22	0.0	70	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1200	-28	0.0	63	57
1400	-29	0.0	62	56
1600	-30	0.0	61	55
1800	-31	0.0	60	54
2000	-32	0.0	59	53

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

2

Construction Noise

Sub-Phase: **Site Preparation**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 89

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	99	95
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	87	83
75	-4	0.0	85	81
100	-6	0.0	83	79
120	-8	0.0	81	77
170	-11	0.0	78	74
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Grading**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Graders	85	40%	81.0
2	Tractors/Loaders/Backhoes	84	40%	80.0
2	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	100	96
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	88	84
75	-4	0.0	86	82
100	-6	0.0	83	79
120	-8	0.0	82	78
170	-11	0.0	79	75
200	-12	0.0	77	73
300	-16	0.0	74	70
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	68	64
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Building Construction**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 89

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	99	95
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	87	83
75	-4	0.0	85	81
100	-6	0.0	83	79
120	-8	0.0	81	77
170	-11	0.0	78	74
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	95	91
50	0	0.0	89	85
100	-6	0.0	83	79
200	-12	0.0	77	73
250	-14	0.0	75	71
400	-18	0.0	71	67
500	-20	0.0	69	65
575	-21	0.0	68	64
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59
1100	-27	0.0	62	58
1200	-28	0.0	61	57
1300	-28	0.0	60	56
1400	-29	0.0	60	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 89

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	95	91
50	0	0.0	89	85
100	-6	0.0	83	79
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59
1200	-28	0.0	61	57
1400	-29	0.0	60	56
1600	-30	0.0	59	55
1800	-31	0.0	58	54
2000	-32	0.0	57	53

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Paving**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
1	Paving Equipment	90	20%	83.0
2	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	93
All Sources Combined - Leq sound level (dBA) at 50 feet =	86

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	97
25	6	0.0	99	92
50	0	0.0	93	86
60	-2	0.0	92	85
75	-4	0.0	90	83
100	-6	0.0	87	80
120	-8	0.0	86	79
170	-11	0.0	83	76
200	-12	0.0	81	74
300	-16	0.0	78	71
450	-19	0.0	74	67
500	-20	0.0	73	66
600	-22	0.0	72	65
700	-23	0.0	70	63
800	-24	0.0	69	62
900	-25	0.0	68	61
1000	-26	0.0	67	60

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
1	Paving Equipment	90	20%	83.0
2	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 93

All Sources Combined - Leq sound level (dBA) at 50 feet = 86

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	99	92
50	0	0.0	93	86
100	-6	0.0	87	80
200	-12	0.0	81	74
250	-14	0.0	79	72
400	-18	0.0	75	68
500	-20	0.0	73	66
575	-21	0.0	72	65
600	-22	0.0	72	65
700	-23	0.0	70	63
800	-24	0.0	69	62
900	-25	0.0	68	61
1000	-26	0.0	67	60
1100	-27	0.0	66	59
1200	-28	0.0	66	59
1300	-28	0.0	65	58
1400	-29	0.0	64	57

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
2	Pavers	77	50%	74.0
3	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 84

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	90
50	0	0.0	91	84
100	-6	0.0	85	78
200	-12	0.0	79	72
300	-16	0.0	75	68
450	-19	0.0	72	65
500	-20	0.0	71	64
600	-22	0.0	69	62
700	-23	0.0	68	61
800	-24	0.0	67	60
900	-25	0.0	66	59
1000	-26	0.0	65	58
1200	-28	0.0	63	56
1400	-29	0.0	62	55
1600	-30	0.0	61	54
1800	-31	0.0	59	53
2000	-32	0.0	59	52

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Architectural Coatings**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:	
All Sources Combined - Lmax sound level (dBA) at 50 feet =	90
All Sources Combined - Leq sound level (dBA) at 50 feet =	83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	101	94
25	6	0.0	96	89
50	0	0.0	90	83
60	-2	0.0	89	82
75	-4	0.0	87	80
100	-6	0.0	84	77
120	-8	0.0	83	76
170	-11	0.0	80	73
200	-12	0.0	78	71
300	-16	0.0	75	68
450	-19	0.0	71	64
500	-20	0.0	70	63
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 90

All Sources Combined - Leq sound level (dBA) at 50 feet = 83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	96	89
50	0	0.0	90	83
100	-6	0.0	84	77
200	-12	0.0	78	71
250	-14	0.0	76	69
400	-18	0.0	72	65
500	-20	0.0	70	63
575	-21	0.0	69	62
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57
1100	-27	0.0	63	56
1200	-28	0.0	63	56
1300	-28	0.0	62	55
1400	-29	0.0	61	54

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 90

All Sources Combined - Leq sound level (dBA) at 50 feet = 83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	96	89
50	0	0.0	90	83
100	-6	0.0	84	77
200	-12	0.0	78	71
300	-16	0.0	75	68
450	-19	0.0	71	64
500	-20	0.0	70	63
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57
1200	-28	0.0	63	56
1400	-29	0.0	61	54
1600	-30	0.0	60	53
1800	-31	0.0	59	52
2000	-32	0.0	58	51

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Concrete Pours**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:	
All Sources Combined - Lmax sound level (dBA) at 50 feet =	83
All Sources Combined - Leq sound level (dBA) at 50 feet =	78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	94	88
25	6	0.0	89	84
50	0	0.0	83	78
60	-2	0.0	82	76
75	-4	0.0	80	74
100	-6	0.0	77	72
120	-8	0.0	76	70
170	-11	0.0	72	67
200	-12	0.0	71	66
300	-16	0.0	68	62
450	-19	0.0	64	58
500	-20	0.0	63	58
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 83

All Sources Combined - Leq sound level (dBA) at 50 feet = 78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	89	84
50	0	0.0	83	78
100	-6	0.0	77	72
200	-12	0.0	71	66
250	-14	0.0	69	64
400	-18	0.0	65	59
500	-20	0.0	63	58
575	-21	0.0	62	56
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52
1100	-27	0.0	56	51
1200	-28	0.0	56	50
1300	-28	0.0	55	49
1400	-29	0.0	54	49

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 83

All Sources Combined - Leq sound level (dBA) at 50 feet = 78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	89	84
50	0	0.0	83	78
100	-6	0.0	77	72
200	-12	0.0	71	66
300	-16	0.0	68	62
450	-19	0.0	64	58
500	-20	0.0	63	58
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52
1200	-28	0.0	56	50
1400	-29	0.0	54	49
1600	-30	0.0	53	47
1800	-31	0.0	52	46
2000	-32	0.0	51	46

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise Calculation Sheets - Project Variant

Summary Table - Phase 1	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours	Well	Well (night)
3 Loudest Pieces @ 50 Feet									
L_{max}	93	89	89	89	93	90	83	87	86
L_{eq}	87	85	85	85	86	83	78	82	81
L_{max} @ distances (feet):									
15	104	99	100	99	104	101	94	97	97
25	99	95	95	95	99	96	89	93	92
50	93	89	89	89	93	90	83	87	86
60	92	87	88	87	92	89	82	85	85
75	90	85	86	85	90	87	80	83	83
100	87	83	83	83	87	84	77	81	80
120	86	81	82	81	86	83	76	79	79
170	83	78	79	78	83	80	72	76	76
200	81	77	77	77	81	78	71	75	74
300	78	73	74	73	78	75	68	71	71
450	74	70	70	70	74	71	64	68	68
500	73	69	69	69	73	70	63	67	66
600	72	67	68	67	72	69	62	65	65
700	70	66	66	66	70	67	60	64	64
800	69	65	65	65	69	66	59	63	62
900	68	64	64	64	68	65	58	62	61
1000	67	63	63	63	67	64	57	61	60
L_{eq} @ distances (feet):									
15	97	95	96	95	97	94	88	93	92
25	93	91	91	91	92	89	84	88	87
50	87	85	85	85	86	83	78	82	81
60	85	83	84	83	85	82	76	81	80
75	83	81	82	81	83	80	74	79	78
100	81	79	79	79	80	77	72	76	75
120	79	77	78	77	79	76	70	75	74
170	76	74	75	74	76	73	67	72	71
200	75	73	73	73	74	71	66	70	69
300	71	69	70	69	71	68	62	67	66
450	68	66	66	66	67	64	58	63	63
500	67	65	65	65	66	63	58	62	61
600	65	63	64	63	65	62	56	61	60
700	64	62	62	62	63	60	55	59	58
800	63	61	61	61	62	59	53	58	57
900	62	60	60	60	61	58	52	57	56
1000	61	59	59	59	60	57	52	56	55

Summary Table - Phase 2	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours	Well	Well (night)
3 Loudest Pieces @ 50 Feet									
L_{max}	93	89	89	89	93	90	83		
L_{eq}	87	85	85	85	86	83	78		
L_{max} @ distances (feet):									
25	97	0	0	95	99	96	89		
50	91	0	0	89	93	90	83		
100	85	0	0	83	87	84	77		
200	79	0	0	77	81	78	71		
250	77	0	0	75	79	76	69		
400	73	0	0	71	75	72	65		
500	71	0	0	69	73	70	63		
575	70	0	0	68	72	69	62		
600	70	0	0	67	72	69	62		
700	68	0	0	66	70	67	60		
800	67	0	0	65	69	66	59		
900	66	0	0	64	68	65	58		
1000	65	0	0	63	67	64	57		
1100	64	0	0	62	66	63	56		
1200	63	0	0	61	66	63	56		
1300	63	0	0	60	65	62	55		
1400	62	0	0	60	64	61	54		
L_{eq} @ distances (feet):									
25	91	0	0	91	92	89	84		
50	85	0	0	85	86	83	78		
100	79	0	0	79	80	77	72		
200	73	0	0	73	74	71	66		
250	71	0	0	71	72	69	64		
400	67	0	0	67	68	65	59		
500	65	0	0	65	66	63	58		
575	64	0	0	64	65	62	56		
600	63	0	0	63	65	62	56		
700	62	0	0	62	63	60	55		
800	61	0	0	61	62	59	53		
900	60	0	0	60	61	58	52		
1000	59	0	0	59	60	57	52		
1100	58	0	0	58	59	56	51		
1200	57	0	0	57	59	56	50		
1300	57	0	0	56	58	55	49		
1400	56	0	0	56	57	54	49		

Summary Table - Phase 3	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours	Well	Well (night)
3 Loudest Pieces @ 50 Feet									
L_{max}	93	89	89	89	93	90	83		
L_{eq}	87	85	85	85	86	83	78		
L_{max} @ distances (feet):									
25	97	0	0	95	97	96	89		
50	91	0	0	89	91	90	83		
100	85	0	0	83	85	84	77		
200	79	0	0	77	79	78	71		
300	76	0	0	73	75	75	68		
450	72	0	0	70	72	71	64		
500	71	0	0	69	71	70	63		
600	70	0	0	67	69	69	62		
700	68	0	0	66	68	67	60		
800	67	0	0	65	67	66	59		
900	66	0	0	64	66	65	58		
1000	65	0	0	63	65	64	57		
1200	63	0	0	61	63	63	56		
1400	62	0	0	60	62	61	54		
1600	61	0	0	59	61	60	53		
1800	60	0	0	58	59	59	52		
2000	59	0	0	57	59	58	51		
L_{eq} @ distances (feet):									
25	91	0	0	91	90	89	84		
50	85	0	0	85	84	83	78		
100	79	0	0	79	78	77	72		
200	73	0	0	73	72	71	66		
300	69	0	0	69	68	68	62		
450	66	0	0	66	65	64	58		
500	65	0	0	65	64	63	58		
600	63	0	0	63	62	62	56		
700	62	0	0	62	61	60	55		
800	61	0	0	61	60	59	53		
900	60	0	0	60	59	58	52		
1000	59	0	0	59	58	57	52		
1200	57	0	0	57	56	56	50		
1400	56	0	0	56	55	54	49		
1600	55	0	0	55	54	53	47		
1800	54	0	0	54	53	52	46		
2000	53	0	0	53	52	51	46		

Off-Road Equipment Inventory

Sub Phase No.	Quantity - Phase 1	Quantity - Phase 2	Quantity - Phase 3	Description	HP	Usage Factor	Hours/day	Total Work Days	Sub-Phase Number	FHWA Equipment Name	Acoustical Use Factor	Lmax at 50 feet (dBA)	Leq at 50 feet (dBA)	Lmax Rank	Leq Rank	Top 3 Loudest Equipment Modeling Rank			Impact Equipment?
																Phase 1	Phase 2	Phase 3	
1				**Demolition**				**178**											
	2	1	1	Concrete/Industrial Saws	33	5%	8	8.9	1	Concrete Saw	20%	90	83	1	1	1	1	1	No
	3	1	1	Excavators	36	90%	8	160.2	1	Excavator	40%	81	77	3	3		3	3	No
	2	1	1	Rubber Tired Dozers	367	90%	8	160.2	1	Dozer	40%	82	78	2	2	2	2	2	No
2		-	-	**Site Preparation**				**135**											
	2	-	-	Rubber Tired Dozers	367	55%	8	74.25	2	Dozer	40%	82	78	2	2		n/a	n/a	No
	6	-	-	Tractors/Loaders/Backhoes	84	70%	8	94.5	2	Tractor	40%	84	80	1	1	1	n/a	n/a	No
3				**Grading**				**100**											
	2	-	-	Excavators	36	70%	8	70	3	Excavator	40%	81	77	5	5		n/a	n/a	No
	1	-	-	Graders	148	75%	8	75	3	Grader	40%	85	81	1	1	1	n/a	n/a	No
	1	-	-	Rubber Tired Dozers	367	25%	8	25	3	Dozer	40%	82	78	4	4		n/a	n/a	No
	2	-	-	Scrapers	423	45%	8	45	3	Scraper	40%	84	80	2	2		n/a	n/a	No
	2	-	-	Tractors/Loaders/Backhoes	84	60%	8	60	3	Tractor	40%	84	80	2	2	2	n/a	n/a	No
4				**Building Construction**				**419**											
	5	3	1	Cranes	367	95%	7	398.05	4	Crane	16%	81	73	4	5				No
	4	4	2	Forklifts	82	35%	8	146.65	4	Tractor	40%	84	80	1	1				No
	5	5	2	Generator Sets	14	45%	8	188.55	4	Generator	50%	81	78	4	3				No
	4	5	3	Tractors/Loaders/Backhoes	84	50%	7	209.5	4	Tractor	40%	84	80	1	1	1	1	1	No
	3	-		Drill Rigs	221	15%	8	59.7075	4	Auger Drill Rig	20%	84	77	1	4				No
	4	5	2	Welders	46	45%	8	188.55	4	Welder / Torch	40%	74	70	6	6				No
5				**Paving**				**199**											
	2	2	1	Pavers	81	85%	8	169.15	5	Paver	50%	77	74	3	2			2	No
	2	2	1	Paving Equipment	89	85%	8	169.15	5	Pavement Scarafier	20%	90	83	1	1	1	1	1	No
	2	2	1	Rollers	36	20%	8	39.8	5	Roller	20%	80	73	2	3	2	2	3	No
6				**Architectural Coatings**				**48**											
	1	1	1	Industrial Saws	81	65%	6	31.2	6	Concrete Saw	20%	90	83	1	1	1	1	1	No
	4	3	2	Aerial Lifts	62	85%	6	40.8	6	Man Lift	20%	75	68	2	2	2	2	2	No
7				**Concrete Pours**				**48**											
	1	1	1	Concrete Truck				0	7	Concrete Mixer Trucl	40%	79	75	2	1	1	1	1	No
	1	1	1	Concrete Pump				0	7	Concrete Pump Trucl	20%	81	74	1	2	2	2	2	No
8				**Well**															
	1			Generator Sets				0	8	Generator	50%	81	78	3	1	1			No
	1			Air Compressor				0	8	Compressor (Air)	40%	78	74	8	6				No
	1			Cranes				0	8	Crane	16%	81	73	3	7				No
	1			Excavators				0	8	Excavator	40%	81	77	3	2	2			No
	1			Dump truck				0	8	Dump Truck	40%	76	72	9	9				No
	1			Concrete Mixer				0	8	Concrete Mixer Trucl	40%	79	75	7	5				No
	1			Wacker compactor				0	8	Compactor (ground)	20%	83	76	2	4				No
	1			Vibratory Roller				0	8	Roller	20%	80	73	6	8				No
	1			Drill Rigs				0	8	Auger Drill Rig	20%	84	77	1	3	3			No
9				**Well (night)**															
	1			Generator Sets				0	9	Generator	50%	81	78	2	1	1			No
	1			Air Compressor				0	9	Compressor (Air)	40%	78	74	3	3	3			No
	1			Drill rig and truck				0	9	Auger Drill Rig	20%	84	77	1	2	2			No

Construction Noise

Sub-Phase: **Demolition**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	93
All Sources Combined - Leq sound level (dBA) at 50 feet =	87

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	97
25	6	0.0	99	93
50	0	0.0	93	87
60	-2	0.0	92	85
75	-4	0.0	90	83
100	-6	0.0	87	81
120	-8	0.0	86	79
170	-11	0.0	83	76
200	-12	0.0	81	75
300	-16	0.0	78	71
450	-19	0.0	74	68
500	-20	0.0	73	67
600	-22	0.0	72	65
700	-23	0.0	70	64
800	-24	0.0	69	63
900	-25	0.0	68	62
1000	-26	0.0	67	61

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0
3	Excavators	81	40%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	91
50	0	0.0	91	85
100	-6	0.0	85	79
200	-12	0.0	79	73
250	-14	0.0	77	71
400	-18	0.0	73	67
500	-20	0.0	71	65
575	-21	0.0	70	64
600	-22	0.0	70	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1100	-27	0.0	64	58
1200	-28	0.0	63	57
1300	-28	0.0	63	57
1400	-29	0.0	62	56

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0
3	Excavators	81	40%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	91
50	0	0.0	91	85
100	-6	0.0	85	79
200	-12	0.0	79	73
300	-16	0.0	76	69
450	-19	0.0	72	66
500	-20	0.0	71	65
600	-22	0.0	70	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1200	-28	0.0	63	57
1400	-29	0.0	62	56
1600	-30	0.0	61	55
1800	-31	0.0	60	54
2000	-32	0.0	59	53

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Site Preparation**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 89

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	99	95
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	87	83
75	-4	0.0	85	81
100	-6	0.0	83	79
120	-8	0.0	81	77
170	-11	0.0	78	74
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Grading**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Graders	85	40%	81.0
2	Tractors/Loaders/Backhoes	84	40%	80.0
2	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 89

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	100	96
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	88	84
75	-4	0.0	86	82
100	-6	0.0	83	79
120	-8	0.0	82	78
170	-11	0.0	79	75
200	-12	0.0	77	73
300	-16	0.0	74	70
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	68	64
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Building Construction**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	99	95
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	87	83
75	-4	0.0	85	81
100	-6	0.0	83	79
120	-8	0.0	81	77
170	-11	0.0	78	74
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	95	91
50	0	0.0	89	85
100	-6	0.0	83	79
200	-12	0.0	77	73
250	-14	0.0	75	71
400	-18	0.0	71	67
500	-20	0.0	69	65
575	-21	0.0	68	64
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59
1100	-27	0.0	62	58
1200	-28	0.0	61	57
1300	-28	0.0	60	56
1400	-29	0.0	60	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	95	91
50	0	0.0	89	85
100	-6	0.0	83	79
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59
1200	-28	0.0	61	57
1400	-29	0.0	60	56
1600	-30	0.0	59	55
1800	-31	0.0	58	54
2000	-32	0.0	57	53

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

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Construction Noise

Sub-Phase: **Paving**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
1	Paving Equipment	90	20%	83.0
2	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 93

All Sources Combined - Leq sound level (dBA) at 50 feet = 86

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	97
25	6	0.0	99	92
50	0	0.0	93	86
60	-2	0.0	92	85
75	-4	0.0	90	83
100	-6	0.0	87	80
120	-8	0.0	86	79
170	-11	0.0	83	76
200	-12	0.0	81	74
300	-16	0.0	78	71
450	-19	0.0	74	67
500	-20	0.0	73	66
600	-22	0.0	72	65
700	-23	0.0	70	63
800	-24	0.0	69	62
900	-25	0.0	68	61
1000	-26	0.0	67	60

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
1	Paving Equipment	90	20%	83.0
2	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 93

All Sources Combined - Leq sound level (dBA) at 50 feet = 86

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	99	92
50	0	0.0	93	86
100	-6	0.0	87	80
200	-12	0.0	81	74
250	-14	0.0	79	72
400	-18	0.0	75	68
500	-20	0.0	73	66
575	-21	0.0	72	65
600	-22	0.0	72	65
700	-23	0.0	70	63
800	-24	0.0	69	62
900	-25	0.0	68	61
1000	-26	0.0	67	60
1100	-27	0.0	66	59
1200	-28	0.0	66	59
1300	-28	0.0	65	58
1400	-29	0.0	64	57

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
2	Pavers	77	50%	74.0
3	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 84

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	90
50	0	0.0	91	84
100	-6	0.0	85	78
200	-12	0.0	79	72
300	-16	0.0	75	68
450	-19	0.0	72	65
500	-20	0.0	71	64
600	-22	0.0	69	62
700	-23	0.0	68	61
800	-24	0.0	67	60
900	-25	0.0	66	59
1000	-26	0.0	65	58
1200	-28	0.0	63	56
1400	-29	0.0	62	55
1600	-30	0.0	61	54
1800	-31	0.0	59	53
2000	-32	0.0	59	52

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Architectural Coatings**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:	
All Sources Combined - Lmax sound level (dBA) at 50 feet =	90
All Sources Combined - Leq sound level (dBA) at 50 feet =	83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	101	94
25	6	0.0	96	89
50	0	0.0	90	83
60	-2	0.0	89	82
75	-4	0.0	87	80
100	-6	0.0	84	77
120	-8	0.0	83	76
170	-11	0.0	80	73
200	-12	0.0	78	71
300	-16	0.0	75	68
450	-19	0.0	71	64
500	-20	0.0	70	63
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	90
All Sources Combined - Leq sound level (dBA) at 50 feet =	83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	96	89
50	0	0.0	90	83
100	-6	0.0	84	77
200	-12	0.0	78	71
250	-14	0.0	76	69
400	-18	0.0	72	65
500	-20	0.0	70	63
575	-21	0.0	69	62
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57
1100	-27	0.0	63	56
1200	-28	0.0	63	56
1300	-28	0.0	62	55
1400	-29	0.0	61	54

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 90

All Sources Combined - Leq sound level (dBA) at 50 feet = 83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	96	89
50	0	0.0	90	83
100	-6	0.0	84	77
200	-12	0.0	78	71
300	-16	0.0	75	68
450	-19	0.0	71	64
500	-20	0.0	70	63
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57
1200	-28	0.0	63	56
1400	-29	0.0	61	54
1600	-30	0.0	60	53
1800	-31	0.0	59	52
2000	-32	0.0	58	51

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Concrete Pours**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:	
All Sources Combined - Lmax sound level (dBA) at 50 feet =	83
All Sources Combined - Leq sound level (dBA) at 50 feet =	78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	94	88
25	6	0.0	89	84
50	0	0.0	83	78
60	-2	0.0	82	76
75	-4	0.0	80	74
100	-6	0.0	77	72
120	-8	0.0	76	70
170	-11	0.0	72	67
200	-12	0.0	71	66
300	-16	0.0	68	62
450	-19	0.0	64	58
500	-20	0.0	63	58
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	83
All Sources Combined - Leq sound level (dBA) at 50 feet =	78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	89	84
50	0	0.0	83	78
100	-6	0.0	77	72
200	-12	0.0	71	66
250	-14	0.0	69	64
400	-18	0.0	65	59
500	-20	0.0	63	58
575	-21	0.0	62	56
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52
1100	-27	0.0	56	51
1200	-28	0.0	56	50
1300	-28	0.0	55	49
1400	-29	0.0	54	49

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	83
All Sources Combined - Leq sound level (dBA) at 50 feet =	78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	89	84
50	0	0.0	83	78
100	-6	0.0	77	72
200	-12	0.0	71	66
300	-16	0.0	68	62
450	-19	0.0	64	58
500	-20	0.0	63	58
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52
1200	-28	0.0	56	50
1400	-29	0.0	54	49
1600	-30	0.0	53	47
1800	-31	0.0	52	46
2000	-32	0.0	51	46

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Well**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Generator Sets	81	50%	78.0
2	Excavators	81	40%	77.0
3	Drill Rigs	84	20%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 87

All Sources Combined - Leq sound level (dBA) at 50 feet = 82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	93
25	6	0.0	93	88
50	0	0.0	87	82
60	-2	0.0	85	81
75	-4	0.0	83	79
100	-6	0.0	81	76
120	-8	0.0	79	75
170	-11	0.0	76	72
200	-12	0.0	75	70
300	-16	0.0	71	67
450	-19	0.0	68	63
500	-20	0.0	67	62
600	-22	0.0	65	61
700	-23	0.0	64	59
800	-24	0.0	63	58
900	-25	0.0	62	57
1000	-26	0.0	61	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Well (night)**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Generator Sets	81	50%	78.0
2	Drill rig and truck	84	20%	77.0
3	Air Compressor	78	40%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 86

All Sources Combined - Leq sound level (dBA) at 50 feet = 81

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	92
25	6	0.0	92	87
50	0	0.0	86	81
60	-2	0.0	85	80
75	-4	0.0	83	78
100	-6	0.0	80	75
120	-8	0.0	79	74
170	-11	0.0	76	71
200	-12	0.0	74	69
300	-16	0.0	71	66
400	-18	0.0	68	63
500	-20	0.0	66	61
600	-22	0.0	65	60
700	-23	0.0	64	58
800	-24	0.0	62	57
900	-25	0.0	61	56
1000	-26	0.0	60	55

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

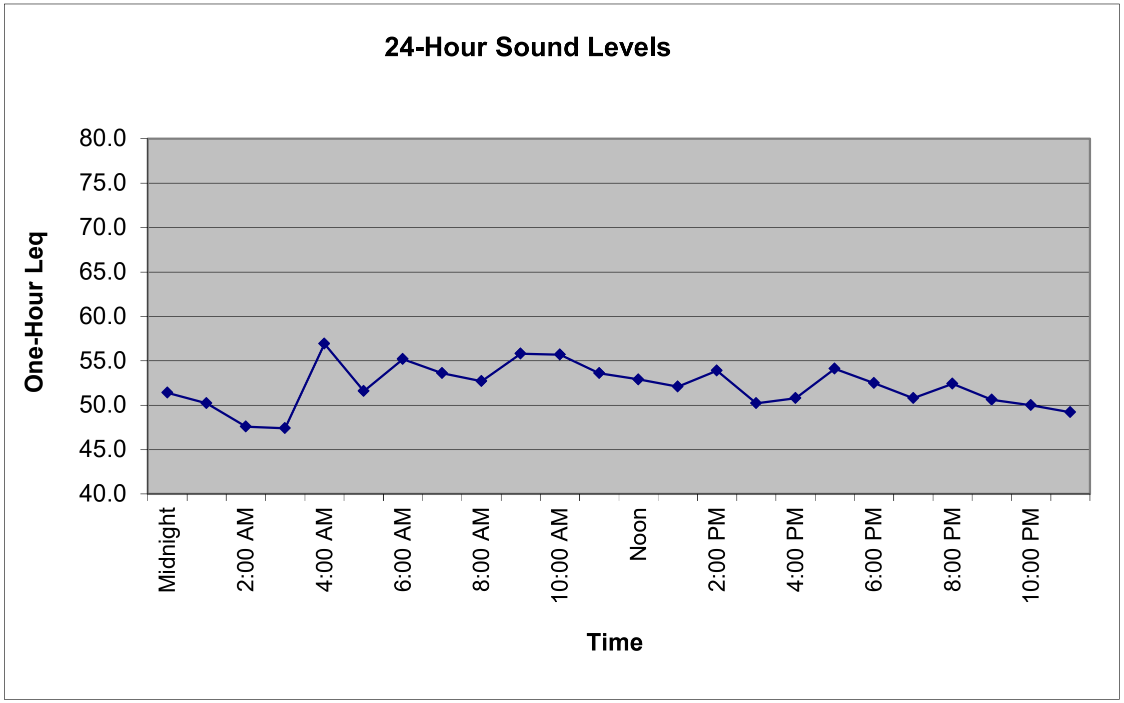
Noise Monitoring Survey

Long Term Measurement Data

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023
Location: LT-1

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	51.4	52.8	58.8	59.0	56.9	1.9	0.2	Evening
1:00 AM	50.2		5.2	5.4				Night
2:00 AM	47.6							
3:00 AM	47.4							
4:00 AM	56.9							
5:00 AM	51.6							
6:00 AM	55.2							
7:00 AM	53.6							
8:00 AM	52.7							
9:00 AM	55.8							
10:00 AM	55.7							
11:00 AM	53.6							
Noon	52.9							
1:00 PM	52.1							
2:00 PM	53.9							
3:00 PM	50.2							
4:00 PM	50.8							
5:00 PM	54.1							
6:00 PM	52.5							
7:00 PM	50.8							
8:00 PM	52.4							
9:00 PM	50.6							
10:00 PM	50.0							
11:00 PM	49.2							

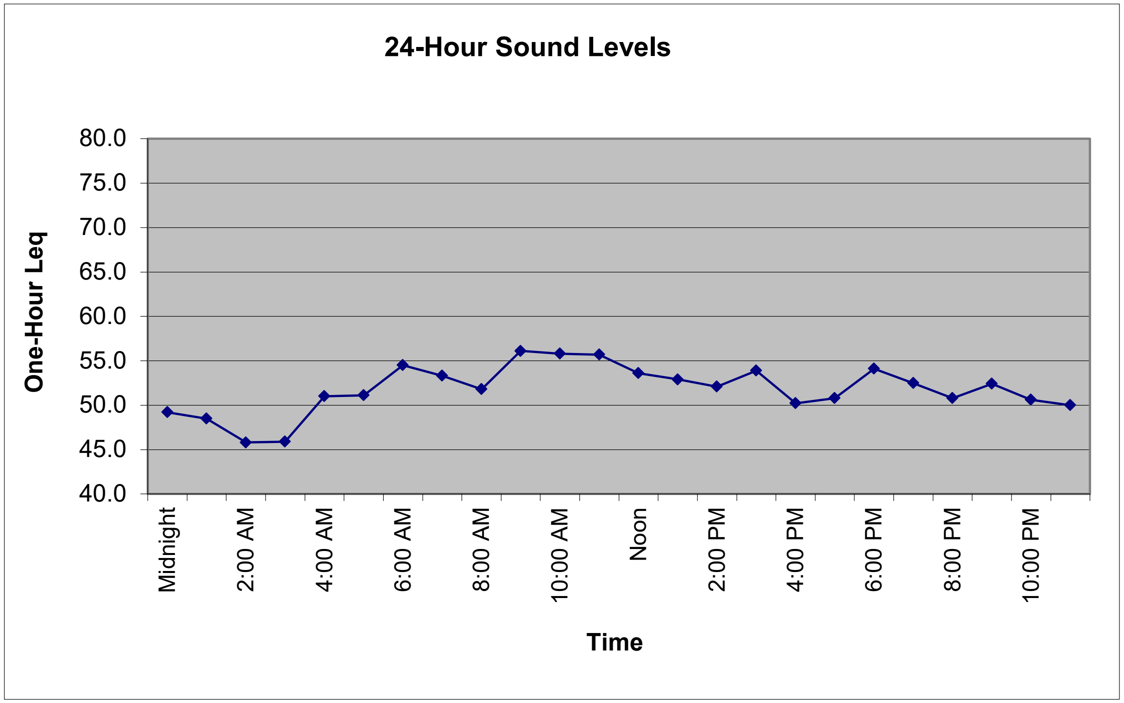


Ldn	58.8
Worst Hour Leq	56.9
Lowest Hour LEQ	47.4
Lowest Hour LEQ (daytime)	50.2
12-hour Leq	53.5

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023
Location: LT-2

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	49.2	52.5	57.4	57.7	56.1	1.3	0.3	Evening
1:00 AM	48.5		4.1	4.4				Night
2:00 AM	45.8							
3:00 AM	45.9							
4:00 AM	51.0							
5:00 AM	51.1							
6:00 AM	54.5							
7:00 AM	53.3							
8:00 AM	51.8							
9:00 AM	56.1							
10:00 AM	55.8							
11:00 AM	55.7							
Noon	53.6							
1:00 PM	52.9							
2:00 PM	52.1							
3:00 PM	53.9							
4:00 PM	50.2							
5:00 PM	50.8							
6:00 PM	54.1							
7:00 PM	52.5							
8:00 PM	50.8							
9:00 PM	52.4							
10:00 PM	50.6							
11:00 PM	50.0							



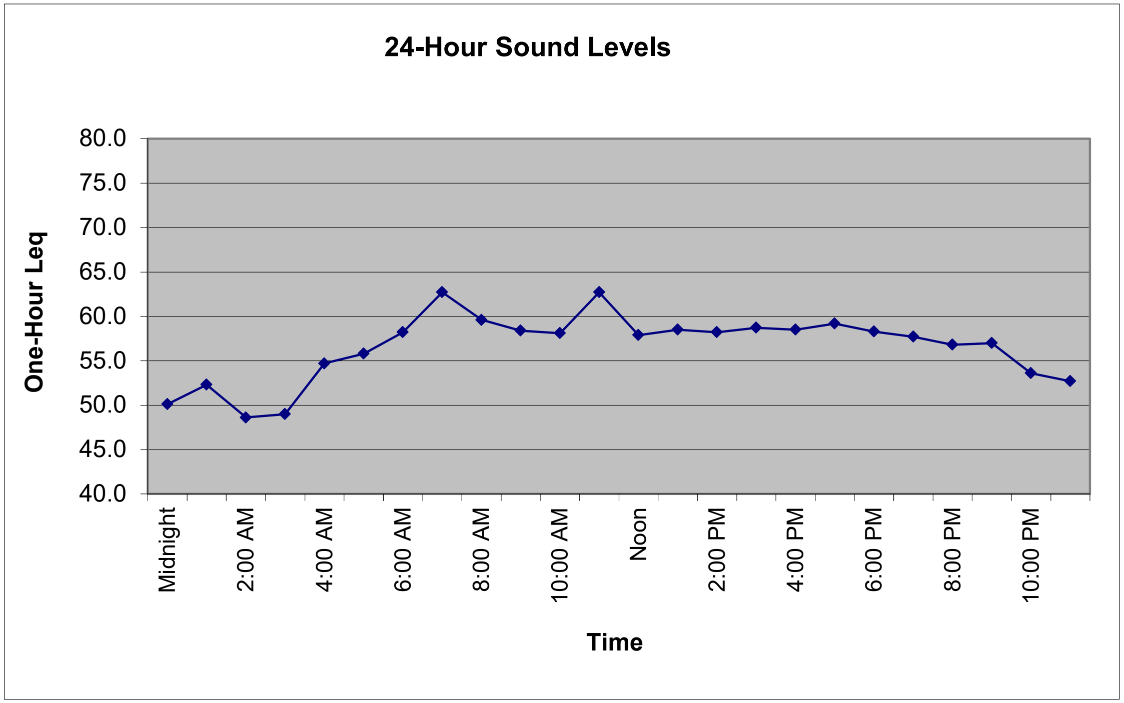
Ldn	57.4
Worst Hour Leq	56.1
Lowest Hour LEQ	45.8
Lowest Hour LEQ (daytime)	50.2
12-hour Leq	53.7

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023

Location: LT-3

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	50.1	57.9	61.5	62.0	62.7	-1.2	0.4	Evening
1:00 AM	52.3		-1.2	-0.7				Night
2:00 AM	48.6							
3:00 AM	49.0							
4:00 AM	54.7							
5:00 AM	55.8							
6:00 AM	58.2							
7:00 AM	62.7							
8:00 AM	59.6							
9:00 AM	58.4							
10:00 AM	58.1							
11:00 AM	62.7							
Noon	57.9							
1:00 PM	58.5							
2:00 PM	58.2							
3:00 PM	58.7							
4:00 PM	58.5							
5:00 PM	59.2							
6:00 PM	58.3							
7:00 PM	57.7							
8:00 PM	56.8							
9:00 PM	57.0							
10:00 PM	53.6							
11:00 PM	52.7							

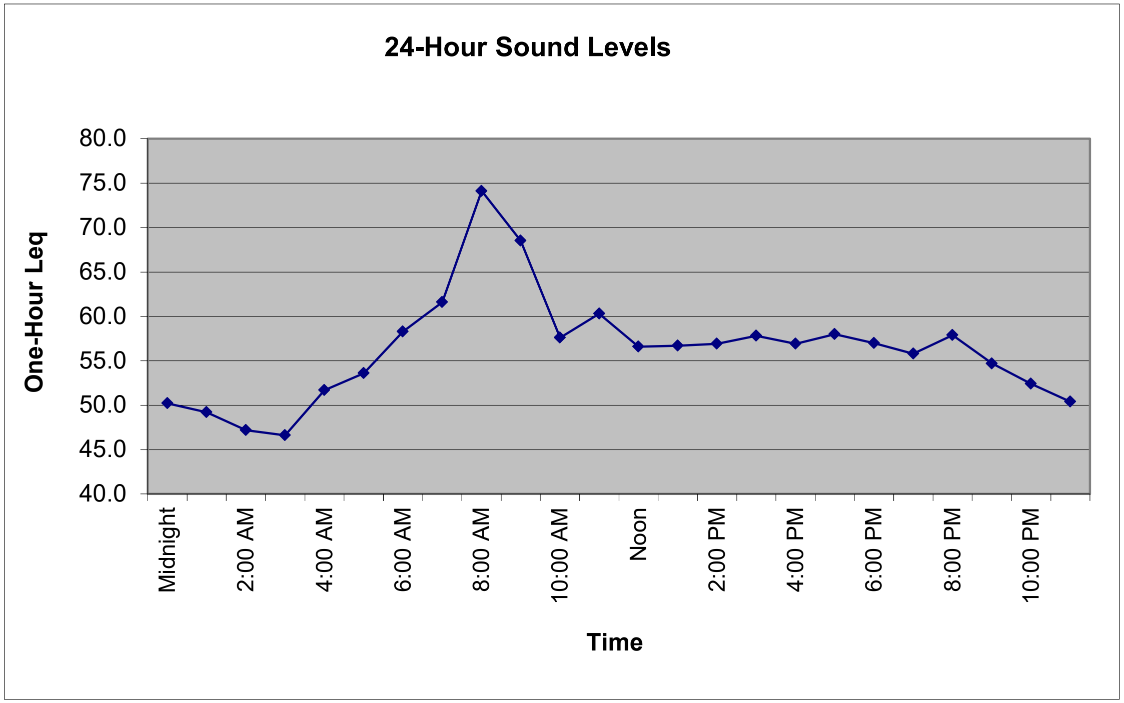


Ldn	61.5
Worst Hour Leq	62.7
Lowest Hour LEQ	48.6
Lowest Hour LEQ (daytime)	57.9
12-hour Leq	59.6

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023
Location: LT-4

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	50.2	62.5	63.8	64.0	74.1	-10.3	0.2	Evening
1:00 AM	49.2		2.2	2.4				Night
2:00 AM	47.2							
3:00 AM	46.6							
4:00 AM	51.7							
5:00 AM	53.6							
6:00 AM	58.3							
7:00 AM	61.6							
8:00 AM	74.1							
9:00 AM	68.5							
10:00 AM	57.6							
11:00 AM	60.3							
Noon	56.6							
1:00 PM	56.7							
2:00 PM	56.9							
3:00 PM	57.8							
4:00 PM	56.9							
5:00 PM	58.0							
6:00 PM	57.0							
7:00 PM	55.8							
8:00 PM	57.9							
9:00 PM	54.7							
10:00 PM	52.4							
11:00 PM	50.4							

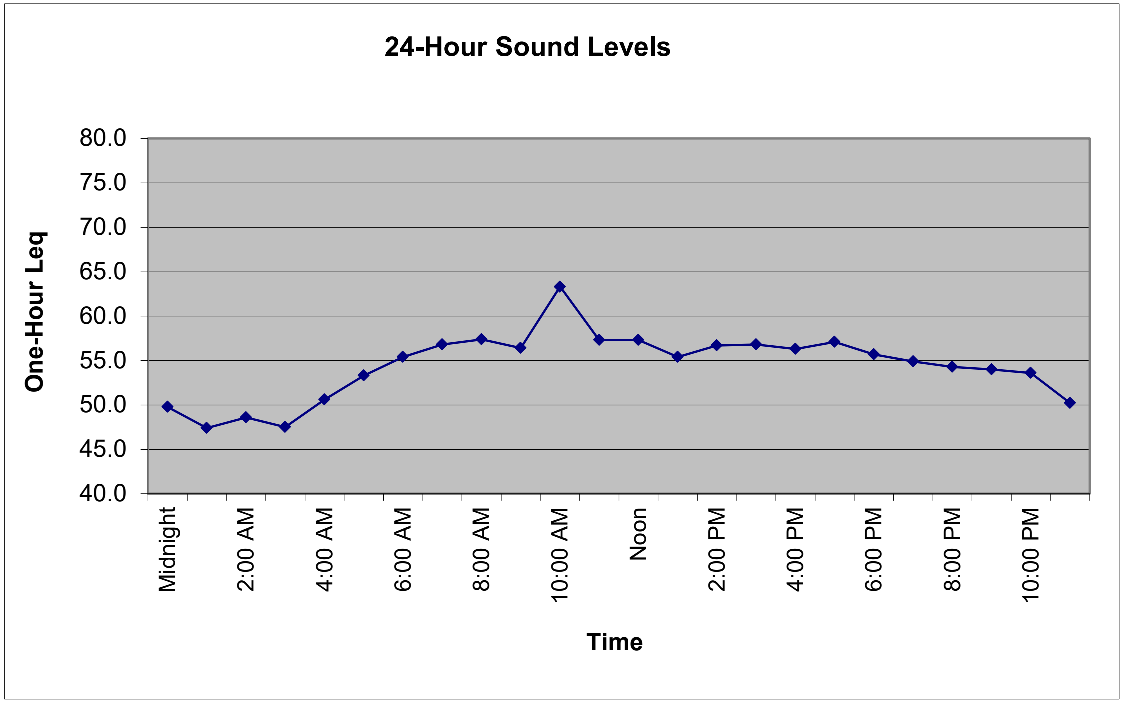


Ldn	63.8
Worst Hour Leq	74.1
Lowest Hour LEQ	46.6
Lowest Hour LEQ (daytime)	56.6
12-hour Leq	65.2

Ldn/CNEL Calculation Spreadsheet

Project: Parkline Specific Plan Date: 4/19/2023
Location: LT-5

Time	4/19/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	49.8	55.9	59.4	59.8	63.3	-3.9	0.4	Evening
1:00 AM	47.4		2.6	3.0				Night
2:00 AM	48.6							
3:00 AM	47.5							
4:00 AM	50.6							
5:00 AM	53.3							
6:00 AM	55.4							
7:00 AM	56.8							
8:00 AM	57.4							
9:00 AM	56.4							
10:00 AM	63.3							
11:00 AM	57.3							
Noon	57.3							
1:00 PM	55.4							
2:00 PM	56.7							
3:00 PM	56.8							
4:00 PM	56.3							
5:00 PM	57.1							
6:00 PM	55.7							
7:00 PM	54.9							
8:00 PM	54.3							
9:00 PM	54.0							
10:00 PM	53.6							
11:00 PM	50.2							



Ldn	59.4
Worst Hour Leq	63.3
Lowest Hour LEQ	47.4
Lowest Hour LEQ (daytime)	55.4
12-hour Leq	57.8

LT-1 Meter Data

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAE	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	4/19/2023	8:53:04 AM	9:00:00 AM	0:06:56	13.36mV/I	70.6	88.9	48.4	96.8	120.2	84.4	81	76.1	73.2	71.9	65.6	58.9	49.9	49.1	48.7
2	4/19/2023	9:00:02 AM	10:00:00 AM	0:59:58	13.36mV/I	55.8	82.9	47.8	91.4	94.7	66.4	64.8	59.8	56.9	55.8	52.2	50.6	49.1	48.8	48.3
3	4/19/2023	10:00:02 AM	11:00:00 AM	0:59:58	13.36mV/I	55.7	75.4	46.6	91.3	91.3	68.5	63.5	59.5	57.7	56.7	52.5	50.4	48.5	48.1	47.6
4	4/19/2023	11:00:02 AM	12:00:00 PM	0:59:58	13.36mV/I	53.6	74.1	46.9	89.2	93.9	63.9	62.1	58.3	55.7	54.8	51.9	49.9	48	47.7	47.3
5	4/19/2023	12:00:02 PM	1:00:00 PM	0:59:58	13.36mV/I	52.9	76.2	46.3	88.5	95.1	62.8	60.1	57.3	55.5	54.5	50.9	49.2	47.6	47.2	46.7
6	4/19/2023	1:00:02 PM	2:00:00 PM	0:59:58	13.36mV/I	52.1	69.9	46	87.7	86.7	63	60.2	57	55.1	54.1	50.2	48.5	47.2	46.9	46.5
7	4/19/2023	2:00:02 PM	3:00:00 PM	0:59:58	13.36mV/I	53.9	73.6	46	89.5	91.4	66.4	62.6	57.8	55.1	53.9	50	48.4	47	46.7	46.4
8	4/19/2023	3:00:02 PM	4:00:00 PM	0:59:58	13.36mV/I	50.2	68.2	46.1	85.8	82.6	58.1	56.5	54.1	52.6	51.8	49.8	48.6	47.1	46.9	46.5
9	4/19/2023	4:00:02 PM	5:00:00 PM	0:59:58	13.36mV/I	50.8	67.8	46.3	86.4	86.3	60.5	58.1	55.3	53.6	52.6	49.8	48.4	47.2	47	46.6
10	4/19/2023	5:00:02 PM	6:00:00 PM	0:59:58	13.36mV/I	54.1	75.4	46.5	89.7	98.9	64.9	62.5	59.1	57.1	56.2	52.5	49.5	47.4	47.2	46.8
11	4/19/2023	6:00:02 PM	7:00:00 PM	0:59:58	13.36mV/I	52.5	73.7	46.5	88.1	87.2	61.7	59.7	57	55.6	55	51.7	49.3	47.7	47.4	46.9
12	4/19/2023	7:00:02 PM	8:00:00 PM	0:59:58	13.36mV/I	50.8	67.8	46.7	86.4	86.5	59.8	58.2	55.6	54	53.3	50.1	48.2	47.3	47.2	47
13	4/19/2023	8:00:02 PM	9:00:00 PM	0:59:58	13.36mV/I	52.4	68.4	46.9	88	90.9	63.3	61.1	57.4	55.6	54.8	50.9	48.3	47.4	47.3	47.2
14	4/19/2023	9:00:02 PM	10:00:00 PM	0:59:58	13.36mV/I	50.6	70.7	46.6	86.2	98.9	59.9	57.9	55.2	53.4	52.3	49.1	47.8	47.1	47	46.9
15	4/19/2023	10:00:02 PM	11:00:00 PM	0:59:58	13.36mV/I	50	65.5	46.4	85.6	92.1	61.2	57.9	53.6	51.7	50.9	48.1	47.3	46.9	46.9	46.7
16	4/19/2023	11:00:02 PM	12:00:00 AM	0:59:58	13.36mV/I	49.2	61.4	46.3	84.8	73.9	56.7	55.9	53.2	51.7	51	48.6	47.5	46.9	46.8	46.6
17	4/20/2023	12:00:02 AM	1:00:00 AM	0:59:58	13.36mV/I	51.4	71.7	46.2	87	85.1	65	60.1	51.3	48.8	48.3	47.4	47.1	46.7	46.6	46.5
18	4/20/2023	1:00:02 AM	2:00:00 AM	0:59:58	13.36mV/I	50.2	71.5	46.2	85.8	83.6	61.5	58.3	52	49.7	48.2	47.4	47.1	46.6	46.6	46.4
19	4/20/2023	2:00:02 AM	3:00:00 AM	0:59:58	13.36mV/I	47.6	59.3	46.5	83.2	77.9	48.8	48.5	48.3	48.2	48.1	47.8	47.5	47	46.9	46.7
20	4/20/2023	3:00:02 AM	4:00:00 AM	0:59:58	13.36mV/I	47.4	50.7	46.7	83	66.8	48.6	48.3	48.1	47.9	47.9	47.6	47.3	47	47	46.9
21	4/20/2023	4:00:02 AM	5:00:00 AM	0:59:58	13.36mV/I	56.9	87.1	46.8	92.5	100.6	63.1	60.7	49.4	48.8	48.6	48.1	47.8	47.3	47.2	47
22	4/20/2023	5:00:02 AM	6:00:00 AM	0:59:58	13.36mV/I	51.6	66.4	47.5	87.2	78.6	60.4	58.9	55.3	53.3	52.2	50.7	50.1	48.9	48.2	47.9
23	4/20/2023	6:00:02 AM	7:00:00 AM	0:59:58	13.36mV/I	55.2	76.8	49	90.8	88.4	64.8	63	59.9	57.9	56.8	52.6	51.2	49.9	49.6	49.3
24	4/20/2023	7:00:02 AM	8:00:00 AM	0:59:58	13.36mV/I	53.6	76.9	47	89.2	89	64.1	60.2	56.6	55.2	54.6	50.9	49.5	48	47.7	47.3
25	4/20/2023	8:00:02 AM	9:00:00 AM	0:59:58	13.36mV/I	52.7	69.9	45.7	88.3	85.6	64.5	62	57.1	54.5	53.7	50.8	48.5	46.9	46.7	46.3
26	4/20/2023	9:00:01 AM	9:38:41 AM	0:38:40	13.36mV/I	56.5	76.6	45.6	90.2	108.9	70.1	66.2	61.2	58.3	56.9	53.4	49.3	46.6	46.4	46
27	4/20/2023	9:41:22 AM	9:43:01 AM	0:01:39	13.36mV/I	73.4	88.5	47.4	93.4	123.7	85.4	84	81	78.2	77.1	72.8	69.1	54.5	51.6	47.6

LT-2 Meter Data

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAE	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	4/19/2023	9:05:10 AM	10:00:00 AM	0:54:50	16.44mV/l	64	93.1	47.2	99.2	127.2	74.5	71	66.2	63.6	61.8	54	49.9	48.2	48	47.7
2	4/19/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.44mV/l	53.6	71.6	45.9	89.2	91.5	65.2	62.8	58.5	56.5	55.6	51.8	49.4	47.5	47.3	46.9
3	4/19/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.44mV/l	52.8	72	46.4	88.4	85.1	62.6	60.1	57.2	55.7	55.1	51.8	49.3	47.6	47.3	46.9
4	4/19/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.44mV/l	52	72.9	46.2	87.6	91.3	61.2	59.3	56.3	54.8	54.2	51.3	49.2	47.3	47	46.7
5	4/19/2023	1:00:02 PM	2:00:00 PM	0:59:58	16.44mV/l	51.9	69.9	45.7	87.5	88.1	62.6	60.6	56.6	54.4	53.4	50.2	48.2	46.8	46.5	46.1
6	4/19/2023	2:00:02 PM	3:00:00 PM	0:59:58	16.44mV/l	52.7	70.4	45.8	88.3	86.1	65.1	61.2	57.1	54.8	53.7	50.2	48.4	46.9	46.6	46.3
7	4/19/2023	3:00:02 PM	4:00:00 PM	0:59:58	16.44mV/l	51.9	77.2	45.1	87.5	96.6	61.1	58.2	55.3	53.8	53	50.2	48.2	46.6	46.3	45.8
8	4/19/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.44mV/l	51	67.7	45.6	86.6	97	62.1	59.7	55.4	53.5	52.6	49.3	47.7	46.4	46.2	45.9
9	4/19/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.44mV/l	54.2	74.9	45.3	89.8	89.8	64.8	62.4	59.8	57.5	56.5	52.4	49.4	46.8	46.5	46
10	4/19/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.44mV/l	51.5	69.7	45.3	87.1	88.3	60.9	58.9	56.1	54.4	53.7	50.5	48.1	46.6	46.3	46
11	4/19/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.44mV/l	50.6	66.5	45.3	86.2	91.8	59.4	57.9	55.3	54.2	53.6	50.3	47.9	46.1	45.9	45.7
12	4/19/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.44mV/l	51.6	70	44.9	87.2	83.2	62.6	60.4	56.9	54.3	53.6	50.3	47.2	45.8	45.6	45.3
13	4/19/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.44mV/l	49.4	69.6	45	85	82.9	57.4	55.6	53.1	51.8	51.1	48.1	46.5	45.6	45.5	45.3
14	4/19/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.44mV/l	48.3	65.5	45.1	83.9	77.5	57.6	56.2	51.9	50.4	49.7	47	46.3	45.6	45.5	45.3
15	4/19/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.44mV/l	48.1	63.7	44.7	83.7	82	56.2	54.5	52.2	50.9	50.2	47.4	46.1	45.3	45.1	44.9
16	4/20/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.44mV/l	49.2	65.6	44.4	84.8	78.7	62.1	59.3	51.1	48.3	47.6	46.2	45.7	45	44.9	44.7
17	4/20/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.44mV/l	48.5	69	44.3	84.1	81.1	58.8	56.4	50.8	48.6	47.8	46.4	45.6	44.8	44.7	44.6
18	4/20/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.44mV/l	45.8	49.4	44.5	81.4	79.4	47.3	46.9	46.6	46.5	46.4	46.1	45.7	45.2	45.1	44.9
19	4/20/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.44mV/l	45.9	50.3	44.8	81.5	77.9	48.2	47.4	46.9	46.6	46.5	46	45.7	45.2	45.2	45
20	4/20/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.44mV/l	51	75.4	45.5	86.6	89.5	60.7	57.2	48.9	48.4	48.2	47.5	46.7	45.9	45.8	45.6
21	4/20/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.44mV/l	51.1	60.5	47.2	86.7	73.6	57.1	56.2	53.6	52.7	52.4	51.4	50.5	48.9	48.4	47.9
22	4/20/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.44mV/l	54.5	69	48.7	90.1	83.5	63.5	62	59.6	58	57.2	53.7	51.6	49.9	49.6	49.3
23	4/20/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.44mV/l	53.3	71.2	47.1	88.9	90.3	61.7	60.1	58	56.8	56.1	53.1	51	48.5	48.2	47.6
24	4/20/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.44mV/l	51.8	66.7	45.1	87.4	86.3	62.5	60.4	56.9	54.8	54	50.6	48.2	46.2	45.9	45.5
25	4/20/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.44mV/l	56.1	76.5	45	91.7	91.4	68.8	66.2	61.6	58.6	57.2	51.4	47.9	46	45.7	45.3
26	4/20/2023	9:59:59 AM	10:09:21 AM	0:09:22	16.44mV/l	63.1	83.8	45.2	90.6	116.5	77.3	74	67.5	63.4	60.8	53.9	48.7	45.8	45.6	45.3

LT-3 Meter Data

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAE	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	4/19/2023	9:20:01 AM	10:00:00 AM	0:39:59	16.82mV/I	65.5	91.2	51.6	99.3	120.9	74.3	72.4	69	67.1	65.7	62.1	60.5	57.1	55.7	52.7
2	4/19/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.82mV/I	58.1	70.6	49.7	93.7	89.7	65.7	64	61.9	60.8	60.4	58.8	56.8	53.5	52.7	50.9
3	4/19/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.82mV/I	62.7	87.4	50.5	98.3	100.2	71.1	65.6	62	60.9	60.5	58.7	56.9	53.9	53.1	51.8
4	4/19/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.82mV/I	57.9	73.3	49.7	93.5	100.9	64.6	63.1	61.6	60.7	60.3	58.4	56.6	53.3	52.6	51.3
5	4/19/2023	1:00:02 PM	2:00:00 PM	0:59:58	16.82mV/I	58.5	74.8	48.5	94.1	96.9	67.5	65.1	62.7	61.3	60.8	58.6	56.4	52.5	51.7	50.4
6	4/19/2023	2:00:02 PM	3:00:00 PM	0:59:58	16.82mV/I	58.2	73.1	48.9	93.8	93.9	65.2	64	62	61	60.6	58.8	56.9	53	52	50.2
7	4/19/2023	3:00:02 PM	4:00:00 PM	0:59:58	16.82mV/I	58.7	81.6	48.9	94.3	92.5	66	64.2	62	61.1	60.7	58.6	56.7	53.2	52.2	50.3
8	4/19/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.82mV/I	58.5	79	49.1	94.1	91.9	66.3	63.7	61.5	60.7	60.3	58.5	56.7	52.9	51.7	50.4
9	4/19/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.82mV/I	59.2	77.9	49	94.8	91.1	66.8	64.9	62.6	61.8	61.3	59.2	57.3	53.7	52.6	51.3
10	4/19/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.82mV/I	58.3	77.1	47.8	93.9	92.3	66.9	64.6	62.1	61.1	60.7	58.6	56.5	52.5	51.3	49.5
11	4/19/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.82mV/I	57.7	76.5	46.3	93.3	88.4	65.9	63.6	61.2	60.3	59.9	58	55.7	51.2	50.2	48.2
12	4/19/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.82mV/I	56.8	75.3	47.8	92.4	87.3	64.8	62.6	60.5	59.4	59.1	57	54.9	50.9	49.7	48.3
13	4/19/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.82mV/I	57	79.5	47.2	92.6	90.7	65	61.4	59.1	58.2	57.8	55.6	53.1	49.1	48.4	47.8
14	4/19/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.82mV/I	53.6	69.4	47.4	89.2	82.1	61.5	59.7	57.7	56.9	56.5	54.2	51.2	48.5	48.2	47.8
15	4/19/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.82mV/I	52.7	73	46.6	88.3	86.3	62.4	59.8	55.9	54.5	53.9	51.3	49.4	47.3	47.1	46.8
16	4/20/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.82mV/I	50.1	64	45.9	85.7	79	59.9	58	54.8	52.9	52	49.1	47.4	46.5	46.4	46.2
17	4/20/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.82mV/I	52.3	78.3	45.6	87.9	90.7	59.9	57	53.6	51.7	50.8	47.9	46.8	46.2	46.1	45.9
18	4/20/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.82mV/I	48.6	69.8	45.8	84.2	86	57.1	54.6	51.5	49.9	49	47.3	46.8	46.3	46.2	46.1
19	4/20/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.82mV/I	49	66.5	45.9	84.6	82.1	57	55.5	53.1	51.3	50.3	47.9	47.3	46.4	46.3	46.2
20	4/20/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.82mV/I	54.7	83.1	46.5	90.3	98	62.5	60.8	56.9	55.4	54.6	51.2	49.5	47.6	47.4	47
21	4/20/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.82mV/I	55.8	68	49.3	91.4	83.2	63.1	62	60.5	59.4	58.7	56.3	53.9	50.9	50.5	49.9
22	4/20/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.82mV/I	58.2	73.6	51.3	93.8	86.8	65.8	63.8	61.9	61.1	60.7	58.7	56.4	53.3	52.7	52
23	4/20/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.82mV/I	62.7	87.4	52	98.3	100.5	71.4	67.9	64	62.8	62.3	60.5	58.6	55	54.2	53.1
24	4/20/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.82mV/I	59.6	73.9	50.3	95.2	86.9	67.5	65.9	63.5	62.5	62	59.9	58	54.9	54	52.4
25	4/20/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.82mV/I	58.4	71.9	48.5	94	91.8	66.3	64.4	62.6	61.6	61	58.8	56.9	53	51.8	49.7
26	4/20/2023	10:00:00 AM	10:19:06 AM	0:19:06	16.82mV/I	63.5	85.5	50.1	94.1	114.5	76.3	72.5	66.6	63.2	62.4	59.8	57.7	53.9	52.7	50.7

LT-4 Meter Data

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAE	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	4/19/2023	9:30:33 AM	10:00:00 AM	0:29:27	16.63mV/I	65.3	85.9	49.4	97.8	121.5	77.5	74.5	69.8	67.6	66.2	62	59.6	55.3	53.6	51.2
2	4/19/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.63mV/I	57.6	77.3	44.5	93.2	95.1	66.1	64.2	62.1	61.2	60.7	58.3	55.3	48.4	47.3	45.3
3	4/19/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.63mV/I	60.3	87.5	45.3	95.9	99.6	67.1	65.4	63	61.5	60.9	58.4	55.7	48.9	47.4	46.1
4	4/19/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.63mV/I	56.6	69.9	45	92.2	86.8	66.1	64.4	61.6	60.2	59.5	57	54.1	47.7	46.9	45.8
5	4/19/2023	1:00:02 PM	2:00:00 PM	0:59:58	16.63mV/I	56.7	75.4	44.4	92.3	97.3	65.4	63.5	61.3	60.3	59.9	57.4	54.1	48	46.8	45.6
6	4/19/2023	2:00:02 PM	3:00:00 PM	0:59:58	16.63mV/I	56.9	74	43.9	92.5	90.8	65.6	63.7	61.4	60.3	59.8	57.7	54.6	47.1	46.3	44.9
7	4/19/2023	3:00:02 PM	4:00:00 PM	0:59:58	16.63mV/I	57.8	85.8	44.1	93.4	97	65.2	62.8	60.6	59.9	59.4	57.4	54.5	46.9	46.1	45.4
8	4/19/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.63mV/I	56.9	70.4	44.2	92.5	95.7	64.6	63.6	61.6	60.8	60.4	58.2	54.9	47.1	46	44.8
9	4/19/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.63mV/I	58	78.2	44	93.6	95.5	67.5	65.2	62.3	61.1	60.5	58.6	55.5	48.4	47.6	46.4
10	4/19/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.63mV/I	57	72.1	44	92.6	89.2	64.7	63.6	61.8	60.9	60.4	58.3	54.9	47.1	46.3	45
11	4/19/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.63mV/I	55.8	70.5	42.8	91.4	95.5	63.6	61.9	60.3	59.6	59.2	57.2	53.6	45.8	44.8	43.4
12	4/19/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.63mV/I	57.9	85.7	43.5	93.5	97.6	64.8	63	60.9	59.9	59.4	57.1	53	46.3	45.4	44.4
13	4/19/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.63mV/I	54.7	69.3	43.6	90.3	85.3	63.6	62.2	60.4	59.4	58.9	55.5	49.7	45.3	44.6	44
14	4/19/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.63mV/I	52.4	67.2	43.7	88	91.9	61.5	60.5	58.7	57.6	57	51.7	47.1	44.7	44.5	44.1
15	4/19/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.63mV/I	50.4	66.6	42.9	86	78.9	60.1	59	57	55.2	54.1	49	45.6	43.8	43.6	43.2
16	4/20/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.63mV/I	50.2	69.3	42.7	85.8	81.4	61.9	60.1	56.8	53.2	51.2	45.4	44.1	43.4	43.2	42.9
17	4/20/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.63mV/I	49.2	71.9	42.5	84.8	85.7	60.2	56.9	53.6	51.2	50.2	45	43.8	43.1	43	42.7
18	4/20/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.63mV/I	47.2	69.4	42.9	82.8	82	58.4	56.4	48.9	45.9	45.4	44.3	43.9	43.4	43.3	43.1
19	4/20/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.63mV/I	46.6	63.7	42.3	82.2	78	58.4	56.2	48.5	46.2	45.6	44.3	43.7	43.1	42.9	42.5
20	4/20/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.63mV/I	51.7	74.2	43.3	87.3	88.2	64.6	60.5	56.7	52.4	50.5	46.4	45.3	43.8	43.7	43.5
21	4/20/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.63mV/I	53.6	67.3	45.6	89.2	83.7	62.4	61.4	59.9	58.7	57.9	52.7	49.5	47.2	46.7	46.2
22	4/20/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.63mV/I	58.3	80.5	47.2	93.9	98.4	66.3	64.1	62.4	61.5	61	58.1	53.8	49.4	48.9	48.3
23	4/20/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.63mV/I	61.6	82.3	46.1	97.2	100.4	72.5	70	67	64.1	63.3	60.5	56.7	49.7	48.7	46.9
24	4/20/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.63mV/I	74.1	89.1	49.2	109.7	101.2	86.3	84.3	80.4	78.1	77.2	72.1	68.4	59.1	56	51.5
25	4/20/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.63mV/I	68.5	79.3	48.9	104.1	99.5	75.4	74.6	73.6	72.9	72.5	70.1	66.9	55.9	54.4	52.1
26	4/20/2023	10:00:01 AM	10:29:16 AM	0:29:15	16.63mV/I	69.1	98.3	44.8	101.5	132.1	77.2	73.3	69.6	68.5	68.1	65.9	62.9	54.2	52	47.2
27	4/20/2023	10:29:17 AM	10:29:20 AM	0:00:03	16.63mV/I	62.2	64.9	57.9	67	95.1	64.9	64.8	64.6	64.4	64.3	63.6	62.4	58.8	58.5	58.1

LT-5 Meter Data

Rec 3 to 28	Slow Response		dBA weighting		1.0 dB resolution stats									
Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	L10%	L8%	L25%
4/19/2023 9:49	1.0 hour	70.1	105.7	99	48.7	81	66	61	55	51	50	49	61	63	58
4/19/2023 10:49	1.0 hour	57.3	92.9	82.4	48.7	65	60	59	54	51	50	49	59	59	56
4/19/2023 11:49	1.0 hour	57.3	92.9	79.2	48.3	64	60	58	54	51	50	49	58	59	56
4/19/2023 12:49	1.0 hour	55.4	91	67.8	47	62	59	58	54	50	49	48	58	58	55
4/19/2023 13:49	1.0 hour	56.7	92.3	71.6	49.2	64	60	59	55	52	51	50	59	59	56
4/19/2023 14:49	1.0 hour	56.8	92.4	81.8	47.3	63	59	58	54	51	50	49	58	58	56
4/19/2023 15:49	1.0 hour	56.3	91.9	72.7	47.2	64	60	58	54	51	50	48	58	59	56
4/19/2023 16:49	1.0 hour	57.1	92.7	77.9	46.9	65	60	58	55	51	50	48	58	59	56
4/19/2023 17:49	1.0 hour	55.7	91.3	74	47	63	59	57	54	50	49	48	57	58	56
4/19/2023 18:49	1.0 hour	54.9	90.5	75.1	47.6	62	58	56	53	50	49	48	56	57	55
4/19/2023 19:49	1.0 hour	54.3	89.9	71.5	47	64	57	55	52	49	48	48	55	56	53
4/19/2023 20:49	1.0 hour	54	89.6	71.6	47.4	63	57	55	51	49	48	48	55	56	53
4/19/2023 21:49	1.0 hour	53.6	89.2	77.1	47.1	62	56	55	50	48	48	47	55	55	52
4/19/2023 22:49	1.0 hour	50.2	85.8	64.3	44.8	55	53	52	49	47	46	46	52	52	50
4/19/2023 23:49	1.0 hour	49.8	85.4	66.9	44.2	59	53	51	47	45	45	44	51	52	48
4/20/2023 0:49	1.0 hour	47.4	83	63.8	43.5	55	50	48	45	44	44	43	48	48	46
4/20/2023 1:49	1.0 hour	48.6	84.2	67.5	43.3	56	51	50	47	45	44	44	50	50	48
4/20/2023 2:49	1.0 hour	47.5	83.1	64.5	42.8	56	50	48	45	44	43	43	48	49	47
4/20/2023 3:49	1.0 hour	50.6	86.2	73.6	42.9	60	54	51	46	44	44	43	51	52	48
4/20/2023 4:49	1.0 hour	53.3	88.9	66.9	48.4	58	56	55	52	50	49	49	55	55	53
4/20/2023 5:49	1.0 hour	55.4	91	73.1	49.9	62	59	57	53	51	50	50	57	58	55
4/20/2023 6:49	1.0 hour	56.8	92.4	79.3	49.5	62	59	58	55	52	51	50	58	58	57
4/20/2023 7:49	1.0 hour	57.4	93	75.1	48	66	61	59	55	52	52	50	59	59	57
4/20/2023 8:49	1.0 hour	56.4	92	72.7	45.9	65	60	58	54	50	49	47	58	59	56
4/20/2023 9:49	1.0 hour	63.3	98.9	77.1	45.9	74	71	67	54	50	49	47	67	69	57
4/20/2023 10:49	2.6 min	73.1	95	86.9	48	83	80	77	64	52	50	48	77	78	71

Short Term Measurement Data

Incorrect timestamps were recorded during the following measurements:
LxT_Data.056
LxT_Data.055
LxT_Data.053

Below are the recorded (incorrect) and updated (correct) start/end timestamps.

LxT_Data.056
Recorded Start: 2020-09-15 03:29:00 PM
Recorded End: 2020-09-15 03:46:00 PM
Updated Start: 2023-04-19 12:06:00 PM
Updated End: 2023-04-19 12:21:00 PM

LxT_Data.055
Recorded Start: 2020-09-15 02:24:00 PM
Recorded End: 2020-09-15 02:39:00 PM
Updated Start: 2023-04-19 11:01:00 AM
Updated End: 2023-04-19 11:16:00 AM

LxT_Data.053
Recorded Start: 2020-09-15 01:51:00 PM
Recorded End: 2020-09-15 02:06:00 PM
Updated Start: 2023-04-19 10:28:00 AM
Updated End: 2023-04-19 10:43:00 AM

Summary

File Name on Meter	LxT_Data.056.s
File Name on PC	LxT_0004004-20200915 032900-LxT_Data.056.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	*The meter date and time was not correctly established during the measurement; as such, the date and times listed for this measurement do not reflect the actual date and time. The correct date and time are shown on the Time History output, and the incorrect date and times have been maintained with strike-through text.	
Start	~~2020-09-15 03:29:00~~	2023-04-19 12:06:00
Stop	~~2020-09-15 03:46:00~~	2023-04-19 12:23:00
Duration	00:17:00.5	
Run Time	00:16:28.3	
Pause	00:00:32.2	
Pre-Calibration	~~2020-09-15 03:26:57~~	2023-04-19 12:03:57
Post-Calibration	~~2020-09-15 03:48:54~~	2023-04-19 12:25:54
Calibration Deviation	-0.15 dB	

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	122.9 dB		
	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**24.4**	25.5	31.8 dB
Noise Floor	15.2	16.4	22.6 dB
	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	49.6 dB		
LAE	79.5 dB		
EA	10.015 µPa²h		
EA8	291.844 µPa²h		
EA40	1.459 mPa²h		
LApeak (max)	~~2020-09-15 03:38:32~~	2023-04-19 12:15:32	80.4 dB
LASmax	~~2020-09-15 03:45:57~~	2023-04-19 12:22:57	66.0 dB
LASmin	~~2020-09-15 03:41:59~~	2023-04-19 12:18:59	40.6 dB
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	59.6	-99.9	49.6	59.6	-99.9	-99.9

LCeq	61.6 dB
LAeq	49.6 dB
LCeq - LAeq	12.0 dB
LAIeq	52.2 dB
LAeq	49.6 dB
LAIeq - LAeq	2.6 dB

	A			**C**	
	dB	**Time Stamp**	**Corrected Time Stamp**	**dB**	**Time Stamp**
Leq	49.6			61.6	
Ls(max)	66.0	~~2020-09-15 03:45:57~~	2023-04-19 12:22:57		
Ls(min)	40.6	~~2020-09-15 03:41:59~~	2023-04-19 12:18:59		
LPeak(max)	80.4	~~2020-09-15 03:38:32~~	2023-04-19 12:15:32		

Overload Count	0
Overload Duration	0.0 s

Dose Settings			
Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results			
Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	35.0	35.0	dB

Statistics		
LA 1.00	58.8	dB
LA 10.00	52.3	dB
LA 25.00	49.1	dB
LA 50.00	46.2	dB
LA 90.00	43.2	dB
LA 99.00	41.3	dB

Calibration History

Preamp	**Date**	**Corrected Date**	**dB re. 1V/Pa**
PRMLxT1L	~~2020-09-15 03:48:48~~	2023-04-19 12:25:48	-29.20
PRMLxT1L	~~2020-09-15 03:26:54~~	2023-04-19 12:03:54	-29.04
PRMLxT1L	~~2020-09-15 02:41:17~~	2023-04-19 11:18:17	-29.15
PRMLxT1L	~~2020-09-15 02:19:48~~	2023-04-19 10:56:48	-29.09
PRMLxT1L	~~2020-09-15 02:07:44~~	2023-04-19 10:44:44	-29.06
PRMLxT1L	~~2020-09-15 01:48:13~~	2023-04-19 10:25:13	-29.04
PRMLxT1L	2020-07-29 00:01:50	N/A	-29.05
PRMLxT1L	2022-06-29 11:07:13	N/A	-28.98
PRMLxT1L	2022-06-29 10:17:28	N/A	-28.91
PRMLxT1L	2022-06-29 07:13:19	N/A	-28.89
PRMLxT1L	2022-06-02 12:37:15	N/A	-28.69

Summary

File Name on Meter	LxT_Data.055.s
File Name on PC	LxT_0004004-20200915 022401-LxT_Data.055.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	*The meter date and time was not correctly established during the measurement; as such, the date and times listed for this measurement do not reflect the actual date and time. The correct date and time are shown on the Time History output, and the incorrect date and times have been maintained with strike-through text.	
Start	~~2020-09-15 02:24:01~~	2023-04-19 11:01:01
Stop	~~2020-09-15 02:39:02~~	2023-04-19 11:16:02
Duration	00:15:01.4	
Run Time	00:15:01.4	
Pause	00:00:00.0	
Pre-Calibration	~~2020-09-15 02:19:48~~	2023-04-19 10:56:48
Post-Calibration	~~2020-09-15 02:41:24~~	2023-04-19 11:18:24
Calibration Deviation	-0.06 dB	

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
Overload	122.9 dB

	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**24.4**	25.5	31.7 dB
Noise Floor	15.2	16.4	22.6 dB

	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	55.9 dB		
LAE	85.4 dB		
EA	38.965 µPa²h		
EA8	1.245 mPa²h		
EA40	6.225 mPa²h		
LApeak (max)	~~2020-09-15 02:24:20~~	2023-04-19 11:01:20	91.2 dB
LASmax	~~2020-09-15 02:26:34~~	2023-04-19 11:03:34	68.7 dB
LASmin	~~2020-09-15 02:34:41~~	2023-04-19 11:11:41	41.0 dB
SEA	-99.9 dB		

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	65.9	-99.9	55.9	65.9	-99.9	-99.9

LCeq	64.5 dB
LAeq	55.9 dB
LCeq - LAeq	8.6 dB
LAIeq	57.7 dB
LAeq	55.9 dB
LAIeq - LAeq	1.8 dB

	A			**C**	
	dB	**Time Stamp**	**Corrected Time Stamp**	**dB**	**Time Stamp**
Leq	55.9			64.5	
Ls(max)	68.7	~~2020-09-15 02:26:34~~	2023-04-19 11:03:34		
Ls(min)	41.0	~~2020-09-15 02:34:41~~	2023-04-19 11:11:41		
LPeak(max)	91.2	~~2020-09-15 02:24:20~~	2023-04-19 11:01:20		

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	40.9	40.9	dB

Statistics

LA 1.00	63.8	dB
LA 10.00	59.5	dB
LA 25.00	57.2	dB
LA 50.00	53.4	dB
LA 90.00	46.1	dB
LA 99.00	41.5	dB

Calibration History

Preamp	**Date**	**Corrected Date**	**dB re. 1V/Pa**
PRMLxT1L	~~2020-09-15 02:41:17~~	2023-04-19 11:18:17	-29.15
PRMLxT1L	~~2020-09-15 02:19:48~~	2023-04-19 10:56:48	-29.09
PRMLxT1L	~~2020-09-15 02:07:44~~	2023-04-19 10:44:44	-29.06
PRMLxT1L	~~2020-09-15 01:48:13~~	2023-04-19 10:25:13	-29.04
PRMLxT1L	2020-07-29 00:01:50	N/A	-29.05
PRMLxT1L	2022-06-29 11:07:13	N/A	-28.98
PRMLxT1L	2022-06-29 10:17:28	N/A	-28.91
PRMLxT1L	2022-06-29 07:13:19	N/A	-28.89
PRMLxT1L	2022-06-02 12:37:15	N/A	-28.69
PRMLxT1L	2022-06-02 11:51:50	N/A	-28.70
PRMLxT1L	2022-06-02 10:54:46	N/A	-28.77

Summary

File Name on Meter	LxT_Data.053.s
File Name on PC	LxT_0004004-20200915 015100-LxT_Data.053.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	*The meter date and time was not correctly established during the measurement; as such, the date and times listed for this measurement do not reflect the actual date and time. The correct date and time are shown on the Time History output, and the incorrect date and times have been maintained with strike-through text.	
Start	~~2020-09-15 01:51:00~~	2023-04-19 10:28:00
Stop	~~2020-09-15 02:06:02~~	2023-04-19 10:43:02
Duration	00:15:01.7	
Run Time	00:15:01.7	
Pause	00:00:00.0	
Pre-Calibration	~~2020-09-15 01:48:16~~	2023-04-19 10:25:16
Post-Calibration	~~2020-09-15 02:07:59~~	2023-04-19 10:44:59
Calibration Deviation	-0.01 dB	

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	122.8 dB		
	A	**C**	**Z**
Under Range Peak	**79.4**	76.4	81.4 dB
Under Range Limit	**24.3**	25.5	31.7 dB
Noise Floor	15.2	16.3	22.5 dB
	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	55.3 dB		
LAE	84.9 dB		
EA	33.948 µPa²h		
EA8	1.084 mPa²h		
EA40	5.422 mPa²h		
LApeak (max)	~~2020-09-15 02:03:46~~	2023-04-19 10:40:46	89.3 dB
LASmax	~~2020-09-15 01:59:41~~	2023-04-19 10:36:41	67.1 dB
LASmin	~~2020-09-15 02:05:54~~	2023-04-19 10:42:54	50.5 dB
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	65.3	-99.9	55.3	65.3	-99.9	-99.9

LCeq	67.0 dB
LAeq	55.3 dB
LCeq - LAeq	11.7 dB
LAIeq	57.2 dB
LAeq	55.3 dB
LAIeq - LAeq	1.9 dB

	A				**C**	
	dB	**Time Stamp**	**Corrected Time Stamp**		**dB**	**Time Stamp**
Leq	55.3				67.0	
Ls(max)	67.1	~~2020-09-15 01:59:41~~	2023-04-19 10:36:41			
Ls(min)	50.5	~~2020-09-15 02:05:54~~	2023-04-19 10:42:54			
LPeak(max)	89.3	~~2020-09-15 02:03:46~~	2023-04-19 10:40:46			

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	40.3	40.3	dB

Statistics

LA 1.00	65.9	dB
LA 10.00	57.8	dB
LA 25.00	53.6	dB
LA 50.00	52.3	dB
LA 90.00	51.6	dB
LA 99.00	51.1	dB

Calibration History

Preamp	**Date**	**Corrected Date**	**dB re. 1V/Pa**
PRMLxT1L	~~2020-09-15 02:07:44~~	2023-04-19 10:44:44	-29.06
PRMLxT1L	~~2020-09-15 01:48:13~~	2023-04-19 10:25:13	-29.04
PRMLxT1L	2020-07-29 00:01:50	N/A	-29.05
PRMLxT1L	2022-06-29 11:07:13	N/A	-28.98
PRMLxT1L	2022-06-29 10:17:28	N/A	-28.91
PRMLxT1L	2022-06-29 07:13:19	N/A	-28.89
PRMLxT1L	2022-06-02 12:37:15	N/A	-28.69
PRMLxT1L	2022-06-02 11:51:50	N/A	-28.70
PRMLxT1L	2022-06-02 10:54:46	N/A	-28.77
PRMLxT1L	2022-06-02 09:45:41	N/A	-28.90
PRMLxT1L	2022-06-01 15:18:09	N/A	-28.75

Summary

File Name on Meter	LxT_Data.057.s
File Name on PC	LxT_0004004-20230420 074200-LxT_Data.057.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2023-04-20 07:42:00
Stop	2023-04-20 07:57:01
Duration	00:15:00.9
Run Time	00:15:00.9
Pause	00:00:00.0
Pre-Calibration	2023-04-20 07:38:41
Post-Calibration	2023-04-20 08:00:19
Calibration Deviation	-0.09 dB

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
Overload	122.9 dB

	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**24.4**	25.5	31.7 dB
Noise Floor	15.2	16.4	22.6 dB

	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	49.3 dB	
LAE	78.8 dB	
EA	8.520 µPa²h	
EA8	272.364 µPa²h	
EA40	1.362 mPa²h	
LApeak (max)	2023-04-20 07:42:34	89.2 dB
LASmax	2023-04-20 07:42:34	63.4 dB
LASmin	2023-04-20 07:55:42	45.0 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	49.3	49.3	-99.9	49.3	49.3	-99.9

LCeq	64.1 dB
LAeq	49.3 dB
LCeq - LAeq	14.8 dB
LAIeq	52.4 dB
LAeq	49.3 dB
LAIeq - LAeq	3.1 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	49.3		64.1			
Ls(max)	63.4	2023/04/20 7:42:34				
Ls(min)	45.0	2023/04/20 7:55:42				
LPeak(max)	89.2	2023/04/20 7:42:34				

Overload Count	0
Overload Duration	0.0 s

Dose Settings			
Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results			
Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	34.3	34.3	dB

Statistics		
LA 1.00	57.0	dB
LA 10.00	50.6	dB
LA 25.00	49.3	dB
LA 50.00	48.2	dB
LA 90.00	46.4	dB
LA 99.00	45.7	dB

Calibration History		
Preamp	**Date**	**dB re. 1V/Pa**
PRMLxT1L	2023-04-20 07:59:51	-29.16
PRMLxT1L	2023-04-20 07:38:38	-29.05
PRMLxT1L	2020-09-15 03:48:48	-29.20
PRMLxT1L	2020-09-15 03:26:54	-29.04
PRMLxT1L	2020-09-15 02:41:17	-29.15
PRMLxT1L	2020-09-15 02:19:48	-29.09
PRMLxT1L	2020-09-15 02:07:44	-29.06
PRMLxT1L	2020-09-15 01:48:13	-29.04
PRMLxT1L	2020-07-29 00:01:50	-29.05
PRMLxT1L	2022-06-29 11:07:13	-28.98
PRMLxT1L	2022-06-29 10:17:28	-28.91

Summary

File Name on Meter	LxT_Data.059.s
File Name on PC	LxT_0004004-20230420 111600-LxT_Data.059.ldbin
Serial Number	0004004
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2023-04-20 11:16:00
Stop	2023-04-20 11:31:01
Duration	00:15:01.6
Run Time	00:15:01.6
Pause	00:00:00.0
Pre-Calibration	2023-04-20 11:14:41
Post-Calibration	2023-04-20 11:34:34
Calibration Deviation	0.06 dB

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
Overload	122.8 dB

	A	C	Z
Under Range Peak	**79.4**	76.4	81.4 dB
Under Range Limit	**24.3**	25.5	31.7 dB
Noise Floor	15.2	16.3	22.5 dB

	First	Second	Third
Instrument Identification			

Results

LAeq	52.5 dB	
LAE	82.1 dB	
EA	17.814 µPa²h	
EA8	569.049 µPa²h	
EA40	2.845 mPa²h	
LApeak (max)	2023-04-20 11:28:23	84.2 dB
LASmax	2023-04-20 11:16:09	60.8 dB
LASmin	2023-04-20 11:29:50	43.6 dB
SEA	-99.9 dB	

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	Ldn	LDay 07:00-22:00	LNight 22:00-07:00	Lden	LDay 07:00-19:00	LEvening 19:00-22:00
	52.5	52.5	-99.9	52.5	52.5	-99.9

LCeq	65.4 dB
LAeq	52.5 dB
LCeq - LAeq	12.9 dB
LAIeq	54.0 dB
LAeq	52.5 dB
LAIeq - LAeq	1.5 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	52.5		65.4			
Ls(max)	60.8	2023/04/20 11:16:09				
Ls(min)	43.6	2023/04/20 11:29:50				
LPeak(max)	84.2	2023/04/20 11:28:23				

Overload Count	0
Overload Duration	0.0 s

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	37.5	37.5 dB

Statistics	
LA 1.00	59.0 dB
LA 10.00	56.6 dB
LA 25.00	53.6 dB
LA 50.00	49.9 dB
LA 90.00	46.9 dB
LA 99.00	44.4 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**
PRMLxT1L	2023-04-20 11:34:30	-29.07	45.63	50.67	57.51
PRMLxT1L	2023-04-20 11:14:36	-29.13	54.33	57.92	46.60
PRMLxT1L	2023-04-20 08:53:43	-28.99	50.80	48.42	55.98
PRMLxT1L	2023-04-20 08:40:11	-29.07	49.13	54.17	48.49
PRMLxT1L	2023-04-20 07:59:51	-29.16	54.22	55.44	47.80
PRMLxT1L	2023-04-20 07:38:38	-29.05	59.26	56.20	48.66
PRMLxT1L	2020-09-15 03:48:48	-29.20	59.26	46.36	59.78
PRMLxT1L	2020-09-15 03:26:54	-29.04	51.48	55.86	60.10
PRMLxT1L	2020-09-15 02:41:17	-29.15	47.36	47.94	48.60
PRMLxT1L	2020-09-15 02:19:48	-29.09	50.28	56.04	49.18
PRMLxT1L	2020-09-15 02:07:44	-29.06	56.36	50.24	52.04

Record #	Record Type	Date	Time	Corrected Date	Corrected Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Calibration Change	~~2020-09-15~~	~~3:26:57~~	2023-04-19	12:03:57							
2	Run	~~2020-09-15~~	~~3:29:00~~	2023-04-19	12:06:00							
3		~~2020-09-15~~	~~3:29:00~~	2023-04-19	12:06:00	47.9	75.6	49.4	46.3	No		
4		~~2020-09-15~~	~~3:29:10~~	2023-04-19	12:06:10	50.3	71.3	53.2	47.1	No		
5		~~2020-09-15~~	~~3:29:20~~	2023-04-19	12:06:20	50.8	70.6	52.1	48.9	No		
6		~~2020-09-15~~	~~3:29:30~~	2023-04-19	12:06:30	54.2	70.8	56.7	50.8	No		
7		~~2020-09-15~~	~~3:29:40~~	2023-04-19	12:06:40	55.6	72.1	58.8	52.6	No		
8		~~2020-09-15~~	~~3:29:50~~	2023-04-19	12:06:50	53.3	69.6	55.9	51.2	No		
9		~~2020-09-15~~	~~3:30:00~~	2023-04-19	12:07:00	52.5	68.6	55.0	49.1	No		
10		~~2020-09-15~~	~~3:30:10~~	2023-04-19	12:07:10	47.6	62.9	49.7	45.1	No		
11		~~2020-09-15~~	~~3:30:20~~	2023-04-19	12:07:20	44.2	71.8	45.2	43.1	No		
12		~~2020-09-15~~	~~3:30:30~~	2023-04-19	12:07:30	43.6	58.3	44.4	42.6	No		
13		~~2020-09-15~~	~~3:30:40~~	2023-04-19	12:07:40	43.9	70.8	44.9	43.1	No		
14		~~2020-09-15~~	~~3:30:50~~	2023-04-19	12:07:50	43.8	66.2	45.6	43.0	No		
15		~~2020-09-15~~	~~3:31:00~~	2023-04-19	12:08:00	43.3	64.8	44.4	42.5	No		
16		~~2020-09-15~~	~~3:31:10~~	2023-04-19	12:08:10	43.7	69.1	45.1	42.6	No		
17		~~2020-09-15~~	~~3:31:20~~	2023-04-19	12:08:20	43.5	66.7	44.8	42.4	No		
18		~~2020-09-15~~	~~3:31:30~~	2023-04-19	12:08:30	43.8	73.1	45.5	42.5	No		
19		~~2020-09-15~~	~~3:31:40~~	2023-04-19	12:08:40	43.8	66.4	45.3	43.0	No		
20		~~2020-09-15~~	~~3:31:50~~	2023-04-19	12:08:50	46.8	72.4	51.4	43.0	No		
21		~~2020-09-15~~	~~3:32:00~~	2023-04-19	12:09:00	48.7	65.5	51.9	43.8	No		
22		~~2020-09-15~~	~~3:32:10~~	2023-04-19	12:09:10	49.1	72.7	51.6	47.7	No		
23		~~2020-09-15~~	~~3:32:20~~	2023-04-19	12:09:20	48.1	64.4	50.8	45.4	No		
24		~~2020-09-15~~	~~3:32:30~~	2023-04-19	12:09:30	47.2	65.1	49.6	44.2	No		
25		~~2020-09-15~~	~~3:32:40~~	2023-04-19	12:09:40	44.4	59.3	47.1	42.3	No		
26		~~2020-09-15~~	~~3:32:50~~	2023-04-19	12:09:50	49.1	68.3	52.1	42.5	No		
27		~~2020-09-15~~	~~3:33:00~~	2023-04-19	12:10:00	43.9	62.6	45.0	42.7	No		
28		~~2020-09-15~~	~~3:33:10~~	2023-04-19	12:10:10	45.1	60.9	46.3	43.5	No		
29		~~2020-09-15~~	~~3:33:20~~	2023-04-19	12:10:20	43.9	67.5	45.8	42.4	No		
30		~~2020-09-15~~	~~3:33:30~~	2023-04-19	12:10:30	45.0	61.1	47.2	43.5	No		
31		~~2020-09-15~~	~~3:33:40~~	2023-04-19	12:10:40	45.1	61.9	46.6	43.0	No		
32		~~2020-09-15~~	~~3:33:50~~	2023-04-19	12:10:50	43.9	60.5	46.4	42.0	No		
33		~~2020-09-15~~	~~3:34:00~~	2023-04-19	12:11:00	45.3	60.8	46.7	43.3	No		
34		~~2020-09-15~~	~~3:34:10~~	2023-04-19	12:11:10	51.5	67.4	55.3	46.5	No		
35		~~2020-09-15~~	~~3:34:20~~	2023-04-19	12:11:20	52.2	71.2	55.3	48.9	No		
36		~~2020-09-15~~	~~3:34:30~~	2023-04-19	12:11:30	48.1	61.7	49.7	46.2	No		
37		~~2020-09-15~~	~~3:34:40~~	2023-04-19	12:11:40	52.0	67.5	55.2	47.7	No		
38		~~2020-09-15~~	~~3:34:50~~	2023-04-19	12:11:50	46.3	61.8	48.1	45.1	No		
39		~~2020-09-15~~	~~3:35:00~~	2023-04-19	12:12:00	45.9	68.0	46.9	44.7	No		
40		~~2020-09-15~~	~~3:35:10~~	2023-04-19	12:12:10	44.4	69.0	46.2	42.7	No		
41		~~2020-09-15~~	~~3:35:20~~	2023-04-19	12:12:20	42.3	60.7	42.9	41.9	No		
42		~~2020-09-15~~	~~3:35:30~~	2023-04-19	12:12:30	43.3	64.2	44.1	41.7	No		
43		~~2020-09-15~~	~~3:35:40~~	2023-04-19	12:12:40	47.0	70.7	49.2	44.1	No		
44		~~2020-09-15~~	~~3:35:50~~	2023-04-19	12:12:50	47.5	68.9	49.8	45.2	No		
45		~~2020-09-15~~	~~3:36:00~~	2023-04-19	12:13:00	47.6	64.1	48.3	46.2	No		
46		~~2020-09-15~~	~~3:36:10~~	2023-04-19	12:13:10	46.3	62.7	48.3	44.8	No		
47		~~2020-09-15~~	~~3:36:20~~	2023-04-19	12:13:20	49.2	73.3	51.5	47.1	No		
48		~~2020-09-15~~	~~3:36:30~~	2023-04-19	12:13:30	51.2	71.3	53.0	49.5	No		
49		~~2020-09-15~~	~~3:36:40~~	2023-04-19	12:13:40	52.1	69.4	54.4	47.6	No		
50		~~2020-09-15~~	~~3:36:50~~	2023-04-19	12:13:50	57.5	69.2	56.0	54.1	No		
51	Pause	~~2020-09-15~~	~~3:36:51~~	2023-04-19	12:13:51							
52	Resume	~~2020-09-15~~	~~3:37:23~~	2023-04-19	12:14:23							
53		~~2020-09-15~~	~~3:37:23~~	2023-04-19	12:14:23	47.3	69.1	49.4	44.9	No		
54		~~2020-09-15~~	~~3:37:33~~	2023-04-19	12:14:33	47.1	77.2	50.4	45.4	No		
55		~~2020-09-15~~	~~3:37:43~~	2023-04-19	12:14:43	47.4	66.1	48.5	45.1	No		
56		~~2020-09-15~~	~~3:37:53~~	2023-04-19	12:14:53	46.7	71.2	49.4	43.7	No		
57		~~2020-09-15~~	~~3:38:03~~	2023-04-19	12:15:03	43.6	69.9	44.2	42.8	No		
58		~~2020-09-15~~	~~3:38:13~~	2023-04-19	12:15:13	43.8	64.2	44.7	43.2	No		
59		~~2020-09-15~~	~~3:38:23~~	2023-04-19	12:15:23	44.7	80.4	49.1	43.1	No		
60		~~2020-09-15~~	~~3:38:33~~	2023-04-19	12:15:33	46.5	68.6	50.8	44.8	No		
61		~~2020-09-15~~	~~3:38:43~~	2023-04-19	12:15:43	46.8	65.1	51.1	45.5	No		
62		~~2020-09-15~~	~~3:38:53~~	2023-04-19	12:15:53	50.8	68.1	53.6	46.5	No		
63		~~2020-09-15~~	~~3:39:03~~	2023-04-19	12:16:03	53.8	72.3	57.3	49.9	No		
64		~~2020-09-15~~	~~3:39:13~~	2023-04-19	12:16:13	50.1	68.4	53.0	47.7	No		
65		~~2020-09-15~~	~~3:39:23~~	2023-04-19	12:16:23	49.9	68.3	53.3	46.7	No		
66		~~2020-09-15~~	~~3:39:33~~	2023-04-19	12:16:33	48.9	65.0	51.2	46.7	No		
67		~~2020-09-15~~	~~3:39:43~~	2023-04-19	12:16:43	47.1	67.8	50.6	45.3	No		
68		~~2020-09-15~~	~~3:39:53~~	2023-04-19	12:16:53	52.1	72.4	55.9	45.7	No		
69		~~2020-09-15~~	~~3:40:03~~	2023-04-19	12:17:03	49.1	64.7	52.5	47.8	No		
70		~~2020-09-15~~	~~3:40:13~~	2023-04-19	12:17:13	53.5	71.4	57.4	49.1	No		
71		~~2020-09-15~~	~~3:40:23~~	2023-04-19	12:17:23	57.6	75.9	62.2	48.3	No		
72		~~2020-09-15~~	~~3:40:33~~	2023-04-19	12:17:33	47.1	61.5	48.9	45.7	No		
73		~~2020-09-15~~	~~3:40:43~~	2023-04-19	12:17:43	44.4	65.5	46.4	43.3	No		
74		~~2020-09-15~~	~~3:40:53~~	2023-04-19	12:17:53	45.1	60.3	46.1	43.2	No		
75		~~2020-09-15~~	~~3:41:03~~	2023-04-19	12:18:03	45.8	67.3	48.4	43.4	No		
76		~~2020-09-15~~	~~3:41:13~~	2023-04-19	12:18:13	48.8	80.3	51.4	47.2	No		
77		~~2020-09-15~~	~~3:41:23~~	2023-04-19	12:18:23	44.8	71.4	47.2	43.5	No		
78		~~2020-09-15~~	~~3:41:33~~	2023-04-19	12:18:33	42.7	66.4	45.7	41.2	No		
79		~~2020-09-15~~	~~3:41:43~~	2023-04-19	12:18:43	43.1	69.2	44.8	41.3	No		
80		~~2020-09-15~~	~~3:41:53~~	2023-04-19	12:18:53	41.0	64.5	44.4	40.6	No		
81		~~2020-09-15~~	~~3:42:03~~	2023-04-19	12:19:03	43.0	58.8	44.2	41.2	No		
82		~~2020-09-15~~	~~3:42:13~~	2023-04-19	12:19:13	43.6	56.9	44.2	43.1	No		
83		~~2020-09-15~~	~~3:42:23~~	2023-04-19	12:19:23	45.5	68.6	47.2	43.6	No		
84		~~2020-09-15~~	~~3:42:33~~	2023-04-19	12:19:33	46.2	63.0	48.4	44.5	No		
85		~~2020-09-15~~	~~3:42:43~~	2023-04-19	12:19:43	46.0	61.7	47.6	44.4	No		

86		~~2020-09-15~~	~~3:42:53~~	2023-04-19	12:19:53	47.0	65.0	49.4	45.7	No
87		~~2020-09-15~~	~~3:43:03~~	2023-04-19	12:20:03	46.8	66.2	47.8	46.0	No
88		~~2020-09-15~~	~~3:43:13~~	2023-04-19	12:20:13	45.9	61.0	47.6	44.7	No
89		~~2020-09-15~~	~~3:43:23~~	2023-04-19	12:20:23	44.8	75.1	47.4	43.5	No
90		~~2020-09-15~~	~~3:43:33~~	2023-04-19	12:20:33	43.6	72.5	44.5	43.1	No
91		~~2020-09-15~~	~~3:43:43~~	2023-04-19	12:20:43	45.8	59.9	47.5	43.7	No
92		~~2020-09-15~~	~~3:43:53~~	2023-04-19	12:20:53	44.2	63.1	45.7	43.2	No
93		~~2020-09-15~~	~~3:44:03~~	2023-04-19	12:21:03	45.0	66.3	46.0	44.4	No
94		~~2020-09-15~~	~~3:44:13~~	2023-04-19	12:21:13	47.6	68.5	50.7	44.4	No
95		~~2020-09-15~~	~~3:44:23~~	2023-04-19	12:21:23	51.5	66.2	53.4	48.0	No
96		~~2020-09-15~~	~~3:44:33~~	2023-04-19	12:21:33	56.8	72.3	59.7	52.6	No
97		~~2020-09-15~~	~~3:44:43~~	2023-04-19	12:21:43	53.4	73.8	58.8	49.6	No
98		~~2020-09-15~~	~~3:44:53~~	2023-04-19	12:21:53	49.0	65.5	51.8	46.2	No
99		~~2020-09-15~~	~~3:45:03~~	2023-04-19	12:22:03	44.4	65.3	47.3	42.1	No
100		~~2020-09-15~~	~~3:45:13~~	2023-04-19	12:22:13	46.6	71.4	50.8	42.0	No
101		~~2020-09-15~~	~~3:45:23~~	2023-04-19	12:22:23	49.5	78.7	53.2	43.4	No
102		~~2020-09-15~~	~~3:45:33~~	2023-04-19	12:22:33	42.0	58.5	43.5	41.0	No
103		~~2020-09-15~~	~~3:45:43~~	2023-04-19	12:22:43	49.5	73.2	51.7	41.1	No
104		~~2020-09-15~~	~~3:45:53~~	2023-04-19	12:22:53	62.5	79.2	66.0	51.7	No
105	Stop	~~2020-09-15~~	~~3:46:00~~	2023-04-19	12:23:00					
106	Calibration Change	~~2020-09-15~~	~~3:48:54~~	2023-04-19	12:25:54					

Record #	Record Type	Date	Time	Corrected Date	Corrected Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Run	~~2020-09-15~~	~~2:24:01~~	2023-04-19	11:01:01							
2		~~2020-09-15~~	~~2:24:01~~	2023-04-19	11:01:01	56.1	75.1	61.8	46.8	No		
3		~~2020-09-15~~	~~2:24:11~~	2023-04-19	11:01:11	52.4	91.2	60.1	45.8	No		
4		~~2020-09-15~~	~~2:24:21~~	2023-04-19	11:01:21	48.8	73.3	55.6	46.5	No		
5		~~2020-09-15~~	~~2:24:31~~	2023-04-19	11:01:31	60.3	86.5	64.1	52.8	No		
6		~~2020-09-15~~	~~2:24:41~~	2023-04-19	11:01:41	55.8	72.3	63.4	48.3	No		
7		~~2020-09-15~~	~~2:24:51~~	2023-04-19	11:01:51	56.4	82.1	61.0	47.8	No		
8		~~2020-09-15~~	~~2:25:01~~	2023-04-19	11:02:01	55.3	75.2	60.8	48.5	No		
9		~~2020-09-15~~	~~2:25:11~~	2023-04-19	11:02:11	49.6	62.7	50.7	48.0	No		
10		~~2020-09-15~~	~~2:25:21~~	2023-04-19	11:02:21	50.9	79.6	53.1	48.4	No		
11		~~2020-09-15~~	~~2:25:31~~	2023-04-19	11:02:31	52.9	75.0	54.7	49.4	No		
12		~~2020-09-15~~	~~2:25:41~~	2023-04-19	11:02:41	54.5	74.2	58.8	49.3	No		
13		~~2020-09-15~~	~~2:25:51~~	2023-04-19	11:02:51	57.9	75.2	61.4	49.3	No		
14		~~2020-09-15~~	~~2:26:01~~	2023-04-19	11:03:01	59.4	77.0	62.9	54.4	No		
15		~~2020-09-15~~	~~2:26:11~~	2023-04-19	11:03:11	55.4	71.8	59.1	51.5	No		
16		~~2020-09-15~~	~~2:26:21~~	2023-04-19	11:03:21	58.8	77.2	61.0	51.6	No		
17		~~2020-09-15~~	~~2:26:31~~	2023-04-19	11:03:31	63.2	81.8	68.7	57.2	No		
18		~~2020-09-15~~	~~2:26:41~~	2023-04-19	11:03:41	55.7	71.7	58.7	51.1	No		
19		~~2020-09-15~~	~~2:26:51~~	2023-04-19	11:03:51	46.9	65.6	51.0	46.4	No		
20		~~2020-09-15~~	~~2:27:01~~	2023-04-19	11:04:01	47.8	65.2	49.7	46.3	No		
21		~~2020-09-15~~	~~2:27:11~~	2023-04-19	11:04:11	57.9	80.7	62.9	49.7	No		
22		~~2020-09-15~~	~~2:27:21~~	2023-04-19	11:04:21	47.1	63.9	50.1	46.3	No		
23		~~2020-09-15~~	~~2:27:31~~	2023-04-19	11:04:31	54.4	71.2	58.2	47.6	No		
24		~~2020-09-15~~	~~2:27:41~~	2023-04-19	11:04:41	58.5	75.1	59.6	56.6	No		
25		~~2020-09-15~~	~~2:27:51~~	2023-04-19	11:04:51	56.8	71.8	58.9	54.4	No		
26		~~2020-09-15~~	~~2:28:01~~	2023-04-19	11:05:01	58.0	74.3	60.8	56.1	No		
27		~~2020-09-15~~	~~2:28:11~~	2023-04-19	11:05:11	53.6	69.3	56.5	49.9	No		
28		~~2020-09-15~~	~~2:28:21~~	2023-04-19	11:05:21	57.8	74.5	60.1	53.9	No		
29		~~2020-09-15~~	~~2:28:31~~	2023-04-19	11:05:31	57.7	72.7	60.6	54.5	No		
30		~~2020-09-15~~	~~2:28:41~~	2023-04-19	11:05:41	55.0	70.7	57.4	49.9	No		
31		~~2020-09-15~~	~~2:28:51~~	2023-04-19	11:05:51	47.5	67.7	50.1	46.4	No		
32		~~2020-09-15~~	~~2:29:01~~	2023-04-19	11:06:01	47.4	64.1	49.2	46.1	No		
33		~~2020-09-15~~	~~2:29:11~~	2023-04-19	11:06:11	54.2	70.9	58.5	47.5	No		
34		~~2020-09-15~~	~~2:29:21~~	2023-04-19	11:06:21	47.0	61.9	49.9	45.7	No		
35		~~2020-09-15~~	~~2:29:31~~	2023-04-19	11:06:31	46.8	64.1	49.2	45.1	No		
36		~~2020-09-15~~	~~2:29:41~~	2023-04-19	11:06:41	59.2	74.6	61.4	49.2	No		
37		~~2020-09-15~~	~~2:29:51~~	2023-04-19	11:06:51	58.0	73.9	61.6	52.9	No		
38		~~2020-09-15~~	~~2:30:01~~	2023-04-19	11:07:01	54.7	72.4	58.8	48.4	No		
39		~~2020-09-15~~	~~2:30:11~~	2023-04-19	11:07:11	53.4	71.6	57.7	48.1	No		
40		~~2020-09-15~~	~~2:30:21~~	2023-04-19	11:07:21	55.2	70.9	57.1	52.9	No		
41		~~2020-09-15~~	~~2:30:31~~	2023-04-19	11:07:31	59.5	76.1	62.0	55.2	No		
42		~~2020-09-15~~	~~2:30:41~~	2023-04-19	11:07:41	56.0	77.2	59.6	53.6	No		
43		~~2020-09-15~~	~~2:30:51~~	2023-04-19	11:07:51	52.5	70.1	57.5	50.0	No		
44		~~2020-09-15~~	~~2:31:01~~	2023-04-19	11:08:01	50.8	70.6	52.3	49.1	No		
45		~~2020-09-15~~	~~2:31:11~~	2023-04-19	11:08:11	49.2	63.6	51.0	47.6	No		
46		~~2020-09-15~~	~~2:31:21~~	2023-04-19	11:08:21	53.4	74.2	57.6	48.9	No		
47		~~2020-09-15~~	~~2:31:31~~	2023-04-19	11:08:31	49.1	70.7	51.2	48.2	No		
48		~~2020-09-15~~	~~2:31:41~~	2023-04-19	11:08:41	60.9	80.2	62.7	50.9	No		
49		~~2020-09-15~~	~~2:31:51~~	2023-04-19	11:08:51	55.5	74.7	62.6	47.5	No		
50		~~2020-09-15~~	~~2:32:01~~	2023-04-19	11:09:01	45.8	59.4	47.8	44.7	No		
51		~~2020-09-15~~	~~2:32:11~~	2023-04-19	11:09:11	46.0	67.7	48.9	44.4	No		
52		~~2020-09-15~~	~~2:32:21~~	2023-04-19	11:09:21	55.0	73.0	57.6	47.0	No		
53		~~2020-09-15~~	~~2:32:31~~	2023-04-19	11:09:31	55.3	69.4	57.5	53.5	No		
54		~~2020-09-15~~	~~2:32:41~~	2023-04-19	11:09:41	50.0	70.3	54.8	46.8	No		
55		~~2020-09-15~~	~~2:32:51~~	2023-04-19	11:09:51	56.3	74.2	60.8	49.3	No		
56		~~2020-09-15~~	~~2:33:01~~	2023-04-19	11:10:01	51.1	68.8	55.2	45.2	No		
57		~~2020-09-15~~	~~2:33:11~~	2023-04-19	11:10:11	54.4	72.7	58.5	44.6	No		
58		~~2020-09-15~~	~~2:33:21~~	2023-04-19	11:10:21	57.2	73.5	58.5	55.1	No		
59		~~2020-09-15~~	~~2:33:31~~	2023-04-19	11:10:31	52.1	68.5	56.2	45.6	No		
60		~~2020-09-15~~	~~2:33:41~~	2023-04-19	11:10:41	54.1	72.8	58.1	45.6	No		
61		~~2020-09-15~~	~~2:33:51~~	2023-04-19	11:10:51	53.4	68.8	56.8	47.8	No		
62		~~2020-09-15~~	~~2:34:01~~	2023-04-19	11:11:01	58.8	79.5	63.9	47.9	No		
63		~~2020-09-15~~	~~2:34:11~~	2023-04-19	11:11:11	52.4	68.9	55.9	47.8	No		
64		~~2020-09-15~~	~~2:34:21~~	2023-04-19	11:11:21	51.2	70.8	56.8	42.3	No		
65		~~2020-09-15~~	~~2:34:31~~	2023-04-19	11:11:31	41.5	60.6	42.4	41.0	No		
66		~~2020-09-15~~	~~2:34:41~~	2023-04-19	11:11:41	42.0	64.5	43.1	41.0	No		
67		~~2020-09-15~~	~~2:34:51~~	2023-04-19	11:11:51	47.9	64.8	51.8	42.5	No		
68		~~2020-09-15~~	~~2:35:01~~	2023-04-19	11:12:01	57.9	72.9	59.8	51.8	No		
69		~~2020-09-15~~	~~2:35:11~~	2023-04-19	11:12:11	58.4	73.6	60.2	55.7	No		
70		~~2020-09-15~~	~~2:35:21~~	2023-04-19	11:12:21	57.6	77.1	61.1	52.4	No		
71		~~2020-09-15~~	~~2:35:31~~	2023-04-19	11:12:31	54.8	73.3	59.7	48.1	No		
72		~~2020-09-15~~	~~2:35:41~~	2023-04-19	11:12:41	57.6	78.3	61.4	52.2	No		
73		~~2020-09-15~~	~~2:35:51~~	2023-04-19	11:12:51	53.0	71.0	60.9	48.3	No		
74		~~2020-09-15~~	~~2:36:01~~	2023-04-19	11:13:01	51.5	69.1	55.9	46.0	No		
75		~~2020-09-15~~	~~2:36:11~~	2023-04-19	11:13:11	49.8	67.5	54.6	44.5	No		
76		~~2020-09-15~~	~~2:36:21~~	2023-04-19	11:13:21	61.5	78.8	65.4	54.6	No		
77		~~2020-09-15~~	~~2:36:31~~	2023-04-19	11:13:31	56.3	74.7	61.9	51.3	No		
78		~~2020-09-15~~	~~2:36:41~~	2023-04-19	11:13:41	58.5	72.2	60.0	51.8	No		
79		~~2020-09-15~~	~~2:36:51~~	2023-04-19	11:13:51	53.1	71.6	56.6	51.8	No		
80		~~2020-09-15~~	~~2:37:01~~	2023-04-19	11:14:01	50.4	69.9	54.6	46.7	No		
81		~~2020-09-15~~	~~2:37:11~~	2023-04-19	11:14:11	61.4	82.9	67.1	54.4	No		
82		~~2020-09-15~~	~~2:37:21~~	2023-04-19	11:14:21	53.7	70.3	59.4	49.2	No		
83		~~2020-09-15~~	~~2:37:31~~	2023-04-19	11:14:31	58.8	76.4	62.6	54.6	No		
84		~~2020-09-15~~	~~2:37:41~~	2023-04-19	11:14:41	57.5	72.3	62.5	54.2	No		
85		~~2020-09-15~~	~~2:37:51~~	2023-04-19	11:14:51	55.4	73.7	58.8	48.9	No		

86		~~2020-09-15~~	~~2:38:01~~	2023-04-19	11:15:01	46.5	71.8	50.8	43.1	No
87		~~2020-09-15~~	~~2:38:11~~	2023-04-19	11:15:11	43.0	63.6	44.3	42.0	No
88		~~2020-09-15~~	~~2:38:21~~	2023-04-19	11:15:21	45.7	66.7	48.0	42.0	No
89		~~2020-09-15~~	~~2:38:31~~	2023-04-19	11:15:31	53.8	73.0	58.7	47.0	No
90		~~2020-09-15~~	~~2:38:41~~	2023-04-19	11:15:41	61.0	80.2	65.2	50.3	No
91		~~2020-09-15~~	~~2:38:51~~	2023-04-19	11:15:51	56.1	90.8	65.1	48.8	No
92		~~2020-09-15~~	~~2:39:01~~	2023-04-19	11:16:01	45.8	64.2	48.8	46.7	No
93	Stop	~~2020-09-15~~	~~2:39:02~~	2023-04-19	11:16:02					
94	Calibration Change	~~2020-09-15~~	~~2:41:24~~	2023-04-19	11:18:24					

Record #	Record Type	Date	Time	Corrected Date	Corrected Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Calibration Change	~~2020-07-29~~	~~0:01:51~~	N/A	N/A							
2	Calibration Change	~~2020-09-15~~	~~1:48:16~~	2023-04-19	10:25:16							
3	Run	~~2020-09-15~~	~~1:51:00~~	2023-04-19	10:28:00							
4		~~2020-09-15~~	~~1:51:00~~	2023-04-19	10:28:00	52.2	76.2	53.1	51.5	No		
5		~~2020-09-15~~	~~1:51:10~~	2023-04-19	10:28:10	52.0	75.3	53.1	51.6	No		
6		~~2020-09-15~~	~~1:51:20~~	2023-04-19	10:28:20	51.5	65.7	52.1	51.1	No		
7		~~2020-09-15~~	~~1:51:30~~	2023-04-19	10:28:30	52.1	77.5	53.4	51.4	No		
8		~~2020-09-15~~	~~1:51:40~~	2023-04-19	10:28:40	51.8	64.9	52.1	51.4	No		
9		~~2020-09-15~~	~~1:51:50~~	2023-04-19	10:28:50	51.8	77.3	52.3	51.2	No		
10		~~2020-09-15~~	~~1:52:00~~	2023-04-19	10:29:00	51.6	64.7	52.2	51.0	No		
11		~~2020-09-15~~	~~1:52:10~~	2023-04-19	10:29:10	52.1	64.9	52.4	51.8	No		
12		~~2020-09-15~~	~~1:52:20~~	2023-04-19	10:29:20	52.6	70.4	53.3	51.9	No		
13		~~2020-09-15~~	~~1:52:30~~	2023-04-19	10:29:30	54.9	83.2	60.2	52.7	No		
14		~~2020-09-15~~	~~1:52:40~~	2023-04-19	10:29:40	54.8	77.9	59.3	52.6	No		
15		~~2020-09-15~~	~~1:52:50~~	2023-04-19	10:29:50	53.4	69.0	54.5	52.2	No		
16		~~2020-09-15~~	~~1:53:00~~	2023-04-19	10:30:00	52.6	75.8	53.5	52.0	No		
17		~~2020-09-15~~	~~1:53:10~~	2023-04-19	10:30:10	52.1	72.9	52.4	51.8	No		
18		~~2020-09-15~~	~~1:53:20~~	2023-04-19	10:30:20	51.5	64.9	52.4	50.9	No		
19		~~2020-09-15~~	~~1:53:30~~	2023-04-19	10:30:30	51.7	65.4	52.0	51.3	No		
20		~~2020-09-15~~	~~1:53:40~~	2023-04-19	10:30:40	52.2	78.8	54.3	51.5	No		
21		~~2020-09-15~~	~~1:53:50~~	2023-04-19	10:30:50	51.9	75.2	53.0	51.2	No		
22		~~2020-09-15~~	~~1:54:00~~	2023-04-19	10:31:00	52.2	71.3	52.6	51.8	No		
23		~~2020-09-15~~	~~1:54:10~~	2023-04-19	10:31:10	52.0	66.2	52.5	51.3	No		
24		~~2020-09-15~~	~~1:54:20~~	2023-04-19	10:31:20	51.6	66.0	52.1	51.3	No		
25		~~2020-09-15~~	~~1:54:30~~	2023-04-19	10:31:30	51.6	64.3	51.8	51.2	No		
26		~~2020-09-15~~	~~1:54:40~~	2023-04-19	10:31:40	52.0	69.3	52.2	51.5	No		
27		~~2020-09-15~~	~~1:54:50~~	2023-04-19	10:31:50	51.4	63.5	51.8	51.2	No		
28		~~2020-09-15~~	~~1:55:00~~	2023-04-19	10:32:00	51.6	69.9	52.1	51.0	No		
29		~~2020-09-15~~	~~1:55:10~~	2023-04-19	10:32:10	51.9	65.7	52.2	51.6	No		
30		~~2020-09-15~~	~~1:55:20~~	2023-04-19	10:32:20	52.4	65.7	53.1	51.6	No		
31		~~2020-09-15~~	~~1:55:30~~	2023-04-19	10:32:30	52.0	65.9	52.4	51.8	No		
32		~~2020-09-15~~	~~1:55:40~~	2023-04-19	10:32:40	52.0	68.0	52.3	51.5	No		
33		~~2020-09-15~~	~~1:55:50~~	2023-04-19	10:32:50	51.8	68.9	52.3	51.1	No		
34		~~2020-09-15~~	~~1:56:00~~	2023-04-19	10:33:00	51.8	67.2	52.2	51.5	No		
35		~~2020-09-15~~	~~1:56:10~~	2023-04-19	10:33:10	51.9	74.8	52.3	51.5	No		
36		~~2020-09-15~~	~~1:56:20~~	2023-04-19	10:33:20	52.9	66.6	53.5	51.9	No		
37		~~2020-09-15~~	~~1:56:30~~	2023-04-19	10:33:30	54.2	70.1	56.2	52.5	No		
38		~~2020-09-15~~	~~1:56:40~~	2023-04-19	10:33:40	57.5	73.7	58.9	56.0	No		
39		~~2020-09-15~~	~~1:56:50~~	2023-04-19	10:33:50	59.2	74.1	60.8	56.4	No		
40		~~2020-09-15~~	~~1:57:00~~	2023-04-19	10:34:00	54.2	74.1	59.4	52.9	No		
41		~~2020-09-15~~	~~1:57:10~~	2023-04-19	10:34:10	52.7	72.0	53.3	52.4	No		
42		~~2020-09-15~~	~~1:57:20~~	2023-04-19	10:34:20	54.4	72.2	55.3	52.5	No		
43		~~2020-09-15~~	~~1:57:30~~	2023-04-19	10:34:30	60.8	80.8	65.5	54.3	No		
44		~~2020-09-15~~	~~1:57:40~~	2023-04-19	10:34:40	63.3	79.4	65.9	60.5	No		
45		~~2020-09-15~~	~~1:57:50~~	2023-04-19	10:34:50	56.7	75.9	60.9	53.7	No		
46		~~2020-09-15~~	~~1:58:00~~	2023-04-19	10:35:00	53.3	71.2	53.9	52.7	No		
47		~~2020-09-15~~	~~1:58:10~~	2023-04-19	10:35:10	57.5	79.3	59.3	53.2	No		
48		~~2020-09-15~~	~~1:58:20~~	2023-04-19	10:35:20	56.1	73.5	58.4	54.7	No		
49		~~2020-09-15~~	~~1:58:30~~	2023-04-19	10:35:30	54.3	68.0	55.5	53.0	No		
50		~~2020-09-15~~	~~1:58:40~~	2023-04-19	10:35:40	53.5	72.2	54.4	53.0	No		
51		~~2020-09-15~~	~~1:58:50~~	2023-04-19	10:35:50	55.2	73.7	58.8	52.5	No		
52		~~2020-09-15~~	~~1:59:00~~	2023-04-19	10:36:00	52.9	83.8	54.7	52.0	No		
53		~~2020-09-15~~	~~1:59:10~~	2023-04-19	10:36:10	54.1	71.0	56.3	52.3	No		
54		~~2020-09-15~~	~~1:59:20~~	2023-04-19	10:36:20	57.6	78.0	60.2	55.3	No		
55		~~2020-09-15~~	~~1:59:30~~	2023-04-19	10:36:30	65.9	82.1	66.9	60.2	No		
56		~~2020-09-15~~	~~1:59:40~~	2023-04-19	10:36:40	63.3	79.9	67.1	58.7	No		
57		~~2020-09-15~~	~~1:59:50~~	2023-04-19	10:36:50	57.0	73.9	61.2	54.6	No		
58		~~2020-09-15~~	~~2:00:00~~	2023-04-19	10:37:00	53.9	70.4	55.4	52.6	No		
59		~~2020-09-15~~	~~2:00:10~~	2023-04-19	10:37:10	51.7	65.6	52.6	50.9	No		
60		~~2020-09-15~~	~~2:00:20~~	2023-04-19	10:37:20	52.0	70.7	52.5	51.4	No		
61		~~2020-09-15~~	~~2:00:30~~	2023-04-19	10:37:30	51.5	65.4	51.8	51.1	No		
62		~~2020-09-15~~	~~2:00:40~~	2023-04-19	10:37:40	51.7	64.7	52.5	51.1	No		
63		~~2020-09-15~~	~~2:00:50~~	2023-04-19	10:37:50	52.2	76.6	53.0	51.5	No		
64		~~2020-09-15~~	~~2:01:00~~	2023-04-19	10:38:00	52.7	76.7	53.1	52.3	No		
65		~~2020-09-15~~	~~2:01:10~~	2023-04-19	10:38:10	53.9	75.8	56.5	52.7	No		
66		~~2020-09-15~~	~~2:01:20~~	2023-04-19	10:38:20	62.7	84.6	66.2	56.5	No		
67		~~2020-09-15~~	~~2:01:30~~	2023-04-19	10:38:30	53.1	76.8	57.0	52.6	No		
68		~~2020-09-15~~	~~2:01:40~~	2023-04-19	10:38:40	52.4	70.0	53.1	51.9	No		
69		~~2020-09-15~~	~~2:01:50~~	2023-04-19	10:38:50	52.1	66.9	52.8	51.7	No		
70		~~2020-09-15~~	~~2:02:00~~	2023-04-19	10:39:00	52.3	66.0	52.8	51.9	No		
71		~~2020-09-15~~	~~2:02:10~~	2023-04-19	10:39:10	52.3	68.7	52.7	52.0	No		
72		~~2020-09-15~~	~~2:02:20~~	2023-04-19	10:39:20	52.0	64.7	52.4	51.6	No		
73		~~2020-09-15~~	~~2:02:30~~	2023-04-19	10:39:30	52.2	68.2	52.6	51.8	No		
74		~~2020-09-15~~	~~2:02:40~~	2023-04-19	10:39:40	52.4	69.5	52.8	51.9	No		
75		~~2020-09-15~~	~~2:02:50~~	2023-04-19	10:39:50	51.9	67.0	52.3	51.5	No		
76		~~2020-09-15~~	~~2:03:00~~	2023-04-19	10:40:00	52.4	76.8	52.9	51.6	No		
77		~~2020-09-15~~	~~2:03:10~~	2023-04-19	10:40:10	52.0	65.8	52.4	51.6	No		
78		~~2020-09-15~~	~~2:03:20~~	2023-04-19	10:40:20	51.9	64.9	52.4	51.6	No		
79		~~2020-09-15~~	~~2:03:30~~	2023-04-19	10:40:30	51.4	66.1	51.8	50.8	No		
80		~~2020-09-15~~	~~2:03:40~~	2023-04-19	10:40:40	52.8	89.3	56.0	51.0	No		
81		~~2020-09-15~~	~~2:03:50~~	2023-04-19	10:40:50	52.1	68.1	52.4	51.7	No		
82		~~2020-09-15~~	~~2:04:00~~	2023-04-19	10:41:00	52.0	65.2	52.5	51.7	No		
83		~~2020-09-15~~	~~2:04:10~~	2023-04-19	10:41:10	54.0	80.0	54.8	51.3	No		
84		~~2020-09-15~~	~~2:04:20~~	2023-04-19	10:41:20	58.2	81.5	61.0	54.0	No		
85		~~2020-09-15~~	~~2:04:30~~	2023-04-19	10:41:30	54.3	75.9	56.4	53.5	No		

86		~~2020-09-15~~	~~2:04:40~~	2023-04-19	10:41:40	59.2	74.6	61.4	54.1	No
87		~~2020-09-15~~	~~2:04:50~~	2023-04-19	10:41:50	54.0	70.5	58.4	53.0	No
88		~~2020-09-15~~	~~2:05:00~~	2023-04-19	10:42:00	52.4	68.8	53.2	52.0	No
89		~~2020-09-15~~	~~2:05:10~~	2023-04-19	10:42:10	51.7	72.0	52.1	51.3	No
90		~~2020-09-15~~	~~2:05:20~~	2023-04-19	10:42:20	51.7	69.4	52.2	51.3	No
91		~~2020-09-15~~	~~2:05:30~~	2023-04-19	10:42:30	51.9	69.6	52.2	51.6	No
92		~~2020-09-15~~	~~2:05:40~~	2023-04-19	10:42:40	51.9	80.1	52.6	51.4	No
93		~~2020-09-15~~	~~2:05:50~~	2023-04-19	10:42:50	51.6	74.1	52.6	50.5	No
94		~~2020-09-15~~	~~2:06:00~~	2023-04-19	10:43:00	52.9	68.7	53.0	52.6	No
95	Stop	~~2020-09-15~~	~~2:06:02~~	2023-04-19	10:43:02					
96	Calibration Change	~~2020-09-15~~	~~2:07:59~~	2023-04-19	10:44:59					

Record #	Record Type	Date	Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Calibration Change	2023-04-20	7:38:41							
2	Run	2023-04-20	7:42:00							
3		2023-04-20	7:42:00	50.0	70.8	53.0	47.6	No		
4		2023-04-20	7:42:10	47.6	66.5	48.8	46.9	No		
5		2023-04-20	7:42:20	53.0	73.0	56.7	47.8	No		
6		2023-04-20	7:42:30	58.7	89.2	63.4	55.1	No		
7		2023-04-20	7:42:40	55.5	81.5	60.3	49.2	No		
8		2023-04-20	7:42:50	49.3	70.1	51.5	48.6	No		
9		2023-04-20	7:43:00	49.9	71.6	51.5	48.5	No		
10		2023-04-20	7:43:10	50.8	73.6	52.7	49.3	No		
11		2023-04-20	7:43:20	49.8	69.4	51.9	49.0	No		
12		2023-04-20	7:43:30	50.8	72.8	52.7	48.8	No		
13		2023-04-20	7:43:40	50.6	73.5	54.0	48.9	No		
14		2023-04-20	7:43:50	49.2	68.0	51.3	48.6	No		
15		2023-04-20	7:44:00	50.0	79.6	52.8	48.4	No		
16		2023-04-20	7:44:10	49.6	73.0	53.2	48.1	No		
17		2023-04-20	7:44:20	48.9	62.4	52.1	48.3	No		
18		2023-04-20	7:44:30	48.3	66.7	49.3	47.9	No		
19		2023-04-20	7:44:40	49.4	68.2	51.1	48.1	No		
20		2023-04-20	7:44:50	49.7	70.5	51.7	48.7	No		
21		2023-04-20	7:45:00	50.0	66.6	51.3	48.5	No		
22		2023-04-20	7:45:10	50.0	67.9	51.2	49.1	No		
23		2023-04-20	7:45:20	49.2	68.2	50.4	48.4	No		
24		2023-04-20	7:45:30	47.6	61.1	50.1	46.7	No		
25		2023-04-20	7:45:40	47.0	65.2	48.4	46.2	No		
26		2023-04-20	7:45:50	47.9	67.4	50.4	46.1	No		
27		2023-04-20	7:46:00	49.8	68.6	52.2	47.4	No		
28		2023-04-20	7:46:10	48.7	64.1	50.6	47.7	No		
29		2023-04-20	7:46:20	48.9	70.6	51.4	48.2	No		
30		2023-04-20	7:46:30	47.5	63.4	48.2	47.0	No		
31		2023-04-20	7:46:40	46.5	63.9	47.4	46.0	No		
32		2023-04-20	7:46:50	49.2	66.3	51.5	46.8	No		
33		2023-04-20	7:47:00	47.2	61.3	48.7	46.5	No		
34		2023-04-20	7:47:10	46.9	66.2	48.2	46.0	No		
35		2023-04-20	7:47:20	46.0	60.4	46.4	45.6	No		
36		2023-04-20	7:47:30	47.1	63.5	47.9	46.1	No		
37		2023-04-20	7:47:40	47.2	69.0	48.3	46.3	No		
38		2023-04-20	7:47:50	46.9	60.9	48.1	46.2	No		
39		2023-04-20	7:48:00	47.6	66.7	49.8	46.1	No		
40		2023-04-20	7:48:10	49.0	78.3	52.3	46.1	No		
41		2023-04-20	7:48:20	47.3	72.7	49.8	46.3	No		
42		2023-04-20	7:48:30	47.6	63.0	48.8	46.1	No		
43		2023-04-20	7:48:40	48.7	65.6	49.4	47.7	No		
44		2023-04-20	7:48:50	49.5	71.9	50.8	48.2	No		
45		2023-04-20	7:49:00	48.6	65.2	49.5	48.0	No		
46		2023-04-20	7:49:10	49.6	71.2	51.4	48.1	No		
47		2023-04-20	7:49:20	48.8	68.6	49.6	48.0	No		
48		2023-04-20	7:49:30	49.4	64.4	50.4	47.6	No		
49		2023-04-20	7:49:40	46.6	62.8	47.6	46.1	No		
50		2023-04-20	7:49:50	47.4	60.8	48.1	46.0	No		
51		2023-04-20	7:50:00	47.2	62.3	49.0	45.8	No		
52		2023-04-20	7:50:10	46.2	60.0	47.0	45.8	No		
53		2023-04-20	7:50:20	46.8	61.2	48.3	45.8	No		
54		2023-04-20	7:50:30	47.1	61.3	48.9	46.1	No		
55		2023-04-20	7:50:40	47.3	63.3	48.7	46.0	No		
56		2023-04-20	7:50:50	47.6	72.1	48.7	47.2	No		
57		2023-04-20	7:51:00	48.9	68.7	52.0	46.3	No		
58		2023-04-20	7:51:10	48.4	62.6	50.2	47.7	No		
59		2023-04-20	7:51:20	52.8	70.6	55.1	48.6	No		
60		2023-04-20	7:51:30	53.7	78.5	57.2	48.3	No		
61		2023-04-20	7:51:40	47.3	60.9	48.3	46.7	No		
62		2023-04-20	7:51:50	49.2	66.3	50.0	47.7	No		
63		2023-04-20	7:52:00	52.3	68.5	55.5	48.8	No		
64		2023-04-20	7:52:10	48.7	63.7	49.4	48.1	No		
65		2023-04-20	7:52:20	49.3	63.7	50.0	48.2	No		
66		2023-04-20	7:52:30	49.5	63.8	50.9	48.2	No		
67		2023-04-20	7:52:40	48.0	61.6	49.0	47.3	No		
68		2023-04-20	7:52:50	47.7	63.0	48.6	46.9	No		
69		2023-04-20	7:53:00	49.3	78.1	54.0	46.8	No		
70		2023-04-20	7:53:10	47.1	62.8	48.1	46.5	No		
71		2023-04-20	7:53:20	47.2	60.9	48.5	46.4	No		
72		2023-04-20	7:53:30	48.4	67.2	50.4	46.6	No		

73		2023-04-20	7:53:40	46.6	61.3	47.2	46.2	No
74		2023-04-20	7:53:50	48.5	64.1	50.4	46.5	No
75		2023-04-20	7:54:00	49.2	69.8	50.4	48.2	No
76		2023-04-20	7:54:10	49.4	65.4	51.5	47.7	No
77		2023-04-20	7:54:20	46.7	62.0	48.9	46.1	No
78		2023-04-20	7:54:30	47.4	61.4	48.6	46.0	No
79		2023-04-20	7:54:40	47.3	66.1	49.2	45.8	No
80		2023-04-20	7:54:50	49.3	65.1	52.3	47.4	No
81		2023-04-20	7:55:00	46.9	62.2	48.3	46.1	No
82		2023-04-20	7:55:10	48.8	71.0	51.1	47.5	No
83		2023-04-20	7:55:20	46.5	63.3	49.2	45.6	No
84		2023-04-20	7:55:30	45.8	59.1	47.0	45.2	No
85		2023-04-20	7:55:40	46.7	61.3	47.6	45.0	No
86		2023-04-20	7:55:50	48.0	62.6	48.9	47.2	No
87		2023-04-20	7:56:00	48.8	62.1	49.8	47.6	No
88		2023-04-20	7:56:10	48.8	63.1	50.5	47.2	No
89		2023-04-20	7:56:20	47.5	61.7	50.3	46.2	No
90		2023-04-20	7:56:30	47.5	64.4	48.9	46.5	No
91		2023-04-20	7:56:40	47.8	63.5	49.7	46.4	No
92		2023-04-20	7:56:50	46.8	70.4	47.4	46.1	No
93		2023-04-20	7:57:00	47.3	59.2	47.4	47.2	No
94	Stop	2023-04-20	7:57:01					
95	Calibration Change	2023-04-20	8:00:19					

Record #	Record Type	Date	Time	LAeq	LApeak	LASmax	LASmin	OVLD	Marker	Comments
1	Calibration Change	2023-04-20	11:14:41							
2	Run	2023-04-20	11:16:00							
3		2023-04-20	11:16:00	58.1	72.7	60.8	51.3	No		
4		2023-04-20	11:16:10	58.3	72.3	60.6	56.5	No		
5		2023-04-20	11:16:20	57.9	71.3	59.6	54.4	No		
6		2023-04-20	11:16:30	57.9	70.6	59.6	56.2	No		
7		2023-04-20	11:16:40	57.1	70.1	59.2	55.8	No		
8		2023-04-20	11:16:50	53.0	67.4	55.9	51.6	No		
9		2023-04-20	11:17:00	56.0	71.3	58.3	53.1	No		
10		2023-04-20	11:17:10	55.8	70.1	57.0	53.1	No		
11		2023-04-20	11:17:20	55.8	70.9	58.8	51.0	No		
12		2023-04-20	11:17:30	58.4	71.9	59.2	57.4	No		
13		2023-04-20	11:17:40	56.4	76.4	58.7	53.9	No		
14		2023-04-20	11:17:50	56.9	71.0	57.9	55.8	No		
15		2023-04-20	11:18:00	55.1	75.9	57.2	53.6	No		
16		2023-04-20	11:18:10	56.0	72.8	57.5	54.2	No		
17		2023-04-20	11:18:20	55.9	74.4	57.4	54.8	No		
18		2023-04-20	11:18:30	54.7	76.1	56.1	52.9	No		
19		2023-04-20	11:18:40	54.3	67.3	56.1	50.3	No		
20		2023-04-20	11:18:50	54.7	68.4	56.8	53.0	No		
21		2023-04-20	11:19:00	50.0	65.3	53.2	47.7	No		
22		2023-04-20	11:19:10	48.1	72.2	50.1	47.1	No		
23		2023-04-20	11:19:20	49.1	69.1	50.7	47.3	No		
24		2023-04-20	11:19:30	47.9	61.9	49.0	46.2	No		
25		2023-04-20	11:19:40	48.8	65.1	51.1	46.4	No		
26		2023-04-20	11:19:50	50.0	64.1	51.6	46.5	No		
27		2023-04-20	11:20:00	51.9	65.5	53.2	50.0	No		
28		2023-04-20	11:20:10	52.6	67.1	54.0	50.5	No		
29		2023-04-20	11:20:20	52.3	66.9	54.3	50.6	No		
30		2023-04-20	11:20:30	50.1	71.1	53.5	47.3	No		
31		2023-04-20	11:20:40	52.0	68.3	53.5	48.6	No		
32		2023-04-20	11:20:50	51.8	67.7	53.3	49.6	No		
33		2023-04-20	11:21:00	49.0	67.2	50.8	47.7	No		
34		2023-04-20	11:21:10	48.0	66.1	49.1	46.8	No		
35		2023-04-20	11:21:20	51.0	66.0	53.3	47.6	No		
36		2023-04-20	11:21:30	47.7	68.2	48.9	46.9	No		
37		2023-04-20	11:21:40	48.3	74.8	50.1	47.2	No		
38		2023-04-20	11:21:50	50.1	75.9	53.4	48.2	No		
39		2023-04-20	11:22:00	47.6	72.6	48.3	46.7	No		
40		2023-04-20	11:22:10	48.9	79.7	51.3	46.5	No		
41		2023-04-20	11:22:20	50.2	64.3	51.9	48.1	No		
42		2023-04-20	11:22:30	48.1	62.1	50.6	47.1	No		
43		2023-04-20	11:22:40	47.3	64.9	48.0	46.3	No		
44		2023-04-20	11:22:50	48.8	66.5	50.6	47.6	No		
45		2023-04-20	11:23:00	48.7	66.8	49.2	48.0	No		
46		2023-04-20	11:23:10	48.5	63.9	50.1	47.9	No		
47		2023-04-20	11:23:20	46.2	66.3	48.0	45.1	No		
48		2023-04-20	11:23:30	46.2	67.8	47.2	44.7	No		
49		2023-04-20	11:23:40	46.6	69.0	47.5	45.6	No		
50		2023-04-20	11:23:50	49.0	65.9	50.7	46.5	No		
51		2023-04-20	11:24:00	48.8	66.0	51.6	46.1	No		
52		2023-04-20	11:24:10	48.9	73.4	52.4	47.2	No		
53		2023-04-20	11:24:20	48.1	70.2	51.1	46.9	No		
54		2023-04-20	11:24:30	51.1	73.0	54.0	46.6	No		
55		2023-04-20	11:24:40	52.6	69.1	55.3	48.6	No		
56		2023-04-20	11:24:50	47.2	65.5	48.6	46.5	No		
57		2023-04-20	11:25:00	48.2	71.0	49.8	46.9	No		
58		2023-04-20	11:25:10	46.8	61.4	48.0	45.8	No		
59		2023-04-20	11:25:20	48.0	62.3	49.4	46.6	No		
60		2023-04-20	11:25:30	48.8	72.0	51.4	47.1	No		
61		2023-04-20	11:25:40	50.9	69.2	53.7	48.9	No		
62		2023-04-20	11:25:50	50.6	66.7	53.6	48.7	No		
63		2023-04-20	11:26:00	52.6	67.1	55.3	48.6	No		
64		2023-04-20	11:26:10	50.9	70.8	52.7	49.4	No		
65		2023-04-20	11:26:20	53.0	67.9	54.6	51.0	No		
66		2023-04-20	11:26:30	53.2	67.2	54.5	51.0	No		
67		2023-04-20	11:26:40	55.9	71.3	58.3	53.0	No		
68		2023-04-20	11:26:50	57.6	71.4	59.2	56.3	No		
69		2023-04-20	11:27:00	56.1	70.1	58.0	54.4	No		
70		2023-04-20	11:27:10	53.0	68.9	54.7	51.7	No		
71		2023-04-20	11:27:20	52.3	66.1	53.6	51.0	No		
72		2023-04-20	11:27:30	50.2	74.0	52.0	49.1	No		

73		2023-04-20	11:27:40	53.3	68.7	56.0	49.5	No
74		2023-04-20	11:27:50	48.3	66.9	54.3	46.9	No
75		2023-04-20	11:28:00	52.5	66.5	54.3	46.9	No
76		2023-04-20	11:28:10	51.6	72.8	53.9	50.1	No
77		2023-04-20	11:28:20	53.3	84.2	55.9	49.2	No
78		2023-04-20	11:28:30	54.0	69.7	56.3	50.3	No
79		2023-04-20	11:28:40	49.4	63.3	55.7	48.0	No
80		2023-04-20	11:28:50	48.7	64.9	49.8	48.0	No
81		2023-04-20	11:29:00	48.4	74.7	50.1	47.2	No
82		2023-04-20	11:29:10	47.2	76.6	49.7	46.0	No
83		2023-04-20	11:29:20	45.0	60.8	46.7	44.2	No
84		2023-04-20	11:29:30	44.6	58.8	45.6	43.8	No
85		2023-04-20	11:29:40	45.9	74.9	50.5	43.6	No
86		2023-04-20	11:29:50	46.5	61.2	47.5	43.6	No
87		2023-04-20	11:30:00	47.2	61.9	48.1	46.6	No
88		2023-04-20	11:30:10	47.9	62.0	48.4	47.0	No
89		2023-04-20	11:30:20	48.0	65.8	49.1	47.1	No
90		2023-04-20	11:30:30	47.9	63.0	48.4	47.4	No
91		2023-04-20	11:30:40	47.9	62.9	48.8	46.9	No
92		2023-04-20	11:30:50	47.4	69.1	48.2	46.1	No
93		2023-04-20	11:31:00	48.8	67.8	48.7	48.1	No
94	Stop	2023-04-20	11:31:01					
95	Calibration Change	2023-04-20	11:34:34					

Field Sheets

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: ST-1 Parkline

PROJECT #:

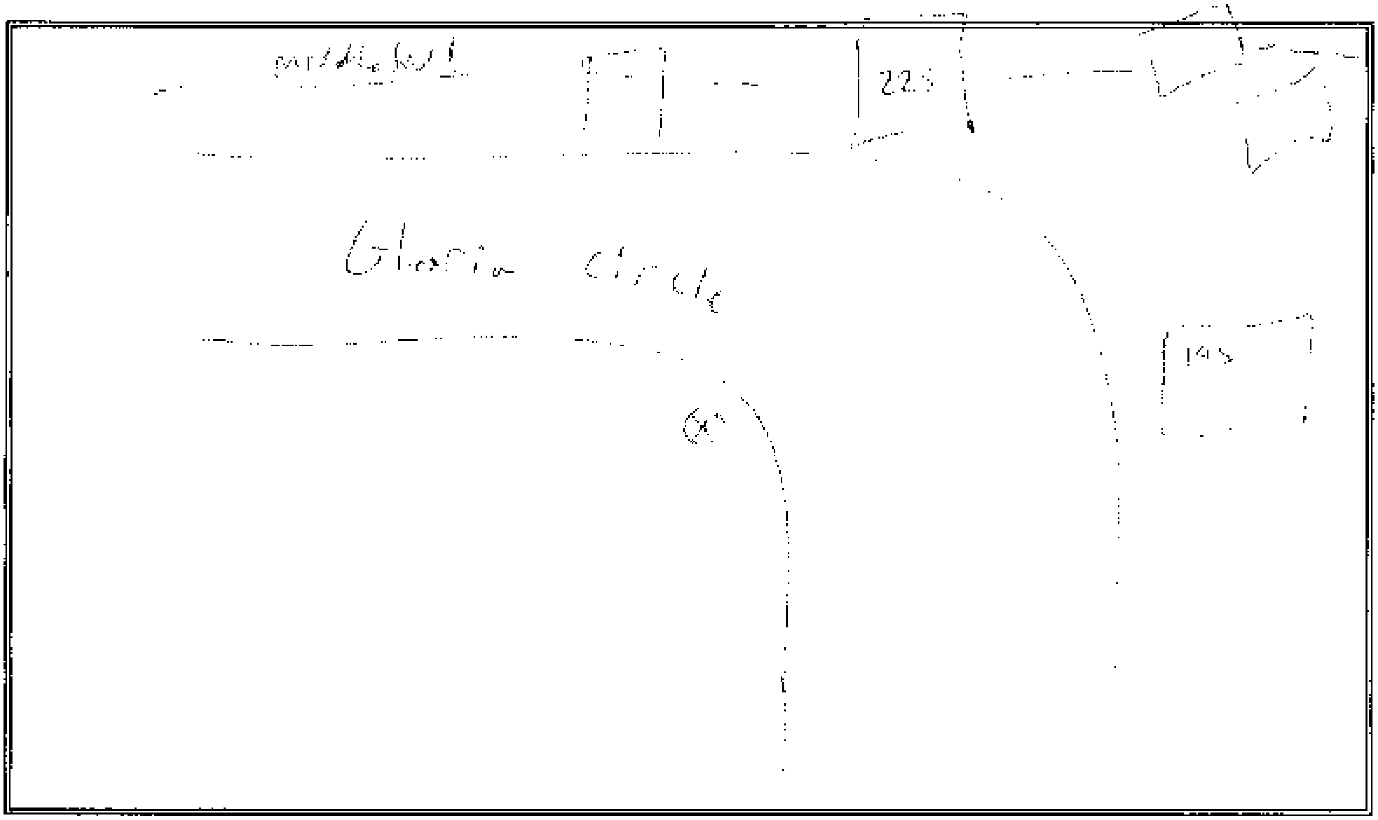
SITE NUMBER: ST-1

DATE/TIME: 20230419 3:29 (12:06 pm)

LOCATION/ADDRESS: across from 195/215/225
200 Gloria Circle

ENGINEERS: [illegible]

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

66.4 1.3mph Bluebird 68.7%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LxT Pre Post [illegible] [illegible] 0.36

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:

COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: ParkLine
SITE NUMBER: ST-1
LOCATION/ADDRESS: 200 Gloria Circle

PROJECT #:
DATE/TIME: 7/23/2419 5:29 (Correct Start Time: 11:01 a.m.)
ENGINEERS: Schonacker

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)	
1	29						Jet overhead	
2	30							
3	31						Jeile closes truck door, moving things in truck bed Jet overhead	
4	32						School bell (high school) Truck on middle field.	
5	33							
6	34						Jet	
7	35				distant honk of horn.		car ~~passed by~~ pulls into drive way opens garage door,	
8	36						Jet overhead Paused; neighbor asked what we were up to.	
9	37						garage door closes	
10	38						Jet	
11	39						car truck door closed (neighboring house) crows	
12	40						car pulls out of driveway and speeds off distant train horn.	
13	41						Jet overhead Man walking by	
14	42						Jet overhead	Leq 49.6
15	43						Truck on middle field	Lmax 66.0
16	44						Jet overhead	Lmin 40.6
17	45						vehicle doors closed car pulls into driveway	L10 52.3
18				noise throughout:	Birds chirping		Fedex passby	L~~33~~ 25 49.1
19								L50 46.2
20								L90 43.2

Overall Leq (Include "O" minutes, Exclude "X" minutes) = ______ dBA
Subset Leq (Exclude "O" and "X" minutes) = ______ dBA

"O" = other characteristic sources that contributed to the Leq
"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: Perkins

PROJECT #:

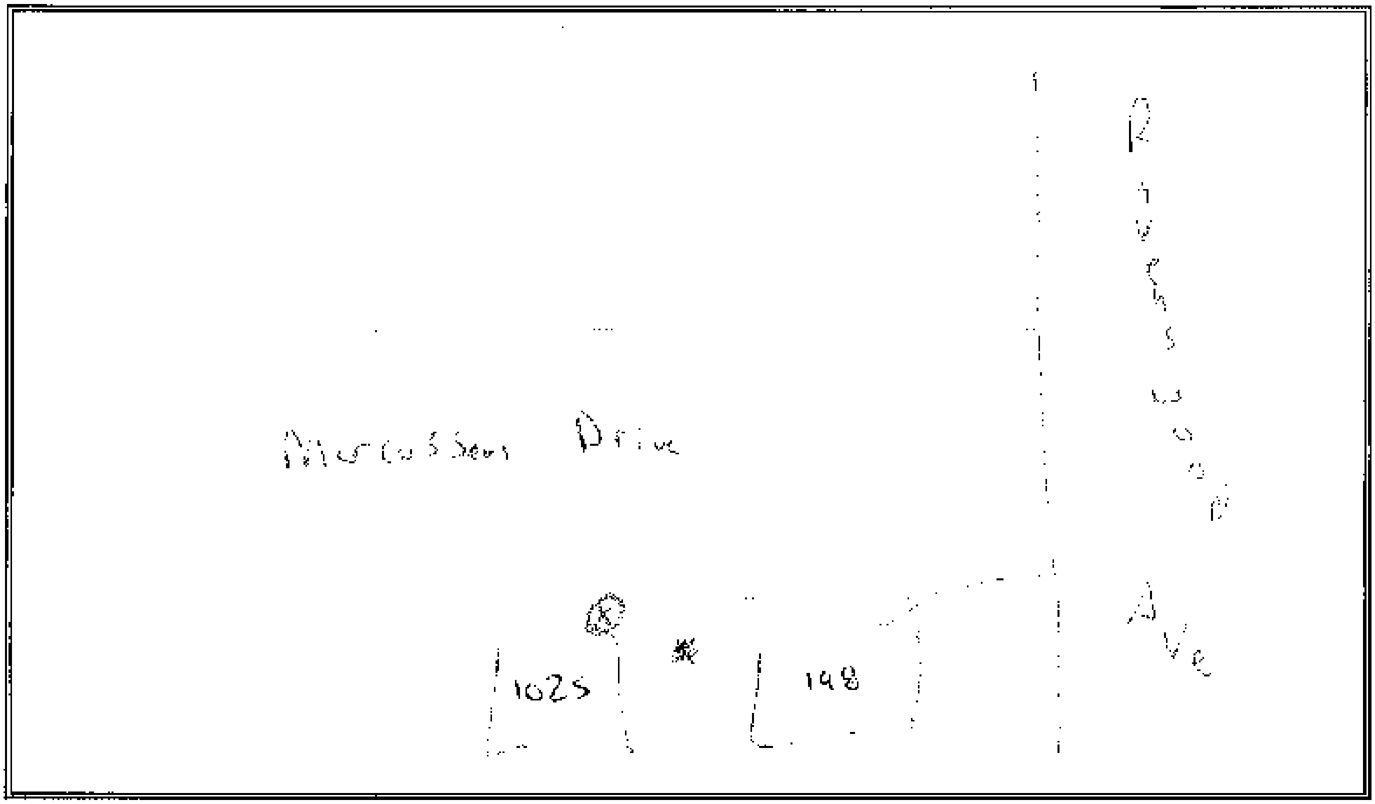
SITE NUMBER: ST-2

DATE/TIME: 20230414 2:24

LOCATION/ADDRESS: 1025 Marcusson

ENGINEERS: Schumacher

SITE SKETCH. Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

66 5.0 Overcast 44 %

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LxT

pre: -0.03 dB

post: -0.07 dB

Outdoors

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:

COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: Parkline
SITE NUMBER: ST-2
LOCATION/ADDRESS: 1025 Mercusson
PROJECT #:
DATE/TIME: 20230414 2:24 (Correct Start Time: 10:28 a.m.)
ENGINEERS: Schumacher

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (Include SLM equipment, Calibration Data)
1	24						[illegible] at Middle on [illegible]
2	25						Set [illegible]
3	26						car passes by [illegible] birds chirp [illegible] traffic ([illegible])
4	27						~~[illegible]~~ [illegible] ([illegible]) Auto passes by
5	28						[illegible] [illegible] distant [illegible] noise
6	29						Bus on [illegible] [illegible]
7	30						[illegible] goes by traffic noise Set
8	31						Truck horn (distant) Traffic noise [illegible]
9	32					[illegible]?	[illegible] [illegible]
10	33						Traffic noise (background)
11	34						[illegible]
12	35						Traffic noise [illegible]
13	36						bus passes by, car passes by [illegible] [illegible]
14	37						SUV passes by [illegible] goes by
15	38						car passes by, [illegible] Traffic noise
16							car passes by
17				[illegible]			
18				[illegible]			
19							
20							

Leq	55.4
Lmax	69.7
Lmin	42.0
L10	59.5
~~L33~~ 25	57.2
L50	53.4
L90	46.1

Overall Leq (Include "O" minutes, Exclude "X" minutes) = ☐ dBA
Subset Leq (Exclude "O" and "X" minutes) = ☐ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: Parkline

PROJECT #:

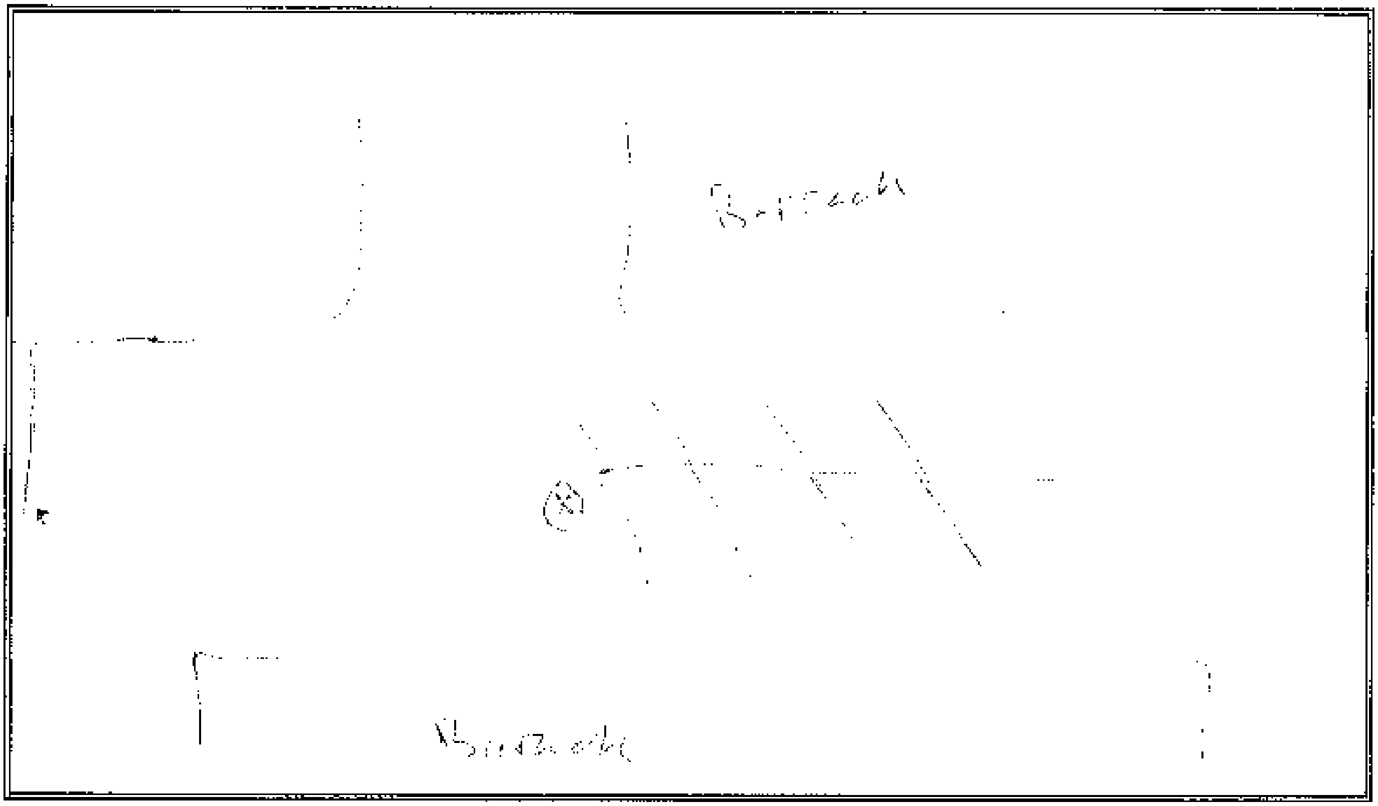
SITE NUMBER: ST-3

DATE/TIME: 2023, 04 19

LOCATION/ADDRESS: [illegible]

ENGINEERS: [illegible]

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

60.2 [illegible] 2.6 mph [illegible] SB-3

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

[illegible]

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:

COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: [illegible]
PROJECT #:
SITE NUMBER: SI 3
DATE/TIME: [illegible]
LOCATION/ADDRESS: [illegible]
ENGINEERS: [illegible]

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	10:51						
2	10:52						[illegible]
3	10:53	31					[illegible]
4	10:54	32					
5	10:55	33					
6	10:56	34					Jet [illegible]
7	10:57	10:35					[illegible]
8	10:58						[illegible] [illegible] 3 cars → [illegible]
9	10:59						Jet [illegible] ([illegible])
10	11:00						[illegible] ([illegible])
11	11:01						[illegible] passes by [illegible] 10:30
12	11:02						
13	11:03						
14	11:04						[illegible] passes by [illegible]
15	11:05						[illegible]
16							
17							
18							Overall noise / [illegible] exhaust?
19							[illegible]
20							

Leq	55.3
Lmax	67.1
Lmin	50.5
L10	57.8
L~~20~~ 25	53.6
L50	52.3
L90	51.6

Overall Leq (Include "O" minutes, Exclude "X" minutes) = ______ dBA
Subset Leq (Exclude "O" and "X" minutes) = ______ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: [illegible]

PROJECT #:

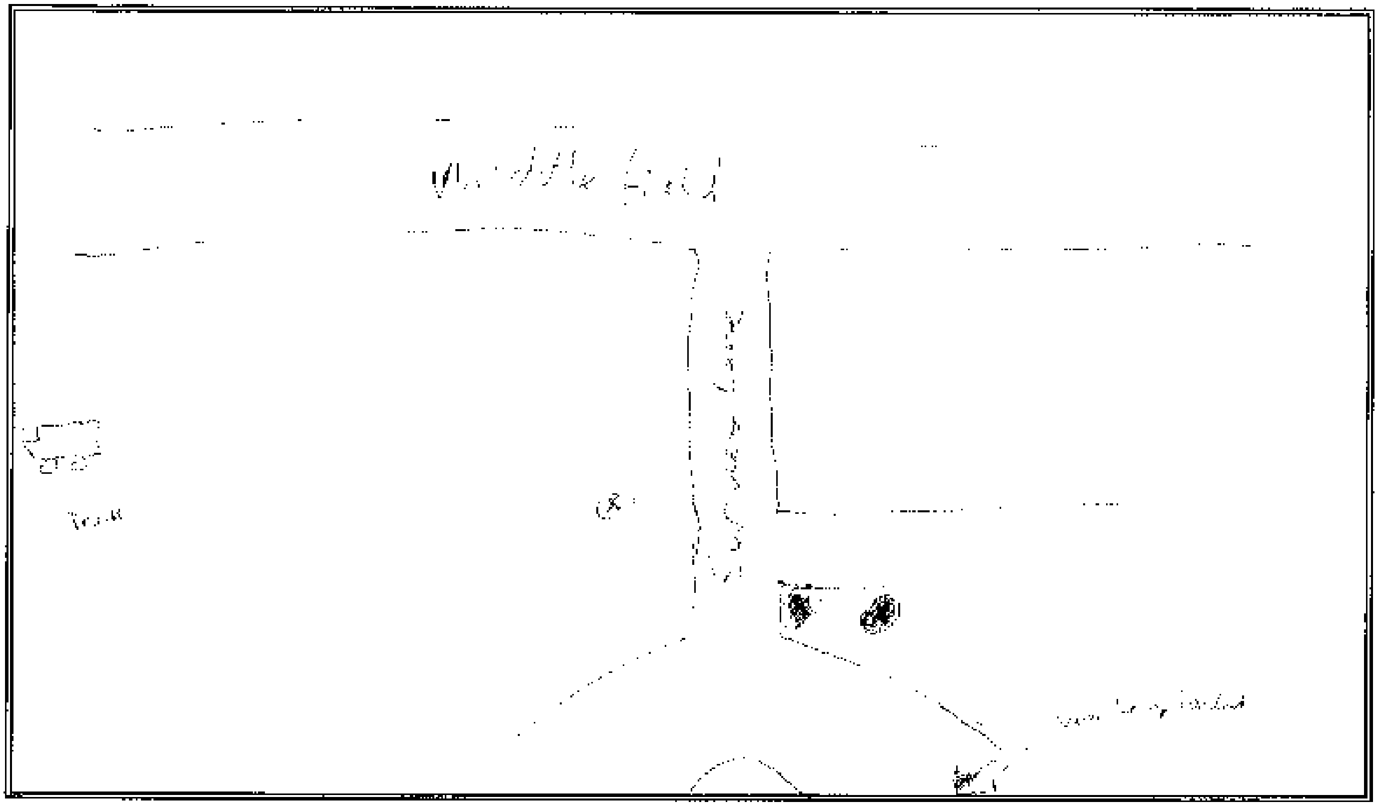
SITE NUMBER: ST-4

DATE/TIME: 20230420 1:42:44

LOCATION/ADDRESS: new Geokids building [illegible]

ENGINEERS: Schumaker

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

[illegible] 0.8 mph [illegible] 68 %

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal, date)

LxT [illegible] -0.12dB [illegible]

post- -0.1dB

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:

COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: Perkline

PROJECT #:

SITE NUMBER: ST-4

DATE/TIME: 20230420 7:42 am

LOCATION/ADDRESS: [illegible] / USGS ([illegible])

ENGINEERS: Schumacher

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	42						[illegible]
2	43						[illegible]
3	44						
4	45						[illegible] stopped. [illegible]
5	46						[illegible]
6	47						[illegible] ~60 yards
7	48						
8	49						[illegible]
9	50						[illegible]
10	51						[illegible]
11	52						[illegible] Set over head.
12	53						[illegible]
13	54						[illegible]
14	55					[illegible]	5 seconds [illegible]
15	56						[illegible]
16							
17							
18				[illegible]			• waves of [illegible] • [illegible]
19							
20							

Leq	44.3
Lmax	63.4
Lmin	45.0
L10	50.6
L33 25	49.3
L50	48.2
L90	46.4

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: Parkline

PROJECT #:

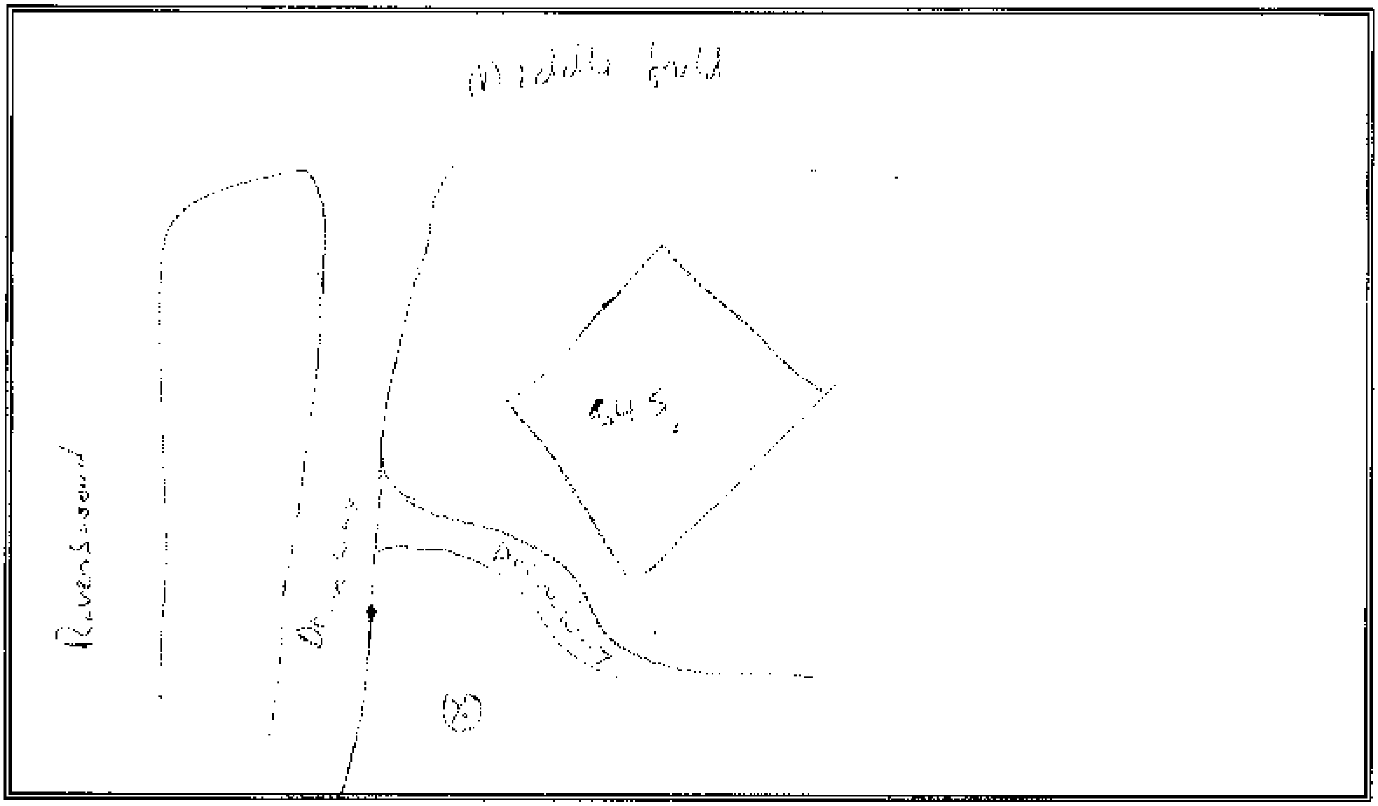
SITE NUMBER: ST-5

DATE/TIME: 20230420 11:16

LOCATION/ADDRESS: 545 Middlefield

ENGINEERS: Schumacher

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

67.4 1.4 sun, slight wind 47.3

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LxT PCB, [illegible] [illegible] [illegible]

post [illegible] .06

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED:

COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: [illegible]
PROJECT #:
SITE NUMBER: ST-5
DATE/TIME: [illegible] 15[illegible]
LOCATION/ADDRESS: 545 Middlefield
ENGINEERS: [illegible]

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	16						leaf blowers up [illegible]
2	17						leaf blowers @ [illegible] [illegible]
3	18						leaf blowers
4	19						leaf blowers [illegible] [illegible]
5	20						[illegible] hydraulic [illegible] (middlefield) leaf blower
6	21						Jet overhead prop plane [illegible] leaf blower [illegible]
7	22						[illegible]
8	23				[illegible]		[illegible]
9	24				[illegible]		[illegible]
10	25						[illegible]
11	26						leaf blower Trash [illegible] [illegible] Jet
12	27						[illegible] prop plane [illegible] 505 [illegible]
13	28						leaf blower [illegible] middlefield [illegible]
14	29						[illegible] no leaf blowing [illegible] Shots.
15	30						[illegible] middlefield [illegible] prop plane [illegible] Jet
16							
17				Autos [illegible]			
18					Birds chirp leaf blowers [illegible]		
19							
20							

[illegible] middlefield

Leq	52.5
Lmax	60.9
Lmin	42.6
L10	55.6
~~L33~~ 25	53.6
L50	49.9
L90	46.9

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Meter Locations

Site #	Meter #	Start Time	Start Date	Stop Time	Stop Date	Start Cal	End Cal	Lock #	Location Description
LT-1	A	8:50	2023 04/19	9:41	2023 04/20	13.36 mV/Pa	13.36 mV/Pa	[redacted]	End of hint court on Tree
LT-2	J	9:05	2023 04/19	10:11	2023 04/20	16.44 mV/Pa	16.44 mV/Pa	[redacted]	End of Barn on Tree
LT-3	I	9:20	2023 04/19	10:20	2023 04/20	16.82 mV/Pa	16.63 mV/Pa	[redacted]	Light pole across from childrens center
LT-4	D	9:30	2023 04/19	10:29	2023 04/20	16.63 mV/Pa	16.25 mV/Pa	[redacted]	First telephone pole along westbound line / Landscapers present at pickup
LT-5	#8	9:43	2023 04/19	10:49	2023 04/20	14.85 mV/Pa	14.75 mV/Pa	[redacted]	2nd redwood tree from southeast

Field Pictures

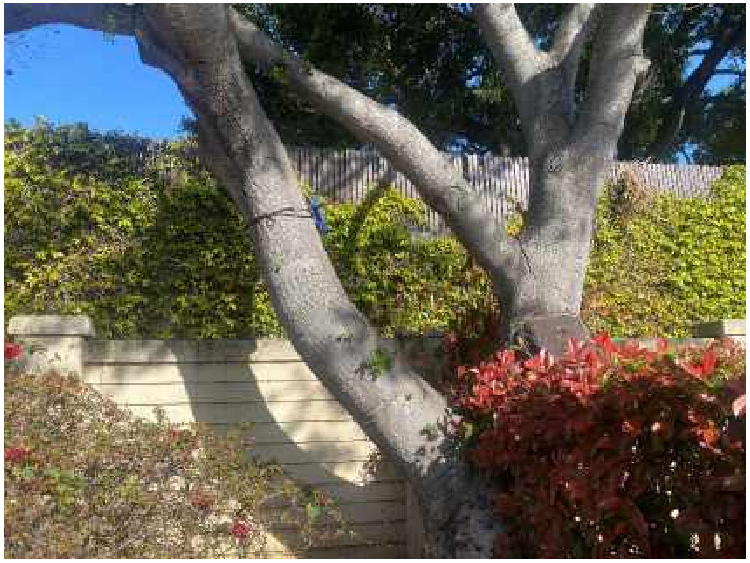
Noise Measurement Photographs


LT-1 Looking East


LT-1 Looking South


LT-1 Looking North

Noise Measurement Photographs


LT-2 Looking North


LT-2 Looking Northeast


LT-2 Looking North (from street)


LT-2 Looking Northwest (from street)

Noise Measurement Photographs


LT-3 Looking North


LT-3 Looking East


LT-3 Looking West

Noise Measurement Photographs

LT-4 Looking West

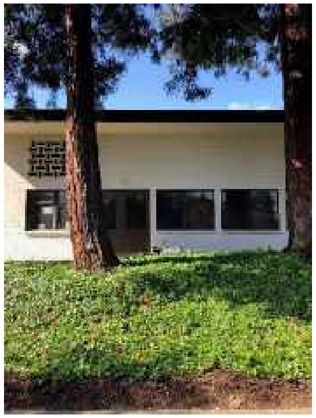
LT-4 Looking South

LT-4 Looking North

Noise Measurement Photographs


LT-5 Looking East


LT-5 Looking Northeast


LT-5 Looking West

Noise Measurement Photographs

ST-1 Looking Southwest

ST-1 Looking East

ST-1 Looking North

Noise Measurement Photographs


ST-2 Looking North


ST-2 Looking West

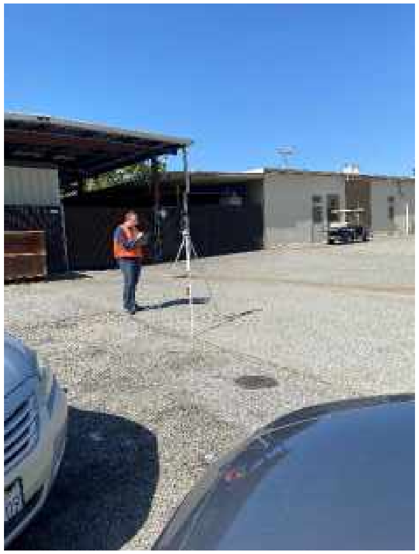

ST-2 Looking South

Noise Measurement Photographs


ST-3 Looking Northeast


ST-3 Looking Southeast


ST-3 Looking Southwest


ST-3 Looking Northwest

Noise Measurement Photographs

ST-4 Looking East

ST-4 Looking South

ST-4 Looking West

ST-4 Looking North

Noise Measurement Photographs


ST-5 Looking North


ST-5 Looking Northwest


ST-5 Looking Southwest


ST-5 Looking Northeast

Noise Measurement Photographs

Traffic Data and Calculations

Total Volumes			N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W
#	**N/S street**	**E/W street**	**2022/2023 Existing Conditions**				**Year 2031 Background**				**Year 2040 Cumulative**				**Year 2031 Background + Project (550)**				**Year 2031 Background + new variant**				**Year 2040 Cumulative + Project (550)**				**Year 2040 Cumulative + new variant**			
1	US 101 NB Off-Ramp	Marsh Road	-	20,435	9,545	20,255	-	26,755	12,942	23,996	-	33,622	15,798	27,365	-	26,855	12,980	24,397	-	26,864	12,978	24,438	-	33,722	15,836	27,766	-	33,731	15,834	27,807
2	US 101 SB Off-Ramp	Marsh Road	16,670	13,405	-	15,925	20,477	16,660	-	17,743	23,210	20,496	-	19,611	20,685	16,761	-	18,143	20,703	16,770	-	18,185	23,418	20,597	-	20,011	23,436	20,606	-	20,053
3	Scott Drive	Marsh Road	2,320	15,475	1,740	11,360	2,730	17,969	1,982	12,600	3,225	20,458	2,687	13,376	2,730	18,218	1,982	13,000	2,730	18,240	1,982	13,042	3,225	20,707	2,687	13,776	3,225	20,729	2,687	13,818
4	Florence Street/Bohannon Drive	Marsh Road	5,700	11,670	1,010	8,385	6,401	13,792	1,232	10,094	6,904	15,522	1,788	11,755	6,552	14,041	1,232	10,645	6,565	14,063	1,232	10,700	7,055	15,771	1,788	12,306	7,068	15,793	1,788	12,361
5	Bay Road	Marsh Road	1,015	9,475	1,830	7,400	1,605	11,774	2,604	7,954	2,077	14,101	3,780	8,248	1,605	12,173	2,653	8,456	1,605	12,209	2,657	8,507	2,077	14,500	3,829	8,750	2,077	14,536	3,833	8,801
6	Bay Road	Ringwood Avenue	2,815	780	3,000	3,690	3,786	782	3,505	3,890	5,251	787	3,909	3,847	3,835	782	3,854	4,259	3,839	782	3,883	4,353	5,300	787	4,258	4,216	5,304	787	4,287	4,310
7	US 101 NB Ramps	Willow Road (SR 114)	-	16,465	10,730	13,360	-	21,553	11,491	19,198	-	23,790	10,751	22,071	-	22,105	12,595	19,952	-	22,153	12,692	20,011	-	24,342	11,855	22,825	-	24,390	11,952	22,884
8	US 101 SB Ramps	Willow Road (SR 114)	6,880	16,530	-	14,140	10,579	19,845	-	16,402	12,277	20,325	-	16,756	10,932	21,501	-	18,260	10,963	21,646	-	18,416	12,630	21,981	-	18,614	12,661	22,126	-	18,770
9	Bay Road	Willow Road (SR 114)	3,370	13,775	-	12,280	4,041	15,664	-	13,977	4,458	15,430	-	13,919	4,361	17,674	-	15,515	4,451	17,848	-	15,580	4,778	17,440	-	15,457	4,868	17,614	-	15,522
10	Durham Street	Willow Road (SR 114)	500	8,170	1,050	8,890	673	9,153	1,651	9,789	915	8,242	2,559	9,023	673	10,814	1,677	11,353	673	10,959	1,679	11,420	915	9,903	2,585	10,587	915	10,048	2,587	10,654
11	Coleman Avenue	Willow Road (SR 114)	1,810	7,845	190	8,035	2,110	8,780	190	8,772	2,538	7,873	190	8,060	2,110	10,466	190	10,336	2,110	10,613	190	10,403	2,538	9,559	190	9,624	2,538	9,706	190	9,691
12	Gilbert Avenue	Willow Road (SR 114)	825	6,895	2,730	7,170	1,108	7,714	2,868	8,079	1,477	6,589	3,151	7,492	1,108	9,400	2,894	9,669	1,108	9,547	2,896	9,738	1,477	8,275	3,177	9,082	1,477	8,422	3,179	9,151
13	Middlefield Road	Willow Road (SR 114)	5,375	8,015	5,760	3,805	6,505	8,873	6,661	4,624	7,135	7,513	7,388	5,788	8,240	10,584	7,012	4,828	8,524	10,734	7,042	4,644	8,870	9,224	7,739	5,992	9,154	9,374	7,769	5,808
14	Laurel Street	Willow Road (SR 114)	1,375	1,395	5	2,480	1,689	2,139	5	2,742	1,629	2,472	5	3,163	1,893	2,504	5	2,742	1,709	2,546	5	2,742	1,833	2,837	5	3,163	1,649	2,879	5	3,163
15	Middlefield Road	Ravenswood Avenue	4,050	-	8,265	5,385	4,548	-	9,324	5,422	4,674	-	8,387	4,960	5,141	-	11,263	5,847	5,188	-	11,133	5,887	5,267	-	10,326	5,385	5,314	-	10,196	5,425
16	Middlefield Road	D Street/Ringwood Avenue	7,175	3,795	6,560	365	8,462	4,494	7,426	365	8,830	4,941	7,000	-	9,157	4,892	9,130	2,460	8,987	4,930	9,230	2,710	9,525	5,339	8,704	2,095	9,355	5,377	8,804	2,345
17	Middlefield Road	Seminary Drive	5,595	375	6,195	130	6,807	573	6,863	130	7,732	812	6,205	-	7,477	573	8,560	1,828	7,490	573	8,699	2,053	8,402	812	7,902	1,698	8,415	812	8,041	1,923
18	Proj Dwy B1 East	Ravenswood Avenue	-	4,105	-	5,460	-	4,146	-	5,497	-	3,264	-	3,959	-	5,097	12	6,998	-	5,088	297	7,005	-	4,215	12	5,460	-	4,206	297	5,467
19	Proj Dwy B1 West	Ravenswood Avenue	-	4,105	-	5,460	-	4,145	-	5,496	-	3,261	-	3,553	-	5,096	292	7,403	-	5,302	689	7,355	-	4,212	292	5,460	-	4,418	689	5,412
20	Proj Dwy/Pine Street	Ravenswood Avenue	300	4,510	200	5,450	314	4,565	200	5,490	351	3,483	-	3,602	314	5,746	618	7,338	314	6,054	200	7,289	351	4,664	418	5,450	351	4,972	-	5,401
21	Laurel Street	Encinal Avenue	-	2,750	1,620	2,445	-	3,060	1,919	3,252	-	3,163	2,204	4,379	-	3,375	2,080	3,353	-	3,411	2,087	3,376	-	3,478	2,365	4,480	-	3,514	2,372	4,503
22	Laurel Street	Glenwood Avenue	1,370	2,305	1,740	2,315	1,557	2,325	1,937	2,565	2,099	2,273	2,185	2,722	1,658	2,428	2,122	2,693	1,691	2,436	2,145	2,705	2,200	2,376	2,370	2,850	2,233	2,384	2,393	2,862
23	Laurel Street	Oak Grove Avenue	2,140	3,485	1,825	3,690	2,457	3,515	2,554	3,950	2,649	3,406	3,054	4,067	2,686	3,679	2,760	4,015	2,731	3,684	2,787	4,021	2,878	3,570	3,260	4,132	2,923	3,575	3,287	4,138
24	Laurel Street	Ravenswood Avenue	1,910	4,720	2,885	5,690	2,490	4,797	3,652	5,690	2,581	3,795	4,629	4,118	2,843	5,958	3,951	7,303	2,888	6,285	3,871	7,430	2,934	4,956	4,928	5,731	2,979	5,283	4,848	5,858
25	Laurel Street	Proj Dwy N	1,535	-	2,885	-	2,197	-	3,652	-	3,156	-	4,560	-	2,374	454	4,020	-	2,330	-	4,063	-	3,333	454	4,928	-	3,289	-	4,971	-
26	Laurel Street	Proj Dwy S	1,535	-	2,885	-	2,197	-	3,652	-	3,126	-	4,563	-	2,404	49	4,017	-	2,220	49	4,059	-	3,333	49	4,928	-	3,149	49	4,970	-
27	Laurel Street	Burgess Drive	1,375	175	2,205	725	2,007	175	2,954	749	2,949	177	3,830	813	2,211	175	3,319	749	2,027	175	3,361	749	3,153	177	4,195	813	2,969	177	4,237	813
28	El Camino Real	Encinal Avenue	13,505	3,105	12,670	450	16,208	3,778	13,846	913	17,798	4,331	15,300	450	16,986	4,248	14,153	913	17,054	4,288	14,181	913	18,576	4,801	15,607	450	18,644	4,841	15,635	450
29	El Camino Real	Valparaiso Avenue/Glenwood Avenue	11,435	2,820	11,930	4,720	13,388	3,209	13,086	5,092	14,893	3,241	14,267	5,606	14,065	3,335	13,392	5,216	14,110	3,359	13,407	5,227	15,570	3,367	14,573	5,730	15,615	3,391	14,588	5,741
30	El Camino Real	Oak Grove Avenue	10,465	3,605	11,700	4,205	12,115	4,395	13,105	4,205	13,395	4,702	14,243	4,577	12,788	4,513	13,293	4,205	12,833	4,536	13,286	4,205	14,068	4,820	14,431	4,577	14,113	4,843	14,424	4,577
31	El Camino Real	Santa Cruz Avenue	11,035	1,230	11,975	955	12,821	1,320	13,411	1,548	14,039	1,767	14,508	1,925	13,429	1,320	13,600	1,549	13,468	1,320	13,593	1,549	14,647	1,767	14,697	1,926	14,686	1,767	14,690	1,926
32	El Camino Real	Ravenswood Avenue/Menlo Avenue	10,790	5,935	16,715	4,010	13,059	6,595	18,400	4,664	14,797	6,546	19,062	5,221	13,668	7,789	19,203	4,865	13,707	7,868	19,273	4,883	15,406	7,740	19,865	5,422	15,445	7,819	19,935	5,440
33	El Camino Real	Roble Avenue	14,150	550	15,070	790	16,554	1,185	16,213	1,059	17,952	1,310	16,753	1,320	17,303	1,185	17,016	1,059	17,387	1,185	17,086	1,059	18,701	1,310	17,556	1,320	18,785	1,310	17,626	1,320
34	El Camino Real	Middle Avenue	13,280	30	15,655	3,965	15,208	30	16,822	3,965	16,558	30	17,740	3,965	15,957	30	17,625	3,965	16,041	30	17,695	3,965	17,307	30	18,543	3,965	17,391	30	18,613	3,965
35	El Camino Real	Cambridge Avenue	14,470	45	16,740	550	16,785	45	18,509	587	18,215	45	19,789	631	17,534	45	19,312	587	17,599	45	19,382	587	18,964	45	20,592	631	19,029	45	20,662	631
36	University Drive	Valparaiso Avenue	1,780	5,110	1,935	5,335	1,780	5,110	2,243	5,847	1,780	5,312	3,211	6,545	1,780	5,235	2,244	5,973	1,780	5,246	2,244	5,984	1,780	5,437	3,212	6,671	1,780	5,448	3,212	6,682
37	University Drive	Santa Cruz Avenue	-	3,880	3,330	6,625	-	4,049	3,540	7,009	-	4,565	3,983	7,298	-	4,050	3,677	7,109	1	4,050	3,689	7,118	-	4,566	4,120	7,398	1	4,566	4,132	7,407
38	Orange Avenue/Santa Cruz Avenue	Avy Avenue/Santa Cruz Avenue	1,430	4,535	4,995	2,220	1,565	4,953	5,490	2,233	1,910	5,139	6,049	2,252	1,565	5,090	5,590	2,233	1,565	5,102	5,599	2,233	1,910	5,276	6,149	2,252	1,910	5,288	6,158	2,252
39	Santa Cruz Avenue	Sand Hill Road	8,125	10,905	11,605	11,520	8,897	11,122	12,278	11,871	9,790	11,676	12,877	12,709	9,034	11,236	12,529	11,871	9,046	11,246	12,551	11,871	9,927	11,790	13,128	12,709	9,939	11,800	13,150	12,709
40	Santa Cruz Avenue/Alpine Road	Junipero Serra Boulevard	9,655	6,430	11,040	-	10,427	6,753	11,364	-	11,053	7,245	11,499	-	10,678	6,753	11,615	-	10,700	6,753	11,637	-	11,304	7,245	11,750	-	11,326	7,245	11,772	-
41	Bayfront Expressway	Willow Road (SR 114)	14,385	1,520	20,890	10,120	18,972	1,555	24,360	11,691	23,419	1,588	27,852	13,307	18,972	1,605	24,611	11,992	18,972	1,609	24,633	12,018	23,419	1,638	28,103	13,608	23,419	1,642	28,125	13,634
42	Hamilton Avenue	Willow Road (SR 114)	1,270	8,025	330	10,740	1,433	9,248	520	12,527	1,398	10,385	853	13,901	1,433	9,549	520	12,828	1,433	9,575	520	12,854	1,398	10,686	853	14,202	1,398	10,712	853	14,228
43	Ivy Drive	Willow Road (SR 114)	915	8,760	-	10,880	1,446	11,897	-	13,527	2,489	10,986	-	14,957	1,446	12,198	-	13,828	1,446	12,224	-	13,854	2,489	11,287	-	15,258	2,489	11,313	-	15,284
44	O'Brien Drive	Willow Road (SR 114)	-	9,800	3,225	13,080	-	12,043	5,136	18,191	-	9,520	7,326	20,788	-	12,344	5,186	18,542	-	12,370	5,190	18,572	-	9,821	7,376	21,139	-	9,847	7,380	21,169
45	Newbridge Street	Willow Road (SR 114)	4,670	12,535	4,420	17,110	5,826	16,148	5,487	22,259	7,746	15,622	6,135	24,784	5,876	16,499	5,638	22,811	5,880	16,530	5,651	22,859	7,796	15,973	6,286	25,336	7,800	16,004	6,299	25,384
46	Bayfront Expressway	University Avenue	22,615	-	28,770	9,560	25,454	-	33,088	11,916	29,095	-	37,167	14,135	25,705	-	33,339	11,916	25,727	-	33,361	11,916	29,346	-	37,418	14,135	29,368	-	37,440	14,135

Truck Volumes			N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W	N	E	S	W
1	US 101 NB Off-Ramp	Marsh Road	-	294	119	213	-	370	181	240	-	461	246	264	-	371	182	244	-	371	182	244	-	462	247	268	-	462	247	268
2	US 101 SB Off-Ramp	Marsh Road	146	189	-	130	180	236	-	135	211	309	-	154	182	238	-	138	182	238	-	139	213	311	-	157	213	311	-	157
3	Scott Drive	Marsh Road	17	144	30	83	20	154	34	85	28	203	27	95	20	156	34	88	20	156	34	88	28	205	27	98	28	205	27	98
4	Florence Street/Bohannon Drive	Marsh Road	29	104	4	60	29	112	5	66	30	158	7	76	29	114	5	70	29	114	5	70	30	160	7	79	31	161	7	80
5	Bay Road	Marsh Road	8	85	10	52	10	95	12	57	11	134	13	69	10	98	12	60	10	99	12	61	11	138	13	73	11	138	13	74
6	Bay Road	Ringwood Avenue	25	-	7	29	25	-	7	28	41	-	8	19	26	-	7	30	26	-	8	31	41	-	9	21	41	-	9	22
7	US 101 NB Ramps	Willow Road (SR 114)	-	328	166	137	-	404	178	205	-	460	168	241	-	415	195	213	-	416	196	214	-	471	185	249	-	472	187	249
8	US 101 SB Ramps	Willow Road (SR 114)	38	351	-	174	70	413	-	208	91	411	-	246	73	447	-	231	73	450	-	233	93	445	-	274	93	448	-	276
9	Bay Road	Willow Road (SR 114)	21	186	-	164	25	222	-	193	75	252	-	192	27	250	-	214	28	253	-	215	80	285	-	213	81	287	-	214
10	Durham Street	Willow Road (SR 114)	1	133	12	132	4	160	18	150	1	129	49	118	4	189	18	174	4	191	18	175	1	155	49	138	1	157	49	139
11	Coleman Avenue	Willow Road (SR 114)	2	127	3	124	3	152	3	142	2	120	3	120	3	181	3	168	3	184	3	169	2	146	3	143	2	148	3	144
12	Gilbert Avenue	Willow Road (SR 114)	1	111	1	110	4	133	1	129	10	102	3	107	4	162	1	154	4	165	1	155	10	129	3	129	10	131	3	130
13	Middlefield Road	Willow Road (SR 114)	68	140	82	10	80	166	100	13	112	126	106	25	101	198	105	13	104	201	105	13	140	155	111	26	144	158	111	25
14	Laurel Street	Willow Road (SR 114)	4	5	0	8	5	8	0	8	5	16	0	8	6	9	0	8	5	10	0	8	6	19	0	8	6	19	0	8
15	Middlefield Road	Ravenswood Avenue	16	-	41	28	20	-	48	33	36	-	53	28	23	-	58	35	23	-	57	36	41	-	65	31	41	-	64	31
16	Middlefield Road	D Street/Ringwood Avenue	41	42	24	2	51	51	30	2	55	72	37	-	55	55	37	16	54	55	38	18	60	78	46	17	58	78	46	19
17	Middlefield Road	Seminary Drive	36	0	29	1	48	0	36	1	79	0	41	-	52	0	44	10	53	0	45	12	86	0	52	14	86	0	53	15
18	Proj Dwy B1 East	Ravenswood Avenue	-	23	-	28	-	25	-	33	-	30	-	23	-	31	0	42	-	31	2	42	-	39	0	31	-	38	2	31
19	Proj Dwy B1 West	Ravenswood Avenue	-	23	-	28	-	25	-	33	-	30	-	20	-	31	2	45	-	32	4	44	-	39	2	31	-	40	5	31
20	Proj Dwy/Pine Street	Ravenswood Avenue	-	24	1	27	-	27	1	32	1	31	-	20	-	34	4	43	-	36	1	43	1	42	3	30	1	44	-	30
21	Laurel Street	Encinal Avenue	-	41	14	14	-	45	8	24	-	45	9	32	-	49	9	25	-	50	9	25	-	50	10	32	-	50	10	32
22	Laurel Street	Glenwood Avenue	15	1	9	2	17	1	6	2	21	1	6	9	18	1	7	2	19	1	7	2	22	1	7	9	22	1	7	9
23	Laurel Street	Oak Grove Avenue	10	3	3	25	12	3	5	16	14	3	8	14	14	3	5	16	14	3	5	16	16	3	9	14	16	3	9	14
24	Laurel Street	Ravenswood Avenue	7	25	18	34	10	28	22	38	9	34	44	29	11	35	24	49	11	37	23	50	11	44	47	41	11	47	46	42
25	Laurel Street	Proj Dwy N	7	-	18	-	10	-	22	-	22	-	43	-	11	2	24	-	11	-	25	-	24	4	47	-	23	-	47	-
26	Laurel Street	Proj Dwy S	7	-	18	-	10	-	22	-	22	-	43	-	11	0	24	-	10	0	25	-	24	0	47	-	22	0	47	-
27	Laurel Street	Burgess Drive	6	1	14	-	8	1	17	-	21	-	37	10	9	1	19	-	8	1	20	-	22	-	41	10	21	-	41	10
28	El Camino Real	Encinal Avenue	93	18	71	3	143	17	87	2	168	22	92	3	149	19	89	2	150	19	89	2	175	25	93	3	176	25	94	3
29	El Camino Real	Valparaiso Avenue/Glenwood Avenue	85	5	72	8	124	7	86	8	154	4	93	7	130	7	89	9	131	7	89	9	161	5	95	7	161	5	95	7
30	El Camino Real	Oak Grove Avenue	88	18	72	8	127	27	81	12	155	23	90	8	134	27	82	12	134	28	82	12	162	23	92	8	163	23	92	8
31	El Camino Real	Santa Cruz Avenue	92	12	74	8	134	4	82	16	162	19	92	8	141	4	83	16	141	4	83	16	169	19	93	8	169	19	93	8
32	El Camino Real	Ravenswood Avenue/Menlo Avenue	91	34	97	18	136	39	109	18	165	62	114	25	142	46	114	18	142	47	114	18	172	74	119	26	172	75	120	26
33	El Camino Real	Roble Avenue	114	4	89	3	163	9	97	3	217	10	102	3	171	9	101	3	171	9	102	3	226	10	107	3	227	10	107	3
34	El Camino Real	Middle Avenue	109	0	84	2	151	0	92	3	203	0	99	3	159	0	96	3	159	0	97	3	213	0	103	3	214	0	104	3
35	El Camino Real	Cambridge Avenue	109	0	82	1	153	0	94	1	207	0	102	1	160	0	98	1	161	0	98	1	216	0	106	1	216	0	106	1
36	University Drive	Valparaiso Avenue	2	7	2	6	2	8	2	6	3	8	6	9	2	9	2	6	2	9	2	6	3	8	6	9	3	8	6	9
37	University Drive	Santa Cruz Avenue	-	7	9	20	-	8	11	20	-	10	19	30	-	8	11	20	0	8	11	20	-	10	19	30	0	10	19	30
38	Orange Avenue/Santa Cruz Avenue	Avy Avenue/Santa Cruz Avenue	1	20	20	0	2	22	20	0	7	30	31	1	2	23	21	0	2	23	21	0	7	31	31	1	7	31	31	1
39	Santa Cruz Avenue	Sand Hill Road	28	152	44	125	33	161	44	138	46	204	59	173	33	163	45	138	33	163	45	138	47	206	60	173	47	206	60	173
40	Santa Cruz Avenue/Alpine Road	Junipero Serra Boulevard	32	38	36	-	35	36	35	-	44	39	56	-	36	36	36	-	36	36	36	-	45	39	57	-	45	39	57	-
41	Bayfront Expressway	Willow Road (SR 114)	251	46	528	208	339	47	626	232	419	43	745	283	339	48	633	238	339	48	633	238	419	44	752	289	419	45	752	290
42	Hamilton Avenue	Willow Road (SR 114)	1	211	10	205	1	221	19	219	2	270	27	269	1	228	19	224	1	229	19	225	2	278	27	275	2	279	27	275
43	Ivy Drive	Willow Road (SR 114)	0	220	-	195	1	261	-	212	12	254	-	256	1	268	-	217	1	269	-	217	12	261	-	261	12	262	-	261
44	O'Brien Drive	Willow Road (SR 114)	-	237	23	217	-	265	72	271	-	191	98	337	-	272	73	276	-	272	73	276	-	197	99	343	-	197	99	343
45	Newbridge Street	Willow Road (SR 114)	1	292	25	227	10	349	35	275	172	309	50	333	10	357	36	282	10	357	36	282	173	316	51	341	173	317	51	341
46	Bayfront Expressway	University Avenue	468	-	920	313	542	-	1,093	424	669	-	1,253	508	547	-	1,101	424	548	-	1,102	424	675	-	1,261	508	675	-	1,262	508

Construction Haul Truck Calculations

Segment Name	Segment Extents	Existing Volume	Existing Truck Volume	Existing Truck Percentage	Construction Trucks	New Volume	New Truck Percentage	Speed	Column lookup (for speeds)	Existing Noise Level (Ldn)	Existing + Construction Noise Level (Ldn)	Difference
Willow Road	East of Bay Road	13,775	186	1.4%	100	13,875	2.1%	25	5	62.0	62.7	0.7
Willow Road	Between Bay Road and Durham Street	12,280	164	1.3%	100	12,380	2.1%	25	7	61.4	62.2	0.8
Willow Road	Between Bay Road and Durham Street	8,170	133	1.6%	100	8,270	2.8%	25	5	60.0	61.1	1.1
Willow Road	Between Durham Street and Coleman Avenue	8,890	132	1.5%	100	8,990	2.6%	25	7	60.2	61.3	1.1
Willow Road	Between Durham Street and Coleman Avenue	7,845	127	1.6%	100	7,945	2.9%	25	5	59.8	61.0	1.2
Willow Road	Between Coleman Avenue and Gilbert Avenue	8,035	124	1.5%	100	8,135	2.8%	25	7	59.8	61.0	1.2
Willow Road	Between Coleman Avenue and Gilbert Avenue	6,895	111	1.6%	100	6,995	3.0%	25	5	59.3	60.5	1.3
Willow Road	Between Gilbert Avenue and Middlefield Road	7,170	110	1.5%	100	7,270	2.9%	25	7	59.3	60.6	1.3
Willow Road	Between Gilbert Avenue and Middlefield Road	8,015	140	1.7%	100	8,115	3.0%	25	5	60.0	61.2	1.2
Middlefield Road	Between Willow Road and Seminary Drive	5,375	68	1.3%	100	5,475	3.1%	30	4	59.5	60.7	1.3
Middlefield Road	Between Willow Road and Seminary Drive	6,195	29	0.5%	100	6,295	2.0%	35	6	61.2	62.2	0.9
Middlefield Road	Between Seminary Drive and Ringwood Avenue	5,595	36	0.6%	100	5,695	2.4%	35	4	60.8	61.9	1.1
Middlefield Road	Between Seminary Drive and Ringwood Avenue	6,560	24	0.4%	100	6,660	1.9%	35	6	61.4	62.3	1.0
Middlefield Road	Between Ringwood Avenue and Ravenswood Ave	7,175	41	0.6%	100	7,275	1.9%	35	4	61.9	62.7	0.8
Middlefield Road	Between Ringwood Avenue and Ravenswood Ave	8,265	41	0.5%	100	8,365	1.7%	35	6	62.4	63.2	0.8
Ravenswood Avenue	West of Middlefield Road	5,385	28	0.5%	100	5,485	2.3%	30	7	58.8	60.2	1.4

Construction Haul Truck Calculations - Project Variant

Segment Name	Segment Extents	Existing Volume	Existing Truck Volume	Existing Truck Percentage	Construction Trucks	New Volume	New Truck Percentage	Speed	Column lookup (for speeds)	Existing Noise Level (Ldn)	Existing + Construction Noise Level (Ldn)	Difference
Willow Road	East of Bay Road	13,775	186	1.4%	177	13,952	2.6%	25	5	62.0	63.2	1.2
Willow Road	Between Bay Road and Durham Street	12,280	164	1.3%	177	12,457	2.7%	25	7	61.4	62.8	1.4
Willow Road	Between Bay Road and Durham Street	8,170	133	1.6%	177	8,347	3.7%	25	5	60.0	61.8	1.8
Willow Road	Between Durham Street and Coleman Avenue	8,890	132	1.5%	177	9,067	3.4%	25	7	60.2	61.9	1.7
Willow Road	Between Durham Street and Coleman Avenue	7,845	127	1.6%	177	8,022	3.8%	25	5	59.8	61.7	1.9
Willow Road	Between Coleman Avenue and Gilbert Avenue	8,035	124	1.5%	177	8,212	3.7%	25	7	59.8	61.7	1.9
Willow Road	Between Coleman Avenue and Gilbert Avenue	6,895	111	1.6%	177	7,072	4.1%	25	5	59.3	61.3	2.1
Willow Road	Between Gilbert Avenue and Middlefield Road	7,170	110	1.5%	177	7,347	3.9%	25	7	59.3	61.4	2.0
Willow Road	Between Gilbert Avenue and Middlefield Road	8,015	140	1.7%	177	8,192	3.9%	25	5	60.0	61.8	1.8
Middlefield Road	Between Willow Road and Seminary Drive	5,375	68	1.3%	177	5,552	4.4%	30	4	59.5	61.5	2.0
Middlefield Road	Between Willow Road and Seminary Drive	6,195	29	0.5%	177	6,372	3.2%	35	6	61.2	62.8	1.6
Middlefield Road	Between Seminary Drive and Ringwood Avenue	5,595	36	0.6%	177	5,772	3.7%	35	4	60.8	62.6	1.8
Middlefield Road	Between Seminary Drive and Ringwood Avenue	6,560	24	0.4%	177	6,737	3.0%	35	6	61.4	63.0	1.6
Middlefield Road	Between Ringwood Avenue and Ravenswood Ave	7,175	41	0.6%	177	7,352	3.0%	35	4	61.9	63.3	1.4
Middlefield Road	Between Ringwood Avenue and Ravenswood Ave	8,265	41	0.5%	177	8,442	2.6%	35	6	62.4	63.7	1.3
Ravenswood Avenue	West of Middlefield Road	5,385	28	0.5%	177	5,562	3.7%	30	7	58.8	61.1	2.3

Speeds

	Intersection					
#	**N/S street**	**E/W street**	**North**	**East**	**South**	**West**
1	US 101 NB Off-Ramp	Marsh Road	0	35	25	35
2	US 101 SB Off-Ramp	Marsh Road	25	35	0	35
3	Scott Drive	Marsh Road	25	30	25	30
4	Florence Street/Bohannon Drive	Marsh Road	25	30	25	30
5	Bay Road	Marsh Road	25	30	30	30
6	Bay Road	Ringwood Avenue	30	25	30	30
7	US 101 NB Ramps	Willow Road (SR 114)	25	40	25	40
8	US 101 SB Ramps	Willow Road (SR 114)	25	40	25	40
9	Bay Road	Willow Road (SR 114)	30	25	0	25
10	Durham Street	Willow Road (SR 114)	25	25	25	25
11	Coleman Avenue	Willow Road (SR 114)	25	25	25	25
12	Gilbert Avenue	Willow Road (SR 114)	25	25	25	25
13	Middlefield Road	Willow Road (SR 114)	30	25	30	25
14	Laurel Street	Willow Road (SR 114)	25	25	25	25
15	Middlefield Road	Ravenswood Avenue	35	30	35	0
16	Middlefield Road	D Street/Ringwood Avenue	35	25	35	30
17	Middlefield Road	Seminary Drive	35	25	35	25
18	Proj Dwy B1 East	Ravenswood Avenue	0	30	25	30
19	Proj Dwy B1 West	Ravenswood Avenue	0	30	25	30
20	Proj Dwy/Pine Street	Ravenswood Avenue	25	30	25	30
21	Laurel Street	Encinal Avenue	25	25	25	25
22	Laurel Street	Glenwood Avenue	25	25	25	25
23	Laurel Street	Oak Grove Avenue	25	25	25	25
24	Laurel Street	Ravenswood Avenue	25	30	25	30
25	Laurel Street	Proj Dwy N	25	25	25	0
26	Laurel Street	Proj Dwy S	25	25	25	0
27	Laurel Street	Burgess Drive	25	25	25	25
28	El Camino Real	Encinal Avenue	35	25	35	25
29	El Camino Real	Valparaiso Avenue/Glenwood Avenue	35	30	35	25
30	El Camino Real	Oak Grove Avenue	35	25	35	25
31	El Camino Real	Santa Cruz Avenue	35	25	35	25
32	El Camino Real	Ravenswood Avenue/Menlo Avenue	35	25	35	30
33	El Camino Real	Roble Avenue	35	25	35	25
34	El Camino Real	Middle Avenue	35	25	35	25
35	El Camino Real	Cambridge Avenue	35	25	35	25
36	University Drive	Valparaiso Avenue	25	30	25	30
37	University Drive	Santa Cruz Avenue	25	25	25	25
38	Orange Avenue/Santa Cruz Avenue	Avy Avenue/Santa Cruz Avenue	25	25	30	25
39	Santa Cruz Avenue	Sand Hill Road	25	40	35	40
40	Santa Cruz Avenue/Alpine Road	Junipero Serra Boulevard	35	35	35	0
41	Bayfront Expressway	Willow Road (SR 114)	45	40	45	40
42	Hamilton Avenue	Willow Road (SR 114)	25	40	25	40
43	Ivy Drive	Willow Road (SR 114)	25	40	0	40
44	O'Brien Drive	Willow Road (SR 114)	0	40	30	40
45	Newbridge Street	Willow Road (SR 114)	25	40	25	40
46	Bayfront Expressway	University Avenue	45	35	45	0

N	4
E	5
S	6
W	7

Segment Names	**ID**
Middlefield Road north of Willow Road	13N
Willow Road east of Coleman Avenue	11E
Willow Road east of Gilbert Avenue	12E
Willow Road east of Middlefield Road	13E
Willow Road between Laurel Street and Middlefield Road	14E
Ravenswood Avenue east of Project Driveway B1 East	18E
Ravenswood Avenue east of Project Driveway B1 West	19E
Ravenswood Avenue east of Pine Street	20E
Ravenswood Avenue between Laurel Street and Pine Street	24E
Middlefield Road between Ravenswood Avenue and Ringwood Avenue	15S
Middlefield Road between Ringwood Avenue and Seminary Drive	16S
Middlefield Road south of Seminary Drive	17S
Pine Street south of Ravenswood Avenue	20S
Willow Road west of Gilbert Avenue	12W
D Street west of Middlefield Road	16W

Seminary Drive west of Middlefield Road	17W
Ravenswood Avenue west of Project Driveway B1 East	18W
Ravenswood Avenue west of Project Driveway B1 West	19W
Ravenswood Avenue west of Pine Street	20W
Ravenswood Avenue west of Laurel Street	24W
Willow Road east of Durham Street	10E
Ravenswood Avenue east of El Camino	32E
Willow Road west of Durham Street	10W
Willow Road west of Coleman Avenue	11W
Bay Road East of Marsh Road	5S
Seminary Drive west of Middlefield Road	17W

Truck Settings

Truck Percentage	**Setting #**
0.00%	1
0.25%	2
0.50%	3
0.75%	4
1.00%	5
1.25%	6
1.50%	7
1.75%	8
2.00%	9
2.25%	10
2.50%	11
2.75%	12
3.00%	13
3.25%	14
3.50%	15
3.75%	16
4.00%	17
4.25%	18
4.50%	19
4.75%	20

Existing

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	-	-	0.00%	1	25	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	-	-	0.00%	1	25	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
102	26	Laurel Street - Proj Dwy S	E	-	-	0.00%	1	25	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.25%	2	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.50%	3	25	44.2
68	17	Middlefield Road - Seminary Drive	W	130	1	0.50%	3	25	45.3
106	27	Laurel Street - Burgess Drive	E	175	1	0.50%	3	25	45.8
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.50%	7	25	46.5
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	200	1	0.50%	3	25	46.0
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	300	-	0.00%	1	25	46.5
167	42	Hamilton Avenue - Willow Road (SR 114)	S	330	10	3.25%	14	25	48.9
64	16	Middlefield Road - D Street/Ringwood Avenue	W	365	2	0.75%	4	30	48.9
66	17	Middlefield Road - Seminary Drive	E	375	0	0.00%	1	25	47.0
112	28	El Camino Real - Encinal Avenue	W	450	3	0.75%	4	25	48.1
37	10	Durham Street - Willow Road (SR 114)	N	500	1	0.25%	2	25	48.0
130	33	El Camino Real - Roble Avenue	E	550	4	0.75%	4	25	48.7
140	35	El Camino Real - Cambridge Avenue	W	550	1	0.00%	1	25	48.0
108	27	Laurel Street - Burgess Drive	W	725	-	0.00%	1	25	48.8
22	6	Bay Road - Ringwood Avenue	E	780	-	0.00%	1	25	49.0
132	33	El Camino Real - Roble Avenue	W	790	3	0.25%	2	25	49.4
45	12	Gilbert Avenue - Willow Road (SR 114)	N	825	1	0.00%	1	25	49.2
169	43	Ivy Drive - Willow Road (SR 114)	N	915	0	0.00%	1	25	49.5
124	31	El Camino Real - Santa Cruz Avenue	W	955	8	0.75%	4	25	50.5
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,010	4	0.25%	2	25	50.2
17	5	Bay Road - Marsh Road	N	1,015	8	0.75%	4	25	50.7
39	10	Durham Street - Willow Road (SR 114)	S	1,050	12	1.25%	6	25	51.4
122	31	El Camino Real - Santa Cruz Avenue	E	1,230	12	1.00%	5	25	51.7
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,270	1	0.00%	1	25	50.7
85	22	Laurel Street - Glenwood Avenue	N	1,370	15	1.00%	5	25	52.1
53	14	Laurel Street - Willow Road (SR 114)	N	1,375	4	0.25%	2	25	51.3
105	27	Laurel Street - Burgess Drive	N	1,375	6	0.50%	3	25	51.6
54	14	Laurel Street - Willow Road (SR 114)	E	1,395	5	0.50%	3	25	51.6
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,430	1	0.00%	1	25	51.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,520	46	3.00%	13	40	58.1
97	25	Laurel Street - Proj Dwy N	N	1,535	7	0.50%	3	25	52.0
101	26	Laurel Street - Proj Dwy S	N	1,535	7	0.50%	3	25	52.0
83	21	Laurel Street - Encinal Avenue	S	1,620	14	0.75%	4	25	52.5
11	3	Scott Drive - Marsh Road	S	1,740	30	1.75%	8	25	53.7
87	22	Laurel Street - Glenwood Avenue	S	1,740	9	0.50%	3	25	52.4
141	36	University Drive - Valparaiso Avenue	N	1,780	2	0.00%	1	25	51.9
41	11	Coleman Avenue - Willow Road (SR 114)	N	1,810	2	0.00%	1	25	51.9
91	23	Laurel Street - Oak Grove Avenue	S	1,825	3	0.25%	2	25	52.3
19	5	Bay Road - Marsh Road	S	1,830	10	0.50%	3	30	54.4
93	24	Laurel Street - Ravenswood Avenue	N	1,910	7	0.50%	3	25	52.8
143	36	University Drive - Valparaiso Avenue	S	1,935	2	0.00%	1	25	52.2
89	23	Laurel Street - Oak Grove Avenue	N	2,140	10	0.50%	3	25	53.2
107	27	Laurel Street - Burgess Drive	S	2,205	14	0.50%	3	25	53.4
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,220	0	0.00%	1	25	52.7
86	22	Laurel Street - Glenwood Avenue	E	2,305	1	0.00%	1	25	52.9
88	22	Laurel Street - Glenwood Avenue	W	2,315	2	0.00%	1	25	52.9
9	3	Scott Drive - Marsh Road	N	2,320	17	0.75%	4	25	53.9
84	21	Laurel Street - Encinal Avenue	W	2,445	14	0.50%	3	25	53.8
56	14	Laurel Street - Willow Road (SR 114)	W	2,480	8	0.25%	2	25	53.5
47	12	Gilbert Avenue - Willow Road (SR 114)	S	2,730	1	0.00%	1	25	53.5
82	21	Laurel Street - Encinal Avenue	E	2,750	41	1.50%	7	25	55.3
21	6	Bay Road - Ringwood Avenue	N	2,815	25	0.75%	4	30	56.3

114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	2,820	5	0.25%	2	30	55.9
95	24	Laurel Street - Ravenswood Avenue	S	2,885	18	0.75%	4	25	54.7
99	25	Laurel Street - Proj Dwy N	S	2,885	18	0.75%	4	25	54.7
103	26	Laurel Street - Proj Dwy S	S	2,885	18	0.75%	4	25	54.7
23	6	Bay Road - Ringwood Avenue	S	3,000	7	0.25%	2	30	56.2
110	28	El Camino Real - Encinal Avenue	E	3,105	18	0.50%	3	25	54.7
175	44	O'Brien Drive - Willow Road (SR 114)	S	3,225	23	0.75%	4	30	56.9
147	37	University Drive - Santa Cruz Avenue	S	3,330	9	0.25%	2	25	54.7
33	9	Bay Road - Willow Road (SR 114)	N	3,370	21	0.50%	3	30	56.9
90	23	Laurel Street - Oak Grove Avenue	E	3,485	3	0.00%	1	25	54.5
118	30	El Camino Real - Oak Grove Avenue	E	3,605	18	0.50%	3	25	55.3
24	6	Bay Road - Ringwood Avenue	W	3,690	29	0.75%	4	30	57.4
92	23	Laurel Street - Oak Grove Avenue	W	3,690	25	0.75%	4	25	55.7
62	16	Middlefield Road - D Street/Ringwood Avenue	E	3,795	42	1.00%	5	25	56.1
52	13	Middlefield Road - Willow Road (SR 114)	W	3,805	10	0.25%	2	25	55.2
146	37	University Drive - Santa Cruz Avenue	E	3,880	7	0.25%	2	25	55.3
136	34	El Camino Real - Middle Avenue	W	3,965	2	0.00%	1	25	55.0
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	4,010	18	0.50%	3	30	57.6
57	15	Middlefield Road - Ravenswood Avenue	N	4,050	16	0.50%	3	35	59.4
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	4,105	23	0.50%	3	30	57.7
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	4,105	23	0.50%	3	30	57.7
120	30	El Camino Real - Oak Grove Avenue	W	4,205	8	0.25%	2	25	55.6
179	45	Newbridge Street - Willow Road (SR 114)	S	4,420	25	0.50%	3	25	56.1
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	4,510	24	0.50%	3	30	58.1
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	4,535	20	0.50%	3	25	56.2
177	45	Newbridge Street - Willow Road (SR 114)	N	4,670	1	0.00%	1	25	55.7
94	24	Laurel Street - Ravenswood Avenue	E	4,720	25	0.50%	3	30	58.3
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	4,720	8	0.25%	2	25	56.1
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	4,995	20	0.50%	3	30	58.5
142	36	University Drive - Valparaiso Avenue	E	5,110	7	0.25%	2	30	58.4
144	36	University Drive - Valparaiso Avenue	W	5,335	6	0.00%	1	30	58.3
49	13	Middlefield Road - Willow Road (SR 114)	N	5,375	68	1.25%	6	30	59.4
60	15	Middlefield Road - Ravenswood Avenue	W	5,385	28	0.50%	3	-	57.2
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	5,450	27	0.50%	3	30	58.9
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	5,460	28	0.50%	3	30	58.9
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	5,460	28	0.50%	3	30	58.9
65	17	Middlefield Road - Seminary Drive	N	5,595	36	0.75%	4	35	60.9
96	24	Laurel Street - Ravenswood Avenue	W	5,690	34	0.50%	3	30	59.0
13	4	Florence Street/Bohannon Drive - Marsh Road	N	5,700	29	0.50%	3	25	57.2
51	13	Middlefield Road - Willow Road (SR 114)	S	5,760	82	1.50%	7	30	59.9
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	5,935	34	0.50%	3	25	57.4
67	17	Middlefield Road - Seminary Drive	S	6,195	29	0.50%	3	35	61.2
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	6,430	38	0.50%	3	35	61.4
63	16	Middlefield Road - D Street/Ringwood Avenue	S	6,560	24	0.25%	2	35	61.3
148	37	University Drive - Santa Cruz Avenue	W	6,625	20	0.25%	2	25	57.5
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	6,880	38	0.50%	3	25	58.0
46	12	Gilbert Avenue - Willow Road (SR 114)	E	6,895	111	1.50%	7	25	59.1
48	12	Gilbert Avenue - Willow Road (SR 114)	W	7,170	110	1.50%	7	25	59.3
61	16	Middlefield Road - D Street/Ringwood Avenue	N	7,175	41	0.50%	3	35	61.8
20	5	Bay Road - Marsh Road	W	7,400	52	0.75%	4	30	60.4
42	11	Coleman Avenue - Willow Road (SR 114)	E	7,845	127	1.50%	7	25	59.7
50	13	Middlefield Road - Willow Road (SR 114)	E	8,015	140	1.75%	8	25	60.0
166	42	Hamilton Avenue - Willow Road (SR 114)	E	8,025	211	2.75%	12	40	65.0
44	11	Coleman Avenue - Willow Road (SR 114)	W	8,035	124	1.50%	7	25	59.8
153	39	Santa Cruz Avenue - Sand Hill Road	N	8,125	28	0.25%	2	25	58.3
38	10	Durham Street - Willow Road (SR 114)	E	8,170	133	1.75%	8	25	60.1
59	15	Middlefield Road - Ravenswood Avenue	S	8,265	41	0.50%	3	35	62.4
16	4	Florence Street/Bohannon Drive - Marsh Road	W	8,385	60	0.75%	4	30	60.9
170	43	Ivy Drive - Willow Road (SR 114)	E	8,760	220	2.50%	11	40	65.3
40	10	Durham Street - Willow Road (SR 114)	W	8,890	132	1.50%	7	25	60.2
18	5	Bay Road - Marsh Road	E	9,475	85	1.00%	5	30	61.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	9,545	119	1.25%	6	25	60.3
184	46	Bayfront Expressway - University Avenue	W	9,560	313	3.25%	14	-	65.5
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	9,655	32	0.25%	2	35	62.9
174	44	O'Brien Drive - Willow Road (SR 114)	E	9,800	237	2.50%	11	40	65.8
164	41	Bayfront Expressway - Willow Road (SR 114)	W	10,120	208	2.00%	9	40	65.7
117	30	El Camino Real - Oak Grove Avenue	N	10,465	88	0.75%	4	35	63.6
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	10,730	166	1.50%	7	25	61.0
168	42	Hamilton Avenue - Willow Road (SR 114)	W	10,740	205	2.00%	9	40	66.0
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	10,790	91	0.75%	4	35	63.7
172	43	Ivy Drive - Willow Road (SR 114)	W	10,880	195	1.75%	8	40	65.9
154	39	Santa Cruz Avenue - Sand Hill Road	E	10,905	152	1.50%	7	40	65.8
121	31	El Camino Real - Santa Cruz Avenue	N	11,035	92	0.75%	4	35	63.8
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,040	36	0.25%	2	35	63.5
12	3	Scott Drive - Marsh Road	W	11,360	83	0.75%	4	30	62.2
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	11,435	85	0.75%	4	35	64.0

156	39	Santa Cruz Avenue - Sand Hill Road	W	11,520	125	1.00%	5	40	65.8
155	39	Santa Cruz Avenue - Sand Hill Road	S	11,605	44	0.50%	3	35	63.9
14	4	Florence Street/Bohannon Drive - Marsh Road	E	11,670	104	1.00%	5	30	62.5
119	30	El Camino Real - Oak Grove Avenue	S	11,700	72	0.50%	3	35	63.9
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	11,930	72	0.50%	3	35	64.0
123	31	El Camino Real - Santa Cruz Avenue	S	11,975	74	0.50%	3	35	64.0
36	9	Bay Road - Willow Road (SR 114)	W	12,280	164	1.25%	6	25	61.3
178	45	Newbridge Street - Willow Road (SR 114)	E	12,535	292	2.25%	10	40	66.7
111	28	El Camino Real - Encinal Avenue	S	12,670	71	0.50%	3	35	64.3
176	44	O'Brien Drive - Willow Road (SR 114)	W	13,080	217	1.75%	8	40	66.7
133	34	El Camino Real - Middle Avenue	N	13,280	109	0.75%	4	35	64.6
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	13,360	137	1.00%	5	40	66.5
6	2	US 101 SB Off-Ramp - Marsh Road	E	13,405	189	1.50%	7	35	65.1
109	28	El Camino Real - Encinal Avenue	N	13,505	93	0.75%	4	35	64.7
34	9	Bay Road - Willow Road (SR 114)	E	13,775	186	1.25%	6	25	61.8
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	14,140	174	1.25%	6	40	66.8
129	33	El Camino Real - Roble Avenue	N	14,150	114	0.75%	4	35	64.9
161	41	Bayfront Expressway - Willow Road (SR 114)	N	14,385	251	1.75%	8	45	68.6
137	35	El Camino Real - Cambridge Avenue	N	14,470	109	0.75%	4	35	65.0
131	33	El Camino Real - Roble Avenue	S	15,070	89	0.50%	3	35	65.0
10	3	Scott Drive - Marsh Road	E	15,475	144	1.00%	5	30	63.7
135	34	El Camino Real - Middle Avenue	S	15,655	84	0.50%	3	35	65.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	15,925	130	0.75%	4	35	65.4
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	16,465	328	2.00%	9	40	67.8
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	16,530	351	2.00%	9	40	67.8
5	2	US 101 SB Off-Ramp - Marsh Road	N	16,670	146	1.00%	5	25	62.4
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	16,715	97	0.50%	3	35	65.5
139	35	El Camino Real - Cambridge Avenue	S	16,740	82	0.50%	3	35	65.5
180	45	Newbridge Street - Willow Road (SR 114)	W	17,110	227	1.25%	6	40	67.6
4	1	US 101 NB Off-Ramp - Marsh Road	W	20,255	213	1.00%	5	35	66.6
2	1	US 101 NB Off-Ramp - Marsh Road	E	20,435	294	1.50%	7	35	66.9
163	41	Bayfront Expressway - Willow Road (SR 114)	S	20,890	528	2.50%	11	45	70.5
181	46	Bayfront Expressway - University Avenue	N	22,615	468	2.00%	9	45	70.6
183	46	Bayfront Expressway - University Avenue	S	28,770	920	3.25%	14	45	72.1

Background No Project

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	-	-	0.00%	1	25	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	-	-	0.00%	1	25	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
102	26	Laurel Street - Proj Dwy S	E	-	-	0.00%	1	25	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.25%	2	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
68	17	Middlefield Road - Seminary Drive	W	130	1	0.50%	3	25	45.3
106	27	Laurel Street - Burgess Drive	E	175	1	0.50%	3	25	45.8
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.75%	8	25	46.6
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	200	1	0.50%	3	25	46.0
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	314	-	0.00%	1	25	46.6
64	16	Middlefield Road - D Street/Ringwood Avenue	W	365	2	0.75%	4	30	48.9
167	42	Hamilton Avenue - Willow Road (SR 114)	S	520	19	3.50%	15	25	50.5
66	17	Middlefield Road - Seminary Drive	E	573	0	0.00%	1	25	48.1
140	35	El Camino Real - Cambridge Avenue	W	587	1	0.00%	1	25	48.2
37	10	Durham Street - Willow Road (SR 114)	N	673	4	0.50%	3	25	49.1
108	27	Laurel Street - Burgess Drive	W	749	-	0.00%	1	25	48.9
22	6	Bay Road - Ringwood Avenue	E	782	-	0.00%	1	25	49.0
112	28	El Camino Real - Encinal Avenue	W	913	2	0.25%	2	25	49.8
132	33	El Camino Real - Roble Avenue	W	1,059	3	0.25%	2	25	50.3
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,108	4	0.25%	2	25	50.5
130	33	El Camino Real - Roble Avenue	E	1,185	9	0.75%	4	25	51.3
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,232	5	0.50%	3	25	51.2
122	31	El Camino Real - Santa Cruz Avenue	E	1,320	4	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,433	1	0.00%	1	25	51.1
169	43	Ivy Drive - Willow Road (SR 114)	N	1,446	1	0.00%	1	25	51.1
124	31	El Camino Real - Santa Cruz Avenue	W	1,548	16	1.00%	5	25	52.6
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,555	47	3.00%	13	40	58.2
85	22	Laurel Street - Glenwood Avenue	N	1,557	17	1.00%	5	25	52.6
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,565	2	0.00%	1	25	51.4
17	5	Bay Road - Marsh Road	N	1,605	10	0.50%	3	25	52.1
39	10	Durham Street - Willow Road (SR 114)	S	1,651	18	1.00%	5	25	52.8
53	14	Laurel Street - Willow Road (SR 114)	N	1,689	5	0.25%	2	25	52.0
141	36	University Drive - Valparaiso Avenue	N	1,780	2	0.00%	1	25	51.9
83	21	Laurel Street - Encinal Avenue	S	1,919	8	0.50%	3	25	52.8
87	22	Laurel Street - Glenwood Avenue	S	1,937	6	0.25%	2	25	52.5
11	3	Scott Drive - Marsh Road	S	1,982	34	1.75%	8	25	54.3
105	27	Laurel Street - Burgess Drive	N	2,007	8	0.50%	3	25	53.0
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,110	3	0.25%	2	25	52.9
54	14	Laurel Street - Willow Road (SR 114)	E	2,139	8	0.50%	3	25	53.2
97	25	Laurel Street - Proj Dwy N	N	2,197	10	0.50%	3	25	53.3
101	26	Laurel Street - Proj Dwy S	N	2,197	10	0.50%	3	25	53.3
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,233	0	0.00%	1	25	52.7
143	36	University Drive - Valparaiso Avenue	S	2,243	2	0.00%	1	25	52.7
86	22	Laurel Street - Glenwood Avenue	E	2,325	1	0.00%	1	25	52.9
89	23	Laurel Street - Oak Grove Avenue	N	2,457	12	0.50%	3	25	53.8
93	24	Laurel Street - Ravenswood Avenue	N	2,490	10	0.50%	3	25	53.8
91	23	Laurel Street - Oak Grove Avenue	S	2,554	5	0.25%	2	25	53.6
88	22	Laurel Street - Glenwood Avenue	W	2,565	2	0.00%	1	25	53.3
19	5	Bay Road - Marsh Road	S	2,604	12	0.50%	3	30	55.8
9	3	Scott Drive - Marsh Road	N	2,730	20	0.75%	4	25	54.5
56	14	Laurel Street - Willow Road (SR 114)	W	2,742	8	0.25%	2	25	53.9
47	12	Gilbert Avenue - Willow Road (SR 114)	S	2,868	1	0.00%	1	25	53.7
107	27	Laurel Street - Burgess Drive	S	2,954	17	0.50%	3	25	54.5
82	21	Laurel Street - Encinal Avenue	E	3,060	45	1.50%	7	25	55.8
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,209	7	0.25%	2	30	56.4
84	21	Laurel Street - Encinal Avenue	W	3,252	24	0.75%	4	25	55.2

23	6	Bay Road - Ringwood Avenue	S	3,505	7	0.25%	2	30	56.8
90	23	Laurel Street - Oak Grove Avenue	E	3,515	3	0.00%	1	25	54.5
147	37	University Drive - Santa Cruz Avenue	S	3,540	11	0.25%	2	25	54.9
95	24	Laurel Street - Ravenswood Avenue	S	3,652	22	0.50%	3	25	55.4
99	25	Laurel Street - Proj Dwy N	S	3,652	22	0.50%	3	25	55.4
103	26	Laurel Street - Proj Dwy S	S	3,652	22	0.50%	3	25	55.4
110	28	El Camino Real - Encinal Avenue	E	3,778	17	0.50%	3	25	55.5
21	6	Bay Road - Ringwood Avenue	N	3,786	25	0.75%	4	30	57.5
24	6	Bay Road - Ringwood Avenue	W	3,890	28	0.75%	4	30	57.7
92	23	Laurel Street - Oak Grove Avenue	W	3,950	16	0.50%	3	25	55.7
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0
33	9	Bay Road - Willow Road (SR 114)	N	4,041	25	0.50%	3	30	57.6
146	37	University Drive - Santa Cruz Avenue	E	4,049	8	0.25%	2	25	55.4
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	4,145	25	0.50%	3	30	57.7
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	4,146	25	0.50%	3	30	57.7
120	30	El Camino Real - Oak Grove Avenue	W	4,205	12	0.25%	2	25	55.6
118	30	El Camino Real - Oak Grove Avenue	E	4,395	27	0.50%	3	25	56.1
62	16	Middlefield Road - D Street/Ringwood Avenue	E	4,494	51	1.00%	5	25	56.8
57	15	Middlefield Road - Ravenswood Avenue	N	4,548	20	0.50%	3	35	59.9
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	4,565	27	0.50%	3	30	58.1
52	13	Middlefield Road - Willow Road (SR 114)	W	4,624	13	0.25%	2	25	56.0
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	4,664	18	0.50%	3	30	58.2
94	24	Laurel Street - Ravenswood Avenue	E	4,797	28	0.50%	3	30	58.3
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	4,953	22	0.50%	3	25	56.6
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,092	8	0.25%	2	25	56.4
142	36	University Drive - Valparaiso Avenue	E	5,110	8	0.25%	2	30	58.4
175	44	O'Brien Drive - Willow Road (SR 114)	S	5,136	72	1.50%	7	30	59.4
60	15	Middlefield Road - Ravenswood Avenue	W	5,422	33	0.50%	3	-	57.3
179	45	Newbridge Street - Willow Road (SR 114)	S	5,487	35	0.75%	4	25	57.4
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	5,490	32	0.50%	3	30	58.9
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	5,490	20	0.25%	2	30	58.7
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	5,496	33	0.50%	3	30	58.9
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	5,497	33	0.50%	3	30	58.9
96	24	Laurel Street - Ravenswood Avenue	W	5,690	38	0.75%	4	30	59.3
177	45	Newbridge Street - Willow Road (SR 114)	N	5,826	10	0.25%	2	25	56.9
144	36	University Drive - Valparaiso Avenue	W	5,847	6	0.00%	1	30	58.7
13	4	Florence Street/Bohannon Drive - Marsh Road	N	6,401	29	0.50%	3	25	57.7
49	13	Middlefield Road - Willow Road (SR 114)	N	6,505	80	1.25%	6	30	60.2
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	6,595	39	0.50%	3	25	57.8
51	13	Middlefield Road - Willow Road (SR 114)	S	6,661	100	1.50%	7	30	60.5
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	6,753	36	0.50%	3	35	61.6
65	17	Middlefield Road - Seminary Drive	N	6,807	48	0.75%	4	35	61.8
67	17	Middlefield Road - Seminary Drive	S	6,863	36	0.50%	3	35	61.6
148	37	University Drive - Santa Cruz Avenue	W	7,009	20	0.25%	2	25	57.7
63	16	Middlefield Road - D Street/Ringwood Avenue	S	7,426	30	0.50%	3	35	62.0
46	12	Gilbert Avenue - Willow Road (SR 114)	E	7,714	133	1.75%	8	25	59.9
20	5	Bay Road - Marsh Road	W	7,954	57	0.75%	4	30	60.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	8,079	129	1.50%	7	25	59.8
61	16	Middlefield Road - D Street/Ringwood Avenue	N	8,462	51	0.50%	3	35	62.5
44	11	Coleman Avenue - Willow Road (SR 114)	W	8,772	142	1.50%	7	25	60.2
42	11	Coleman Avenue - Willow Road (SR 114)	E	8,780	152	1.75%	8	25	60.4
50	13	Middlefield Road - Willow Road (SR 114)	E	8,873	166	1.75%	8	25	60.5
153	39	Santa Cruz Avenue - Sand Hill Road	N	8,897	33	0.25%	2	25	58.7
38	10	Durham Street - Willow Road (SR 114)	E	9,153	160	1.75%	8	25	60.6
166	42	Hamilton Avenue - Willow Road (SR 114)	E	9,248	221	2.50%	11	40	65.5
59	15	Middlefield Road - Ravenswood Avenue	S	9,324	48	0.50%	3	35	63.0
40	10	Durham Street - Willow Road (SR 114)	W	9,789	150	1.50%	7	25	60.6
16	4	Florence Street/Bohannon Drive - Marsh Road	W	10,094	66	0.75%	4	30	61.7
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	10,427	35	0.25%	2	35	63.3
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	10,579	70	0.75%	4	25	60.1
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,122	161	1.50%	7	40	65.9
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,364	35	0.25%	2	35	63.6
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	11,491	178	1.50%	7	25	61.3
164	41	Bayfront Expressway - Willow Road (SR 114)	W	11,691	232	2.00%	9	40	66.3
18	5	Bay Road - Marsh Road	E	11,774	95	0.75%	4	30	62.3
156	39	Santa Cruz Avenue - Sand Hill Road	W	11,871	138	1.25%	6	40	66.1
170	43	Ivy Drive - Willow Road (SR 114)	E	11,897	261	2.25%	10	40	66.5
184	46	Bayfront Expressway - University Avenue	W	11,916	424	3.50%	15	-	66.7
174	44	O'Brien Drive - Willow Road (SR 114)	E	12,043	265	2.25%	10	40	66.6
117	30	El Camino Real - Oak Grove Avenue	N	12,115	127	1.00%	5	35	64.4
155	39	Santa Cruz Avenue - Sand Hill Road	S	12,278	44	0.25%	2	35	64.0
168	42	Hamilton Avenue - Willow Road (SR 114)	W	12,527	219	1.75%	8	40	66.5
12	3	Scott Drive - Marsh Road	W	12,600	85	0.75%	4	30	62.6
121	31	El Camino Real - Santa Cruz Avenue	N	12,821	134	1.00%	5	35	64.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	12,942	181	1.50%	7	25	61.8
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	13,059	136	1.00%	5	35	64.7

115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	13,086	86	0.75%	4	35	64.6
119	30	El Camino Real - Oak Grove Avenue	S	13,105	81	0.50%	3	35	64.4
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	13,388	124	1.00%	5	35	64.8
123	31	El Camino Real - Santa Cruz Avenue	S	13,411	82	0.50%	3	35	64.5
172	43	Ivy Drive - Willow Road (SR 114)	W	13,527	212	1.50%	7	40	66.7
14	4	Florence Street/Bohannon Drive - Marsh Road	E	13,792	112	0.75%	4	30	63.0
111	28	El Camino Real - Encinal Avenue	S	13,846	87	0.75%	4	35	64.8
36	9	Bay Road - Willow Road (SR 114)	W	13,977	193	1.50%	7	25	62.2
133	34	El Camino Real - Middle Avenue	N	15,208	151	1.00%	5	35	65.4
34	9	Bay Road - Willow Road (SR 114)	E	15,664	222	1.50%	7	25	62.6
178	45	Newbridge Street - Willow Road (SR 114)	E	16,148	349	2.25%	10	40	67.8
109	28	El Camino Real - Encinal Avenue	N	16,208	143	1.00%	5	35	65.6
131	33	El Camino Real - Roble Avenue	S	16,213	97	0.50%	3	35	65.3
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	16,402	208	1.25%	6	40	67.5
129	33	El Camino Real - Roble Avenue	N	16,554	163	1.00%	5	35	65.7
6	2	US 101 SB Off-Ramp - Marsh Road	E	16,660	236	1.50%	7	35	66.1
137	35	El Camino Real - Cambridge Avenue	N	16,785	153	1.00%	5	35	65.8
135	34	El Camino Real - Middle Avenue	S	16,822	92	0.50%	3	35	65.5
8	2	US 101 SB Off-Ramp - Marsh Road	W	17,743	135	0.75%	4	35	65.9
10	3	Scott Drive - Marsh Road	E	17,969	154	0.75%	4	30	64.2
176	44	O'Brien Drive - Willow Road (SR 114)	W	18,191	271	1.50%	7	40	68.0
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	18,400	109	0.50%	3	35	65.9
139	35	El Camino Real - Cambridge Avenue	S	18,509	94	0.50%	3	35	65.9
161	41	Bayfront Expressway - Willow Road (SR 114)	N	18,972	339	1.75%	8	45	69.8
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	19,198	205	1.00%	5	40	68.0
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	19,845	413	2.00%	9	40	68.6
5	2	US 101 SB Off-Ramp - Marsh Road	N	20,477	180	1.00%	5	25	63.2
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	21,553	404	2.00%	9	40	69.0
180	45	Newbridge Street - Willow Road (SR 114)	W	22,259	275	1.25%	6	40	68.8
4	1	US 101 NB Off-Ramp - Marsh Road	W	23,996	240	1.00%	5	35	67.3
163	41	Bayfront Expressway - Willow Road (SR 114)	S	24,360	626	2.50%	11	45	71.1
181	46	Bayfront Expressway - University Avenue	N	25,454	542	2.25%	10	45	71.2
2	1	US 101 NB Off-Ramp - Marsh Road	E	26,755	370	1.50%	7	35	68.1
183	46	Bayfront Expressway - University Avenue	S	33,088	1,093	3.25%	14	45	72.7

Cumulative No Project

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	-	-	0.00%	1	25	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	-	-	0.00%	1	25	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
102	26	Laurel Street - Proj Dwy S	E	-	-	0.00%	1	25	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
68	17	Middlefield Road - Seminary Drive	W	-	-	0.00%	1	25	
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	-	-	0.00%	1	25	
64	16	Middlefield Road - D Street/Ringwood Avenue	W	-	-	0.00%	1	30	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.50%	3	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
106	27	Laurel Street - Burgess Drive	E	177	-	0.00%	1	25	45.5
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.50%	7	25	46.5
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	351	1	0.25%	2	25	47.1
112	28	El Camino Real - Encinal Avenue	W	450	3	0.50%	3	25	47.9
140	35	El Camino Real - Cambridge Avenue	W	631	1	0.00%	1	25	48.4
22	6	Bay Road - Ringwood Avenue	E	787	-	0.00%	1	25	49.1
66	17	Middlefield Road - Seminary Drive	E	812	0	0.00%	1	25	49.2
108	27	Laurel Street - Burgess Drive	W	813	10	1.25%	6	25	50.5
167	42	Hamilton Avenue - Willow Road (SR 114)	S	853	27	3.25%	14	25	52.1
37	10	Durham Street - Willow Road (SR 114)	N	915	1	0.00%	1	25	49.5
130	33	El Camino Real - Roble Avenue	E	1,310	10	0.75%	4	25	51.7
132	33	El Camino Real - Roble Avenue	W	1,320	3	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,398	2	0.00%	1	25	51.0
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,477	10	0.75%	4	25	52.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,588	43	2.75%	12	40	58.2
53	14	Laurel Street - Willow Road (SR 114)	N	1,629	5	0.25%	2	25	51.9
122	31	El Camino Real - Santa Cruz Avenue	E	1,767	19	1.00%	5	25	53.1
141	36	University Drive - Valparaiso Avenue	N	1,780	3	0.25%	2	25	52.2
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,788	7	0.25%	2	25	52.2
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,910	7	0.25%	2	25	52.5
124	31	El Camino Real - Santa Cruz Avenue	W	1,925	8	0.50%	3	25	52.8
17	5	Bay Road - Marsh Road	N	2,077	11	0.50%	3	25	53.1
85	22	Laurel Street - Glenwood Avenue	N	2,099	21	1.00%	5	25	53.7
87	22	Laurel Street - Glenwood Avenue	S	2,185	6	0.25%	2	25	53.0
83	21	Laurel Street - Encinal Avenue	S	2,204	9	0.50%	3	25	53.4
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,252	1	0.00%	1	25	52.8
86	22	Laurel Street - Glenwood Avenue	E	2,273	1	0.00%	1	25	52.8
54	14	Laurel Street - Willow Road (SR 114)	E	2,472	16	0.75%	4	25	54.1
169	43	Ivy Drive - Willow Road (SR 114)	N	2,489	12	0.50%	3	25	53.8
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,538	2	0.00%	1	25	53.2
39	10	Durham Street - Willow Road (SR 114)	S	2,559	49	2.00%	9	25	55.5
93	24	Laurel Street - Ravenswood Avenue	N	2,581	9	0.25%	2	25	53.6
89	23	Laurel Street - Oak Grove Avenue	N	2,649	14	0.50%	3	25	54.1
11	3	Scott Drive - Marsh Road	S	2,687	27	1.00%	5	25	54.7
88	22	Laurel Street - Glenwood Avenue	W	2,722	9	0.25%	2	25	53.9
105	27	Laurel Street - Burgess Drive	N	2,949	21	0.75%	4	25	54.8
91	23	Laurel Street - Oak Grove Avenue	S	3,054	8	0.25%	2	25	54.3
101	26	Laurel Street - Proj Dwy S	N	3,126	22	0.75%	4	25	55.0
47	12	Gilbert Avenue - Willow Road (SR 114)	S	3,151	3	0.00%	1	25	54.1
97	25	Laurel Street - Proj Dwy N	N	3,156	22	0.75%	4	25	55.1
82	21	Laurel Street - Encinal Avenue	E	3,163	45	1.50%	7	25	55.9
56	14	Laurel Street - Willow Road (SR 114)	W	3,163	8	0.25%	2	25	54.4
143	36	University Drive - Valparaiso Avenue	S	3,211	6	0.25%	2	25	54.5
9	3	Scott Drive - Marsh Road	N	3,225	28	0.75%	4	25	55.2
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,241	4	0.25%	2	30	56.5
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	3,261	30	1.00%	5	30	57.1
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	3,264	30	1.00%	5	30	57.1
90	23	Laurel Street - Oak Grove Avenue	E	3,406	3	0.00%	1	25	54.4

78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	3,483	31	1.00%	5	30	57.4
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	3,553	20	0.50%	3	30	57.1
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	3,602	20	0.50%	3	30	57.1
19	5	Bay Road - Marsh Road	S	3,780	13	0.25%	2	30	57.1
94	24	Laurel Street - Ravenswood Avenue	E	3,795	34	1.00%	5	30	57.8
107	27	Laurel Street - Burgess Drive	S	3,830	37	1.00%	5	25	56.2
24	6	Bay Road - Ringwood Avenue	W	3,847	19	0.50%	3	30	57.4
23	6	Bay Road - Ringwood Avenue	S	3,909	8	0.25%	2	30	57.2
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	3,959	23	0.50%	3	30	57.5
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0
147	37	University Drive - Santa Cruz Avenue	S	3,983	19	0.50%	3	25	55.7
92	23	Laurel Street - Oak Grove Avenue	W	4,067	14	0.25%	2	25	55.5
96	24	Laurel Street - Ravenswood Avenue	W	4,118	29	0.75%	4	30	57.9
110	28	El Camino Real - Encinal Avenue	E	4,331	22	0.50%	3	25	56.1
84	21	Laurel Street - Encinal Avenue	W	4,379	32	0.75%	4	25	56.4
33	9	Bay Road - Willow Road (SR 114)	N	4,458	75	1.75%	8	30	59.0
99	25	Laurel Street - Proj Dwy N	S	4,560	43	1.00%	5	25	56.9
103	26	Laurel Street - Proj Dwy S	S	4,563	43	1.00%	5	25	56.9
146	37	University Drive - Santa Cruz Avenue	E	4,565	10	0.25%	2	25	55.9
120	30	El Camino Real - Oak Grove Avenue	W	4,577	8	0.25%	2	25	55.9
95	24	Laurel Street - Ravenswood Avenue	S	4,629	44	1.00%	5	25	56.9
57	15	Middlefield Road - Ravenswood Avenue	N	4,674	36	0.75%	4	35	60.2
118	30	El Camino Real - Oak Grove Avenue	E	4,702	23	0.50%	3	25	56.4
62	16	Middlefield Road - D Street/Ringwood Avenue	E	4,941	72	1.50%	7	25	57.7
60	15	Middlefield Road - Ravenswood Avenue	W	4,960	28	0.50%	3	-	56.9
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,139	30	0.50%	3	25	56.8
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	5,221	25	0.50%	3	30	58.7
21	6	Bay Road - Ringwood Avenue	N	5,251	41	0.75%	4	30	58.9
142	36	University Drive - Valparaiso Avenue	E	5,312	8	0.25%	2	30	58.5
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,606	7	0.00%	1	25	56.4
52	13	Middlefield Road - Willow Road (SR 114)	W	5,788	25	0.50%	3	25	57.3
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	6,049	31	0.50%	3	30	59.3
179	45	Newbridge Street - Willow Road (SR 114)	S	6,135	50	0.75%	4	25	57.8
67	17	Middlefield Road - Seminary Drive	S	6,205	41	0.75%	4	35	61.4
144	36	University Drive - Valparaiso Avenue	W	6,545	9	0.25%	2	30	59.4
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	6,546	62	1.00%	5	25	58.4
46	12	Gilbert Avenue - Willow Road (SR 114)	E	6,589	102	1.50%	7	25	59.0
13	4	Florence Street/Bohannon Drive - Marsh Road	N	6,904	30	0.50%	3	25	58.0
63	16	Middlefield Road - D Street/Ringwood Avenue	S	7,000	37	0.50%	3	35	61.7
49	13	Middlefield Road - Willow Road (SR 114)	N	7,135	112	1.50%	7	30	60.8
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	7,245	39	0.50%	3	35	61.9
148	37	University Drive - Santa Cruz Avenue	W	7,298	30	0.50%	3	25	58.2
175	44	O'Brien Drive - Willow Road (SR 114)	S	7,326	98	1.25%	6	30	60.7
51	13	Middlefield Road - Willow Road (SR 114)	S	7,388	106	1.50%	7	30	61.0
48	12	Gilbert Avenue - Willow Road (SR 114)	W	7,492	107	1.50%	7	25	59.5
50	13	Middlefield Road - Willow Road (SR 114)	E	7,513	126	1.75%	8	25	59.8
65	17	Middlefield Road - Seminary Drive	N	7,732	79	1.00%	5	35	62.5
177	45	Newbridge Street - Willow Road (SR 114)	N	7,746	172	2.25%	10	25	60.3
42	11	Coleman Avenue - Willow Road (SR 114)	E	7,873	120	1.50%	7	25	59.7
44	11	Coleman Avenue - Willow Road (SR 114)	W	8,060	120	1.50%	7	25	59.8
38	10	Durham Street - Willow Road (SR 114)	E	8,242	129	1.50%	7	25	59.9
20	5	Bay Road - Marsh Road	W	8,248	69	0.75%	4	30	60.8
59	15	Middlefield Road - Ravenswood Avenue	S	8,387	53	0.75%	4	35	62.7
61	16	Middlefield Road - D Street/Ringwood Avenue	N	8,830	55	0.75%	4	35	62.9
40	10	Durham Street - Willow Road (SR 114)	W	9,023	118	1.25%	6	25	60.0
174	44	O'Brien Drive - Willow Road (SR 114)	E	9,520	191	2.00%	9	40	65.5
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,790	46	0.50%	3	25	59.5
166	42	Hamilton Avenue - Willow Road (SR 114)	E	10,385	270	2.50%	11	40	66.0
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	10,751	168	1.50%	7	25	61.0
170	43	Ivy Drive - Willow Road (SR 114)	E	10,986	254	2.25%	10	40	66.2
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	11,053	44	0.50%	3	35	63.7
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,499	56	0.50%	3	35	63.9
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,676	204	1.75%	8	40	66.2
16	4	Florence Street/Bohannon Drive - Marsh Road	W	11,755	76	0.75%	4	30	62.3
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	12,277	91	0.75%	4	25	60.8
156	39	Santa Cruz Avenue - Sand Hill Road	W	12,709	173	1.25%	6	40	66.4
155	39	Santa Cruz Avenue - Sand Hill Road	S	12,877	59	0.50%	3	35	64.3
164	41	Bayfront Expressway - Willow Road (SR 114)	W	13,307	283	2.25%	10	40	67.0
12	3	Scott Drive - Marsh Road	W	13,376	95	0.75%	4	30	62.9
117	30	El Camino Real - Oak Grove Avenue	N	13,395	155	1.25%	6	35	65.0
168	42	Hamilton Avenue - Willow Road (SR 114)	W	13,901	269	2.00%	9	40	67.1
36	9	Bay Road - Willow Road (SR 114)	W	13,919	192	1.50%	7	25	62.1
121	31	El Camino Real - Santa Cruz Avenue	N	14,039	162	1.25%	6	35	65.2
18	5	Bay Road - Marsh Road	E	14,101	134	1.00%	5	30	63.3
184	46	Bayfront Expressway - University Avenue	W	14,135	508	3.50%	15	-	67.4
119	30	El Camino Real - Oak Grove Avenue	S	14,243	90	0.75%	4	35	64.9

115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	14,267	93	0.75%	4	35	64.9
123	31	El Camino Real - Santa Cruz Avenue	S	14,508	92	0.75%	4	35	65.0
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	14,797	165	1.00%	5	35	65.3
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	14,893	154	1.00%	5	35	65.3
172	43	Ivy Drive - Willow Road (SR 114)	W	14,957	256	1.75%	8	40	67.3
111	28	El Camino Real - Encinal Avenue	S	15,300	92	0.50%	3	35	65.1
34	9	Bay Road - Willow Road (SR 114)	E	15,430	252	1.75%	8	25	62.8
14	4	Florence Street/Bohannon Drive - Marsh Road	E	15,522	158	1.00%	5	30	63.7
178	45	Newbridge Street - Willow Road (SR 114)	E	15,622	309	2.00%	9	40	67.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	15,798	246	1.50%	7	25	62.7
133	34	El Camino Real - Middle Avenue	N	16,558	203	1.25%	6	35	65.9
131	33	El Camino Real - Roble Avenue	S	16,753	102	0.50%	3	35	65.5
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	16,756	246	1.50%	7	40	67.7
135	34	El Camino Real - Middle Avenue	S	17,740	99	0.50%	3	35	65.7
109	28	El Camino Real - Encinal Avenue	N	17,798	168	1.00%	5	35	66.0
129	33	El Camino Real - Roble Avenue	N	17,952	217	1.25%	6	35	66.2
137	35	El Camino Real - Cambridge Avenue	N	18,215	207	1.25%	6	35	66.3
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,062	114	0.50%	3	35	66.0
8	2	US 101 SB Off-Ramp - Marsh Road	W	19,611	154	0.75%	4	35	66.3
139	35	El Camino Real - Cambridge Avenue	S	19,789	102	0.50%	3	35	66.2
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	20,325	411	2.00%	9	40	68.7
10	3	Scott Drive - Marsh Road	E	20,458	203	1.00%	5	30	64.9
6	2	US 101 SB Off-Ramp - Marsh Road	E	20,496	309	1.50%	7	35	67.0
176	44	O'Brien Drive - Willow Road (SR 114)	W	20,788	337	1.50%	7	40	68.6
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	22,071	241	1.00%	5	40	68.6
5	2	US 101 SB Off-Ramp - Marsh Road	N	23,210	211	1.00%	5	25	63.8
161	41	Bayfront Expressway - Willow Road (SR 114)	N	23,419	419	1.75%	8	45	70.7
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	23,790	460	2.00%	9	40	69.4
180	45	Newbridge Street - Willow Road (SR 114)	W	24,784	333	1.25%	6	40	69.2
4	1	US 101 NB Off-Ramp - Marsh Road	W	27,365	264	1.00%	5	35	67.9
163	41	Bayfront Expressway - Willow Road (SR 114)	S	27,852	745	2.75%	12	45	71.8
181	46	Bayfront Expressway - University Avenue	N	29,095	669	2.25%	10	45	71.8
2	1	US 101 NB Off-Ramp - Marsh Road	E	33,622	461	1.25%	6	35	68.9
183	46	Bayfront Expressway - University Avenue	S	37,167	1,253	3.25%	14	45	73.2

Background With Project

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.25%	2	25	43.6
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	12	0	0.50%	3	25	43.7
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
102	26	Laurel Street - Proj Dwy S	E	49	0	0.50%	3	25	44.3
106	27	Laurel Street - Burgess Drive	E	175	1	0.50%	3	25	45.8
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.75%	8	25	46.6
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	292	2	0.50%	3	25	46.8
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	314	-	0.00%	1	25	46.6
98	25	Laurel Street - Proj Dwy N	E	454	2	0.50%	3	25	47.9
167	42	Hamilton Avenue - Willow Road (SR 114)	S	520	19	3.50%	15	25	50.5
66	17	Middlefield Road - Seminary Drive	E	573	0	0.00%	1	25	48.1
140	35	El Camino Real - Cambridge Avenue	W	587	1	0.00%	1	25	48.2
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	618	4	0.50%	3	25	48.8
37	10	Durham Street - Willow Road (SR 114)	N	673	4	0.50%	3	25	49.1
108	27	Laurel Street - Burgess Drive	W	749	-	0.00%	1	25	48.9
22	6	Bay Road - Ringwood Avenue	E	782	-	0.00%	1	25	49.0
112	28	El Camino Real - Encinal Avenue	W	913	2	0.25%	2	25	49.8
132	33	El Camino Real - Roble Avenue	W	1,059	3	0.25%	2	25	50.3
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,108	4	0.25%	2	25	50.5
130	33	El Camino Real - Roble Avenue	E	1,185	9	0.75%	4	25	51.3
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,232	5	0.50%	3	25	51.2
122	31	El Camino Real - Santa Cruz Avenue	E	1,320	4	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,433	1	0.00%	1	25	51.1
169	43	Ivy Drive - Willow Road (SR 114)	N	1,446	1	0.00%	1	25	51.1
124	31	El Camino Real - Santa Cruz Avenue	W	1,549	16	1.00%	5	25	52.6
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,565	2	0.00%	1	25	51.4
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,605	48	3.00%	13	40	58.3
17	5	Bay Road - Marsh Road	N	1,605	10	0.50%	3	25	52.1
85	22	Laurel Street - Glenwood Avenue	N	1,658	18	1.00%	5	25	52.8
39	10	Durham Street - Willow Road (SR 114)	S	1,677	18	1.00%	5	25	52.9
141	36	University Drive - Valparaiso Avenue	N	1,780	2	0.00%	1	25	51.9
68	17	Middlefield Road - Seminary Drive	W	1,828	10	0.50%	3	25	52.6
53	14	Laurel Street - Willow Road (SR 114)	N	1,893	6	0.25%	2	25	52.4
11	3	Scott Drive - Marsh Road	S	1,982	34	1.75%	8	25	54.3
83	21	Laurel Street - Encinal Avenue	S	2,080	9	0.50%	3	25	53.1
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,110	3	0.25%	2	25	52.9
87	22	Laurel Street - Glenwood Avenue	S	2,122	7	0.25%	2	25	52.9
105	27	Laurel Street - Burgess Drive	N	2,211	9	0.50%	3	25	53.4
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,233	0	0.00%	1	25	52.7
143	36	University Drive - Valparaiso Avenue	S	2,244	2	0.00%	1	25	52.8
97	25	Laurel Street - Proj Dwy N	N	2,374	11	0.50%	3	25	53.6
101	26	Laurel Street - Proj Dwy S	N	2,404	11	0.50%	3	25	53.7
86	22	Laurel Street - Glenwood Avenue	E	2,428	1	0.00%	1	25	53.1
64	16	Middlefield Road - D Street/Ringwood Avenue	W	2,460	16	0.75%	4	30	55.8
54	14	Laurel Street - Willow Road (SR 114)	E	2,504	9	0.50%	3	25	53.8
19	5	Bay Road - Marsh Road	S	2,653	12	0.50%	3	30	55.9
89	23	Laurel Street - Oak Grove Avenue	N	2,686	14	0.50%	3	25	54.1
88	22	Laurel Street - Glenwood Avenue	W	2,693	2	0.00%	1	25	53.5
9	3	Scott Drive - Marsh Road	N	2,730	20	0.75%	4	25	54.5
56	14	Laurel Street - Willow Road (SR 114)	W	2,742	8	0.25%	2	25	53.9
91	23	Laurel Street - Oak Grove Avenue	S	2,760	5	0.25%	2	25	53.9
93	24	Laurel Street - Ravenswood Avenue	N	2,843	11	0.50%	3	25	54.4
47	12	Gilbert Avenue - Willow Road (SR 114)	S	2,894	1	0.00%	1	25	53.7
107	27	Laurel Street - Burgess Drive	S	3,319	19	0.50%	3	25	55.0
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,335	7	0.25%	2	30	56.6
84	21	Laurel Street - Encinal Avenue	W	3,353	25	0.75%	4	25	55.3
82	21	Laurel Street - Encinal Avenue	E	3,375	49	1.50%	7	25	56.2

147	37	University Drive - Santa Cruz Avenue	S	3,677	11	0.25%	2	25	55.1
90	23	Laurel Street - Oak Grove Avenue	E	3,679	3	0.00%	1	25	54.7
21	6	Bay Road - Ringwood Avenue	N	3,835	26	0.75%	4	30	57.6
23	6	Bay Road - Ringwood Avenue	S	3,854	7	0.25%	2	30	57.2
95	24	Laurel Street - Ravenswood Avenue	S	3,951	24	0.50%	3	25	55.7
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0
92	23	Laurel Street - Oak Grove Avenue	W	4,015	16	0.50%	3	25	55.7
103	26	Laurel Street - Proj Dwy S	S	4,017	24	0.50%	3	25	55.7
99	25	Laurel Street - Proj Dwy N	S	4,020	24	0.50%	3	25	55.8
146	37	University Drive - Santa Cruz Avenue	E	4,050	8	0.25%	2	25	55.4
120	30	El Camino Real - Oak Grove Avenue	W	4,205	12	0.25%	2	25	55.6
110	28	El Camino Real - Encinal Avenue	E	4,248	19	0.50%	3	25	56.0
24	6	Bay Road - Ringwood Avenue	W	4,259	30	0.75%	4	30	58.0
33	9	Bay Road - Willow Road (SR 114)	N	4,361	27	0.50%	3	30	57.9
118	30	El Camino Real - Oak Grove Avenue	E	4,513	27	0.50%	3	25	56.2
52	13	Middlefield Road - Willow Road (SR 114)	W	4,828	13	0.25%	2	25	56.2
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	4,865	18	0.50%	3	30	58.4
62	16	Middlefield Road - D Street/Ringwood Avenue	E	4,892	55	1.00%	5	25	57.2
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,090	23	0.50%	3	25	56.7
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	5,096	31	0.50%	3	30	58.6
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	5,097	31	0.50%	3	30	58.6
57	15	Middlefield Road - Ravenswood Avenue	N	5,141	23	0.50%	3	35	60.4
175	44	O'Brien Drive - Willow Road (SR 114)	S	5,186	73	1.50%	7	30	59.5
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,216	9	0.25%	2	25	56.5
142	36	University Drive - Valparaiso Avenue	E	5,235	9	0.25%	2	30	58.5
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	5,590	21	0.25%	2	30	58.7
179	45	Newbridge Street - Willow Road (SR 114)	S	5,638	36	0.75%	4	25	57.5
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	5,746	34	0.50%	3	30	59.1
60	15	Middlefield Road - Ravenswood Avenue	W	5,847	35	0.50%	3	-	57.6
177	45	Newbridge Street - Willow Road (SR 114)	N	5,876	10	0.25%	2	25	57.0
94	24	Laurel Street - Ravenswood Avenue	E	5,958	35	0.50%	3	30	59.2
144	36	University Drive - Valparaiso Avenue	W	5,973	6	0.00%	1	30	58.8
13	4	Florence Street/Bohannon Drive - Marsh Road	N	6,552	29	0.50%	3	25	57.8
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	6,753	36	0.50%	3	35	61.6
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	6,998	42	0.50%	3	30	59.9
51	13	Middlefield Road - Willow Road (SR 114)	S	7,012	105	1.50%	7	30	60.7
148	37	University Drive - Santa Cruz Avenue	W	7,109	20	0.25%	2	25	57.8
96	24	Laurel Street - Ravenswood Avenue	W	7,303	49	0.75%	4	30	60.3
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	7,338	43	0.50%	3	30	60.1
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	7,403	45	0.50%	3	30	60.1
65	17	Middlefield Road - Seminary Drive	N	7,477	52	0.75%	4	35	62.2
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	7,789	46	0.50%	3	25	58.5
49	13	Middlefield Road - Willow Road (SR 114)	N	8,240	101	1.25%	6	30	61.2
20	5	Bay Road - Marsh Road	W	8,456	60	0.75%	4	30	60.9
67	17	Middlefield Road - Seminary Drive	S	8,560	44	0.50%	3	35	62.6
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,034	33	0.25%	2	25	58.8
63	16	Middlefield Road - D Street/Ringwood Avenue	S	9,130	37	0.50%	3	35	62.9
61	16	Middlefield Road - D Street/Ringwood Avenue	N	9,157	55	0.50%	3	35	62.9
46	12	Gilbert Avenue - Willow Road (SR 114)	E	9,400	162	1.75%	8	25	60.7
166	42	Hamilton Avenue - Willow Road (SR 114)	E	9,549	228	2.50%	11	40	65.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	9,669	154	1.50%	7	25	60.6
44	11	Coleman Avenue - Willow Road (SR 114)	W	10,336	168	1.50%	7	25	60.9
42	11	Coleman Avenue - Willow Road (SR 114)	E	10,466	181	1.75%	8	25	61.2
50	13	Middlefield Road - Willow Road (SR 114)	E	10,584	198	1.75%	8	25	61.2
16	4	Florence Street/Bohannon Drive - Marsh Road	W	10,645	70	0.75%	4	30	61.9
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	10,678	36	0.25%	2	35	63.4
38	10	Durham Street - Willow Road (SR 114)	E	10,814	189	1.75%	8	25	61.3
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	10,932	73	0.75%	4	25	60.3
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,236	163	1.50%	7	40	65.9
59	15	Middlefield Road - Ravenswood Avenue	S	11,263	58	0.50%	3	35	63.8
40	10	Durham Street - Willow Road (SR 114)	W	11,353	174	1.50%	7	25	61.3
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,615	36	0.25%	2	35	63.7
156	39	Santa Cruz Avenue - Sand Hill Road	W	11,871	138	1.25%	6	40	66.1
184	46	Bayfront Expressway - University Avenue	W	11,916	424	3.50%	15	-	66.7
164	41	Bayfront Expressway - Willow Road (SR 114)	W	11,992	238	2.00%	9	40	66.4
18	5	Bay Road - Marsh Road	E	12,173	98	0.75%	4	30	62.5
170	43	Ivy Drive - Willow Road (SR 114)	E	12,198	268	2.25%	10	40	66.6
174	44	O'Brien Drive - Willow Road (SR 114)	E	12,344	272	2.25%	10	40	66.7
155	39	Santa Cruz Avenue - Sand Hill Road	S	12,529	45	0.25%	2	35	64.1
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	12,595	195	1.50%	7	25	61.7
117	30	El Camino Real - Oak Grove Avenue	N	12,788	134	1.00%	5	35	64.6
168	42	Hamilton Avenue - Willow Road (SR 114)	W	12,828	224	1.75%	8	40	66.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	12,980	182	1.50%	7	25	61.8
12	3	Scott Drive - Marsh Road	W	13,000	88	0.75%	4	30	62.8
119	30	El Camino Real - Oak Grove Avenue	S	13,293	82	0.50%	3	35	64.5
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	13,392	89	0.75%	4	35	64.7

121	31	El Camino Real - Santa Cruz Avenue	N	13,429	141	1.00%	5	35	64.8
123	31	El Camino Real - Santa Cruz Avenue	S	13,600	83	0.50%	3	35	64.6
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	13,668	142	1.00%	5	35	64.9
172	43	Ivy Drive - Willow Road (SR 114)	W	13,828	217	1.50%	7	40	66.8
14	4	Florence Street/Bohannon Drive - Marsh Road	E	14,041	114	0.75%	4	30	63.1
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	14,065	130	1.00%	5	35	65.0
111	28	El Camino Real - Encinal Avenue	S	14,153	89	0.75%	4	35	64.9
36	9	Bay Road - Willow Road (SR 114)	W	15,515	214	1.50%	7	25	62.6
133	34	El Camino Real - Middle Avenue	N	15,957	159	1.00%	5	35	65.6
178	45	Newbridge Street - Willow Road (SR 114)	E	16,499	357	2.25%	10	40	67.9
6	2	US 101 SB Off-Ramp - Marsh Road	E	16,761	238	1.50%	7	35	66.1
109	28	El Camino Real - Encinal Avenue	N	16,986	149	1.00%	5	35	65.8
131	33	El Camino Real - Roble Avenue	S	17,016	101	0.50%	3	35	65.5
129	33	El Camino Real - Roble Avenue	N	17,303	171	1.00%	5	35	65.9
137	35	El Camino Real - Cambridge Avenue	N	17,534	160	1.00%	5	35	66.0
135	34	El Camino Real - Middle Avenue	S	17,625	96	0.50%	3	35	65.7
34	9	Bay Road - Willow Road (SR 114)	E	17,674	250	1.50%	7	25	63.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	18,143	138	0.75%	4	35	66.0
10	3	Scott Drive - Marsh Road	E	18,218	156	0.75%	4	30	64.2
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	18,260	231	1.25%	6	40	67.9
176	44	O'Brien Drive - Willow Road (SR 114)	W	18,542	276	1.50%	7	40	68.1
161	41	Bayfront Expressway - Willow Road (SR 114)	N	18,972	339	1.75%	8	45	69.8
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,203	114	0.50%	3	35	66.1
139	35	El Camino Real - Cambridge Avenue	S	19,312	98	0.50%	3	35	66.1
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	19,952	213	1.00%	5	40	68.2
5	2	US 101 SB Off-Ramp - Marsh Road	N	20,685	182	1.00%	5	25	63.3
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	21,501	447	2.00%	9	40	69.0
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	22,105	415	2.00%	9	40	69.1
180	45	Newbridge Street - Willow Road (SR 114)	W	22,811	282	1.25%	6	40	68.9
4	1	US 101 NB Off-Ramp - Marsh Road	W	24,397	244	1.00%	5	35	67.4
163	41	Bayfront Expressway - Willow Road (SR 114)	S	24,611	633	2.50%	11	45	71.2
181	46	Bayfront Expressway - University Avenue	N	25,705	547	2.25%	10	45	71.3
2	1	US 101 NB Off-Ramp - Marsh Road	E	26,855	371	1.50%	7	35	68.1
183	46	Bayfront Expressway - University Avenue	S	33,339	1,101	3.25%	14	45	72.8

Background With Project Variant

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
145	37	University Drive - Santa Cruz Avenue	N	1	0	0.25%	2	25	43.5
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.25%	2	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
102	26	Laurel Street - Proj Dwy S	E	49	0	0.50%	3	25	44.3
106	27	Laurel Street - Burgess Drive	E	175	1	0.50%	3	25	45.8
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.75%	8	25	46.6
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	200	1	0.50%	3	25	46.0
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	297	2	0.50%	3	25	46.9
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	314	-	0.00%	1	25	46.6
167	42	Hamilton Avenue - Willow Road (SR 114)	S	520	19	3.50%	15	25	50.5
66	17	Middlefield Road - Seminary Drive	E	573	0	0.00%	1	25	48.1
140	35	El Camino Real - Cambridge Avenue	W	587	1	0.00%	1	25	48.2
37	10	Durham Street - Willow Road (SR 114)	N	673	4	0.50%	3	25	49.1
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	689	4	0.50%	3	25	49.2
108	27	Laurel Street - Burgess Drive	W	749	-	0.00%	1	25	48.9
22	6	Bay Road - Ringwood Avenue	E	782	-	0.00%	1	25	49.0
112	28	El Camino Real - Encinal Avenue	W	913	2	0.25%	2	25	49.8
132	33	El Camino Real - Roble Avenue	W	1,059	3	0.25%	2	25	50.3
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,108	4	0.25%	2	25	50.5
130	33	El Camino Real - Roble Avenue	E	1,185	9	0.75%	4	25	51.3
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,232	5	0.50%	3	25	51.2
122	31	El Camino Real - Santa Cruz Avenue	E	1,320	4	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,433	1	0.00%	1	25	51.1
169	43	Ivy Drive - Willow Road (SR 114)	N	1,446	1	0.00%	1	25	51.1
124	31	El Camino Real - Santa Cruz Avenue	W	1,549	16	1.00%	5	25	52.6
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,565	2	0.00%	1	25	51.4
17	5	Bay Road - Marsh Road	N	1,605	10	0.50%	3	25	52.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,609	48	3.00%	13	40	58.3
39	10	Durham Street - Willow Road (SR 114)	S	1,679	18	1.00%	5	25	52.9
85	22	Laurel Street - Glenwood Avenue	N	1,691	19	1.00%	5	25	52.9
53	14	Laurel Street - Willow Road (SR 114)	N	1,709	5	0.25%	2	25	52.1
141	36	University Drive - Valparaiso Avenue	N	1,780	2	0.00%	1	25	51.9
11	3	Scott Drive - Marsh Road	S	1,982	34	1.75%	8	25	54.3
105	27	Laurel Street - Burgess Drive	N	2,027	8	0.50%	3	25	53.0
68	17	Middlefield Road - Seminary Drive	W	2,053	12	0.50%	3	25	53.1
83	21	Laurel Street - Encinal Avenue	S	2,087	9	0.50%	3	25	53.1
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,110	3	0.25%	2	25	52.9
87	22	Laurel Street - Glenwood Avenue	S	2,145	7	0.25%	2	25	52.9
101	26	Laurel Street - Proj Dwy S	N	2,220	10	0.50%	3	25	53.4
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,233	0	0.00%	1	25	52.7
143	36	University Drive - Valparaiso Avenue	S	2,244	2	0.00%	1	25	52.8
97	25	Laurel Street - Proj Dwy N	N	2,330	11	0.50%	3	25	53.6
86	22	Laurel Street - Glenwood Avenue	E	2,436	1	0.00%	1	25	53.1
54	14	Laurel Street - Willow Road (SR 114)	E	2,546	10	0.50%	3	25	53.9
19	5	Bay Road - Marsh Road	S	2,657	12	0.50%	3	30	55.9
88	22	Laurel Street - Glenwood Avenue	W	2,705	2	0.00%	1	25	53.5
64	16	Middlefield Road - D Street/Ringwood Avenue	W	2,710	18	0.75%	4	30	56.2
9	3	Scott Drive - Marsh Road	N	2,730	20	0.75%	4	25	54.5
89	23	Laurel Street - Oak Grove Avenue	N	2,731	14	0.50%	3	25	54.2
56	14	Laurel Street - Willow Road (SR 114)	W	2,742	8	0.25%	2	25	53.9
91	23	Laurel Street - Oak Grove Avenue	S	2,787	5	0.25%	2	25	53.9
93	24	Laurel Street - Ravenswood Avenue	N	2,888	11	0.50%	3	25	54.4
47	12	Gilbert Avenue - Willow Road (SR 114)	S	2,896	1	0.00%	1	25	53.7
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,359	7	0.25%	2	30	56.6
107	27	Laurel Street - Burgess Drive	S	3,361	20	0.50%	3	25	55.0
84	21	Laurel Street - Encinal Avenue	W	3,376	25	0.75%	4	25	55.4
82	21	Laurel Street - Encinal Avenue	E	3,411	50	1.50%	7	25	56.2

90	23	Laurel Street - Oak Grove Avenue	E	3,684	3	0.00%	1	25	54.7
147	37	University Drive - Santa Cruz Avenue	S	3,689	11	0.25%	2	25	55.1
21	6	Bay Road - Ringwood Avenue	N	3,839	26	0.75%	4	30	57.6
95	24	Laurel Street - Ravenswood Avenue	S	3,871	23	0.50%	3	25	55.6
23	6	Bay Road - Ringwood Avenue	S	3,883	8	0.25%	2	30	57.2
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0
92	23	Laurel Street - Oak Grove Avenue	W	4,021	16	0.50%	3	25	55.8
146	37	University Drive - Santa Cruz Avenue	E	4,050	8	0.25%	2	25	55.4
103	26	Laurel Street - Proj Dwy S	S	4,059	25	0.50%	3	25	55.8
99	25	Laurel Street - Proj Dwy N	S	4,063	25	0.50%	3	25	55.8
120	30	El Camino Real - Oak Grove Avenue	W	4,205	12	0.25%	2	25	55.6
110	28	El Camino Real - Encinal Avenue	E	4,288	19	0.50%	3	25	56.0
24	6	Bay Road - Ringwood Avenue	W	4,353	31	0.75%	4	30	58.1
33	9	Bay Road - Willow Road (SR 114)	N	4,451	28	0.50%	3	30	58.0
118	30	El Camino Real - Oak Grove Avenue	E	4,536	28	0.50%	3	25	56.2
52	13	Middlefield Road - Willow Road (SR 114)	W	4,644	13	0.25%	2	25	56.0
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	4,883	18	0.50%	3	30	58.4
62	16	Middlefield Road - D Street/Ringwood Avenue	E	4,930	55	1.00%	5	25	57.2
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	5,088	31	0.50%	3	30	58.6
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,102	23	0.50%	3	25	56.7
57	15	Middlefield Road - Ravenswood Avenue	N	5,188	23	0.50%	3	35	60.5
175	44	O'Brien Drive - Willow Road (SR 114)	S	5,190	73	1.50%	7	30	59.5
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,227	9	0.25%	2	25	56.5
142	36	University Drive - Valparaiso Avenue	E	5,246	9	0.25%	2	30	58.5
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	5,302	32	0.50%	3	30	58.7
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	5,599	21	0.25%	2	30	58.7
179	45	Newbridge Street - Willow Road (SR 114)	S	5,651	36	0.75%	4	25	57.5
177	45	Newbridge Street - Willow Road (SR 114)	N	5,880	10	0.25%	2	25	57.0
60	15	Middlefield Road - Ravenswood Avenue	W	5,887	36	0.50%	3	-	57.6
144	36	University Drive - Valparaiso Avenue	W	5,984	6	0.00%	1	30	58.8
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	6,054	36	0.50%	3	30	59.3
94	24	Laurel Street - Ravenswood Avenue	E	6,285	37	0.50%	3	30	59.5
13	4	Florence Street/Bohannon Drive - Marsh Road	N	6,565	29	0.50%	3	25	57.8
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	6,753	36	0.50%	3	35	61.6
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	7,005	42	0.50%	3	30	59.9
51	13	Middlefield Road - Willow Road (SR 114)	S	7,042	105	1.50%	7	30	60.8
148	37	University Drive - Santa Cruz Avenue	W	7,118	20	0.25%	2	25	57.8
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	7,289	43	0.50%	3	30	60.1
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	7,355	44	0.50%	3	30	60.1
96	24	Laurel Street - Ravenswood Avenue	W	7,430	50	0.75%	4	30	60.4
65	17	Middlefield Road - Seminary Drive	N	7,490	53	0.75%	4	35	62.2
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	7,868	47	0.50%	3	25	58.5
20	5	Bay Road - Marsh Road	W	8,507	61	0.75%	4	30	61.0
49	13	Middlefield Road - Willow Road (SR 114)	N	8,524	104	1.25%	6	30	61.4
67	17	Middlefield Road - Seminary Drive	S	8,699	45	0.50%	3	35	62.7
61	16	Middlefield Road - D Street/Ringwood Avenue	N	8,987	54	0.50%	3	35	62.8
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,046	33	0.25%	2	25	58.8
63	16	Middlefield Road - D Street/Ringwood Avenue	S	9,230	38	0.50%	3	35	62.9
46	12	Gilbert Avenue - Willow Road (SR 114)	E	9,547	165	1.75%	8	25	60.8
166	42	Hamilton Avenue - Willow Road (SR 114)	E	9,575	229	2.50%	11	40	65.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	9,738	155	1.50%	7	25	60.6
44	11	Coleman Avenue - Willow Road (SR 114)	W	10,403	169	1.50%	7	25	60.9
42	11	Coleman Avenue - Willow Road (SR 114)	E	10,613	184	1.75%	8	25	61.2
16	4	Florence Street/Bohannon Drive - Marsh Road	W	10,700	70	0.75%	4	30	61.9
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	10,700	36	0.25%	2	35	63.4
50	13	Middlefield Road - Willow Road (SR 114)	E	10,734	201	1.75%	8	25	61.3
38	10	Durham Street - Willow Road (SR 114)	E	10,959	191	1.75%	8	25	61.4
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	10,963	73	0.75%	4	25	60.3
59	15	Middlefield Road - Ravenswood Avenue	S	11,133	57	0.50%	3	35	63.7
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,246	163	1.50%	7	40	65.9
40	10	Durham Street - Willow Road (SR 114)	W	11,420	175	1.50%	7	25	61.3
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,637	36	0.25%	2	35	63.7
156	39	Santa Cruz Avenue - Sand Hill Road	W	11,871	138	1.25%	6	40	66.1
184	46	Bayfront Expressway - University Avenue	W	11,916	424	3.50%	15	-	66.7
164	41	Bayfront Expressway - Willow Road (SR 114)	W	12,018	238	2.00%	9	40	66.5
18	5	Bay Road - Marsh Road	E	12,209	99	0.75%	4	30	62.5
170	43	Ivy Drive - Willow Road (SR 114)	E	12,224	269	2.25%	10	40	66.6
174	44	O'Brien Drive - Willow Road (SR 114)	E	12,370	272	2.25%	10	40	66.7
155	39	Santa Cruz Avenue - Sand Hill Road	S	12,551	45	0.25%	2	35	64.1
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	12,692	196	1.50%	7	25	61.7
117	30	El Camino Real - Oak Grove Avenue	N	12,833	134	1.00%	5	35	64.6
168	42	Hamilton Avenue - Willow Road (SR 114)	W	12,854	225	1.75%	8	40	66.6
3	1	US 101 NB Off-Ramp - Marsh Road	S	12,978	182	1.50%	7	25	61.8
12	3	Scott Drive - Marsh Road	W	13,042	88	0.75%	4	30	62.8
119	30	El Camino Real - Oak Grove Avenue	S	13,286	82	0.50%	3	35	64.5
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	13,407	89	0.75%	4	35	64.7

121	31	El Camino Real - Santa Cruz Avenue	N	13,468	141	1.00%	5	35	64.8
123	31	El Camino Real - Santa Cruz Avenue	S	13,593	83	0.50%	3	35	64.6
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	13,707	142	1.00%	5	35	64.9
172	43	Ivy Drive - Willow Road (SR 114)	W	13,854	217	1.50%	7	40	66.8
14	4	Florence Street/Bohannon Drive - Marsh Road	E	14,063	114	0.75%	4	30	63.1
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	14,110	131	1.00%	5	35	65.0
111	28	El Camino Real - Encinal Avenue	S	14,181	89	0.75%	4	35	64.9
36	9	Bay Road - Willow Road (SR 114)	W	15,580	215	1.50%	7	25	62.6
133	34	El Camino Real - Middle Avenue	N	16,041	159	1.00%	5	35	65.6
178	45	Newbridge Street - Willow Road (SR 114)	E	16,530	357	2.25%	10	40	67.9
6	2	US 101 SB Off-Ramp - Marsh Road	E	16,770	238	1.50%	7	35	66.1
109	28	El Camino Real - Encinal Avenue	N	17,054	150	1.00%	5	35	65.9
131	33	El Camino Real - Roble Avenue	S	17,086	102	0.50%	3	35	65.6
129	33	El Camino Real - Roble Avenue	N	17,387	171	1.00%	5	35	65.9
137	35	El Camino Real - Cambridge Avenue	N	17,599	161	1.00%	5	35	66.0
135	34	El Camino Real - Middle Avenue	S	17,695	97	0.50%	3	35	65.7
34	9	Bay Road - Willow Road (SR 114)	E	17,848	253	1.50%	7	25	63.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	18,185	139	0.75%	4	35	66.0
10	3	Scott Drive - Marsh Road	E	18,240	156	0.75%	4	30	64.2
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	18,416	233	1.25%	6	40	68.0
176	44	O'Brien Drive - Willow Road (SR 114)	W	18,572	276	1.50%	7	40	68.1
161	41	Bayfront Expressway - Willow Road (SR 114)	N	18,972	339	1.75%	8	45	69.8
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,273	114	0.50%	3	35	66.1
139	35	El Camino Real - Cambridge Avenue	S	19,382	98	0.50%	3	35	66.1
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	20,011	214	1.00%	5	40	68.2
5	2	US 101 SB Off-Ramp - Marsh Road	N	20,703	182	1.00%	5	25	63.3
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	21,646	450	2.00%	9	40	69.0
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	22,153	416	2.00%	9	40	69.1
180	45	Newbridge Street - Willow Road (SR 114)	W	22,859	282	1.25%	6	40	68.9
4	1	US 101 NB Off-Ramp - Marsh Road	W	24,438	244	1.00%	5	35	67.4
163	41	Bayfront Expressway - Willow Road (SR 114)	S	24,633	633	2.50%	11	45	71.2
181	46	Bayfront Expressway - University Avenue	N	25,727	548	2.25%	10	45	71.3
2	1	US 101 NB Off-Ramp - Marsh Road	E	26,864	371	1.50%	7	35	68.1
183	46	Bayfront Expressway - University Avenue	S	33,361	1,102	3.25%	14	45	72.8

Cumulative With Project

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
145	37	University Drive - Santa Cruz Avenue	N	-	-	0.00%	1	25	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.50%	3	25	43.6
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	12	0	0.75%	4	25	43.7
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
102	26	Laurel Street - Proj Dwy S	E	49	0	0.75%	4	25	44.3
106	27	Laurel Street - Burgess Drive	E	177	-	0.00%	1	25	45.5
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.50%	7	25	46.5
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	292	2	0.75%	4	25	47.0
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	351	1	0.25%	2	25	47.1
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	418	3	0.75%	4	25	47.9
112	28	El Camino Real - Encinal Avenue	W	450	3	0.50%	3	25	47.9
98	25	Laurel Street - Proj Dwy N	E	454	4	0.75%	4	25	48.2
140	35	El Camino Real - Cambridge Avenue	W	631	1	0.00%	1	25	48.4
22	6	Bay Road - Ringwood Avenue	E	787	-	0.00%	1	25	49.1
66	17	Middlefield Road - Seminary Drive	E	812	0	0.00%	1	25	49.2
108	27	Laurel Street - Burgess Drive	W	813	10	1.25%	6	25	50.5
167	42	Hamilton Avenue - Willow Road (SR 114)	S	853	27	3.25%	14	25	52.1
37	10	Durham Street - Willow Road (SR 114)	N	915	1	0.00%	1	25	49.5
130	33	El Camino Real - Roble Avenue	E	1,310	10	0.75%	4	25	51.7
132	33	El Camino Real - Roble Avenue	W	1,320	3	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,398	2	0.00%	1	25	51.0
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,477	10	0.75%	4	25	52.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,638	44	2.75%	12	40	58.3
68	17	Middlefield Road - Seminary Drive	W	1,698	14	0.75%	4	25	52.6
122	31	El Camino Real - Santa Cruz Avenue	E	1,767	19	1.00%	5	25	53.1
141	36	University Drive - Valparaiso Avenue	N	1,780	3	0.25%	2	25	52.2
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,788	7	0.25%	2	25	52.2
53	14	Laurel Street - Willow Road (SR 114)	N	1,833	6	0.25%	2	25	52.3
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,910	7	0.25%	2	25	52.5
124	31	El Camino Real - Santa Cruz Avenue	W	1,926	8	0.50%	3	25	52.8
17	5	Bay Road - Marsh Road	N	2,077	11	0.50%	3	25	53.1
64	16	Middlefield Road - D Street/Ringwood Avenue	W	2,095	17	0.75%	4	30	55.1
85	22	Laurel Street - Glenwood Avenue	N	2,200	22	1.00%	5	25	53.9
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,252	1	0.00%	1	25	52.8
83	21	Laurel Street - Encinal Avenue	S	2,365	10	0.50%	3	25	53.6
87	22	Laurel Street - Glenwood Avenue	S	2,370	7	0.25%	2	25	53.3
86	22	Laurel Street - Glenwood Avenue	E	2,376	1	0.00%	1	25	53.0
169	43	Ivy Drive - Willow Road (SR 114)	N	2,489	12	0.50%	3	25	53.8
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,538	2	0.00%	1	25	53.2
39	10	Durham Street - Willow Road (SR 114)	S	2,585	49	2.00%	9	25	55.5
11	3	Scott Drive - Marsh Road	S	2,687	27	1.00%	5	25	54.7
54	14	Laurel Street - Willow Road (SR 114)	E	2,837	19	0.75%	4	25	54.7
88	22	Laurel Street - Glenwood Avenue	W	2,850	9	0.25%	2	25	54.0
89	23	Laurel Street - Oak Grove Avenue	N	2,878	16	0.50%	3	25	54.4
93	24	Laurel Street - Ravenswood Avenue	N	2,934	11	0.25%	2	25	54.2
105	27	Laurel Street - Burgess Drive	N	3,153	22	0.75%	4	25	55.1
56	14	Laurel Street - Willow Road (SR 114)	W	3,163	8	0.25%	2	25	54.4
47	12	Gilbert Avenue - Willow Road (SR 114)	S	3,177	3	0.00%	1	25	54.1
143	36	University Drive - Valparaiso Avenue	S	3,212	6	0.25%	2	25	54.5
9	3	Scott Drive - Marsh Road	N	3,225	28	0.75%	4	25	55.2
91	23	Laurel Street - Oak Grove Avenue	S	3,260	9	0.25%	2	25	54.6
97	25	Laurel Street - Proj Dwy N	N	3,333	24	0.75%	4	25	55.3
101	26	Laurel Street - Proj Dwy S	N	3,333	24	0.75%	4	25	55.3
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,367	5	0.25%	2	30	56.6
82	21	Laurel Street - Encinal Avenue	E	3,478	50	1.50%	7	25	56.3
90	23	Laurel Street - Oak Grove Avenue	E	3,570	3	0.00%	1	25	54.6
19	5	Bay Road - Marsh Road	S	3,829	13	0.25%	2	30	57.2
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0

147	37	University Drive - Santa Cruz Avenue	S	4,120	19	0.50%	3	25	55.9
92	23	Laurel Street - Oak Grove Avenue	W	4,132	14	0.25%	2	25	55.5
107	27	Laurel Street - Burgess Drive	S	4,195	41	1.00%	5	25	56.5
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	4,212	39	1.00%	5	30	58.2
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	4,215	39	1.00%	5	30	58.2
24	6	Bay Road - Ringwood Avenue	W	4,216	21	0.50%	3	30	57.8
23	6	Bay Road - Ringwood Avenue	S	4,258	9	0.25%	2	30	57.6
84	21	Laurel Street - Encinal Avenue	W	4,480	32	0.75%	4	25	56.5
146	37	University Drive - Santa Cruz Avenue	E	4,566	10	0.25%	2	25	55.9
120	30	El Camino Real - Oak Grove Avenue	W	4,577	8	0.25%	2	25	55.9
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	4,664	42	1.00%	5	30	58.6
33	9	Bay Road - Willow Road (SR 114)	N	4,778	80	1.75%	8	30	59.3
110	28	El Camino Real - Encinal Avenue	E	4,801	25	0.50%	3	25	56.5
118	30	El Camino Real - Oak Grove Avenue	E	4,820	23	0.50%	3	25	56.5
95	24	Laurel Street - Ravenswood Avenue	S	4,928	47	1.00%	5	25	57.2
99	25	Laurel Street - Proj Dwy N	S	4,928	47	1.00%	5	25	57.2
103	26	Laurel Street - Proj Dwy S	S	4,928	47	1.00%	5	25	57.2
94	24	Laurel Street - Ravenswood Avenue	E	4,956	44	1.00%	5	30	58.9
57	15	Middlefield Road - Ravenswood Avenue	N	5,267	41	0.75%	4	35	60.7
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,276	31	0.50%	3	25	56.9
21	6	Bay Road - Ringwood Avenue	N	5,300	41	0.75%	4	30	59.0
62	16	Middlefield Road - D Street/Ringwood Avenue	E	5,339	78	1.50%	7	25	58.1
60	15	Middlefield Road - Ravenswood Avenue	W	5,385	31	0.50%	3	-	57.2
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	5,422	26	0.50%	3	30	58.8
142	36	University Drive - Valparaiso Avenue	E	5,437	8	0.25%	2	30	58.6
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	5,450	30	0.50%	3	30	58.9
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	5,460	31	0.50%	3	30	58.9
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	5,460	31	0.50%	3	30	58.9
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,730	7	0.00%	1	25	56.5
96	24	Laurel Street - Ravenswood Avenue	W	5,731	41	0.75%	4	30	59.3
52	13	Middlefield Road - Willow Road (SR 114)	W	5,992	26	0.50%	3	25	57.4
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	6,149	31	0.50%	3	30	59.4
179	45	Newbridge Street - Willow Road (SR 114)	S	6,286	51	0.75%	4	25	57.9
144	36	University Drive - Valparaiso Avenue	W	6,671	9	0.25%	2	30	59.5
13	4	Florence Street/Bohannon Drive - Marsh Road	N	7,055	30	0.50%	3	25	58.1
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	7,245	39	0.50%	3	35	61.9
175	44	O'Brien Drive - Willow Road (SR 114)	S	7,376	99	1.25%	6	30	60.8
148	37	University Drive - Santa Cruz Avenue	W	7,398	30	0.50%	3	25	58.3
51	13	Middlefield Road - Willow Road (SR 114)	S	7,739	111	1.50%	7	30	61.2
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	7,740	74	1.00%	5	25	59.1
177	45	Newbridge Street - Willow Road (SR 114)	N	7,796	173	2.25%	10	25	60.4
67	17	Middlefield Road - Seminary Drive	S	7,902	52	0.75%	4	35	62.4
46	12	Gilbert Avenue - Willow Road (SR 114)	E	8,275	129	1.50%	7	25	59.9
65	17	Middlefield Road - Seminary Drive	N	8,402	86	1.00%	5	35	62.8
63	16	Middlefield Road - D Street/Ringwood Avenue	S	8,704	46	0.50%	3	35	62.7
20	5	Bay Road - Marsh Road	W	8,750	73	0.75%	4	30	61.1
49	13	Middlefield Road - Willow Road (SR 114)	N	8,870	140	1.50%	7	30	61.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	9,082	129	1.50%	7	25	60.3
50	13	Middlefield Road - Willow Road (SR 114)	E	9,224	155	1.75%	8	25	60.6
61	16	Middlefield Road - D Street/Ringwood Avenue	N	9,525	60	0.75%	4	35	63.2
42	11	Coleman Avenue - Willow Road (SR 114)	E	9,559	146	1.50%	7	25	60.5
44	11	Coleman Avenue - Willow Road (SR 114)	W	9,624	143	1.50%	7	25	60.6
174	44	O'Brien Drive - Willow Road (SR 114)	E	9,821	197	2.00%	9	40	65.6
38	10	Durham Street - Willow Road (SR 114)	E	9,903	155	1.50%	7	25	60.7
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,927	47	0.50%	3	25	59.5
59	15	Middlefield Road - Ravenswood Avenue	S	10,326	65	0.75%	4	35	63.6
40	10	Durham Street - Willow Road (SR 114)	W	10,587	138	1.25%	6	25	60.7
166	42	Hamilton Avenue - Willow Road (SR 114)	E	10,686	278	2.50%	11	40	66.2
170	43	Ivy Drive - Willow Road (SR 114)	E	11,287	261	2.25%	10	40	66.3
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	11,304	45	0.50%	3	35	63.8
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,750	57	0.50%	3	35	63.9
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,790	206	1.75%	8	40	66.3
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	11,855	185	1.50%	7	25	61.5
16	4	Florence Street/Bohannon Drive - Marsh Road	W	12,306	79	0.75%	4	30	62.5
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	12,630	93	0.75%	4	25	60.9
156	39	Santa Cruz Avenue - Sand Hill Road	W	12,709	173	1.25%	6	40	66.4
155	39	Santa Cruz Avenue - Sand Hill Road	S	13,128	60	0.50%	3	35	64.4
164	41	Bayfront Expressway - Willow Road (SR 114)	W	13,608	289	2.25%	10	40	67.1
12	3	Scott Drive - Marsh Road	W	13,776	98	0.75%	4	30	63.0
117	30	El Camino Real - Oak Grove Avenue	N	14,068	162	1.25%	6	35	65.2
184	46	Bayfront Expressway - University Avenue	W	14,135	508	3.50%	15	-	67.4
168	42	Hamilton Avenue - Willow Road (SR 114)	W	14,202	275	2.00%	9	40	67.2
119	30	El Camino Real - Oak Grove Avenue	S	14,431	92	0.75%	4	35	65.0
18	5	Bay Road - Marsh Road	E	14,500	138	1.00%	5	30	63.5
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	14,573	95	0.75%	4	35	65.0
121	31	El Camino Real - Santa Cruz Avenue	N	14,647	169	1.25%	6	35	65.4

123	31	El Camino Real - Santa Cruz Avenue	S	14,697	93	0.75%	4	35	65.1
172	43	Ivy Drive - Willow Road (SR 114)	W	15,258	261	1.75%	8	40	67.4
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	15,406	172	1.00%	5	35	65.4
36	9	Bay Road - Willow Road (SR 114)	W	15,457	213	1.50%	7	25	62.6
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	15,570	161	1.00%	5	35	65.5
111	28	El Camino Real - Encinal Avenue	S	15,607	93	0.50%	3	35	65.2
14	4	Florence Street/Bohannon Drive - Marsh Road	E	15,771	160	1.00%	5	30	63.8
3	1	US 101 NB Off-Ramp - Marsh Road	S	15,836	247	1.50%	7	25	62.7
178	45	Newbridge Street - Willow Road (SR 114)	E	15,973	316	2.00%	9	40	67.7
133	34	El Camino Real - Middle Avenue	N	17,307	213	1.25%	6	35	66.1
34	9	Bay Road - Willow Road (SR 114)	E	17,440	285	1.75%	8	25	63.4
131	33	El Camino Real - Roble Avenue	S	17,556	107	0.50%	3	35	65.7
135	34	El Camino Real - Middle Avenue	S	18,543	103	0.50%	3	35	65.9
109	28	El Camino Real - Encinal Avenue	N	18,576	175	1.00%	5	35	66.2
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	18,614	274	1.50%	7	40	68.1
129	33	El Camino Real - Roble Avenue	N	18,701	226	1.25%	6	35	66.4
137	35	El Camino Real - Cambridge Avenue	N	18,964	216	1.25%	6	35	66.5
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,865	119	0.50%	3	35	66.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	20,011	157	0.75%	4	35	66.4
139	35	El Camino Real - Cambridge Avenue	S	20,592	106	0.50%	3	35	66.4
6	2	US 101 SB Off-Ramp - Marsh Road	E	20,597	311	1.50%	7	35	67.0
10	3	Scott Drive - Marsh Road	E	20,707	205	1.00%	5	30	65.0
176	44	O'Brien Drive - Willow Road (SR 114)	W	21,139	343	1.50%	7	40	68.7
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	21,981	445	2.00%	9	40	69.1
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	22,825	249	1.00%	5	40	68.8
5	2	US 101 SB Off-Ramp - Marsh Road	N	23,418	213	1.00%	5	25	63.8
161	41	Bayfront Expressway - Willow Road (SR 114)	N	23,419	419	1.75%	8	45	70.7
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	24,342	471	2.00%	9	40	69.5
180	45	Newbridge Street - Willow Road (SR 114)	W	25,336	341	1.25%	6	40	69.3
4	1	US 101 NB Off-Ramp - Marsh Road	W	27,766	268	1.00%	5	35	68.0
163	41	Bayfront Expressway - Willow Road (SR 114)	S	28,103	752	2.75%	12	45	71.8
181	46	Bayfront Expressway - University Avenue	N	29,346	675	2.25%	10	45	71.9
2	1	US 101 NB Off-Ramp - Marsh Road	E	33,722	462	1.25%	6	35	69.0
183	46	Bayfront Expressway - University Avenue	S	37,418	1,261	3.25%	14	45	73.3

Cumulative With Project Variant

Segment #	Intersection #	Intersection	Intersection leg	Volume	Truck Volume	Truck %	Truck Setting	Speed	Ldn (dBA)
1	1	US 101 NB Off-Ramp - Marsh Road	N	-	-	0.00%	1	-	
7	2	US 101 SB Off-Ramp - Marsh Road	S	-	-	0.00%	1	-	
25	7	US 101 NB Ramps - Willow Road (SR 114)	N	-	-	0.00%	1	25	
31	8	US 101 SB Ramps - Willow Road (SR 114)	S	-	-	0.00%	1	25	
35	9	Bay Road - Willow Road (SR 114)	S	-	-	0.00%	1	-	
58	15	Middlefield Road - Ravenswood Avenue	E	-	-	0.00%	1	30	
69	18	Proj Dwy B1 East - Ravenswood Avenue	N	-	-	0.00%	1	0	
73	19	Proj Dwy B1 West - Ravenswood Avenue	N	-	-	0.00%	1	0	
81	21	Laurel Street - Encinal Avenue	N	-	-	0.00%	1	25	
98	25	Laurel Street - Proj Dwy N	E	-	-	0.00%	1	25	
100	25	Laurel Street - Proj Dwy N	W	-	-	0.00%	1	0	
104	26	Laurel Street - Proj Dwy S	W	-	-	0.00%	1	0	
160	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	W	-	-	0.00%	1	0	
171	43	Ivy Drive - Willow Road (SR 114)	S	-	-	0.00%	1	-	
173	44	O'Brien Drive - Willow Road (SR 114)	N	-	-	0.00%	1	-	
182	46	Bayfront Expressway - University Avenue	E	-	-	0.00%	1	35	
79	20	Proj Dwy/Pine Street - Ravenswood Avenue	S	-	-	0.00%	1	25	
145	37	University Drive - Santa Cruz Avenue	N	1	0	0.25%	2	25	43.5
55	14	Laurel Street - Willow Road (SR 114)	S	5	0	0.50%	3	25	43.6
134	34	El Camino Real - Middle Avenue	E	30	0	0.75%	4	25	44.0
138	35	El Camino Real - Cambridge Avenue	E	45	0	0.75%	4	25	44.2
102	26	Laurel Street - Proj Dwy S	E	49	0	0.75%	4	25	44.3
106	27	Laurel Street - Burgess Drive	E	177	-	0.00%	1	25	45.5
43	11	Coleman Avenue - Willow Road (SR 114)	S	190	3	1.50%	7	25	46.5
71	18	Proj Dwy B1 East - Ravenswood Avenue	S	297	2	0.75%	4	25	47.0
77	20	Proj Dwy/Pine Street - Ravenswood Avenue	N	351	1	0.25%	2	25	47.1
112	28	El Camino Real - Encinal Avenue	W	450	3	0.50%	3	25	47.9
140	35	El Camino Real - Cambridge Avenue	W	631	1	0.00%	1	25	48.4
75	19	Proj Dwy B1 West - Ravenswood Avenue	S	689	5	0.75%	4	25	49.4
22	6	Bay Road - Ringwood Avenue	E	787	-	0.00%	1	25	49.1
66	17	Middlefield Road - Seminary Drive	E	812	0	0.00%	1	25	49.2
108	27	Laurel Street - Burgess Drive	W	813	10	1.25%	6	25	50.5
167	42	Hamilton Avenue - Willow Road (SR 114)	S	853	27	3.25%	14	25	52.1
37	10	Durham Street - Willow Road (SR 114)	N	915	1	0.00%	1	25	49.5
130	33	El Camino Real - Roble Avenue	E	1,310	10	0.75%	4	25	51.7
132	33	El Camino Real - Roble Avenue	W	1,320	3	0.25%	2	25	51.1
165	42	Hamilton Avenue - Willow Road (SR 114)	N	1,398	2	0.00%	1	25	51.0
45	12	Gilbert Avenue - Willow Road (SR 114)	N	1,477	10	0.75%	4	25	52.1
162	41	Bayfront Expressway - Willow Road (SR 114)	E	1,642	45	2.75%	12	40	58.3
53	14	Laurel Street - Willow Road (SR 114)	N	1,649	6	0.25%	2	25	51.9
122	31	El Camino Real - Santa Cruz Avenue	E	1,767	19	1.00%	5	25	53.1
141	36	University Drive - Valparaiso Avenue	N	1,780	3	0.25%	2	25	52.2
15	4	Florence Street/Bohannon Drive - Marsh Road	S	1,788	7	0.25%	2	25	52.2
149	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	N	1,910	7	0.25%	2	25	52.5
68	17	Middlefield Road - Seminary Drive	W	1,923	15	0.75%	4	25	53.1
124	31	El Camino Real - Santa Cruz Avenue	W	1,926	8	0.50%	3	25	52.8
17	5	Bay Road - Marsh Road	N	2,077	11	0.50%	3	25	53.1
85	22	Laurel Street - Glenwood Avenue	N	2,233	22	1.00%	5	25	54.0
152	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	W	2,252	1	0.00%	1	25	52.8
64	16	Middlefield Road - D Street/Ringwood Avenue	W	2,345	19	0.75%	4	30	55.6
83	21	Laurel Street - Encinal Avenue	S	2,372	10	0.50%	3	25	53.6
86	22	Laurel Street - Glenwood Avenue	E	2,384	1	0.00%	1	25	53.0
87	22	Laurel Street - Glenwood Avenue	S	2,393	7	0.25%	2	25	53.3
169	43	Ivy Drive - Willow Road (SR 114)	N	2,489	12	0.50%	3	25	53.8
41	11	Coleman Avenue - Willow Road (SR 114)	N	2,538	2	0.00%	1	25	53.2
39	10	Durham Street - Willow Road (SR 114)	S	2,587	49	2.00%	9	25	55.5
11	3	Scott Drive - Marsh Road	S	2,687	27	1.00%	5	25	54.7
88	22	Laurel Street - Glenwood Avenue	W	2,862	9	0.25%	2	25	54.1
54	14	Laurel Street - Willow Road (SR 114)	E	2,879	19	0.75%	4	25	54.7
89	23	Laurel Street - Oak Grove Avenue	N	2,923	16	0.50%	3	25	54.5
105	27	Laurel Street - Burgess Drive	N	2,969	21	0.75%	4	25	54.8
93	24	Laurel Street - Ravenswood Avenue	N	2,979	11	0.25%	2	25	54.2
101	26	Laurel Street - Proj Dwy S	N	3,149	22	0.75%	4	25	55.1
56	14	Laurel Street - Willow Road (SR 114)	W	3,163	8	0.25%	2	25	54.4
47	12	Gilbert Avenue - Willow Road (SR 114)	S	3,179	3	0.00%	1	25	54.1
143	36	University Drive - Valparaiso Avenue	S	3,212	6	0.25%	2	25	54.5
9	3	Scott Drive - Marsh Road	N	3,225	28	0.75%	4	25	55.2
91	23	Laurel Street - Oak Grove Avenue	S	3,287	9	0.25%	2	25	54.6
97	25	Laurel Street - Proj Dwy N	N	3,289	23	0.75%	4	25	55.2
114	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	E	3,391	5	0.25%	2	30	56.7
82	21	Laurel Street - Encinal Avenue	E	3,514	50	1.50%	7	25	56.3
90	23	Laurel Street - Oak Grove Avenue	E	3,575	3	0.00%	1	25	54.6
19	5	Bay Road - Marsh Road	S	3,833	13	0.25%	2	30	57.2
136	34	El Camino Real - Middle Avenue	W	3,965	3	0.00%	1	25	55.0

147	37	University Drive - Santa Cruz Avenue	S	4,132	19	0.50%	3	25	55.9
92	23	Laurel Street - Oak Grove Avenue	W	4,138	14	0.25%	2	25	55.5
70	18	Proj Dwy B1 East - Ravenswood Avenue	E	4,206	38	1.00%	5	30	58.2
107	27	Laurel Street - Burgess Drive	S	4,237	41	1.00%	5	25	56.6
23	6	Bay Road - Ringwood Avenue	S	4,287	9	0.25%	2	30	57.6
24	6	Bay Road - Ringwood Avenue	W	4,310	22	0.50%	3	30	57.9
74	19	Proj Dwy B1 West - Ravenswood Avenue	E	4,418	40	1.00%	5	30	58.4
84	21	Laurel Street - Encinal Avenue	W	4,503	32	0.75%	4	25	56.5
146	37	University Drive - Santa Cruz Avenue	E	4,566	10	0.25%	2	25	55.9
120	30	El Camino Real - Oak Grove Avenue	W	4,577	8	0.25%	2	25	55.9
110	28	El Camino Real - Encinal Avenue	E	4,841	25	0.50%	3	25	56.5
118	30	El Camino Real - Oak Grove Avenue	E	4,843	23	0.50%	3	25	56.5
95	24	Laurel Street - Ravenswood Avenue	S	4,848	46	1.00%	5	25	57.1
33	9	Bay Road - Willow Road (SR 114)	N	4,868	81	1.75%	8	30	59.4
103	26	Laurel Street - Proj Dwy S	S	4,970	47	1.00%	5	25	57.2
99	25	Laurel Street - Proj Dwy N	S	4,971	47	1.00%	5	25	57.2
78	20	Proj Dwy/Pine Street - Ravenswood Avenue	E	4,972	44	1.00%	5	30	58.9
94	24	Laurel Street - Ravenswood Avenue	E	5,283	47	1.00%	5	30	59.1
150	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	E	5,288	31	0.50%	3	25	56.9
21	6	Bay Road - Ringwood Avenue	N	5,304	41	0.75%	4	30	59.0
57	15	Middlefield Road - Ravenswood Avenue	N	5,314	41	0.75%	4	35	60.7
62	16	Middlefield Road - D Street/Ringwood Avenue	E	5,377	78	1.50%	7	25	58.1
80	20	Proj Dwy/Pine Street - Ravenswood Avenue	W	5,401	30	0.50%	3	30	58.8
76	19	Proj Dwy B1 West - Ravenswood Avenue	W	5,412	31	0.50%	3	30	58.8
60	15	Middlefield Road - Ravenswood Avenue	W	5,425	31	0.50%	3	-	57.3
128	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	W	5,440	26	0.50%	3	30	58.8
142	36	University Drive - Valparaiso Avenue	E	5,448	8	0.25%	2	30	58.6
72	18	Proj Dwy B1 East - Ravenswood Avenue	W	5,467	31	0.50%	3	30	58.9
116	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	W	5,741	7	0.00%	1	25	56.5
52	13	Middlefield Road - Willow Road (SR 114)	W	5,808	25	0.50%	3	25	57.3
96	24	Laurel Street - Ravenswood Avenue	W	5,858	42	0.75%	4	30	59.4
151	38	Orange Avenue/Santa Cruz Avenue - Avy Avenue/San	S	6,158	31	0.50%	3	30	59.4
179	45	Newbridge Street - Willow Road (SR 114)	S	6,299	51	0.75%	4	25	57.9
144	36	University Drive - Valparaiso Avenue	W	6,682	9	0.25%	2	30	59.5
13	4	Florence Street/Bohannon Drive - Marsh Road	N	7,068	31	0.50%	3	25	58.1
158	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	E	7,245	39	0.50%	3	35	61.9
175	44	O'Brien Drive - Willow Road (SR 114)	S	7,380	99	1.25%	6	30	60.8
148	37	University Drive - Santa Cruz Avenue	W	7,407	30	0.50%	3	25	58.3
51	13	Middlefield Road - Willow Road (SR 114)	S	7,769	111	1.50%	7	30	61.2
177	45	Newbridge Street - Willow Road (SR 114)	N	7,800	173	2.25%	10	25	60.4
126	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	E	7,819	75	1.00%	5	25	59.1
67	17	Middlefield Road - Seminary Drive	S	8,041	53	0.75%	4	35	62.5
65	17	Middlefield Road - Seminary Drive	N	8,415	86	1.00%	5	35	62.8
46	12	Gilbert Avenue - Willow Road (SR 114)	E	8,422	131	1.50%	7	25	60.0
20	5	Bay Road - Marsh Road	W	8,801	74	0.75%	4	30	61.1
63	16	Middlefield Road - D Street/Ringwood Avenue	S	8,804	46	0.50%	3	35	62.7
48	12	Gilbert Avenue - Willow Road (SR 114)	W	9,151	130	1.50%	7	25	60.3
49	13	Middlefield Road - Willow Road (SR 114)	N	9,154	144	1.50%	7	30	61.9
61	16	Middlefield Road - D Street/Ringwood Avenue	N	9,355	58	0.75%	4	35	63.1
50	13	Middlefield Road - Willow Road (SR 114)	E	9,374	158	1.75%	8	25	60.7
44	11	Coleman Avenue - Willow Road (SR 114)	W	9,691	144	1.50%	7	25	60.6
42	11	Coleman Avenue - Willow Road (SR 114)	E	9,706	148	1.50%	7	25	60.6
174	44	O'Brien Drive - Willow Road (SR 114)	E	9,847	197	2.00%	9	40	65.6
153	39	Santa Cruz Avenue - Sand Hill Road	N	9,939	47	0.50%	3	25	59.5
38	10	Durham Street - Willow Road (SR 114)	E	10,048	157	1.50%	7	25	60.7
59	15	Middlefield Road - Ravenswood Avenue	S	10,196	64	0.75%	4	35	63.5
40	10	Durham Street - Willow Road (SR 114)	W	10,654	139	1.25%	6	25	60.7
166	42	Hamilton Avenue - Willow Road (SR 114)	E	10,712	279	2.50%	11	40	66.2
170	43	Ivy Drive - Willow Road (SR 114)	E	11,313	262	2.25%	10	40	66.3
157	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	N	11,326	45	0.50%	3	35	63.8
159	40	Santa Cruz Avenue/Alpine Road - Junipero Serra Boul	S	11,772	57	0.50%	3	35	64.0
154	39	Santa Cruz Avenue - Sand Hill Road	E	11,800	206	1.75%	8	40	66.3
27	7	US 101 NB Ramps - Willow Road (SR 114)	S	11,952	187	1.50%	7	25	61.5
16	4	Florence Street/Bohannon Drive - Marsh Road	W	12,361	80	0.75%	4	30	62.6
29	8	US 101 SB Ramps - Willow Road (SR 114)	N	12,661	93	0.75%	4	25	60.9
156	39	Santa Cruz Avenue - Sand Hill Road	W	12,709	173	1.25%	6	40	66.4
155	39	Santa Cruz Avenue - Sand Hill Road	S	13,150	60	0.50%	3	35	64.4
164	41	Bayfront Expressway - Willow Road (SR 114)	W	13,634	290	2.25%	10	40	67.1
12	3	Scott Drive - Marsh Road	W	13,818	98	0.75%	4	30	63.0
117	30	El Camino Real - Oak Grove Avenue	N	14,113	163	1.25%	6	35	65.2
184	46	Bayfront Expressway - University Avenue	W	14,135	508	3.50%	15	-	67.4
168	42	Hamilton Avenue - Willow Road (SR 114)	W	14,228	275	2.00%	9	40	67.2
119	30	El Camino Real - Oak Grove Avenue	S	14,424	92	0.75%	4	35	65.0
18	5	Bay Road - Marsh Road	E	14,536	138	1.00%	5	30	63.5
115	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	S	14,588	95	0.75%	4	35	65.0
121	31	El Camino Real - Santa Cruz Avenue	N	14,686	169	1.25%	6	35	65.4

123	31	El Camino Real - Santa Cruz Avenue	S	14,690	93	0.75%	4	35	65.1
172	43	Ivy Drive - Willow Road (SR 114)	W	15,284	261	1.75%	8	40	67.4
125	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	N	15,445	172	1.00%	5	35	65.4
36	9	Bay Road - Willow Road (SR 114)	W	15,522	214	1.50%	7	25	62.6
113	29	El Camino Real - Valparaiso Avenue/Glenwood Avenu	N	15,615	161	1.00%	5	35	65.5
111	28	El Camino Real - Encinal Avenue	S	15,635	94	0.50%	3	35	65.2
14	4	Florence Street/Bohannon Drive - Marsh Road	E	15,793	161	1.00%	5	30	63.8
3	1	US 101 NB Off-Ramp - Marsh Road	S	15,834	247	1.50%	7	25	62.7
178	45	Newbridge Street - Willow Road (SR 114)	E	16,004	317	2.00%	9	40	67.7
133	34	El Camino Real - Middle Avenue	N	17,391	214	1.25%	6	35	66.1
34	9	Bay Road - Willow Road (SR 114)	E	17,614	287	1.75%	8	25	63.4
131	33	El Camino Real - Roble Avenue	S	17,626	107	0.50%	3	35	65.7
135	34	El Camino Real - Middle Avenue	S	18,613	104	0.50%	3	35	65.9
109	28	El Camino Real - Encinal Avenue	N	18,644	176	1.00%	5	35	66.3
32	8	US 101 SB Ramps - Willow Road (SR 114)	W	18,770	276	1.50%	7	40	68.2
129	33	El Camino Real - Roble Avenue	N	18,785	227	1.25%	6	35	66.4
137	35	El Camino Real - Cambridge Avenue	N	19,029	216	1.25%	6	35	66.5
127	32	El Camino Real - Ravenswood Avenue/Menlo Avenue	S	19,935	120	0.50%	3	35	66.2
8	2	US 101 SB Off-Ramp - Marsh Road	W	20,053	157	0.75%	4	35	66.4
6	2	US 101 SB Off-Ramp - Marsh Road	E	20,606	311	1.50%	7	35	67.0
139	35	El Camino Real - Cambridge Avenue	S	20,662	106	0.50%	3	35	66.4
10	3	Scott Drive - Marsh Road	E	20,729	205	1.00%	5	30	65.0
176	44	O'Brien Drive - Willow Road (SR 114)	W	21,169	343	1.50%	7	40	68.7
30	8	US 101 SB Ramps - Willow Road (SR 114)	E	22,126	448	2.00%	9	40	69.1
28	7	US 101 NB Ramps - Willow Road (SR 114)	W	22,884	249	1.00%	5	40	68.8
161	41	Bayfront Expressway - Willow Road (SR 114)	N	23,419	419	1.75%	8	45	70.7
5	2	US 101 SB Off-Ramp - Marsh Road	N	23,436	213	1.00%	5	25	63.8
26	7	US 101 NB Ramps - Willow Road (SR 114)	E	24,390	472	2.00%	9	40	69.5
180	45	Newbridge Street - Willow Road (SR 114)	W	25,384	341	1.25%	6	40	69.3
4	1	US 101 NB Off-Ramp - Marsh Road	W	27,807	268	1.00%	5	35	68.0
163	41	Bayfront Expressway - Willow Road (SR 114)	S	28,125	752	2.75%	12	45	71.8
181	46	Bayfront Expressway - University Avenue	N	29,368	675	2.25%	10	45	71.9
2	1	US 101 NB Off-Ramp - Marsh Road	E	33,731	462	1.25%	6	35	69.0
183	46	Bayfront Expressway - University Avenue	S	37,440	1,262	3.25%	14	45	73.3

Construction Noise Calculation Sheets - Proposed Project

Summary Table - Phase 1	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours
3 Loudest Pieces @ 50 Feet							
L_{max}	93	89	89	89	93	90	83
L_{eq}	87	85	85	85	86	83	78
L_{max} @ distances (feet):							
15	104	99	100	99	104	101	94
25	99	95	95	95	99	96	89
50	93	89	89	89	93	90	83
60	92	87	88	87	92	89	82
75	90	85	86	85	90	87	80
100	87	83	83	83	87	84	77
120	86	81	82	81	86	83	76
170	83	78	79	78	83	80	72
200	81	77	77	77	81	78	71
300	78	73	74	73	78	75	68
450	74	70	70	70	74	71	64
500	73	69	69	69	73	70	63
600	72	67	68	67	72	69	62
700	70	66	66	66	70	67	60
800	69	65	65	65	69	66	59
900	68	64	64	64	68	65	58
1000	67	63	63	63	67	64	57
L_{eq} @ distances (feet):							
15	97	95	96	95	97	94	88
25	93	91	91	91	92	89	84
50	87	85	85	85	86	83	78
60	85	83	84	83	85	82	76
75	83	81	82	81	83	80	74
100	81	79	79	79	80	77	72
120	79	77	78	77	79	76	70
170	76	74	75	74	76	73	67
200	75	73	73	73	74	71	66
300	71	69	70	69	71	68	62
450	68	66	66	66	67	64	58
500	67	65	65	65	66	63	58
600	65	63	64	63	65	62	56
700	64	62	62	62	63	60	55
800	63	61	61	61	62	59	53
900	62	60	60	60	61	58	52
1000	61	59	59	59	60	57	52

Summary Table - Phase 2	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours
3 Loudest Pieces @ 50 Feet							
L_{max}	93	89	89	89	93	90	83
L_{eq}	87	85	85	85	86	83	78
L_{max} @ distances (feet):							
25	97	0	0	95	99	96	89
50	91	0	0	89	93	90	83
100	85	0	0	83	87	84	77
200	79	0	0	77	81	78	71
250	77	0	0	75	79	76	69
400	73	0	0	71	75	72	65
500	71	0	0	69	73	70	63
575	70	0	0	68	72	69	62
600	70	0	0	67	72	69	62
700	68	0	0	66	70	67	60
800	67	0	0	65	69	66	59
900	66	0	0	64	68	65	58
1000	65	0	0	63	67	64	57
1100	64	0	0	62	66	63	56
1200	63	0	0	61	66	63	56
1300	63	0	0	60	65	62	55
1400	62	0	0	60	64	61	54
L_{eq} @ distances (feet):							
25	91	0	0	91	92	89	84
50	85	0	0	85	86	83	78
100	79	0	0	79	80	77	72
200	73	0	0	73	74	71	66
250	71	0	0	71	72	69	64
400	67	0	0	67	68	65	59
500	65	0	0	65	66	63	58
575	64	0	0	64	65	62	56
600	63	0	0	63	65	62	56
700	62	0	0	62	63	60	55
800	61	0	0	61	62	59	53
900	60	0	0	60	61	58	52
1000	59	0	0	59	60	57	52
1100	58	0	0	58	59	56	51
1200	57	0	0	57	59	56	50
1300	57	0	0	56	58	55	49
1400	56	0	0	56	57	54	49

Summary Table - Phase 3		Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours
3 Loudest Pieces @ 50 Feet								
L_{max}		93	89	89	89	93	90	83
L_{eq}		87	85	85	85	86	83	78
L_{max} @ distances (feet):								
	25	97	0	0	95	97	96	89
	50	91	0	0	89	91	90	83
	100	85	0	0	83	85	84	77
	200	79	0	0	77	79	78	71
	300	76	0	0	73	75	75	68
	450	72	0	0	70	72	71	64
	500	71	0	0	69	71	70	63
	600	70	0	0	67	69	69	62
	700	68	0	0	66	68	67	60
	800	67	0	0	65	67	66	59
	900	66	0	0	64	66	65	58
	1000	65	0	0	63	65	64	57
	1200	63	0	0	61	63	63	56
	1400	62	0	0	60	62	61	54
	1600	61	0	0	59	61	60	53
	1800	60	0	0	58	59	59	52
	2000	59	0	0	57	59	58	51
L_{eq} @ distances (feet):								
	25	91	0	0	91	90	89	84
	50	85	0	0	85	84	83	78
	100	79	0	0	79	78	77	72
	200	73	0	0	73	72	71	66
	300	69	0	0	69	68	68	62
	450	66	0	0	66	65	64	58
	500	65	0	0	65	64	63	58
	600	63	0	0	63	62	62	56
	700	62	0	0	62	61	60	55
	800	61	0	0	61	60	59	53
	900	60	0	0	60	59	58	52
	1000	59	0	0	59	58	57	52
	1200	57	0	0	57	56	56	50
	1400	56	0	0	56	55	54	49
	1600	55	0	0	55	54	53	47
	1800	54	0	0	54	53	52	46
	2000	53	0	0	53	52	51	46

Off-Road Equipment Inventory

Sub Phase No.	Quantity - Phase 1	Quantity - Phase 2	Quantity - Phase 3	Description	HP	Usage Factor	Hours/day	Total Work Days	Sub-Phase Number	FHWA Equipment Name	Acoustical Use Factor	Lmax at 50 feet (dBA)	Leq at 50 feet (dBA)	Lmax Rank	Leq Rank	Top 3 Loudest Equipment Modeling Rank			Impact Equipment?
																Phase 1	Phase 2	Phase 3	
1				**Demolition**				**135**											
	2	1	1	Concrete/Industrial Saws	33	5%	8	6.75	1	Concrete Saw	20%	90	83	1	1	1	1	1	No
	3	1	1	Excavators	36	90%	8	121.5	1	Excavator	40%	81	77	3	3		3	3	No
	2	1	1	Rubber Tired Dozers	367	90%	8	121.5	1	Dozer	40%	82	78	2	2	2	2	2	No
2		-	-	**Site Preparation**															
	2	-	-	Rubber Tired Dozers	367	55%	8	0	2	Dozer	40%	82	78	2	2		n/a	n/a	No
	6	-	-	Tractors/Loaders/Backhoes	84	70%	8	0	2	Tractor	40%	84	80	1	1	1	n/a	n/a	No
3				**Grading**				**100**											
	2	-	-	Excavators	36	70%	8	70	3	Excavator	40%	81	77	5	5		n/a	n/a	No
	1	-	-	Graders	148	75%	8	75	3	Grader	40%	85	81	1	1	1	n/a	n/a	No
	1	-	-	Rubber Tired Dozers	367	25%	8	25	3	Dozer	40%	82	78	4	4		n/a	n/a	No
	2	-	-	Scrapers	423	45%	8	45	3	Scraper	40%	84	80	2	2		n/a	n/a	No
	2	-	-	Tractors/Loaders/Backhoes	84	60%	8	60	3	Tractor	40%	84	80	2	2	2	n/a	n/a	No
4				**Building Construction**				**406**											
	3	3	1	Cranes	367	95%	7	385.7	4	Crane	16%	81	73	4	5				No
	3	4	2	Forklifts	82	35%	8	142.1	4	Tractor	40%	84	80	1	1				No
	4	5	2	Generator Sets	14	45%	8	182.7	4	Generator	50%	81	78	4	3				No
	3	5	3	Tractors/Loaders/Backhoes	84	50%	7	203	4	Tractor	40%	84	80	1	1	1	1	1	No
	3	-		Drill Rigs	221	15%	8	57.855	4	Auger Drill Rig	20%	84	77	1	4				No
	4	5	2	Welders	46	45%	8	182.7	4	Welder / Torch	40%	74	70	6	6				No
5				**Paving**				**199**											
	2	2	1	Pavers	81	85%	8	169.15	5	Paver	50%	77	74	3	2			2	No
	2	2	1	Paving Equipment	89	85%	8	169.15	5	Pavement Scarafier	20%	90	83	1	1	1	1	1	No
	2	2	1	Rollers	36	20%	8	39.8	5	Roller	20%	80	73	2	3	2	2	3	No
6				**Architectural Coatings**				**48**											
	1	1	1	Industrial Saws	81	65%	6	31.2	6	Concrete Saw	20%	90	83	1	1	1	1	1	No
	1	3	2	Aerial Lifts	62	85%	6	40.8	6	Man Lift	20%	75	68	2	2	2	2	2	No
7				**Concrete Pours**				**48**											
	1	1	1	Concrete Truck				0	7	Concrete Mixer Truck	40%	79	75	2	1	1	1	1	No
	1	1	1	Concrete Pump				0	7	Concrete Pump Truck	20%	81	74	1	2	2	2	2	No

1

Construction Noise

Sub-Phase: **Demolition**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 93

All Sources Combined - Leq sound level (dBA) at 50 feet = 87

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	97
25	6	0.0	99	93
50	0	0.0	93	87
60	-2	0.0	92	85
75	-4	0.0	90	83
100	-6	0.0	87	81
120	-8	0.0	86	79
170	-11	0.0	83	76
200	-12	0.0	81	75
300	-16	0.0	78	71
450	-19	0.0	74	68
500	-20	0.0	73	67
600	-22	0.0	72	65
700	-23	0.0	70	64
800	-24	0.0	69	63
900	-25	0.0	68	62
1000	-26	0.0	67	61

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0
3	Excavators	81	40%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	91
50	0	0.0	91	85
100	-6	0.0	85	79
200	-12	0.0	79	73
250	-14	0.0	77	71
400	-18	0.0	73	67
500	-20	0.0	71	65
575	-21	0.0	70	64
600	-22	0.0	70	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1100	-27	0.0	64	58
1200	-28	0.0	63	57
1300	-28	0.0	63	57
1400	-29	0.0	62	56

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0
3	Excavators	81	40%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	91
50	0	0.0	91	85
100	-6	0.0	85	79
200	-12	0.0	79	73
300	-16	0.0	76	69
450	-19	0.0	72	66
500	-20	0.0	71	65
600	-22	0.0	70	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1200	-28	0.0	63	57
1400	-29	0.0	62	56
1600	-30	0.0	61	55
1800	-31	0.0	60	54
2000	-32	0.0	59	53

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Site Preparation**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 89

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	99	95
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	87	83
75	-4	0.0	85	81
100	-6	0.0	83	79
120	-8	0.0	81	77
170	-11	0.0	78	74
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Grading**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Graders	85	40%	81.0
2	Tractors/Loaders/Backhoes	84	40%	80.0
2	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	100	96
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	88	84
75	-4	0.0	86	82
100	-6	0.0	83	79
120	-8	0.0	82	78
170	-11	0.0	79	75
200	-12	0.0	77	73
300	-16	0.0	74	70
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	68	64
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Building Construction**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 89

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	99	95
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	87	83
75	-4	0.0	85	81
100	-6	0.0	83	79
120	-8	0.0	81	77
170	-11	0.0	78	74
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	95	91
50	0	0.0	89	85
100	-6	0.0	83	79
200	-12	0.0	77	73
250	-14	0.0	75	71
400	-18	0.0	71	67
500	-20	0.0	69	65
575	-21	0.0	68	64
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59
1100	-27	0.0	62	58
1200	-28	0.0	61	57
1300	-28	0.0	60	56
1400	-29	0.0	60	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	95	91
50	0	0.0	89	85
100	-6	0.0	83	79
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59
1200	-28	0.0	61	57
1400	-29	0.0	60	56
1600	-30	0.0	59	55
1800	-31	0.0	58	54
2000	-32	0.0	57	53

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Paving**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
1	Paving Equipment	90	20%	83.0
2	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	93
All Sources Combined - Leq sound level (dBA) at 50 feet =	86

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	97
25	6	0.0	99	92
50	0	0.0	93	86
60	-2	0.0	92	85
75	-4	0.0	90	83
100	-6	0.0	87	80
120	-8	0.0	86	79
170	-11	0.0	83	76
200	-12	0.0	81	74
300	-16	0.0	78	71
450	-19	0.0	74	67
500	-20	0.0	73	66
600	-22	0.0	72	65
700	-23	0.0	70	63
800	-24	0.0	69	62
900	-25	0.0	68	61
1000	-26	0.0	67	60

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
1	Paving Equipment	90	20%	83.0
2	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 93

All Sources Combined - Leq sound level (dBA) at 50 feet = 86

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	99	92
50	0	0.0	93	86
100	-6	0.0	87	80
200	-12	0.0	81	74
250	-14	0.0	79	72
400	-18	0.0	75	68
500	-20	0.0	73	66
575	-21	0.0	72	65
600	-22	0.0	72	65
700	-23	0.0	70	63
800	-24	0.0	69	62
900	-25	0.0	68	61
1000	-26	0.0	67	60
1100	-27	0.0	66	59
1200	-28	0.0	66	59
1300	-28	0.0	65	58
1400	-29	0.0	64	57

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
2	Pavers	77	50%	74.0
3	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 84

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	90
50	0	0.0	91	84
100	-6	0.0	85	78
200	-12	0.0	79	72
300	-16	0.0	75	68
450	-19	0.0	72	65
500	-20	0.0	71	64
600	-22	0.0	69	62
700	-23	0.0	68	61
800	-24	0.0	67	60
900	-25	0.0	66	59
1000	-26	0.0	65	58
1200	-28	0.0	63	56
1400	-29	0.0	62	55
1600	-30	0.0	61	54
1800	-31	0.0	59	53
2000	-32	0.0	59	52

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Architectural Coatings**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 90

All Sources Combined - Leq sound level (dBA) at 50 feet = 83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	101	94
25	6	0.0	96	89
50	0	0.0	90	83
60	-2	0.0	89	82
75	-4	0.0	87	80
100	-6	0.0	84	77
120	-8	0.0	83	76
170	-11	0.0	80	73
200	-12	0.0	78	71
300	-16	0.0	75	68
450	-19	0.0	71	64
500	-20	0.0	70	63
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 90

All Sources Combined - Leq sound level (dBA) at 50 feet = 83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	96	89
50	0	0.0	90	83
100	-6	0.0	84	77
200	-12	0.0	78	71
250	-14	0.0	76	69
400	-18	0.0	72	65
500	-20	0.0	70	63
575	-21	0.0	69	62
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57
1100	-27	0.0	63	56
1200	-28	0.0	63	56
1300	-28	0.0	62	55
1400	-29	0.0	61	54

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	90
All Sources Combined - Leq sound level (dBA) at 50 feet =	83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	96	89
50	0	0.0	90	83
100	-6	0.0	84	77
200	-12	0.0	78	71
300	-16	0.0	75	68
450	-19	0.0	71	64
500	-20	0.0	70	63
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57
1200	-28	0.0	63	56
1400	-29	0.0	61	54
1600	-30	0.0	60	53
1800	-31	0.0	59	52
2000	-32	0.0	58	51

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Concrete Pours**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:	
All Sources Combined - Lmax sound level (dBA) at 50 feet =	83
All Sources Combined - Leq sound level (dBA) at 50 feet =	78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	94	88
25	6	0.0	89	84
50	0	0.0	83	78
60	-2	0.0	82	76
75	-4	0.0	80	74
100	-6	0.0	77	72
120	-8	0.0	76	70
170	-11	0.0	72	67
200	-12	0.0	71	66
300	-16	0.0	68	62
450	-19	0.0	64	58
500	-20	0.0	63	58
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 83

All Sources Combined - Leq sound level (dBA) at 50 feet = 78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	89	84
50	0	0.0	83	78
100	-6	0.0	77	72
200	-12	0.0	71	66
250	-14	0.0	69	64
400	-18	0.0	65	59
500	-20	0.0	63	58
575	-21	0.0	62	56
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52
1100	-27	0.0	56	51
1200	-28	0.0	56	50
1300	-28	0.0	55	49
1400	-29	0.0	54	49

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 83

All Sources Combined - Leq sound level (dBA) at 50 feet = 78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	89	84
50	0	0.0	83	78
100	-6	0.0	77	72
200	-12	0.0	71	66
300	-16	0.0	68	62
450	-19	0.0	64	58
500	-20	0.0	63	58
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52
1200	-28	0.0	56	50
1400	-29	0.0	54	49
1600	-30	0.0	53	47
1800	-31	0.0	52	46
2000	-32	0.0	51	46

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise Calculation Sheets - Project Variant

Summary Table - Phase 1		Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours	Well	Well (night)
3 Loudest Pieces @ 50 Feet										
L_{max}		93	89	89	89	93	90	83	87	86
L_{eq}		87	85	85	85	86	83	78	82	81
L_{max} @ distances (feet):										
	15	104	99	100	99	104	101	94	97	97
	25	99	95	95	95	99	96	89	93	92
	50	93	89	89	89	93	90	83	87	86
	60	92	87	88	87	92	89	82	85	85
	75	90	85	86	85	90	87	80	83	83
	100	87	83	83	83	87	84	77	81	80
	120	86	81	82	81	86	83	76	79	79
	170	83	78	79	78	83	80	72	76	76
	200	81	77	77	77	81	78	71	75	74
	300	78	73	74	73	78	75	68	71	71
	450	74	70	70	70	74	71	64	68	68
	500	73	69	69	69	73	70	63	67	66
	600	72	67	68	67	72	69	62	65	65
	700	70	66	66	66	70	67	60	64	64
	800	69	65	65	65	69	66	59	63	62
	900	68	64	64	64	68	65	58	62	61
	1000	67	63	63	63	67	64	57	61	60
L_{eq} @ distances (feet):										
	15	97	95	96	95	97	94	88	93	92
	25	93	91	91	91	92	89	84	88	87
	50	87	85	85	85	86	83	78	82	81
	60	85	83	84	83	85	82	76	81	80
	75	83	81	82	81	83	80	74	79	78
	100	81	79	79	79	80	77	72	76	75
	120	79	77	78	77	79	76	70	75	74
	170	76	74	75	74	76	73	67	72	71
	200	75	73	73	73	74	71	66	70	69
	300	71	69	70	69	71	68	62	67	66
	450	68	66	66	66	67	64	58	63	63
	500	67	65	65	65	66	63	58	62	61
	600	65	63	64	63	65	62	56	61	60
	700	64	62	62	62	63	60	55	59	58
	800	63	61	61	61	62	59	53	58	57
	900	62	60	60	60	61	58	52	57	56
	1000	61	59	59	59	60	57	52	56	55

Summary Table - Phase 2	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours	Well	Well (night)
3 Loudest Pieces @ 50 Feet									
L_{max}	93	89	89	89	93	90	83		
L_{eq}	87	85	85	85	86	83	78		
L_{max} @ distances (feet):									
25	97	0	0	95	99	96	89		
50	91	0	0	89	93	90	83		
100	85	0	0	83	87	84	77		
200	79	0	0	77	81	78	71		
250	77	0	0	75	79	76	69		
400	73	0	0	71	75	72	65		
500	71	0	0	69	73	70	63		
575	70	0	0	68	72	69	62		
600	70	0	0	67	72	69	62		
700	68	0	0	66	70	67	60		
800	67	0	0	65	69	66	59		
900	66	0	0	64	68	65	58		
1000	65	0	0	63	67	64	57		
1100	64	0	0	62	66	63	56		
1200	63	0	0	61	66	63	56		
1300	63	0	0	60	65	62	55		
1400	62	0	0	60	64	61	54		
L_{eq} @ distances (feet):									
25	91	0	0	91	92	89	84		
50	85	0	0	85	86	83	78		
100	79	0	0	79	80	77	72		
200	73	0	0	73	74	71	66		
250	71	0	0	71	72	69	64		
400	67	0	0	67	68	65	59		
500	65	0	0	65	66	63	58		
575	64	0	0	64	65	62	56		
600	63	0	0	63	65	62	56		
700	62	0	0	62	63	60	55		
800	61	0	0	61	62	59	53		
900	60	0	0	60	61	58	52		
1000	59	0	0	59	60	57	52		
1100	58	0	0	58	59	56	51		
1200	57	0	0	57	59	56	50		
1300	57	0	0	56	58	55	49		
1400	56	0	0	56	57	54	49		

Summary Table - Phase 3		Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coatings	Concrete Pours	Well	Well (night)
3 Loudest Pieces @ 50 Feet										
L_{max}		93	89	89	89	93	90	83		
L_{eq}		87	85	85	85	86	83	78		
L_{max} @ distances (feet):										
	25	97	0	0	95	97	96	89		
	50	91	0	0	89	91	90	83		
	100	85	0	0	83	85	84	77		
	200	79	0	0	77	79	78	71		
	300	76	0	0	73	75	75	68		
	450	72	0	0	70	72	71	64		
	500	71	0	0	69	71	70	63		
	600	70	0	0	67	69	69	62		
	700	68	0	0	66	68	67	60		
	800	67	0	0	65	67	66	59		
	900	66	0	0	64	66	65	58		
	1000	65	0	0	63	65	64	57		
	1200	63	0	0	61	63	63	56		
	1400	62	0	0	60	62	61	54		
	1600	61	0	0	59	61	60	53		
	1800	60	0	0	58	59	59	52		
	2000	59	0	0	57	59	58	51		
L_{eq} @ distances (feet):										
	25	91	0	0	91	90	89	84		
	50	85	0	0	85	84	83	78		
	100	79	0	0	79	78	77	72		
	200	73	0	0	73	72	71	66		
	300	69	0	0	69	68	68	62		
	450	66	0	0	66	65	64	58		
	500	65	0	0	65	64	63	58		
	600	63	0	0	63	62	62	56		
	700	62	0	0	62	61	60	55		
	800	61	0	0	61	60	59	53		
	900	60	0	0	60	59	58	52		
	1000	59	0	0	59	58	57	52		
	1200	57	0	0	57	56	56	50		
	1400	56	0	0	56	55	54	49		
	1600	55	0	0	55	54	53	47		
	1800	54	0	0	54	53	52	46		
	2000	53	0	0	53	52	51	46		

Off-Road Equipment Inventory

Sub Phase No.	Quantity - Phase 1	Quantity - Phase 2	Quantity - Phase 3	Description	HP	Usage Factor	Hours/day	Total Work Days	Sub-Phase Number	FHWA Equipment Name	Acoustical Use Factor	Lmax at 50 feet (dBA)	Leq at 50 feet (dBA)	Lmax Rank	Leq Rank	Top 3 Loudest Equipment Modeling Rank			Impact Equipment?
1				**Demolition**				**178**								**Phase 1**	**Phase 2**	**Phase 3**	
	2	1	1	Concrete/Industrial Saws	33	5%	8	8.9	1	Concrete Saw	20%	90	83	1	1	1	1	1	No
	3	1	1	Excavators	36	90%	8	160.2	1	Excavator	40%	81	77	3	3		3	3	No
	2	1	1	Rubber Tired Dozers	367	90%	8	160.2	1	Dozer	40%	82	78	2	2	2	2	2	No
2		-	-	**Site Preparation**				**135**											
	2	-	-	Rubber Tired Dozers	367	55%	8	74.25	2	Dozer	40%	82	78	2	2		n/a	n/a	No
	6	-	-	Tractors/Loaders/Backhoes	84	70%	8	94.5	2	Tractor	40%	84	80	1	1	1	n/a	n/a	No
3				**Grading**				**100**											
	2	-	-	Excavators	36	70%	8	70	3	Excavator	40%	81	77	5	5		n/a	n/a	No
	1	-	-	Graders	148	75%	8	75	3	Grader	40%	85	81	1	1	1	n/a	n/a	No
	1	-	-	Rubber Tired Dozers	367	25%	8	25	3	Dozer	40%	82	78	4	4		n/a	n/a	No
	2	-	-	Scrapers	423	45%	8	45	3	Scraper	40%	84	80	2	2		n/a	n/a	No
	2	-	-	Tractors/Loaders/Backhoes	84	60%	8	60	3	Tractor	40%	84	80	2	2	2	n/a	n/a	No
4				**Building Construction**				**419**											
	5	3	1	Cranes	367	95%	7	398.05	4	Crane	16%	81	73	4	5				No
	4	4	2	Forklifts	82	35%	8	146.65	4	Tractor	40%	84	80	1	1				No
	5	5	2	Generator Sets	14	45%	8	188.55	4	Generator	50%	81	78	4	3				No
	4	5	3	Tractors/Loaders/Backhoes	84	50%	7	209.5	4	Tractor	40%	84	80	1	1	1	1	1	No
	3	-		Drill Rigs	221	15%	8	59.7075	4	Auger Drill Rig	20%	84	77	1	4				No
	4	5	2	Welders	46	45%	8	188.55	4	Welder / Torch	40%	74	70	6	6				No
5				**Paving**				**199**											
	2	2	1	Pavers	81	85%	8	169.15	5	Paver	50%	77	74	3	2			2	No
	2	2	1	Paving Equipment	89	85%	8	169.15	5	Pavement Scarafier	20%	90	83	1	1	1	1	1	No
	2	2	1	Rollers	36	20%	8	39.8	5	Roller	20%	80	73	2	3	2	2	3	No
6				**Architectural Coatings**				**48**											
	1	1	1	Industrial Saws	81	65%	6	31.2	6	Concrete Saw	20%	90	83	1	1	1	1	1	No
	4	3	2	Aerial Lifts	62	85%	6	40.8	6	Man Lift	20%	75	68	2	2	2	2	2	No
7				**Concrete Pours**				**48**											
	1	1	1	Concrete Truck				0	7	Concrete Mixer Truc	40%	79	75	2	1	1	1	1	No
	1	1	1	Concrete Pump				0	7	Concrete Pump Truc	20%	81	74	1	2	2	2	2	No
8				**Well**															
	1			Generator Sets				0	8	Generator	50%	81	78	3	1	1			No
	1			Air Compressor				0	8	Compressor (Air)	40%	78	74	8	6				No
	1			Cranes				0	8	Crane	16%	81	73	3	7				No
	1			Excavators				0	8	Excavator	40%	81	77	3	2	2			No
	1			Dump truck				0	8	Dump Truck	40%	76	72	9	9				No
	1			Concrete Mixer				0	8	Concrete Mixer Truc	40%	79	75	7	5				No
	1			Wacker compactor				0	8	Compactor (ground)	20%	83	76	2	4				No
	1			Vibratory Roller				0	8	Roller	20%	80	73	6	8				No
	1			Drill Rigs				0	8	Auger Drill Rig	20%	84	77	1	3	3			No
9				**Well (night)**															
	1			Generator Sets				0	9	Generator	50%	81	78	2	1	1			No
	1			Air Compressor				0	9	Compressor (Air)	40%	78	74	3	3	3			No
	1			Drill rig and truck				0	9	Auger Drill Rig	20%	84	77	1	2	2			No

Construction Noise

Sub-Phase: **Demolition**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	93
All Sources Combined - Leq sound level (dBA) at 50 feet =	87

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	97
25	6	0.0	99	93
50	0	0.0	93	87
60	-2	0.0	92	85
75	-4	0.0	90	83
100	-6	0.0	87	81
120	-8	0.0	86	79
170	-11	0.0	83	76
200	-12	0.0	81	75
300	-16	0.0	78	71
450	-19	0.0	74	68
500	-20	0.0	73	67
600	-22	0.0	72	65
700	-23	0.0	70	64
800	-24	0.0	69	63
900	-25	0.0	68	62
1000	-26	0.0	67	61

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0
3	Excavators	81	40%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	91
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	91
50	0	0.0	91	85
100	-6	0.0	85	79
200	-12	0.0	79	73
250	-14	0.0	77	71
400	-18	0.0	73	67
500	-20	0.0	71	65
575	-21	0.0	70	64
600	-22	0.0	70	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1100	-27	0.0	64	58
1200	-28	0.0	63	57
1300	-28	0.0	63	57
1400	-29	0.0	62	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete/Industrial Saws	90	20%	83.0
2	Rubber Tired Dozers	82	40%	78.0
3	Excavators	81	40%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 91

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	91
50	0	0.0	91	85
100	-6	0.0	85	79
200	-12	0.0	79	73
300	-16	0.0	76	69
450	-19	0.0	72	66
500	-20	0.0	71	65
600	-22	0.0	70	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1200	-28	0.0	63	57
1400	-29	0.0	62	56
1600	-30	0.0	61	55
1800	-31	0.0	60	54
2000	-32	0.0	59	53

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Site Preparation**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	99	95
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	87	83
75	-4	0.0	85	81
100	-6	0.0	83	79
120	-8	0.0	81	77
170	-11	0.0	78	74
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Grading**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Graders	85	40%	81.0
2	Tractors/Loaders/Backhoes	84	40%	80.0
2	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 89

All Sources Combined - Leq sound level (dBA) at 50 feet = 85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	100	96
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	88	84
75	-4	0.0	86	82
100	-6	0.0	83	79
120	-8	0.0	82	78
170	-11	0.0	79	75
200	-12	0.0	77	73
300	-16	0.0	74	70
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	68	64
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Building Construction**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	99	95
25	6	0.0	95	91
50	0	0.0	89	85
60	-2	0.0	87	83
75	-4	0.0	85	81
100	-6	0.0	83	79
120	-8	0.0	81	77
170	-11	0.0	78	74
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	95	91
50	0	0.0	89	85
100	-6	0.0	83	79
200	-12	0.0	77	73
250	-14	0.0	75	71
400	-18	0.0	71	67
500	-20	0.0	69	65
575	-21	0.0	68	64
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59
1100	-27	0.0	62	58
1200	-28	0.0	61	57
1300	-28	0.0	60	56
1400	-29	0.0	60	56

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0
1	Tractors/Loaders/Backhoes	84	40%	80.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	89
All Sources Combined - Leq sound level (dBA) at 50 feet =	85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	95	91
50	0	0.0	89	85
100	-6	0.0	83	79
200	-12	0.0	77	73
300	-16	0.0	73	69
450	-19	0.0	70	66
500	-20	0.0	69	65
600	-22	0.0	67	63
700	-23	0.0	66	62
800	-24	0.0	65	61
900	-25	0.0	64	60
1000	-26	0.0	63	59
1200	-28	0.0	61	57
1400	-29	0.0	60	56
1600	-30	0.0	59	55
1800	-31	0.0	58	54
2000	-32	0.0	57	53

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Paving**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
1	Paving Equipment	90	20%	83.0
2	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 93

All Sources Combined - Leq sound level (dBA) at 50 feet = 86

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	97
25	6	0.0	99	92
50	0	0.0	93	86
60	-2	0.0	92	85
75	-4	0.0	90	83
100	-6	0.0	87	80
120	-8	0.0	86	79
170	-11	0.0	83	76
200	-12	0.0	81	74
300	-16	0.0	78	71
450	-19	0.0	74	67
500	-20	0.0	73	66
600	-22	0.0	72	65
700	-23	0.0	70	63
800	-24	0.0	69	62
900	-25	0.0	68	61
1000	-26	0.0	67	60

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
1	Paving Equipment	90	20%	83.0
2	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 93

All Sources Combined - Leq sound level (dBA) at 50 feet = 86

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	99	92
50	0	0.0	93	86
100	-6	0.0	87	80
200	-12	0.0	81	74
250	-14	0.0	79	72
400	-18	0.0	75	68
500	-20	0.0	73	66
575	-21	0.0	72	65
600	-22	0.0	72	65
700	-23	0.0	70	63
800	-24	0.0	69	62
900	-25	0.0	68	61
1000	-26	0.0	67	60
1100	-27	0.0	66	59
1200	-28	0.0	66	59
1300	-28	0.0	65	58
1400	-29	0.0	64	57

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Paving Equipment	90	20%	83.0
2	Pavers	77	50%	74.0
3	Rollers	80	20%	73.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	91
All Sources Combined - Leq sound level (dBA) at 50 feet =	84

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	97	90
50	0	0.0	91	84
100	-6	0.0	85	78
200	-12	0.0	79	72
300	-16	0.0	75	68
450	-19	0.0	72	65
500	-20	0.0	71	64
600	-22	0.0	69	62
700	-23	0.0	68	61
800	-24	0.0	67	60
900	-25	0.0	66	59
1000	-26	0.0	65	58
1200	-28	0.0	63	56
1400	-29	0.0	62	55
1600	-30	0.0	61	54
1800	-31	0.0	59	53
2000	-32	0.0	59	52

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Architectural Coatings**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	90
All Sources Combined - Leq sound level (dBA) at 50 feet =	83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	101	94
25	6	0.0	96	89
50	0	0.0	90	83
60	-2	0.0	89	82
75	-4	0.0	87	80
100	-6	0.0	84	77
120	-8	0.0	83	76
170	-11	0.0	80	73
200	-12	0.0	78	71
300	-16	0.0	75	68
450	-19	0.0	71	64
500	-20	0.0	70	63
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 90

All Sources Combined - Leq sound level (dBA) at 50 feet = 83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	96	89
50	0	0.0	90	83
100	-6	0.0	84	77
200	-12	0.0	78	71
250	-14	0.0	76	69
400	-18	0.0	72	65
500	-20	0.0	70	63
575	-21	0.0	69	62
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57
1100	-27	0.0	63	56
1200	-28	0.0	63	56
1300	-28	0.0	62	55
1400	-29	0.0	61	54

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Industrial Saws	90	20%	83.0
2	Aerial Lifts	75	20%	68.0
2	Aerial Lifts	75	20%	68.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet =	90
All Sources Combined - Leq sound level (dBA) at 50 feet =	83

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	96	89
50	0	0.0	90	83
100	-6	0.0	84	77
200	-12	0.0	78	71
300	-16	0.0	75	68
450	-19	0.0	71	64
500	-20	0.0	70	63
600	-22	0.0	69	62
700	-23	0.0	67	60
800	-24	0.0	66	59
900	-25	0.0	65	58
1000	-26	0.0	64	57
1200	-28	0.0	63	56
1400	-29	0.0	61	54
1600	-30	0.0	60	53
1800	-31	0.0	59	52
2000	-32	0.0	58	51

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Concrete Pours**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:	
All Sources Combined - Lmax sound level (dBA) at 50 feet =	83
All Sources Combined - Leq sound level (dBA) at 50 feet =	78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	94	88
25	6	0.0	89	84
50	0	0.0	83	78
60	-2	0.0	82	76
75	-4	0.0	80	74
100	-6	0.0	77	72
120	-8	0.0	76	70
170	-11	0.0	72	67
200	-12	0.0	71	66
300	-16	0.0	68	62
450	-19	0.0	64	58
500	-20	0.0	63	58
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Phase 2

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 83

All Sources Combined - Leq sound level (dBA) at 50 feet = 78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	89	84
50	0	0.0	83	78
100	-6	0.0	77	72
200	-12	0.0	71	66
250	-14	0.0	69	64
400	-18	0.0	65	59
500	-20	0.0	63	58
575	-21	0.0	62	56
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52
1100	-27	0.0	56	51
1200	-28	0.0	56	50
1300	-28	0.0	55	49
1400	-29	0.0	54	49

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Phase 3

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Concrete Truck	79	40%	75.0
2	Concrete Pump	81	20%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 83

All Sources Combined - Leq sound level (dBA) at 50 feet = 78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0.0	89	84
50	0	0.0	83	78
100	-6	0.0	77	72
200	-12	0.0	71	66
300	-16	0.0	68	62
450	-19	0.0	64	58
500	-20	0.0	63	58
600	-22	0.0	62	56
700	-23	0.0	60	55
800	-24	0.0	59	53
900	-25	0.0	58	52
1000	-26	0.0	57	52
1200	-28	0.0	56	50
1400	-29	0.0	54	49
1600	-30	0.0	53	47
1800	-31	0.0	52	46
2000	-32	0.0	51	46

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Well**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Generator Sets	81	50%	78.0
2	Excavators	81	40%	77.0
3	Drill Rigs	84	20%	77.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 87

All Sources Combined - Leq sound level (dBA) at 50 feet = 82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	93
25	6	0.0	93	88
50	0	0.0	87	82
60	-2	0.0	85	81
75	-4	0.0	83	79
100	-6	0.0	81	76
120	-8	0.0	79	75
170	-11	0.0	76	72
200	-12	0.0	75	70
300	-16	0.0	71	67
450	-19	0.0	68	63
500	-20	0.0	67	62
600	-22	0.0	65	61
700	-23	0.0	64	59
800	-24	0.0	63	58
900	-25	0.0	62	57
1000	-26	0.0	61	56

Geometric attenuation based on 6 dB per doubling of distance.

Ground affect attenuation based on 1.5 dB per doubling of distance

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Construction Noise

Sub-Phase: **Well (night)**

Phase 1

	Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
1	Generator Sets	81	50%	78.0
2	Drill rig and truck	84	20%	77.0
3	Air Compressor	78	40%	74.0

Calculated Data:

All Sources Combined - Lmax sound level (dBA) at 50 feet = 86

All Sources Combined - Leq sound level (dBA) at 50 feet = 81

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	92
25	6	0.0	92	87
50	0	0.0	86	81
60	-2	0.0	85	80
75	-4	0.0	83	78
100	-6	0.0	80	75
120	-8	0.0	79	74
170	-11	0.0	76	71
200	-12	0.0	74	69
300	-16	0.0	71	66
400	-18	0.0	68	63
500	-20	0.0	66	61
600	-22	0.0	65	60
700	-23	0.0	64	58
800	-24	0.0	62	57
900	-25	0.0	61	56
1000	-26	0.0	60	55

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Appendix 3.8-1

SRI International Campus Historic Resources Technical Report

PAGE&TURNBULL

PARKLINE PROJECT
SRI INTERNATIONAL CAMPUS
HISTORIC RESOURCES TECHNICAL REPORT

333 RAVENSWOOD AVENUE
MENLO PARK, CALIFORNIA
[21144]

PREPARED FOR:
LANE PARTNERS

SUBMITTED TO:
MENLO PARK PLANNING DEPARTMENT

June 6, 2024

REVISED & RESTATED

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TABLE OF CONTENTS

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I. INTRODUCTION

This Historic Resources Technical Report (HRTR) has been prepared for the proposed Parkline project (Proposed Project), and provides an environmental analysis that includes an evaluation of a Proposed Project and an increased development variant (Project Variant). The Proposed Project and Project Variant are described in greater detail in **Section IV. Project Description** of this report. This HRTR has been prepared in connection with the City's environmental analysis of the Proposed Project and Project Variant pursuant to the California Environmental Quality Act (CEQA), and is intended to be utilized by the City and its CEQA consultant in the Environmental Impact Report (EIR).

The Proposed Project Site is on the SRI International Campus at 333 Ravenswood Avenue in Menlo Park. The 63-acre campus spans five legal parcels: APN 062-390-660, 062-390-670, 062-390-730, 062-390-760, and 062-390-780. The property has 39 extant buildings built between 1943 and c. 2000. Currently owned and occupied by SRI International, a non-profit contract research and development (R&D) institution, the Parkline Master Plan development is a collaboration between SRI International and Lane Partners (Project Sponsors). The Project Variant also includes the property at 201 Ravenswood Avenue (APN 062-039-050) consisting of a 1958 multi-use building and a 1966 church building (First Church of Christ Scientist).

The SRI International campus was evaluated in April 2022 by Page & Turnbull and determined to be eligible for listing as a historic district in the California Register of Historical Resources (California Register) under Criterion 1 (Events) for association with SRI International as an innovative research and development institution that has contributed numerous advancements in a variety of fields including computing, business and economics, health and medicine, and physical sciences. Often called the birthplace of the internet, some of the most significant advances include those related to ARPANET, internetworks, dot coms, and personal computing, including the invention of the computer mouse. The eligible historic district has 26 contributing buildings and two contributing landscape features, as well as 13 non-contributing buildings. In addition, Page & Turnbull's evaluation found three buildings within the SRI International campus to be individually eligible for listing in the California Register: Building A, under Criterion 1 (Events) and Criterion 3 (Architecture); Building E, under Criterion 1 and Criterion 2 (Persons); and Building 100, under Criterion 1.

The property at 201 Ravenswood Avenue was separately evaluated in April 2024 by Page & Turnbull. The First Church of Christ Scientist chapel, built in 1966 by architects Inwood & Hoover, was found to be individually eligible for listing in the California Register as a distinctive local example of Late Modernist architecture under Criterion 3 (Architecture).

Thus, taken together the Project Site, inclusive of the property at 201 Ravenswood Avenue, includes four individual buildings and one historic district that are historic resources for the purposes of the California Environmental Quality Act (CEQA).

The Proposed Project includes the demolition of 35 of the existing buildings, including all three individually eligible historic resources and 23 of the historic district contributors, at 333 Ravenswood Avenue. Only Buildings P, S, and T will be retained. The Proposed Project includes the construction of five new office/R&D buildings, 450 residential units within three residential buildings, townhomes, up to 100 residential units in a future 100-percent affordable or special needs housing, community-serving recreational uses, a small community amenity building, up to 25 acres of publicly accessible open space, three parking garages, and other amenities. In addition to this demolition activity, the Project Variant would also demolish the two existing buildings on the 201 Ravenswood Avenue property, including an individually eligible historic resource.

Figure 1. Aerial view of the SRI International Campus at 333 Ravenswood Avenue, indicated by red outline. 201 Ravenswood Avenue, which is included in the Project Variant, is indicated by a dashed red line. Source: Google Maps, 2021. Edited by Page & Turnbull.

Methodology

This report includes a summary of the current status of individual historic resources and Historic District contributors within the Project Site per Page & Turnbull's April 2022 SRI International Campus Historic Resource Evaluation (HRE) and lists of character-defining features for individually eligible buildings **(Appendix C)**, as well as the evaluation prepared by Page & Turnbull in April 2024 using California Department of Parks and Recreation (DPR) 523 forms for 201 Ravenswood Avenue **(Appendix D)**.

Based on these findings of historic significance, the Proposed Project and Project Variant have been evaluated for potential project-specific and cumulative impacts in accordance with CEQA. The analysis is based on a proposed project description, site plans and data summary tables, prepared by STUDIOS Architecture and provided by Lane Partners to Page & Turnbull in April 2023, and as updated in March 2024 for the Project Variant. All photographs in this report were taken by Page & Turnbull in June 2021 and are also included in the April 2022 Historic Resource Evaluation, unless otherwise noted.

This report does not address potential archeological resources that may be found within the Project Site.

II. SUMMARY OF HISTORIC RESOURCES

333 Ravenswood Avenue (SRI International Campus)

The SRI International campus at 333 Ravenswood Avenue in Menlo Park is a 63-acre site with an irregular boundary spanning five legal parcels **(Figure 1)**. Located at the south intersection of Middlefield Road and Ravenswood Avenue, the campus is bounded by Laurel Street to the south and wraps around three sides of the First Church of Christ, Scientist at 201 Ravenswood Avenue and an office park at 535 Middlefield Road.[1]

The site was originally developed as part of a much larger residential estate originally built circa 1864 for William Eustace Barron and later owned by Milton Slocum Latham in 1871 to 1882 as Thurlow Lodge, then by Mary Frances Sherwood Hopkins and Timothy Hopkins from 1883 to 1941 as the Hopkins Estate or Sherwood Hall; however, no buildings or structures survive from this residential estate period. The property was then developed by the United States military and occupied by Dibble General Hospital during World War II.

SRI International was originally established by the trustees of Stanford University as Stanford Research Institute (SRI) in 1946 as an independent, nonprofit contract research institute to promote innovation and economic development in the Western United States. SRI moved to the property in 1947 and, in 1970, formally separated from Stanford University and eventually became known as SRI International.

The SRI International campus includes 39 extant buildings, 20 of which were built by the U.S. military for Dibble Hospital in 1943-1944 and have since been adaptively reused, and 19 of which were built or installed by and for SRI International from 1948 to c. 2000, as well as number of permanent and temporary structures. In addition to the many mature trees that landscape the campus, planted during various periods of development, the campus includes landscape features such as a designed landscape known as “Oak Park” between Buildings W and 205, a “research field” north of Building M, landscaped areas and courtyards associated with individual buildings, as well as a number of roads, paths, and parking lots.

The following map and table provide a summary of Page & Turnbull’s findings in the HRE. In the table, individually eligible buildings are shaded red and contributors to the eligible SRI International Campus Historic District are shaded light pink. A map illustrating Page & Turnbull’s findings follows the summary table.

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[1] The SRI International Campus is oriented off of true north. For the purposes of this report, Middlefield Road will be referred to as the north side of the campus, and so on. The north arrows on all graphics indicate true north, unless otherwise noted.

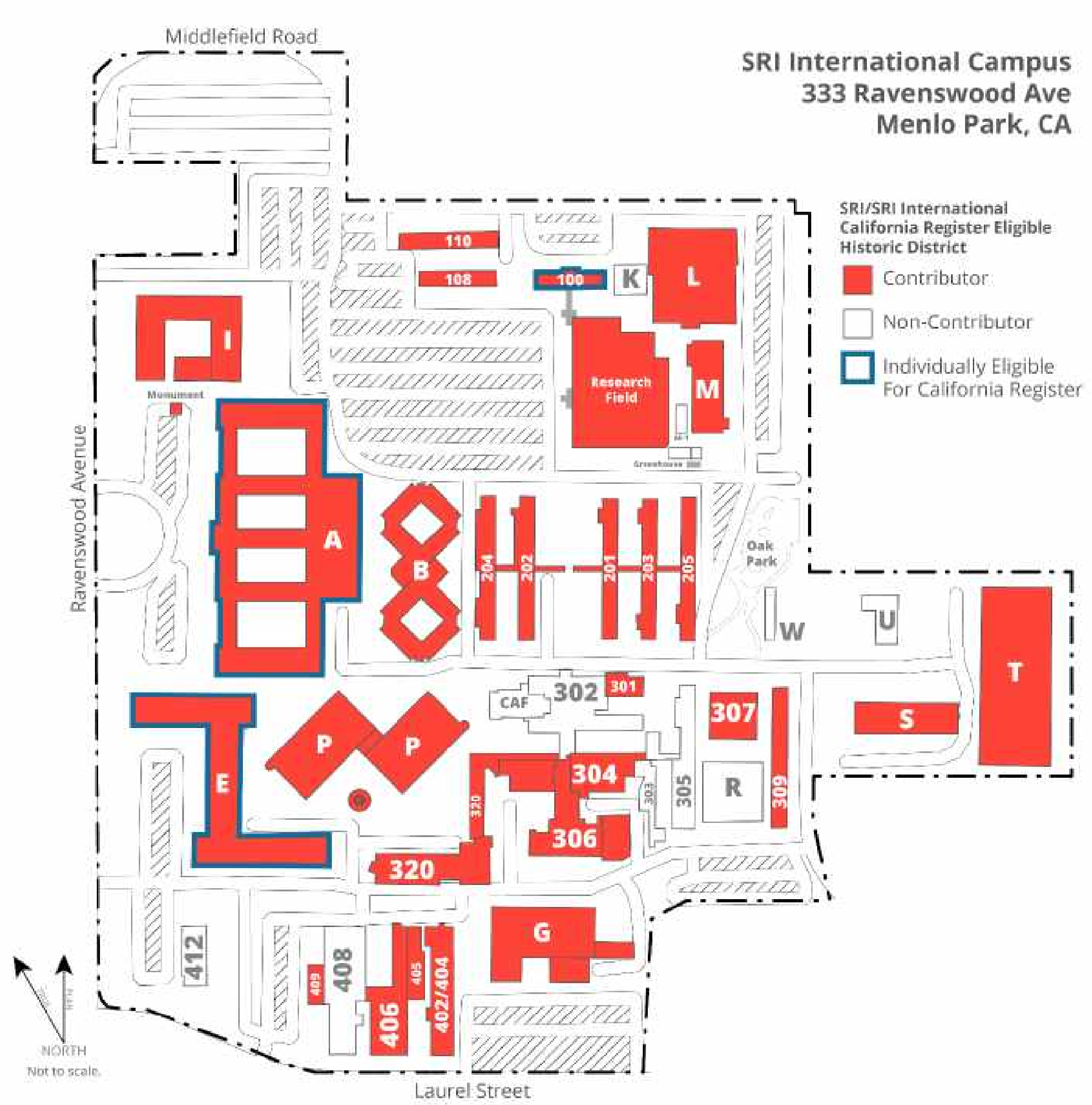

Figure 2. Map showing summary of findings for California Register eligibility. Source: Page & Turnbull, *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation* (2022), 9.

TABLE 1. SUMMARY OF FINDINGS FOR HISTORIC RESOURCES ON SRI INTERNATIONAL CAMPUS

Name	Year Built	Individual Historic Resource Eligible for CR[2]	CR-Eligible SRI International Campus Historic District Contributor/Non-Contributor	Historical Resource for CEQA
Building A	1958-61	Yes – Criterion 1; 3	Contributor	Yes
Building B	1976-77	No	Contributor	Yes
Building E	1966	Yes – Criterion 1; 2	Contributor	Yes
Building G	1964	No	Contributor	Yes
Building I	1969	No	Contributor	Yes
Building K	1971	No	Non-Contributor	No
Building L	1967	No	Contributor	Yes
Building M	1962	No	Contributor	Yes
Building M-1	c. 2000	No	Non-Contributor	No
Building P	1980-81	No	Contributor	Yes
Building R	1984	No	Non-Contributor	No
Building S	1981	No	Contributor	Yes
Building T	1962	No	Contributor	Yes
Building U	1986-87	No	Non-Contributor	No
Building W	1988	No	Non-Contributor	No
Building 100	1943	Yes – Criterion 1	Contributor	Yes
Building 108	1943	No	Contributor	Yes
Building 110	1943	No	Contributor	Yes
Building 201	1943	No	Contributor	Yes
Building 202	1943	No	Contributor	Yes
Building 203	1943	No	Non-Contributor	No
Building 204	1943	No	Contributor	Yes
Building 205	1943	No	Contributor	Yes
Building 301	1943-44	No	Contributor	Yes
Building 302-CAF	1943-44	No	Non-Contributor	No
Building 303	1943	No	Non-Contributor	No
Building 304	1943	No	Contributor	Yes
Building 305	1943	No	Non-Contributor	No
Building 306	1943	No	Non-Contributor	No
Building 307	1992	No	Contributor	Yes
Building 309	1943	No	Contributor	Yes
Building 320	1943	No	Contributor	Yes
Building 402/404	1943	No	Contributor	Yes
Building 405	c.1948-56	No	Contributor	Yes
Building 406	1943	No	Contributor	Yes
Building 408	1943	No	Non-Contributor	No
Building 409	c.1948-56	No	Contributor	Yes
Building 412	1943	No	Non-Contributor	No
Greenhouse Structure	c. mid- to late 1980s	No	Non-Contributor	No

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[2] CR = California Register.

Name	Year Built	Individual Historic Resource Eligible for CR[2]	CR-Eligible SRI International Campus Historic District Contributor/Non-Contributor	Historical Resource for CEQA
Objects & Landscape Features				
Greenhouse	c. mid- to late 1980s	No	Non-Contributor	No
Main Employee Parking Lot	c.1981-2	No	Non-Contributor	No
Oak Park	c. early 1990s	No	Non-Contributor	No
Research Field	c.1981-9	No	Contributor	Yes
Satellite Dish	c.2000	No	Non-Contributor	No
SRI International Monument	c.1970	No	Contributor	Yes

ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

Page & Turnbull identified a California Register-eligible SRI International Historic District, which is eligible under Criterion 1 (Events). As stated in the 2022 HRE:

> The SRI International campus at 333 Ravenswood Avenue is significant under Criterion 1 for significant contributions to the broad patterns of local history, and to scientific innovation nationally. Stanford Research Institute, later renamed SRI International, was established as the first successful contract-applied research institute of its kind on the West Coast, established to benefit western industry, in 1946. Although established by Stanford University, the institute functioned fairly independently even before formally breaking off as a separate non-profit in 1970. During the second half of the twentieth century, SRI not only functioned as the largest employer in Menlo Park, but also spurred economic development and innovation in Silicon Valley. Advancements made as part of SRI's research and development efforts not only helped in the success of burgeoning Silicon Valley companies, but, in some cases, transformed the world—as in the innovations in early internetworking, dot coms, personal computing, and the computer mouse in the 1960s and 1970s, which would form the backbone of the modern internet and personal computers. Additionally, SRI has spun-off over 60 companies, many of which have been influential in their own right, not least of which includes Siri, which was later bought by Apple and implemented as the first virtual personal assistant in cell phones in 2011. While advancements in computing and the internet are perhaps SRI International's most widely recognized contributions, the institute has worked on over 50,000 projects, many of which resulted in breakthroughs and innovation in sectors such as business and economics, health, education, artificial intelligence,

> robotics and physical sciences. Therefore, the SRI International Campus is eligible under Criterion 1 as a historic district. […]
>
> Contributors to the Eligible SRI International Campus Historic District include buildings that were purpose-built for SRI to serve primary research and development functions, such as offices and laboratories. Former Dibble [General Hospital World War II-era military] buildings that were converted to offices and/or laboratories for research and development purposes are also contributors. Buildings that have ancillary or support functions, such as power generation, machine shops, storage, and maintenance, are considered non-contributors. […]
>
> The SRI International Campus is eligible as a historic district under California Register Criterion 1 (Events) with an on-going period of significance beginning in 1947 through the present day. The eligible historic district has 26 contributing buildings and 2 contributing landscape features, as well as 13 non-contributing buildings.[3]

INDIVIDUALLY ELIGIBLE BUILDINGS

In addition to the California Register-eligible district, Page & Turnbull's 2022 evaluation identified three buildings that are individually eligible for listing in the California Register: Building 100, Building A, and Building E.

For a property to be eligible for national, state or local designation under one of the significance criteria, the essential physical features (or character-defining features) that enable the property to convey its historic identity must be evident. To be eligible, a property must clearly contain enough of those characteristics, and these features must also retain a sufficient degree of integrity. Characteristics can be expressed in terms such as form, proportion, structure, plan, style, or materials. The character-defining features of each individually eligible building are summarized below.

Building 100

Date of Construction: 1943
Architect/Builder: G.W. Williams Co. according to standard U.S. Military plans.
California Register Significance Criterion: Criterion 1 (Events)

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[3] Page & Turnbull, *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation* (submitted to Menlo Park Planning Department, April 21, 2022), 87-9.

Figure 3. Building 100.

As stated in the 2022 HRE:

> Building 100 was originally constructed according to standard plans for general hospitals during World War II, and served as Dibble General Hospital's Administration Building. It was one of over 100 buildings that comprised the General Hospital's campus, and the hospital's role in providing medical care to military personnel was primarily carried out in clinic buildings, with convalescent care provided in separate ward buildings. Thus, while a central administration building, Building 100 does not appear to be individually representative of the larger history of medical care at Dibble General Hospital, and it is not individually significant under Criterion 1 for this association.
>
> In 1947, Building 100 was adapted to serve as the first permanent home of Stanford Research Institute (SRI), which had previously been temporarily located for several months at the Physics Building on the Stanford University campus. Building 100 served as the main SRI building as SRI slowly expanded into additional rooms and buildings on the former Dibble General Hospital campus, before constructing its first purpose-built building in 1958. Thus, Building 100 is closely associated with the earliest history of SRI and its first decade of growth and innovation. Building 100 is individually significant for its association with the origination of SRI, as the building served as the first headquarters location for the institute.[4]

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[4] Page & Turnbull, *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation*, 154.

Building 100 Character-Defining Features:

- Two-story massing and rectangular plan
- Projecting, two-story central volume at the primary façade
- Symmetrical facades
- Original fenestration pattern, including original eight-over-eight wood double hung windows
- Wood shutters at two windows flanking the primary entrance
- Primary entry ensemble, including paired doors and multi-lite operable wood transom
- Stucco cladding
- Cross-gable roof with shallow eaves, with wood board cladding and a round wood vent in the front gable eave
- Brick steps and wood portico at primary entrance.

Building A

Date of Construction: 1958 – Phase 1; 1961 – Phase 2
Architect/Builder: Stanton & Stockwell, architects; John C. Carmack, landscape architect.
California Register Significance Criteria: Criterion 1 (Events), Criterion 3 (Architecture)

Figure 4. Building A.

As stated in the 2022 HRE:

> Building A is individually significant under California Register Criterion 1 because it is associated with events that have made a significant contribution to the broad patterns of our history. Stanford Research Institute was previously housed in the former Dibble General Hospital Building 100 for a decade, and more briefly before

that in an office on Stanford University campus for a few months. As the first purpose-built building, Building A was the first permanent home of Stanford Research Institute. Building A also serves as the institution's administrative center and most-public facing building. Building A continues to operate as the central headquarters of the SRI International Campus. Thus, as the first permanent home of Stanford Research Institute, Building A is associated with the broad contributions of the institute in fields including computing, business and economics, health, education, robotics, and physical sciences and is individually eligible under Criterion 1.

Building A was designed by master architects of regional significance Stanton & Stockwell in the Midcentury Modern style, and it was built in two phases in 1958 and 1961. The building is the most prominent example of the Los Angeles-based firm's work in Northern California and is representative of their best work in the Midcentury Modern style. The massive building retains a human scale as it is broken up by four central landscaped courtyards, the outer two of which are visible from the front of the building through breezeways. However, the double height colonnaded portico at the primary entrance is monumental in scale, if restrained in detailing, announcing the ambition of the institution within. Building A expresses the distinctive characteristics of Midcentury Modern architecture, including in its geometric massing, flat roof, brick cladding, ribbon windows, louvered vertical metal sun shades, breezeways supported by slender columns, a connection to the outdoors with landscaped courtyards, and the relative lack of ornamentation except that created by the abstract pattern of punched openings with glass block on either side of the entrance portico and the two-tone blue tile mosaics inset into windows with large projecting frames at either end of the building. As an exemplary work of master architects Stanton & Stockwell and expressive of the distinctive characteristics Midcentury Modern style, Building A is individually eligible for the California Register under Criterion 3.[5]

Building A Character-Defining Features:

- Overall footprint, geometric massing, and flat roof
- Brick cladding
- Double-height colonnaded entry portico and double-height window wall
- Breezeways supported by square columns along the primary façade
- Vertical metal louvered sunshades

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[5] Page & Turnbull, *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation*, 100-1.

- Small rectangular punched openings with patterned glass block at primary façade
- Original doorway and fenestration pattern, including original aluminum sash ribbon windows
- Two double-heigh projecting concrete frames with opaque glazing and inset two-tone blue tile mosaics
- Rear portico and terraced, sunken area well
- Interior landscaped courtyards.

Building E

Date of Construction: 1966
Architect/Builder: Stanton & Stockwell
California Register Significance Criteria: Criterion 1 (Events), Criterion 2 (Persons)

Figure 5. Building E.

As stated in the 2022 HRE:

> Building E is individually significant under Criterion 1 because it is associated with events that have made a significant contribution to the broad patterns of our history. It was constructed in 1966, during a significant period of growth on the SRI International campus, to house engineering-related divisions including systems sciences, electronic and radio sciences, and engineering sciences and industrial

development. As such, Building E appears to be the building most closely associated with innovations in early computing and internetworking in the late 1960s and early 1970s. While the exact locations of the computers involved in the 1969 ARPANET demonstration or the packet radio station internetwork gateway involved in the 1976 and 1977 internetworking demonstrations on the SRI International campus were not established during the course of historical research, the projects are most closely associated with the engineering division, housed primarily in Building E. The SRI Mobile Packet Radio Van is no longer owned by SRI International, and is in the collection of the Computer History Museum in Mountain View. While hundreds of significant innovations and influential research projects have been associated with SRI International over the years, the advancements in internetworking stand out as some of the most consequential to modern life. Additionally, Douglas Engelbart's 1968 "Mother of All Demos" was run from a room in Building E. Building E also housed the Artificial Intelligence Center which developed and tested Shakey the Robot, the world's first mobile intelligent robot from 1966 to 1972. Thus, Building E is individually eligible under Criterion 1.

Building E appears to be the building most closely associated with the innovative computing and internetworking research of Dr. Douglas Carl Engelbart and Donald Nielson. Originally known as the Engineering Building, the building housed divisions related to computing where Engelbart and Nielson worked. Engelbart is perhaps the single-most significant researcher associated with SRI International, and is widely recognized for his contributions to early personal computing including his 1968 "Mother of All Demos," the patent for the first computer mouse, and other innovations under his leadership of the Augmentation Research Center at SRI International. Nielson, as assistant director of the Telecommunications Sciences Center at SRI International, led the teams that made the first ARPANET communication with UCLA in 1969, the first connection between two dissimilar networks in 1976, and the first connection between three dissimilar networks—often considered the "birth of the internet"—in 1977. While many notable researchers at the top of their respective fields have worked at SRI International, and many of them likely worked at Building E, Engelbart and Nielson stand out for their involvement in some of the most influential and widely recognized projects associated with SRI International. Therefore, Building E is eligible under Criterion 2 for association with Dr. Douglas Carl Engelbart and Donald Nielson.[6]

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[6] Page & Turnbull, *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation*, 110-1.

Building E Character-Defining Features:

- Three-story-over basement massing and flat roof
- Perpendicular Z-shape footprint with central wing between offset, perpendicular north and south wings
- Exposed aggregate concrete and brick cladding
- Exterior concrete columns
- Vertical concrete fins and horizontal concrete sunshades
- Original fenestration, including original aluminum sash fixed windows and vertical aluminum fins, and aluminum frame storefront window system
- Primary entrance ensemble, including the covered walkway with flat concrete canopy, central support columns, horizontal beams over open planted area, and basketweave brick paving
- Fully glazed hyphen corridor connected to Building A.

201 Ravenswood Avenue (Chapel)

Date of Construction: 1966
Architect/Builder: Inwood & Hoover
California Register Significance Criteria: Criterion 3 (Architecture)

The property at 201 Ravenswood Avenue in Menlo Park is a one-acre rectangular site, surrounded on three sides by the SRI International Campus at 333 Ravenswood Avenue. The property was developed by the First Church of Christ Scientist with two buildings—first a multi-use building in 1958, then a chapel in 1966. The multi-purpose building, designed by Leslie Nichols in the Midcentury Modern style, was found *not* to be eligible for listing in the California Register under any criteria. The cross-plan chapel (Chapel), designed by Inwood & Hoover, was found to be a distinctive local example of a religious building designed in the Late Modern style, and is individually eligible for listing in the California Register under Criterion 3 (Architecture). Therefore, only the Chapel at 201 Ravenswood Avenue is a historical resource for the purposes of CEQA.

As stated in the April 2024 DPR forms:

> 201 Ravenswood Avenue appears to have an individually eligible resource for listing in the California Register under Criterion 3 (Architecture). The chapel appears to be eligible at the local level under Criterion 3 as a distinctive example of Late Modern architecture. However, the earlier multi-use building does not contribute to this significance and is not, itself, individually eligible.

The multi-use building, designed by architect Leslie Nichols, does not embody the distinctive characteristics of the Late Modern style, nor is it a distinctive example of Midcentury Modern design. Except for a few details such as the colored glass window wall and tapered front columns, its modest use of massing, materials, and utilitarian fenestration result in an overall restrained design. The building appears to have been built on a more restrictive budget by the Church before building the main chapel, and does not express the same level of distinctive design character as the chapel. The Midcentury Modern design of the multi-use building does not stand out among the many examples of Midcentury Modern style buildings constructed in Menlo Park and the region during the 1950s.

The chapel, designed by architects Inwood & Hoover does embody the distinctive characteristics of the Late Modern style. The chapel's design features strong geometric forms in a symmetrical composition, a dramatic and soaring roofline, and floor-to-ceiling glazing systems with selective use of decorative art glass. The cruciform concrete columns not only integrate structural elements into the interior and exterior design, but also reference the shape of the cruciform chapel itself—this strong design parti is characteristic of Late Modernist design which often highlights structural features as integral design elements. In addition to embodying distinctive characteristics of the Late Modern style, details such as the frameless clerestory windows at the nave create a dramatic sense that the roof is floating above the building, coupled with the enclosed gardens and ceiling-height glazing, there is a strong sense of indoor-outdoor connection. These details cause the chapel's design to stand out as distinctive amongst Late Modern style buildings, including amongst other religious buildings, constructed in Menlo Park and the region during this period. As such, the chapel rises to the level of significance for individual eligibility for listing in the California Register under Criterion 3 at the local level. The period of significance for the chapel is 1966, the year of completion.[7]

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[7] Page & Turnbull, 201 Ravenswood Avenue, Department of Parks and Recreation Primary Record (523A) and Building, Structure, Object Record (523B), prepared April 4,, 2024.

Figure 6. Chapel at 201 Ravenswood Avenue. Source: Page & Turnbull, January 2024.

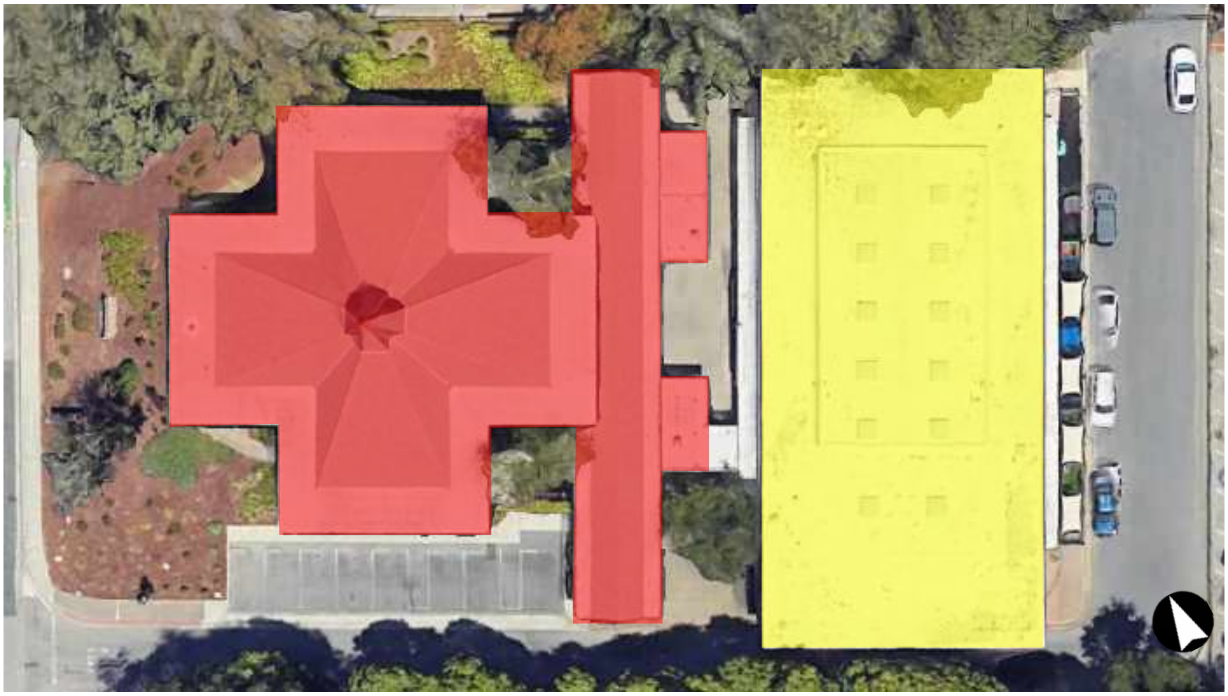

Figure 7. Aerial view of 201 Ravenswood Avenue. The 1966 Chapel (shaded red) is an eligible historic resource. The 1958 Multi-Use Building (shaded yellow) is *not* an eligible historic resource and does not contribute to the historic significance of the property. Source: Google Maps, 2023, edited by Page & Turnbull.

Chapel Character-Defining Features:

- Mass, scale, and proportions of the nave, including its cruciform footprint and steeply pitched roof and steeple with tapered vertical bands of semi-opaque windows and metal cap, and rectangular, flared gable roofed narthex.
- Roof eaves with concrete soffits that extend into the interior space
- Concrete cruciform columns
- Frameless clerestory windows
- Roman brick walls
- Full-height window walls, including art glass
- Exposed structural heavy timber roof joists
- Enclosed gardens
- Multi-panel wood doors.

III. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The California Environmental Quality Act (CEQA) is state legislation (Pub. Res. Code §21000 et seq.) that provides for the development and maintenance of a high-quality environment for the present-day and future through the identification of significant environmental effects.[8] CEQA applies to "projects" proposed to be undertaken or requiring approval from state or local government agencies.[9] "Projects" are defined as "activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps."[10] Historic and cultural resources are considered to be part of the environment. In general, the lead agency must complete the environmental review process as required by CEQA. In the case of the proposed Parkline project, the City of Menlo Park will act as the lead agency.

Status of Existing Historical Resources

In completing an analysis of a project under CEQA, it must first be determined if the project site possesses a historical resource. A site may qualify as a historical resource if it falls within at least one of four categories listed in CEQA Guidelines, California Code of Regulations (CCR), Title 14, Section 15064.5(a). The four categories are:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code § 5024.1, Title 14 CCR, Section 4850 et seq.).

2. A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of section 5024.1 (g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's

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[8] California Environmental Quality Act (CEQA), Public Resources Code (PRC), § 21000 et seq.

[9] Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines), California Code of Regulations (CCR), Title 14 § 15000 et seq.

[10] 14 CCR § 15378: Project.

determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code § 5024.1, Title 14 CCR, Section 4852) including the following:

(A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
(B) Is associated with the lives of persons important in our past;
(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
(D) Has yielded, or may be likely to yield, information important in prehistory or history.

4. The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Pub. Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Pub. Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Pub. Resources Code § 5020.1(j) or 5024.1.

In general, a resource that meets any of the four criteria listed in CEQA Guidelines Section 15064.5(a) is considered to be a historical resource unless "the preponderance of evidence demonstrates" that the resource is not historically or culturally significant."[11]

Based on Page & Turnbull's 2022 HRE, the California Register-eligible SRI International Campus Historic District, which includes 26 contributing buildings and two contributing landscape features, is a historical resource for the purposes of CEQA. In addition to contributing to the eligible Historic District, Building 100, Building A, and Building E are individually eligible for listing in the California Register, and therefore, are considered historical resources under CEQA.

Based on Page & Turnbull's April 2024 evaluation of 201 Ravenswood Avenue, the Chapel is individually eligible for listing in the California Register, and therefore, is considered a historical resource under CEQA.

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[11] 14 CCR § 15064.5(a)(2).

Threshold for Substantial Adverse Change

According to CEQA, a "project with an effect that may cause a substantial adverse change in the significance of an historic resource is a project that may have a significant effect on the environment."[12] Substantial adverse change is defined as: "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired."[13] The significance of an historical resource is materially impaired when a project "demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources."[14] Thus, a project may cause a substantial change in a historic resource but still not have a significant adverse effect on the environment as defined by CEQA as long as the impact of the change on the historic resource is determined to be less-than-significant, negligible, neutral, or even beneficial.

In other words, a project may have an impact on a historical resource, and that impact may or may not impair the resource's eligibility for inclusion in the California Register. If an identified impact would result in a resource that is no longer able to convey its historic significance and is therefore no longer eligible for listing in the California Register, then it would be considered a significant effect.

In addition, according to Section 15126.4(b)(1) of the Public Resources Code (CEQA), if a project adheres to the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (the Standards), the project's impact "will generally be considered mitigated below the level of significance and thus is not significant."[15]

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[12] 14 CCR § 15064.5(b).
[13] 14 CCR § 15064.5(b)(1).
[14] 14 CCR § 15064.5(b)(2).
[15] 14 CCR § 15126.4(b)(1).

IV. PROJECT DESCRIPTION

The Proposed Project would redevelop the SRI International Campus by creating a new office/R&D campus with no increase in office/R&D square footage; up to 550 new rental dwelling units at a range of affordability levels; new bicycle and pedestrian connections; and open space.[16] The Proposed Project would demolish 35 of the 38 existing buildings on the Project Site; existing Buildings P, S, and T, would remain onsite and be operated by SRI International and its tenants,[17] and a six-megawatt natural gas cogeneration plant would be decommissioned. In total, the Proposed Project would result in approximately 1,768,802 sf of mixed-use development, with approximately 1,093,602 sf of office/R&D uses and approximately 675,200 sf of residential uses. Because future commercial tenants of the office/R&D buildings are not yet known, those buildings are designed to accommodate either office uses, R&D or life science uses, or a combination of both. Therefore, the EIR evaluates two buildout scenarios: a 100 percent office scenario and a 100 percent R&D scenario. Additionally, open space areas and supporting amenities would be developed at the Project Site, including a network of publicly accessible bicycle and pedestrian trails, open spaces, and active/passive recreational areas that would be available to the public. In addition, the Project Site would include community-oriented facilities, such as a community playing field, a children's playground area, and a community amenity building that would accommodate retail uses.

The Proposed Project would include demolition of the 6-megawatt natural gas power facility that generates power and steam energy for the SRI International Campus. The entire Project Site would be converted to an all-electric design for operational energy needs, in compliance with the city's adopted Reach Code. Two existing buildings (Buildings P and T) would retain natural gas and diesel backup generators, for continued laboratory and R&D purposes.

The Proposed Project (and Project Variant, as described below) would demolish all buildings within the SRI International Campus other than Buildings P, Building S, and Building T, as well as Oak Lawn and the Research Field **(Figure 8)**.[18] The SRI International Monument is proposed to be relocated on-site.

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[16] The Proposed Project description was provided by the Project Applicant, and has been reviewed by the City of Menlo Park.

[17] As discussed under "Approach to Cumulative Impacts" in Chapter 3, Environmental Impact Analysis, SRI International is proposing to construct tenant improvements at Buildings P, S, and T, as well as related site utility work, to modernize the buildings for SRI International's near-term and ongoing operations. The proposed tenant improvements in Buildings P, S, and T are not part of the Proposed Project, and are included as a cumulative project for purposes of this EIR analysis.

[18] Assessment of trees on the property, including potential heritage trees, was not part of the scope of the 2022 HRE or this HRTR.

Project Variant

As noted above, Proposed Project considers an “Office Buildout” scenario and an “R&D Buildout” scenario, as well as a Project Variant. A project variant is a variation of a project that would be located at the same Project Site, with the same project objectives, background, and development controls, but with additions and changes to the project, the inclusion of which may or may not change environmental impacts.

The Project Variant includes up to 800 residential units (an increase of 250 units from the up to 550 units in the Proposed Project), as well as a below-grade water reservoir to be developed and operated by the City, inclusive of an above-grade pump station and generator at the northeastern corner of the site.

The Project Variant would include up to 250 additional residential rental dwelling units compared to the Proposed Project (an increase from 550 to 800 units, inclusive of up to 154 affordable units to be developed by an affordable housing developer in the northeast corner of the Project Site at Ravenswood Avenue and Middlefield Road). The Project Variant site plan includes the parcel located at 201 Ravenswood Avenue to create a continuous project frontage along Ravenswood Avenue. Under the Project Variant, the existing First Church of Christ, Scientist—inclusive of the 1966 Chapel and 1958 Multi-Use Building—would be demolished to accommodate the additional residential units, recreational open space area, and the emergency water reservoir. The Project Variant would not make any changes to the property office/R&D buildings.

Under the Project Variant, the R1, R2, and R3 multifamily buildings would be reduced to two buildings, R1 and R2, both of which accommodate 300 units for a total of 600 units in the northwest corner of the Project site. The Project Variant would maintain the 19 two-story townhouses included under the Proposed Project along Laurel Avenue (TH1). The Project Variant would include residential buildings in the northeastern portion of the Project Site, including the 6-story multifamily 100 percent affordable building with up to 154 units (R3; to be developed separately by an affordable housing developer) at the corner of Ravenswood Avenue and Middlefield Road, along with 27 additional townhomes located immediately south of R3 (referred to as TH2). Total gross residential floor area would increase from approximately 520,000 square feet under the Proposed Project to 1.096 million square feet under the Project Variant.

The Project Variant would reduce the underground parking footprint within the site, both by removing underground parking from the residential buildings and removing the underground parking connection between Buildings Office/R&D 1 and Office/R&D 2. As a result, the commercial parking garages PG1 and PG2 increase in square footage and one-level of height (from four to five stories) compared to the Proposed Project.

Under the Project Variant, the total number of commercial parking spaces remains unchanged at 2,800 spaces, whereas the residential parking increases to 926 spaces. The increased residential parking results from providing parking within Buildings R1 and R2 at 1.25 spaces per unit and providing for additional townhome parking of 2 spaces per unit for TH1 and TH2 (Project Variant includes 54 townhomes, compared to 19 townhomes under the Proposed Project). Parking for the 100% affordable building (Building R3) will remain at 0.5 spaces per unit, with the option to utilize parking spaces within PG1 and PG2 during nights and weekends. Parking for the R1, R2 and R3 multifamily buildings is provided within each of those buildings; parking for the up to 46 townhomes is provided within each unit.

Under the Project Variant, similar site access and vehicular, bicycle, and pedestrian circulation would occur as under the Proposed Project, with the following differences. R1 ingress and egress is located on Ravenswood Avenue and via the internal road that connects to the Loop Road, but there will be no access from Laurel Avenue. R2 ingress is located on Laurel Ave and via the internal road that connects to the Loop Road and the driveways on Ravenswood Avenue and Middlefield Road. R2 egress is provided only via the internal road to the driveways on Ravenswood Avenue and Middlefield Road. There will be no R2 egress to Laurel Avenue. As a consequence, residential trips associated with R1 and R2 would largely be shifted to the driveways on Ravenswood Avenue and Middlefield Road, and fewer trips would be using Laurel Avenue. The TH1 townhomes are accessible only from Laurel Ave. R3 (Affordable) and the TH2 townhomes (TH2) are accessible from Ravenswood Avenue and Middlefield Road.

The Project Variant would include a recreational open space area in the northeast corner of the Project Site, along with associated surface parking. The Project Variant would also include space for an approximately 2-million-gallon underground water reservoir under the recreational open space area and an associated aboveground facilities room to be developed and operated by the City at a later date if the site is selected by the City for that use.

A summary of the Proposed Project and Project Variant is provided in **Table 2** includes a site plan showing the buildings proposed to demolished; data included in Table 2 was provided to Page & Turnbull by the Project Sponsor. Conceptual site plans for the Proposed Project and Project Variant are included in **Appendix B** of this report.

TABLE 2. PARKLINE – SUMMARY OF BUILDOUT SCENARIOS AND PROJECT VARIANT

	Proposed Project (Office or R&D Buildout)	**Project Variant**
Total Site Area	2,754,035 sf	2,797,797 sf
Total New Commercial GFA		
Office/R&D:	1,051,600 sf	1,051,600 sf
Office Amenity Building:	40,000 sf	40,000 sf
Community Amenity Building:	2,002 sf	2,002 sf (Program included in Residential Building 3)
Total Residential GFA *Residential GFA inclusive of 100% Affordable Housing Site, assumed at 120,000sf	675,200 sf	1,096,000 sf
Total Number of Residential Units	Up to 550 units	Up to 800 units
Total GFA, Other Uses	0 sf	1,500 sf (Pump station for the below-grade water reservoir.)
Total GFA to be Demolished	1,093,602 sf	1,106,302 sf
Existing Office/R&D to be Retained (Buildings P, S, T)	286,730 sf	286,730 sf
Total Building Coverage Area	752,117 sf	918,000 sf
Total Open Space *Area excludes onsite roadways and the outdoor areas directly adjacent to Buildings P, S, & T	26 acres	29 acres
Building Heights *Heights provided here are inclusive of mechanical screens and equipment.	110 ft. – Office/R&D 85 ft. – Residential	110 ft. – Office/R&D 90 ft. – Residential
Total Impervious Area / Pervious Area	1,588,300 sf / 1,165,750 sf	1,633,600 sf / 1,164,200 sf
Total Area of Ground Disturbance *Area inclusive of right-of-way and off-site improvements along project site frontages	2,981,000 +/- sf	3,133,000 +/- sf
Trees to be Removed	741	802
Trees to be Planted	873	860
Total Parking Spaces Assumes 0.5 space/DU for 100% Affordable Housing Site.	2,800 spaces – Office 519 spaces – Residential	2,800 spaces – Office 919 spaces – Residential
Emergency Generators	13	13

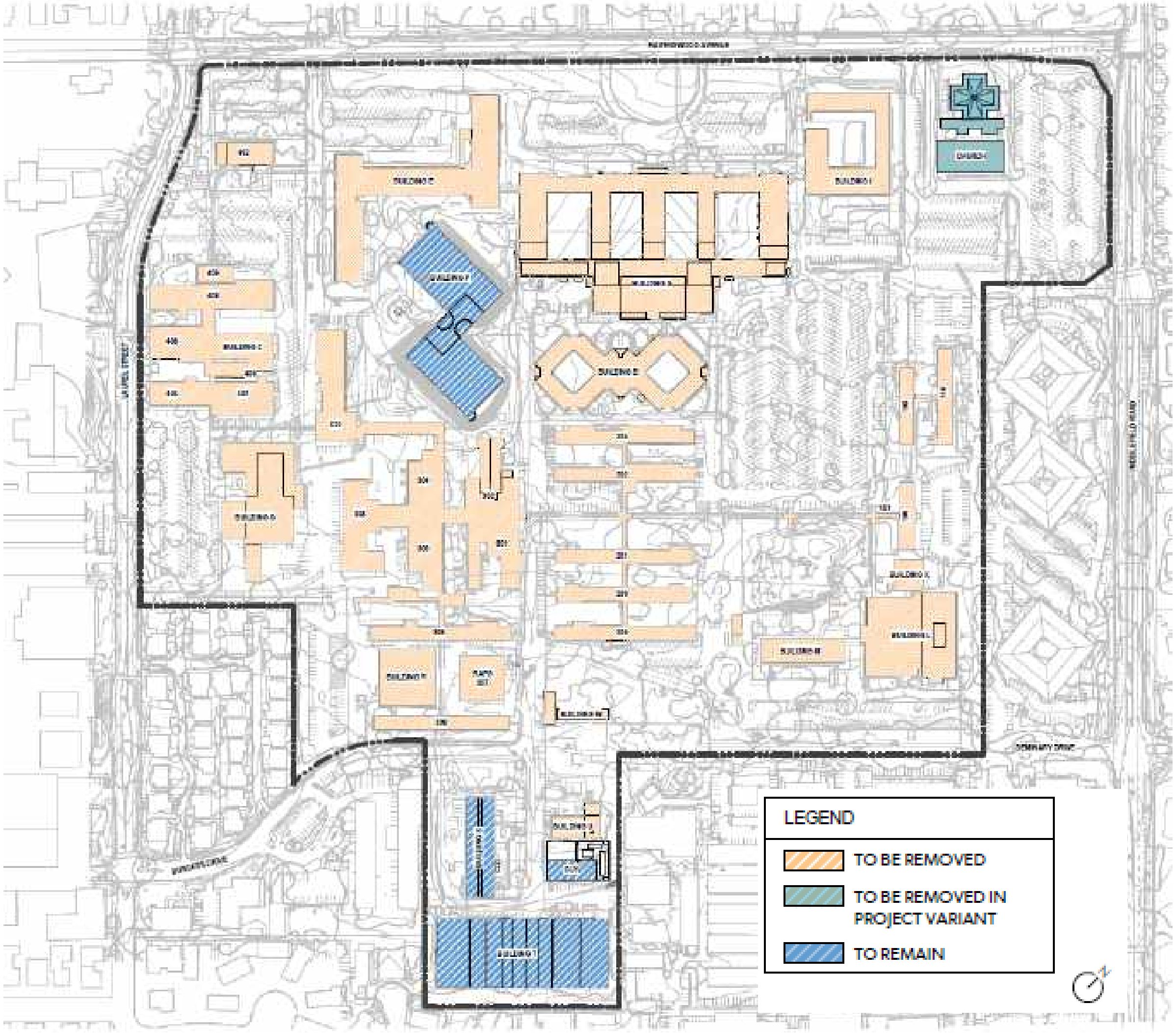

Figure 8. Map of Project Site showing buildings to be demolished in the Proposed Project (orange) and buildings to be retained (blue) in Proposed Project and Project Variant. Buildings at 201 Ravenswood Avenue (teal) would only be removed in the Project Variant. Source: STUDIOS, "Existing Building Footprint and Demolition Plan" Sheet G1.06, dated October 31, 2022 (updated March 5, 2024).

V. PROPOSED PROJECT IMPACT ANALYSIS

This section analyzes the project-specific and cumulative impacts of the Proposed Project and Project Variant on the environment, specifically historic resources, as required by the California Environmental Quality Act (CEQA).

Analysis of Project-Specific Impacts Under CEQA

The following provides an analysis of the project-specific impacts of the Proposed Project and Project Variant upon qualified historical resources. The analysis applies to both buildout scenarios (100-precent R&D scenario and 100-percent office scenario), as each scenario would demolish the same buildings and landscape features. As discussed above, substantial adverse change is defined by CEQA as: "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."[19] The significance of an historical resource is materially impaired when a project "demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance" and that justify or account for its inclusion in, or eligibility for inclusion in, the California Register.[20]

DETERMINING THE LEVEL OF SIGNIFICANCE

For each potential environmental impact identified, a statement of the level of significance of the impact is provided. Impacts are assessed as one of the following categories:

- The term "no impact" is used when the environmental resource being discussed would or may not be adversely by the proposed project. It means no change from existing conditions. This impact level does not need mitigation.
- A "less-than-significant impact" would or may cause a minor, but acceptable adverse change in the physical environment. This impact level does not require mitigation, even if feasible, under CEQA.
- A "significant impact" would or may have a substantial adverse effect on the physical environment, but could be reduced to a less-than-significant level with mitigation. If a project cannot be mitigated, the level of impact is considered "significant and unavoidable." Impacts may also be considered "potentially significant" if the analysis cannot definitively conclude that an impact would occur as a result of the implementation of the proposed project. Under CEQA, mitigation measures must be provided, where feasible, to reduce the magnitude of significant or potentially significant impacts.

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[19] 14 CCR § 15064.5(b)(1).

[20] 14 CCR § 15064.5(b)(2).

PROJECT-SPECIFIC IMPACTS

Impact 1.0 – Construction of the Proposed Project or Project Variant would cause a substantial adverse change in the significance of the SRI International Campus Historic District at 333 Ravenswood Avenue as defined in CEQA Guidelines Section 15064.5. (Significant and Unavoidable).

The California Register-eligible SRI International Campus Historic District includes 26 contributing buildings and two contributing landscape features. The Proposed Project and Project Variant would demolish 23 of the 26 contributing buildings and one of two contributing landscape features. The only three buildings that contribute to the Historic District that would remain are Building P, Building S, and Building T. The SRI International Monument, a contributing landscape feature, is proposed to be relocated on-site. Thirteen extant buildings and three landscape features on the site are non-contributing to the historic district, all of which would be demolished.

The number of buildings and landscape features that would be demolished as part of the Proposed Project and Project Variant would cause the historic district to lose historic integrity. The three buildings proposed to be retained are not sufficiently representative of the significance of SRI International's contributions as a research and development institution and are not clustered in a manner that would remain eligible as a historic district. Furthermore, the spatial relationships and siting of the buildings that convey the sense of a large institutional campus would be lost. As such, the site would no longer be eligible for listing in the California Register as a historic district. Therefore, the impact on the SRI International Campus Historic District in all Proposed Project scenarios and the Project Variant would be Significant and Unavoidable.

Impact 2.0 – Construction of the Proposed Project or Project Variant would cause a substantial adverse change in the significance of three individual historical resources (Building 100, Building A, and Building E) at 333 Ravenswood Avenue as defined in CEQA Guidelines Section 15064.5. (Significant and Unavoidable).

The Proposed Project or Project Variant would result in the demolition of the Building 100, Building A, and Building E. Demolition would render each of the buildings ineligible for listing in the California Register of Historical Resources, and is defined as a significant adverse change to the historic resources. Therefore, the impact to Building 100, Building A, and Building E in all Proposed Project scenarios and the Project Variant would be Significant and Unavoidable.

Impact 3.0 – Construction of the Project Variant would cause a substantial adverse change in the significance of the Chapel at 201 Ravenswood Avenue as defined in CEQA Guidelines Section 15064.5. (Significant and Unavoidable).

The Proposed Project does not include the property at 201 Ravenswood Avenue. However, the Project Variant would result in the demolition of the Chapel at 201 Ravenswood Avenue. Demolition would render the building ineligible for listing in the California Register of Historical Resources, which is defined as a significant adverse change to the historic resource. Therefore, the impact to the Chapel in the Project Variant would be Significant and Unavoidable.

Analysis of Cumulative Impacts Under CEQA

The California Environmental Quality Act defines cumulative impacts as follows:

> "Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.
>
> a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.[21]

Per CEQA Guidelines Section 15130(b)(1), cumulative impacts can be based on either (1) a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (2) a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. This analysis utilizes the list-based approach and considers development projects proposed, approved, under construction, and recently completed in the cities of Menlo Park, Palo Alto, and East Palo Alto based on a list of 56 projects provided by the City of Menlo Park.

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[21] 14 CCR § 15355.

Page & Turnbull cross-referenced the 56 project sites with lists of designated and identified historic resources, including the California Office of Historic Preservation Built Environment Resource Directory (BERD, last updated September 2022) for San Mateo and Santa Clara counties; City of Menlo Park Historic Site District zoning map; ConnectMenlo General Plan (City of Menlo Park, 2016); ConnectMenlo Draft Environmental Impact Report (City of Menlo Park, 2016); Menlo Park El Camino Real/Downtown Specific Plan Final EIR (ESA, April 2012); Palo Alto Property Information Map; and San Mateo County Historical Association, "City of East Palo Alto Historic Resources Inventory Report" (February 1994).

Of the 56 development projects, four include (or previously included) identified or potential historic resources: 409 Glenwood Avenue, Menlo Park (approved residential development project); 1162 El Camino Real, Menlo Park (residential development project, under construction); 565 Hamilton Avenue, Palo Alto (approved); and 1039 Garden Street, East Palo Alto (approved). Two properties were identified in 1990s HUD surveys and assigned status codes of "6Y" meaning that they were "determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or local listing": 717 Donohoe Street, East Palo Alto (proposed) and 2041 Euclid Avenue, East Palo Alto (approved). Additionally, the tenant improvements at 333 Ravenswood Avenue (Buildings P, S, and T) are included in the list of development projects; Buildings P, S and T are contributors to the Eligible SRI International Campus Historic District.

The 409 Glenwood Avenue project includes an identified historic residence (Gale House, addressed 417 Glenwood Avenue) that is proposed to be relocated on the project site to accommodate additional new residential construction.[22] The 1162 El Camino Real project involved the demolition of commercial properties—the former Doughty's Meat Market (1162 El Camino Real) and former McCarthy's Groceries (1170 El Camino Real). The two properties had been previously identified in the 1990 San Mateo County Historical Association survey, but through the CEQA process for the project were determined not to be eligible for listing in the National Register or California Register, and while potentially eligible for local listing, the City of Menlo Park does not maintain a local register of historic resources.[23] As such, neither project appears to have the potential to result in the demolition of a designated or identified historic resource.

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[22] Architectural Control, Use Permit, Below Market Rate Housing Agreement, and Mitigated Negative Declaration/Mark Sutherland/409 & 417 Glenwood Avenue and 1357 Laurel Street, Staff Report Number 18-097-PC, Planning Commission Meeting Date December 3, 2018, accessed online July 11, 2023, https://www.menlopark.org/DocumentCenter/View/19050/F2---409-Glenwood-Staff-Report?bidId=.

[23] Study Session/Chase Rapp/1162 El Camino Real, Staff Report Number 19-073-PC, Planning Commission Meeting Date October 7, 2019, accessed online July 11, 2023, https://www.menlopark.org/DocumentCenter/View/23052/G2-1162-El-Camino-Real?bidId=.

A building on the 565 Hamilton Avenue, Palo Alto site was deemed potentially eligible for listing in the California Register in 1998, according to the City of Palo Alto Property Information Map. However, based on Google Street View, the early twentieth century residential building was demolished in 2020.

A single-family house at 1039 Garden Street, East Palo Alto and greenhouses that appear to have been associated with a Japanese flower growing family were identified as individually eligible for local listing (5S2) in an East Palo Alto historic resources survey in the 1990s; however, the residence and greenhouses were demolished c. 2011 for the construction of a high school.[24] The property at 717 Donohoe Street, East Palo Alto, which was assigned a status code of 6Y in the 1990s, does not appear to have any extant buildings. The residential building at 2043 Euclid Avenue, East Palo Alto was also assigned a status code of 6Y in the 1990s, and through the EIR process for the 2041 Euclid Avenue (Woodland Park Euclid Improvements) project was found not to be eligible for the California Register.

Of the 56 development projects, six project sites are research and development (R&D) and/or light industrial sites: 1350 Adams Court (1315 O'Brien Drive), Menlo Park; 1075 O'Brien Drive and 20 Kelly Court, Menlo Park; 995-1005 O'Brien Drive and 1320 Willow Road, Menlo Park; 1030 O'Brien Drive, Menlo Park; 333 Ravenswood Avenue, Menlo Park (Buildings P, S, and T); and 807 E. Bayshore Avenue, East Palo Alto. Other than the SRI International Campus buildings, none of these sites include designated historic resources or previously identified eligible historic resources.

Except for the tenant improvements of Buildings P, S, and T, none of the 56 development projects are located on or immediately adjacent to the project site. Except for the tenant improvements of Buildings P, S, and T, none of the 56 development projects include historic resources from the same era of development as the SRI Campus, historic resources with Modernist architectural styles, or historic resources that have association with technology and innovation. None of the 56 development projects include Late Modernist religious buildings.

The tenant improvements at Buildings P, S, and T would likely include interior alterations, the details of which are not currently available. The tenant improvement scope is anticipated to add approximately 3,000 gross square feet (gsf) to Building P and remove approximately 6,000 gsf from Building S. Buildings P, S and T will thereafter accommodate 700 employees. While Buildings P, S, and T are currently contributors to the Eligible SRI International Campus Historic District, none of the

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[24] San Mateo County Historical Association, "City of East Palo Alto Historic Resources Inventory Report" (February 1994), accessed online November 21, 2023, https://www.cityofepa.org/sites/default/files/fileattachments/community_amp_economic_development/page/2961/full_report.pdf

three buildings are individually eligible historic buildings. If the Proposed Project or Project Variant are built, there would no longer be an extant eligible historic district, and Buildings P, S, and T would lose their historic resource status. Therefore, if the tenant improvements are carried out in the future, they would not result in any cumulative impacts to historic resources.

Therefore, the Parkline project is not anticipated to result in cumulative impacts related to the historic resources on the Project Site, or to related types of historic resources in Menlo Park, Palo Alto or East Palo Alto.

VI. MITIGATION MEASURES

Demolition cannot be mitigated to reduce impacts to a less-than-significant level and impacts will remain significant and unavoidable. However, mitigation measures that document and provide interpretation and/or commemoration of the resources to be demolished, including the historic district and individual resources, would lessen the impacts associated with the Proposed Project and Project Variant.

The following Mitigation Measure 1 and Mitigation Measure 2 are proposed to lessen Impact 1.0 and Impact 2.0, and would apply to both the Proposed Project and the Project Variant. Mitigation Measure 3 would lessen Impact 3.0 and would apply only to the Project Variant.

Mitigation Measure 1: Documentation of SRI International Property

Prior to issuance of any demolition, grading, or construction permits for the site, the project sponsor shall undertake documentation of the historic district and individual historic resources at 333 Ravenswood Avenue. The documentation shall be funded by the project sponsor and undertaken by a qualified professional(s) who meets the Secretary of the Interior's Professional Qualification Standards for history, architectural history, or architecture (Code of Federal Regulations, Title 36, Part 61, Appendix A), and be submitted for review by the Menlo Park Planning Division or a qualified historic consultant prior to issuance of demolition permits.[25] The documentation package created shall consist of the items listed below:

- MM 1a: Digital Photography
- MM 1b: Historical Report
- MM 1c: Site Plan & Drawings

The documentation materials shall be submitted to the Northwest Information Center at Sonoma State University, the repository for the California Historical Resources Information System. The documentation shall also be offered to state, regional, and local repositories, including City of Menlo Park Public Library, Menlo Park Historical Association, San Mateo County History Museum, Computer History Museum, and SRI International. Materials will either be provided in archival digital and/or hard copy formats depending on the capacity and preference of the repository. This measure would create a collection of reference materials that would be available to the public and inform future research. While the documentation utilizes some of the guidelines and specifications

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[25] Code of Federal Regulations, Title 36, Part 61, Appendix A, Professional Qualification Standards, accessed online April 12, 2023, https://www.govinfo.gov/content/pkg/CFR-1998-title36-vol1/pdf/CFR-1998-title36-vol1-part61-appA.pdf.

developed for the Historic American Buildings Survey (HABS), the documentation package does not need to be delivered as HABS documentation to the Library of Congress.

MM 1a: Digital Photography

Digital photographs will be taken of the contributing buildings and landscape elements and the overall character and setting of the eligible SRI International Campus Historic District and the three individually eligible historic resources (Buildings 100, A, and E). All digital photography shall be conducted according to current National Park Service (NPS) standards as specified in the National Register Photo Policy Factsheet (updated May 2013).[26] The photography shall be undertaken by a qualified professional with demonstrated experience in documentation photography. Large format negatives are not required.

Photograph views for the data set shall include:

- At least one photograph of each contributing building, which may be the primary façade or an oblique view showing the primary façade and a secondary facade
- Photographs of all facades of the three individually eligible buildings (Buildings 100, A, and E)
- Detail views of character-defining features of the three individually eligible buildings (Building 100, A, and E)
- Representative interior views of the three individually eligible buildings (Building 100, A, and E)
- Contextual views of the site and each contributing landscape element.

All photographs shall be referenced on a photographic key map or site plan. The photographic key shall show the photograph number with an arrow to indicate the direction of the view. Digital photographs shall be taken in uncompressed RAW file format and saved as TIFF files. The size of each image shall be a minimum of 1600x1200 pixels at 300 pixels per inch or larger and in color format. The file name for each electronic image shall correspond with the index of photographs and photograph label. If repositories request hard copy prints, the photographs will be printed on archival paper.

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[26] National Park Service, "Heritage Documentation Programs – HABS/HAER/HALS Photography Guidelines" (Washington D.C.: U.S. Department of the Interior, November 2011, updated June 2015), accessed online April 12, 2023, https://www.nps.gov/hdp/standards/PhotoGuidelines.pdf; and National Park Service, "National Register Photo Policy Fact Sheet" (Washington D.C.: U.S. Department of the Interior, updated May 15, 2013), accessed online April 12, 2023, https://www.nps.gov/subjects/nationalregister/upload/Photo_Policy_update_2013_05_15_508.pdf.

Drone photography of the site shall be taken to capture the overall site and saved in a digital file format on an archival DVD and submitted to repositories with the photographic documentation. The use of digital photography and drone photography in Mitigation Measure 2: Interpretive Program is encouraged.

MM 1b: Historical Report

A written historical narrative and report that meets the HABS Historical Report Guidelines shall be produced for the three individually eligible buildings. This HABS-style Historical Report may be based on the documentation provided in the 2022 Historic Resource Evaluation for the site and will include historic photographs and drawings, if available. The HABS-style Historical Reports shall follow the outline format with a statement of significance of the building and a description of the buildings. The HABS-style Historical Reports shall be submitted along with the Historic Resource Evaluation (2022), which documents the history of the site and the Historic District.

MM 1c: Site Plan & Drawings

An existing conditions site plan shall be produced depicting the current configuration and spatial relationships of the contributing buildings and landscape features. The existing conditions site plan shall be prepared by a professional who meets the Secretary of the Interior’s Professional Qualification Standards for Architecture or Historic Architecture and be reviewed by the professional retained to prepare the written history. Documentation of all plantings is not required, but depiction of the locations and types of mature trees, and designed hardscape and landscape features will be included.

Reasonable efforts should be made to locate original drawings and/or site plans of the district and contributing buildings during its period of significance. If located, selected representative drawings (such as site plans, elevations, sections, relevant key details) should be photographed or scanned at high resolution, reproduced, and included in the dataset.

Original architectural drawings or as-built drawings of the three individually eligible buildings proposed for demolition shall be submitted as part of the documentation package. Original drawings for Buildings A and E are known to be available in the SRI International records and should be reproduced. Efforts should be made to locate original drawings for Building 100. If original architectural or construction drawings of Building 100, including floor plans and elevations, cannot be located, measured drawings shall be prepared according to HABS guidelines by a professional who meets the Secretary of the Interior’s Professional

> Qualification Standards for Architecture or Historic Architecture, and be reviewed by the professional retained to prepare the written history.[27]

Mitigation Measure 2: Interpretative Program for SRI International Property

The project sponsor, in consultation with a qualified historian or architectural historian who meets the Secretary of the Interior's Professional Qualification Standards and an experienced exhibit design professional, shall develop an interpretive program for the site. The interpretive program plan shall be reviewed by the Planning Division or a qualified historic consultant prior to the issuance of demolition permit(s) for any demolition, grading, or construction permits for the site. The plan should include the proposed format and location of the content, as well as high-quality graphics and written narratives that will be incorporated. The interpretive display/feature(s) shall be fully implemented and/or installed prior to issuance of the final Certificate of Occupancy for the proposed project, and inspected by Planning Division staff or a qualified historic consultant to confirm its adherence to mitigation measure requirements.

The project sponsor shall provide a robust interpretive program with multiple permanent outdoor displays of interpretive materials concerning the history of SRI International. The high-quality interpretive display(s) shall be installed within the Project Site boundaries, made of durable, all-weather materials, and positioned to allow for high public visibility and interactivity. In addition to narrative text, the interpretative display(s) may include, but are not limited to, a display of photographs, news articles, memorabilia, and drawings. The Interpretive Program may use source materials from the Historic Resource Evaluation (HRE) or materials prepared as part of Mitigation Measure 1, but should also incorporate other primary and secondary sources, such as existing oral histories, historic photographs and video footage. In addition to interpreting the overall significance of the SRI International Campus as a Historic District, the interpretive displays shall feature information on the individual significance of Buildings 100, A, and E, including the specific innovations, significant persons, and architecture of those buildings.

In addition to interpretive display(s) in public areas of the site, the project sponsor may consider additional means of on-site interpretation, which may include digital interpretation methods, such as a website, mobile application, interpretive videos, drone footage, or virtual or augmented reality experience; and/or artwork inspired by or related to the history of the site. Creative means of interpretation such as through landscape and play features on site and/or other means of presenting information regarding the history and development of the site are encouraged.

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[27] National Park Service, "HABS Guidelines: Recording Historic Structures and Sites with HABS Measured Drawings" (Washington D.C.: U.S. Department of the Interior, 2008), accessed online April 12, https://www.nps.gov/hdp/standards/HABS/HABSDrawings.pdf.

While the interpretation program must include information about the history and development of SRI International and the important persons and innovations associated with the institution, interpretation may also include information on previous eras of site history such as the residential estate era and Dibble General Hospital era.

Mitigation Measure 3: Documentation of Chapel

Prior to issuance of any demolition, grading, or construction permits for the site, the project sponsor shall undertake documentation of the Chapel at 201 Ravenswood Avenue. The documentation shall be funded by the project sponsor and undertaken by a qualified professional(s) who meets the Secretary of the Interior's Professional Qualification Standards for history, architectural history, or architecture (Code of Federal Regulations, Title 36, Part 61, Appendix A), and be submitted for review by the Menlo Park Planning Division or a qualified historic consultant prior to issuance of demolition permits.[28] The documentation package created shall consist of the items listed below:

- MM 3a: Digital Photography
- MM 3b: Historical Report

The documentation materials shall be submitted to the Northwest Information Center at Sonoma State University, the repository for the California Historical Resources Information System. The documentation shall also be offered to local repositories, including City of Menlo Park Public Library, Menlo Park Historical Association, and San Mateo County History Museum. Materials will either be provided in archival digital and/or hard copy formats depending on the capacity and preference of the repository. This measure would create a collection of reference materials that would be available to the public and inform future research. While the documentation utilizes some of the guidelines and specifications developed for the Historic American Buildings Survey (HABS), the documentation package does not need to be delivered as HABS documentation to the Library of Congress.

MM 3a: Digital Photography

Digital photographs will be taken of the Chapel at 201 Ravenswood Avenue. All digital photography shall be conducted according to current National Park Service (NPS) standards as specified in the National Register Photo Policy Factsheet (updated May 2013).[29] The

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[28] Code of Federal Regulations, Title 36, Part 61, Appendix A, Professional Qualification Standards, accessed online April 12, 2023, https://www.govinfo.gov/content/pkg/CFR-1998-title36-vol1/pdf/CFR-1998-title36-vol1-part61-appA.pdf.

[29] National Park Service, "Heritage Documentation Programs – HABS/HAER/HALS Photography Guidelines" (Washington D.C.: U.S. Department of the Interior, November 2011, updated June 2015), accessed online April 12, 2023, https://www.nps.gov/hdp/standards/PhotoGuidelines.pdf; and National Park Service, "National Register Photo Policy Fact

photography shall be undertaken by a qualified professional with demonstrated experience in documentation photography. Large format negatives are not required.

Photograph views for the data set shall include:

- Photographs of all facades
- Detail views of character-defining features
- Representative interior views of the nave and narthex
- Contextual views of the site, including the courtyards at the corners of the cross-plan Chapel.
    - Contextual views may include the multi-use building, but full façade and detail views of the multi-use building are not required.

All photographs shall be referenced on a photographic key map or site plan. The photographic key shall show the photograph number with an arrow to indicate the direction of the view. Digital photographs shall be taken in uncompressed RAW file format and saved as TIFF files. The size of each image shall be a minimum of 1600x1200 pixels at 300 pixels per inch or larger and in color format. The file name for each electronic image shall correspond with the index of photographs and photograph label. If repositories request hard copy prints, the photographs will be printed on archival paper.

MM 3b: Historical Report

A written historical narrative and report that meets the HABS Historical Report Guidelines shall be produced for the Chapel at 201 Ravenswood Avenue. This HABS-style Historical Report may be based on the documentation provided in the 2024 DPR 523 form evaluation for the property and will include historic photographs and drawings, if available. The HABS-style Historical Reports shall follow the outline format with a statement of significance of the building and a description of the building. [30]

Impacts After Mitigation

The implementation of Mitigation Measures 1 and 2 would lessen the level of impact to the California Register-eligible SRI International Campus Historic District (Impact 1.0) and the level of impact to the three individually California Register-eligible historic resources on the SRI International Campus (Impact 2.0). Mitigation Measure 3 would lessen the level of impact to the California

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Sheet" (Washington D.C.: U.S. Department of the Interior, updated May 15, 2013), accessed online April 12, 2023, https://www.nps.gov/subjects/nationalregister/upload/Photo_Policy_update_2013_05_15_508.pdf.

[30] The multi-use building may be mentioned in the site description, but a full description of the multi-use building is not required.

Register-eligible Chapel at 201 Ravenswood Avenue. However, demolition of historic resources cannot be mitigated to a less-than-significant level, and therefore impacts after mitigation would remain **Significant and Unavoidable**.

VII. CONCLUSION

The SRI International Campus in Menlo Park features buildings constructed for Dibble General Hospital, which was operated by the U.S. military during World War II, as well as buildings constructed by and for Stanford Research Institute. Prior to the construction of Dibble General Hospital, the site was part of larger residential estates owned by William Eustace Barron (c.1864-1871), Milton Slocum Latham (1871-1882), and Mary Frances Sherwood Hopkins and Timothy Hopkins (1883-1941), but no built resources survive from this era. SRI International was originally established by the trustees of Stanford University as Stanford Research Institute (SRI) in 1946 as an independent, nonprofit contract research institute to promote innovation and economic development in the Western United States, and moved to the 333 Ravenswood Avenue campus in 1947. In 1970, SRI formally separated from Stanford University and eventually became known as SRI International. SRI International was the largest employer in Menlo Park in the second half of the twentieth century and was the source of many advancements that aided in the success of the burgeoning Silicon Valley, including innovations that transformed the world in the realm of internetwork and personal computing, as well as other sectors including military defense, business and economics, health, education, artificial intelligence, robotics and physical sciences.

The Project Site was evaluated in April 2022 by Page & Turnbull and determined to be eligible for listing as a historic district in the California Register of Historical Resources (California Register) under Criterion 1 (Events) as an innovative research and development institution, particularly in the realm of the early internet, personal computing, and robotics, with 26 contributing buildings and two contributing landscape features. In addition, Page & Turnbull's evaluation found four buildings to be individually eligible for listing in the California Register: Building 100 under Criterion 1 as the first permanent home of Stanford Research Institute (SRI); Building A under Criterion 1 as the first purpose-built building for Stanford Research Institute and the public face of the institution as the main administration building, and under Criterion 3 as a distinctive example of Midcentury Modern architecture by the firm Stanton & Stockwell; and Building E under Criterion 1 for its specific associations with innovations related to ARPANET, the Mother of All Demos, and Artificial Intelligence Center robotics, and under Criterion 2 for association with Dr. Douglas Carl Engelbart and Donald Nielson. As such, the SRI International Campus at 333 Ravenswood Avenue and Buildings 100, A, and E, are historic resources for the purposes of CEQA.

The Project Variant also includes the property at 201 Ravenswood Avenue, which has a 1966 chapel (Chapel) and a 1958 multi-use building. Page & Turnbull evaluated the property in April 2024 and determined that the Chapel is individually eligible for listing in the California Register under Criterion 3 (Architecture) as a distinctive local example of Late Modernist religious architecture. As such, the Chapel at 201 Ravenswood Avenue is a historic resource for the purposes of CEQA.

This Historic Resources Technical Report (HRTR) finds that the Proposed Project would cause a significant and unavoidable impact on the SRI International Campus Historic District, as well as the three individually significant buildings: Building 100, Building A, and Building E. Implementation of the Proposed Project would require the demolition of these three individual buildings, as well as 23 of the 26 Historic District contributor buildings and one of two contributing landscape features. As a result, the Historic District and three individual buildings on the SRI International campus would lose eligibility for listing in the California Register. The Chapel would be retained in the Proposed Project. Thus, the impact to the Historic District and three individual buildings on the SRI International Campus would be Significant and Unavoidable, but there would be no impact to the Chapel in the Proposed Project.

This HRTR finds that the Project Variant cause a significant and unavoidable impact to the SRI International Campus Historic District, as well as the four individually significant buildings: Building 100, Building A, and Building E, as well as the Chapel (201 Ravenswood Avenue). Implementation of the Project Variant would require the demolition of these four individual buildings, as well as 23 of the 26 Historic District contributor buildings and one of two contributing landscape features. As a result, the Historic District and four individual buildings would lose eligibility for listing in the California Register, and the impact to all historic resources would be Significant and Unavoidable.

Feasible mitigation measures, including documentation and an interpretative program, cannot mitigate the impact to a less-than-significant level. The impacts to the SRI International Campus Historic District and three individual historic resources (four individual historic resources in the Project Variant) would be Significant and Unavoidable.

VIII. REFERENCES CITED

Code of Federal Regulations, Title 36, Part 61, Appendix A, Professional Qualification Standards. Accessed online April 12, 2023, https://www.govinfo.gov/content/pkg/CFR-1998-title36-vol1/pdf/CFR-1998-title36-vol1-part61-appA.pdf.

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National Park Service. Secretary of the Interior's Standards for the Treatment of Historic Properties. Washington D.C.: U.S. Department of the Interior, 2017. Accessed online, https://www.nps.gov/orgs/1739/upload/treatment-guidelines-2017-part1-preservation-rehabilitation.pdf.

Page & Turnbull. *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation*. Submitted to City of Menlo Park, April 21, 2022.

Page & Turnbull, 201 Ravenswood Avenue, Department of Parks and Recreation Primary Record (523A) and Building, Structure, Object Record (523B). Prepared April 4, 2024.

Public Resources Code (PRC) § 21000 et seq. California Environmental Quality Act (CEQA).

Public Resources Code (PRC) § 5020 – 5029.6. Historical Resources.

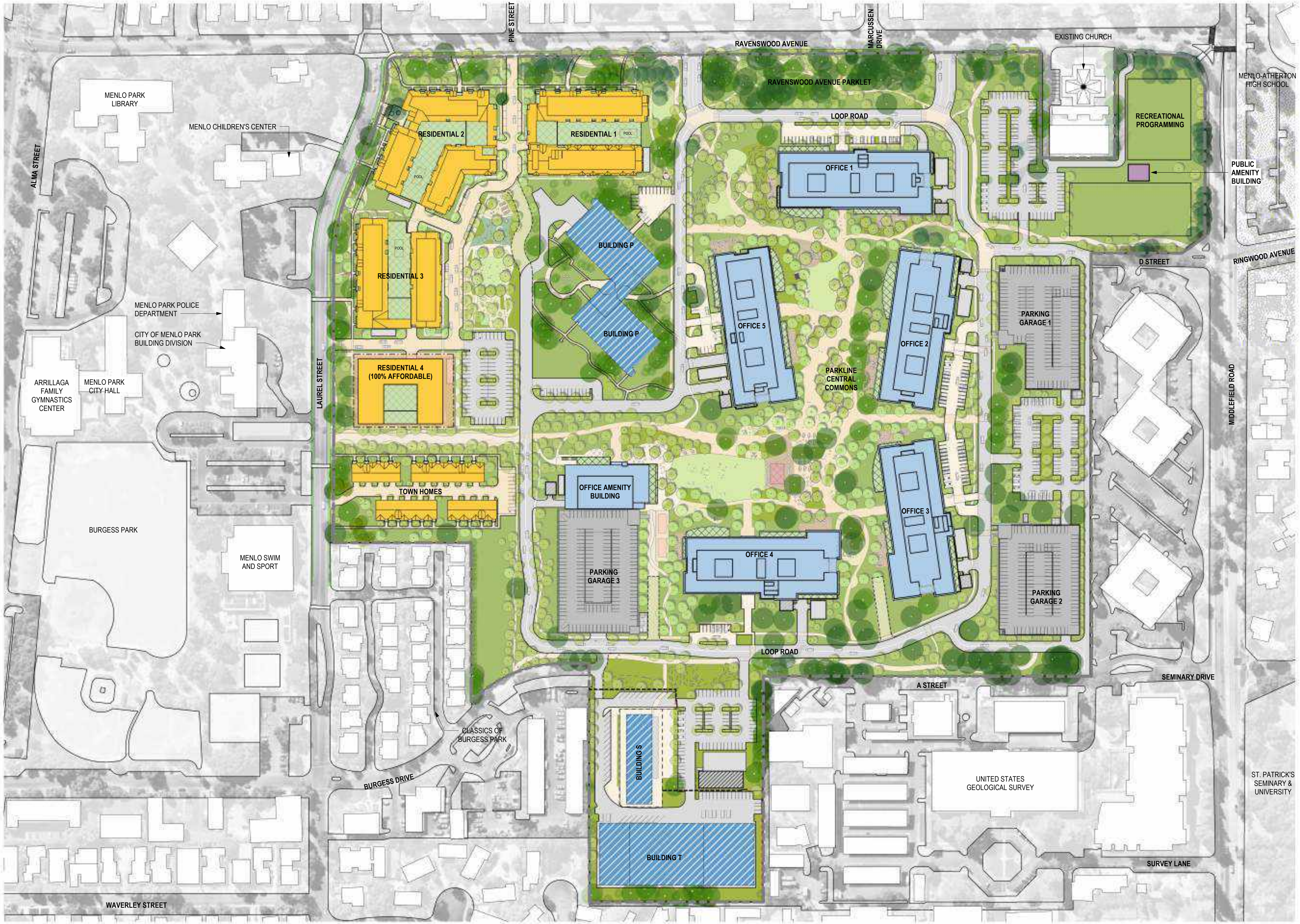
IX. APPENDIX

Appendix A – Preparer Qualifications

This Historic Resources Technical Report was prepared by Page & Turnbull of San Francisco, California. Page & Turnbull staff responsible for this report include Ruth Todd, FAIA, AICP, LEED AP, Principal-in-charge; Christina Dikas, Associate Principal, project manager; and Hannah Simonson, Associate, Cultural Resources Planner, primary author. All staff involved meet or exceed the Secretary of the Interior's Professional Qualification Standards for Historic Architecture, Architectural History, or History.

Appendix B – Parkline Conceptual Site Plans

The following Parkline Project conceptual site plans were prepared by STUDIOS Architecture. The Proposed Project conceptual site plan is dated April 19, 2023. The Project Variant conceptual site plan is dated February 21, 2024.



LEGEND

- 🟨 RESIDENTIAL
- 🟦 OFFICE
- 🟩 TERRACE
- 🟪 PUBLIC AMENITY BUILDING
- ▨ EXISTING BUILDINGS
- ▨ PARKING GARAGE
- ▨ UTILITY YARD
- ▨ TRASH ENCLOSURE FOOTPRINT / ROOF
- 🟥 OUTDOOR PAVILION / EVENT SPACE

Scale: 1" = 100' -0"

PARKLINE

LANE PARTNERS

SRI International

STUDIOS

OJB

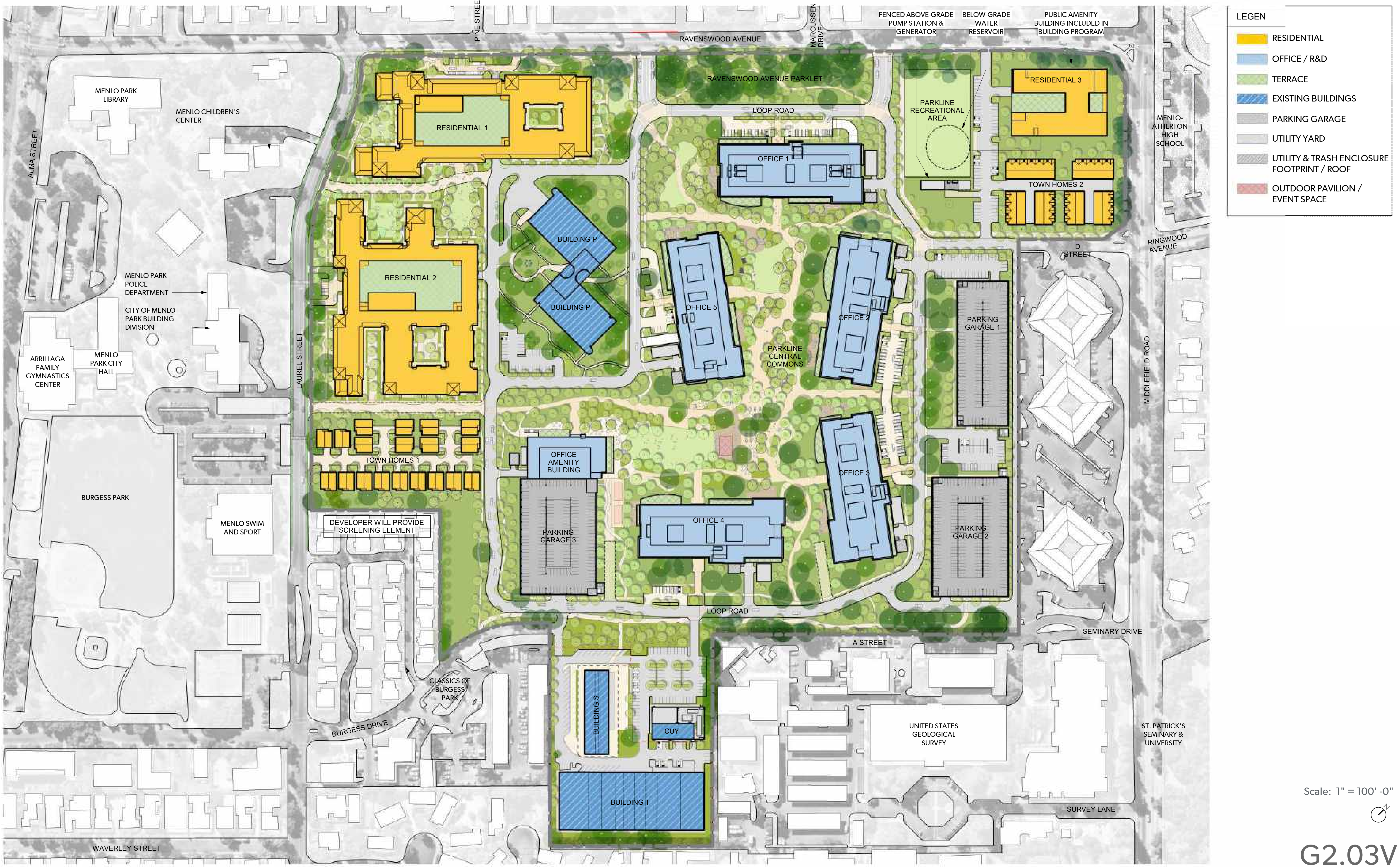
KIER+WRIGHT

04/19/202

CONCEPTUAL MASTER PLAN - PROJECT (BASE SCHEME - 500 DU) - OFFICE OR R&D BUILDOUT

SK-ICF.06.10

G2.03



G2.03V

PARKLINE LANE PARTNERS SRI International STUDIOS OJB KIER+WRIGHT TCA

02/21/2024

CONCEPTUAL MASTER PLAN - VARIANT (2024)

SK-ICF.06.40

Appendix C – SRI International Campus Historic Resource Evaluation (2022)

The following Historic Resource Evaluation was prepared by Page & Turnbull and submitted to the City of Menlo Park in 2022.

PAGE&TURNBULL

SRI INTERNATIONAL CAMPUS
333 RAVENSWOOD AVENUE
HISTORIC RESOURCE EVALUATION

MENLO PARK, CALIFORNIA
[21144]

PREPARED FOR:
LANE PARTNERS

SUBMITTED TO:
MENLO PARK PLANNING DEPARTMENT

April 21, 2022

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TABLE OF CONTENTS

I. INTRODUCTION

This Historic Resource Evaluation (HRE) has been prepared at the request of Lane Partners for the SRI International campus at 333 Ravenswood Avenue in Menlo Park, for submittal to the Menlo Park Community Development Department Planning Division **(Figure 1)**. The campus spans five legal parcels: APN 062-390-660, 062-390-670, 062-390-730, 062-390-760, and 062-390-780, which have C-1(X) zoning (Administrative and Professional District, Restrictive with Conditional Development combining district). Currently owned and occupied by SRI International, a non-profit contract research and development (R&D) institution founded in 1946 as Stanford Research Institute, the campus was formerly occupied by Dibble General Hospital (Dibble Hospital) which was operated by the United States military for a brief period during World War II. Before the war, the site was part of a much larger residential estate originally built circa 1864 for William Eustace Barron and later owned by Timothy Hopkins. While none of the buildings or structures associated with the residential estates remain on the subject property, the current site includes a mix of repurposed Dibble-era military buildings and purpose-built SRI International buildings and structures.

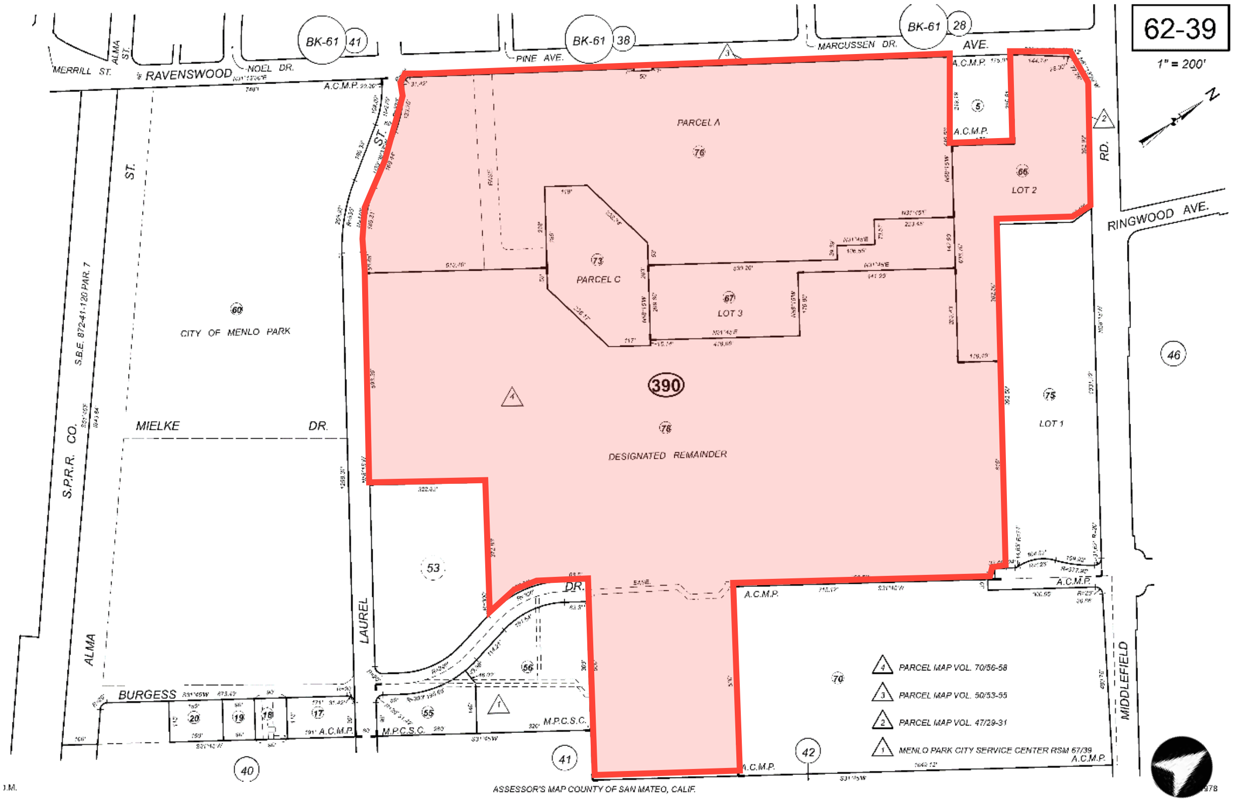

Figure 1. The location of the subject property, spanning five legal parcels, is shaded and outlined in red. Source: San Mateo County Assessor Property Maps Portal. Edited by Page & Turnbull.

Description of SRI International Campus

The SRI International campus at 333 Ravenswood Avenue in Menlo Park is a 63-acre site with an irregular boundary spanning five legal parcels **(Figure 2)**. Located at the south intersection of Middlefield Road and Ravenswood Avenue, the campus is bounded by Laurel Street to the south and wraps around three sides of the First Church of Christ Scientist at 201 Ravenswood Avenue and an office park at 535 Middlefield Road.[1] Immediately east of the campus is the United States Geological Survey (USGS) campus at 345 Middlefield Road, residences along Waverly Street, and a City of Menlo Park Corporation Yard at 333 Burgess Drive. Southeast of the SRI International Campus are residences along Thurlow and Barron streets in the Linfield Oaks neighborhood. A number of other civic and religious properties are located nearby, including Menlo-Atherton High School (555 Middlefield Road), Saint Patrick's Seminary & University (32 Middlefield Road), Corpus Christi Monastery (215 Oak Grove Avenue), and Menlo Park Civic Center Complex and Burgess Park (701 Laurel Street). The former Barron-Latham-Hopkins Estate Gatehouse, now owned by the Junior League of Palo Alto-Midpeninsula, is across the street at 555 Ravenswood Avenue.

The campus includes 39 extant buildings, 20 of which were built by the U.S. military for Dibble Hospital and have since been adaptively used, and 19 of which were built or installed by and for SRI International, as well as number of permanent and temporary structures. In addition to the many mature trees that landscape the campus, planted during various periods of development, the campus includes landscape features such as a designed landscape known as "Oak Park" between Buildings W and 205, a "research field" north of Building M, landscaped areas and courtyards associated with individual buildings, as well as a number of roads, paths, and parking lots.

Several private roads provide vehicular access throughout the campus, including A Street, 1st Street, W. 4th Street, E. 4th Street, and a portion of Burgess Drive. The main entrance to the site is a vehicle loop around a landscaped semi-circle connected to two parking lots in front of the main building, Building A, which contains the visitor lobby and security desk. Additional visitor-accessible parking lots are located off of Ravenswood Avenue near Buildings E and 402 and off of Laurel Street near Building G. The two primary secured employee parking areas are located between buildings 409 and 412, accessed through the Ravenswood Gate on West 4th Street off of Ravenswood Avenue, and east of Building B, accessed through the Middlefield Gate on D Street off of Middlefield Road. A secured tenant parking area is located at the northwest end of the campus, at the intersection of Ravenswood Avenue and Middlefield Road. Smaller areas of designated parking are located throughout the campus.

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[1] The SRI International Campus is oriented off of true north. For the purposes of this report, Middlefield Road will be referred to as the north side of the campus, and so on. The north arrows on all graphics indicate true north, unless otherwise noted.

Figure 2. Aerial view of the SRI International Campus at 333 Ravenswood Avenue, indicated by red outline. Source: Google Maps, 2021. Edited by Page & Turnbull.

The following table lists the extant buildings on the SRI International campus.

TABLE 1. EXTANT BUILDINGS ON SRI INTERNATIONAL CAMPUS

Name	Year Built	Architect/Builder	Alternate/Previous Name(s)[2]
Building A	1958-61	Stanton & Stockwell	Main Building/Bldg. 1
Building B	1976-77	William L. Pereira Assoc.	Bldg. 22
Building E	1966	Stanton & Stockwell	Engineering Building/Bldg. 40
Building G	1964	Stanton & Stockwell	Engineering Building No. 2/Bldg. 44
Building I	1969	Skidmore, Owings & Merrill (SOM)	International Building/Bldg. 20
Building K	1971	Unknown	Bldg. 16
Building L	1967	Stanton & Stockwell	Health Research Facility II/Bldg. 18
Building M	1962	Stanton & Stockwell	Health Research Building/Bldg. 28 (decommissioned)
Building M-1	c. 2000	Unknown (prefab)	N/A
Building P	1980-81	William L. Pereira Assoc.; Eckbo Kay Associates	Physical Sciences/Bldg. 32

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[2] The purpose-built SRI buildings had numbered names until the early 1980s when they were renamed with letters.

Name	Year Built	Architect/Builder	Alternate/Previous Name(s)[2]
Building R	1984	Unknown (Prefab)	Shipping & Receiving
Building S	1981	R. A. Rotondo (engineers)	High Bay Project
Building T	1962	Robert E. Jones	Animal Facilities – Physical Sciences/Bldg. 255
Building U	1986-87	Bechtel; International Power Technology (IPT)	Cogeneration Plant
Building W	1988	SRI International	Waste Storage Facility
Building 100	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Administration Building
Building 108	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital BOQ
Building 110	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 201	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 202	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 203	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 204	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 205	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 301	1943-44	U.S. Military/G.W. Williams Co.	Dibble General Hospital Civic Center
Building 302-CAF	1943-44	U.S. Military/G.W. Williams Co.	Dibble General Hospital Civic Center
Building 303	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Altered Corridor
Building 304	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Mess Hall
Building 305	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 306	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 307	1992	Kimbrell Architects, Inc.	N/A
Building 309	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Ward
Building 320	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Mess Hall/Altered Corridor
Building 402/404	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Warehouse-Utility
Building 405	c.1948-56	Unknown	N/A
Building 406	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Warehouse-Utility
Building 408	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital Warehouse-Utility
Building 409	c.1948-56	Paul James Huston	N/A
Building 412	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital / Old Steam Power Plant (decommissioned)
Greenhouse	c. mid- to late 1980s	Unknown	Unknown

Methodology

This report provides a summary of the current historic status and historic context for the site, including various eras of development from the Barron-Latham-Hopkins Estate era, Dibble Hospital Era, and Stanford Village era to the Stanford Research Institute/SRI International era. The report includes historic context for the various architectural styles represented and notable architects, landscape architects, and builder-contractors involved in the design of parts of the campus. The report also includes a discussion and evaluation of potential historic districts and evaluation of potential individual historic resources; integrity discussions and lists of character-defining features have been provided for eligible historic resources. A full building description is provided for buildings, structures, and/or landscape features that were found to be individually eligible historic resources. Buildings, structures, and landscape features that were found not to be eligible historic resources, either as individual resources or as contributors to an eligible historic district, are briefly described. The appendix includes chronological historic aerial photographs and campus maps.

Page & Turnbull prepared this report using research collected at various local repositories, including the San Mateo County Assessor, SRI International Facilities, SRI International Library & Records, Stanford University Libraries, California State Library, University of Berkeley Environmental Design Archives, and History San Jose. Online repositories and sources were also consulted, including the U.S. National Library of Medicine, California Digital Newspaper Collection, Newspapers.com, Internet Archive, David Rumsey Map Collection, and University of California Santa Barbara Historic Aerials FrameFinder. Key primary sources consulted and cited in this report include original and as-built architectural drawings, and historical photographs, maps, and newspapers. Key secondary sources, among others, included publications written by former SRI employees: *A Heritage of Innovation: SRI's First Half Century* (2004) by Donald Nielson, and *SRI: The Founding Years* (1980) and *SRI: The Take-Off Days* (1986) both by Weldon B. Gibson. Additional published works that were reviewed include *Historic Context for Department of Defense Facilities World War II Permanent Construction* (1997) by R. Christopher Goodwin and Associates, Inc., *Dibble General Hospital, Menlo Park, CA (1946)*, and *Life Begins…Dibble General Hospital* (1946), both of which were published by the hospital or related entities.

Due to the volume of building permits likely to be on file for a large campus with over 30 buildings with changing interior uses, and the availability of original historical drawings from SRI International Facilities, building permit records were not requested from the City of Menlo Park; alterations to the buildings were documented based on visual inspection compared with original architectural drawings and available early photographs. The National Archives and Records Administration (NARA) appears to have drawings of some of the Dibble Hospital era buildings on file in the "Plans of Military Hospitals and Medical Facilities 1894-1951" and "Standard Plans of Hospitals and Medical Facilities 1917-1952" collections at their College Park, Maryland facility; however, due to COVID-19 safety protocols, the NARA facility was not available for in-person or remote research.

Assessment of trees on the subject property, including potential heritage trees, was beyond the scope of this report; a detailed tree inventory and assessment will be prepared under separate cover for Lane Partners by certified arborists at Bartlett Consulting.

Page & Turnbull staff conducted site visits to the SRI International campus at 333 Ravenswood Avenue on June 8 and June 17, 2021. All current photographs within this report were taken at that time, unless otherwise noted.

Summary of Findings

None of the buildings or structures on the SRI International campus are currently listed in the National Register of Historic Places (National Register) or in the California Register of Historical Resources (California Register) individually or as historic district, nor does the property have Menlo Park Historic Site District (H) zoning. It appears that the property has not previously been evaluated for eligibility for listing in the California Register as a potential historic district, and it does not appear that any of the buildings on the property have been evaluated for individual eligibility for the California Register.

Page & Turnbull found that three buildings on the SRI International Campus are individually eligible for listing in the California Register: Building A, Building E, and Building 100. These three buildings are therefore historical resources for the purposes of review under the California Environmental Quality Act (CEQA).

Additionally, Page & Turnbull identified a California Register-eligible SRI International Campus Historic District, which is eligible under Criterion 1 (Events) for association with SRI International as an innovative research and development institution that has contributed numerous advancements in a variety of fields including computing, business and economics, health and medicine, and physical sciences. Often called the birthplace of the internet, some of the most significant advances include those related to ARPANET, internetworks, dot coms, and personal computing, including the invention of the computer mouse. The SRI International Historic District has an on-going period of significance beginning in 1947 through the present day. Contributors to the district include buildings that have laboratory and office spaces that have been associated with research and development activities. Buildings that have ancillary or support functions, such as power generation, machine shops, storage, and maintenance, are considered non-contributors. The eligible historic district has 26 contributing buildings and 2 contributing landscape features, as well as 13 non-contributing buildings. The California Register-eligible SRI International Campus Historic District is a historical resource for the purposes of CEQA.

Page & Turnbull also identified a potential Dibble General Hospital Historic District, with significance under Criterion 1 (events) for associated with national planning and construction of medical facilities during World War II, and under Criterion 3 (Architecture) as a property whose elements lacked individual distinction but as a district embodied the distinct characteristics of a Type-A general hospital with a pavilion plan built between 1943 and 1945 by prominent local builders G.W. Williams Co. (later known as Williams & Burrows). However, this potential district was found to lack sufficient historic integrity to support eligibility under either criterion.

The following table provides a summary of Page & Turnbull's findings. Individually eligible buildings are shaded red and contributors to the eligible SRI International Campus Historic District are shaded light pink. A map illustrating Page & Turnbull's findings follows the summary table.

TABLE 2. SUMMARY OF FINDINGS FOR HISTORIC RESOURCES ON SRI INTERNATIONAL CAMPUS

Name	Year Built	Individual Historic Resource Eligible for CR[3]	CR-Eligible SRI International Campus Historic District Contributor/ Non-Contributor	Historical Resource for CEQA
Building A	1958-61	Yes – Criterion 1; 3	Contributor	Yes
Building B	1976-77	No	Contributor	Yes
Building E	1966	Yes – Criterion 1; 2	Contributor	Yes
Building G	1964	No	Contributor	Yes
Building I	1969	No	Contributor	Yes
Building K	1971	No	Non-Contributor	No
Building L	1967	No	Contributor	Yes
Building M	1962	No	Contributor	Yes
Building M-1	c. 2000	No	Non-Contributor	No
Building P	1980-81	No	Contributor	Yes
Building R	1984	No	Non-Contributor	No
Building S	1981	No	Contributor	Yes
Building T	1962	No	Contributor	Yes
Building U	1986-87	No	Non-Contributor	No
Building W	1988	No	Non-Contributor	No
Building 100	1943	Yes – Criterion 1	Contributor	Yes
Building 108	1943	No	Contributor	Yes
Building 110	1943	No	Contributor	Yes
Building 201	1943	No	Contributor	Yes
Building 202	1943	No	Contributor	Yes
Building 203	1943	No	Non-Contributor	No
Building 204	1943	No	Contributor	Yes
Building 205	1943	No	Contributor	Yes
Building 301	1943-44	No	Contributor	Yes
Building 302-CAF	1943-44	No	Non-Contributor	No

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[3] CR = California Register.

Name	**Year Built**	**Individual Historic Resource Eligible for CR**[3]	**CR-Eligible SRI International Campus Historic District Contributor/ Non-Contributor**	**Historical Resource for CEQA**
Building 303	1943	No	Non-Contributor	No
Building 304	1943	No	Contributor	Yes
Building 305	1943	No	Non-Contributor	No
Building 306	1943	No	Non-Contributor	No
Building 307	1992	No	Contributor	Yes
Building 309	1943	No	Contributor	Yes
Building 320	1943	No	Contributor	Yes
Building 402/404	1943	No	Contributor	Yes
Building 405	c.1948-56	No	Contributor	Yes
Building 406	1943	No	Contributor	Yes
Building 408	1943	No	Non-Contributor	No
Building 409	c.1948-56	No	Contributor	Yes
Building 412	1943	No	Non-Contributor	No
Greenhouse	c. mid- to late 1980s	No	Non-Contributor	No
Research Field	c.1981-1989	No	Contributor	Yes
SRI International Monument	c.1970	No	Contributor	Yes

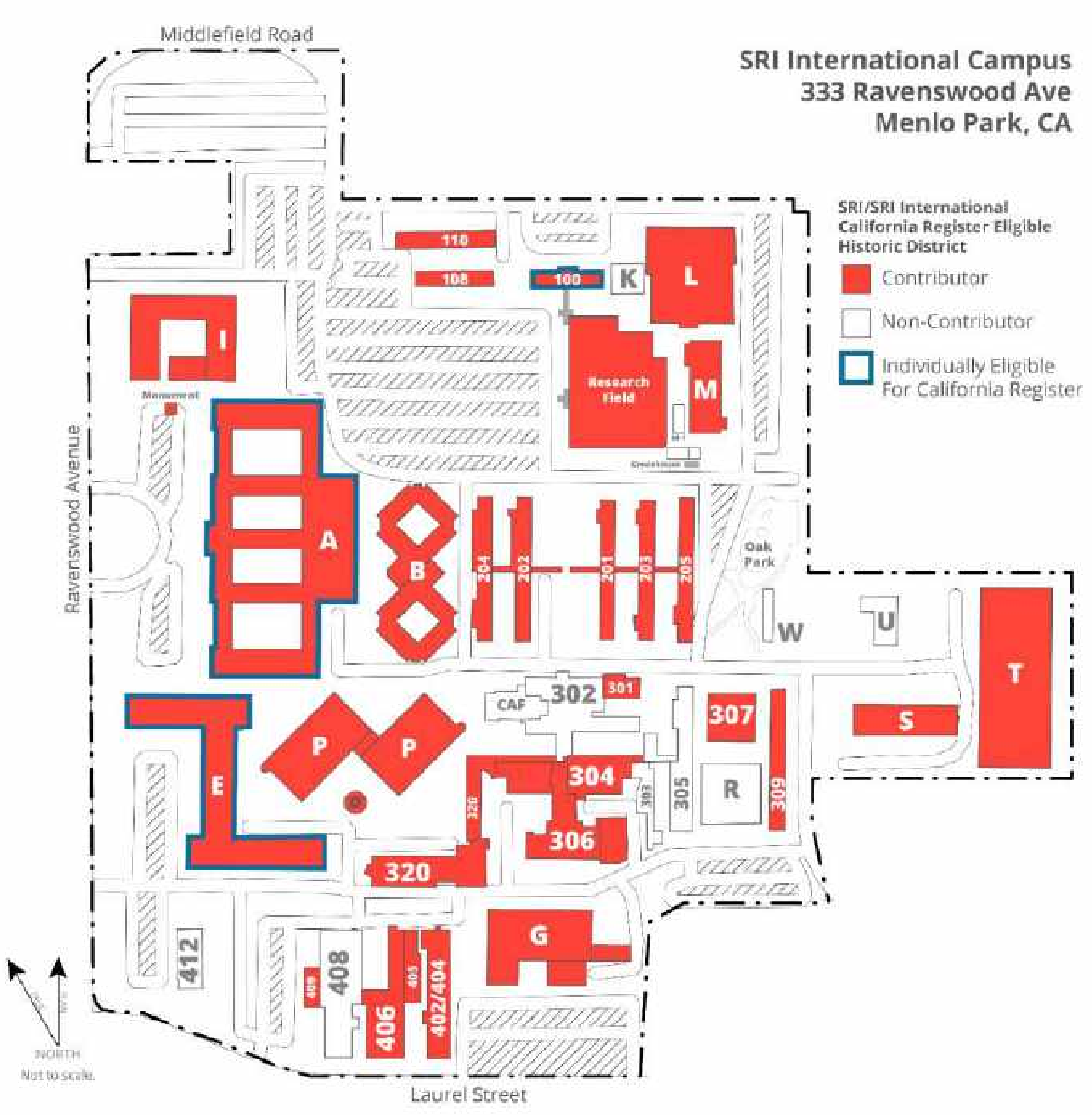

Figure 3. Map showing summary of findings for California Register eligibility. Source: Page & Turnbull.

II. EXISTING HISTORIC STATUS

The following section examines the national, state, and local historic status currently assigned to the SRI International campus at 333 Ravenswood Avenue, Menlo Park.

National Register of Historic Places

The National Register of Historic Places (National Register) is the nation's most comprehensive inventory of historic resources. The National Register is administered by the National Park Service and includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

The subject property is not currently listed in the National Register of Historic Places.

California Register of Historical Resources

The California Register of Historical Resources (California Register) is an inventory of significant architectural, archaeological, and historical resources in the State of California. Resources can be listed in the California Register through a number of methods. State Historical Landmarks and National Register-listed properties are automatically listed in the California Register. Properties can also be nominated to the California Register by local governments, private organizations, or citizens. The evaluative criteria used by the California Register for determining eligibility are closely based on those developed by the National Park Service for the National Register of Historic Places.

The subject property is not currently listed in the California Register of Historical Resources.

California Historical Resource Status Codes

Properties listed or under review by the State of California Office of Historic Preservation are listed within the Built Environment Resource Directory (BERD) and are assigned a California Historical Resource Status Code (Status Code) of "1" to "7" to establish their historical significance in relation to the National Register of Historic Places (National Register) or California Register of Historical Resources (California Register).[4] Properties with a Status Code of "1" or "2" are either eligible for listing in the California Register or the National Register, or are already listed in one or both of the registers. Properties assigned Status Codes of "3" or "4" appear to be eligible for listing in either register, but normally require more research to support this rating. Properties assigned a Status Code of "5" have typically been determined to be locally significant or to have contextual

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[4] California State Office of Historic Preservation, Built Environment Resource Directory (BERD), San Mateo County, updated March 2020.

importance. Properties with a Status Code of "6" are not eligible for listing in either register. Finally, a Status Code of "7" means that the resource has not been evaluated for the National Register or the California Register, or needs reevaluation.

The subject property is not currently listed in the BERD database for San Mateo County with a status code. The most recent update to the BERD database was in March 2020.

Menlo Park Historic Site District (H) Zoning

The City of Menlo Park does not maintain a local register of historic resources. However, Chapter 16.54 of the Zoning Ordinance in the City of Menlo Park Municipal Code establishes Historic Site District (H) zoning. Historic Site District Zoning was implemented for the "protection, enhancement, perpetuation and use of structures, sites and areas that are reminders of people, events or eras, or which provide significant examples of architectural styles and the physical surroundings in which past generations lived."[5] Chapter 16.54 allows the City Council to designate historic resources or sites for H-zoning, and requires that permits for construction, alteration, removal, or demolition of designated resources be in keeping with the architectural controls in Chapter 16.68.

The subject property does not have Menlo Park Historic Site District (H) zoning.

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[5] Section 16.54.010, Menlo Park Municipal Code, accessed online July 13, 2021, https://www.codepublishing.com/CA/MenloPark/#!/MenloPark16/MenloPark1654.html#16.54.

III. HISTORIC CONTEXT & SITE DEVELOPMENT

This section provides a brief history of Menlo Park's early development, as well as a chronological account of the development of the subject site. Initially developed as a residential estate, the subject property was then redeveloped as Dibble General Hospital by the military during World War II. After the end of the war, the site was used by Stanford University for housing and became the first permanent home for Stanford Research Institute, now SRI International, which has since occupied the site as its main headquarters.

Early Menlo Park History

The following historic context for Menlo Park is excerpted from Chapter 4.4, Cultural Resources, of the City of Menlo Park Housing Element Update, General Plan Consistency Update, and Zoning Ordinance Amendments Environmental Assessment.[6]

> The City of Menlo Park was originally the home of Ohlone Indians. The Ohlone lived off the land and due to the abundance of food they did not practice agriculture. Evidences of their civilization are still being unearthed on the Filoli estate in Woodside, and along San Francisquito Creek.
>
> In 1769 Spanish rule was introduced to the area when the exploration party led by Don Gaspar de Portola camped near "El Palo Alto" after their momentous discovery of San Francisco Bay. The colonizing of the Peninsula began after the expedition of Juan Bautista DeAnza passed through Menlo Park on its way to establishing Mission Dolores and the Presidio of San Francisco in 1776. [...]
>
> In 1854 Dennis J. Oliver and Daniel McGlynn purchased 1,700 acres from the Don Jose Dario Arguello family that had legally obtained the title to the land in 1853. Around this time Menlo Park received its official name when Oliver and McGlynn erected an arch with the words "Menlo Park" on it to honor their former home in Menlough, County Galway, Ireland. In 1863, the Southern Pacific Railroad was extended to the community of Menlo Park. In the late 1850s, the road between San Francisco and San

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[6] As noted by the City of Menlo Park, information about historic resources was obtained from the Menlo Park Historical Association, and a Historic Resources Report was prepared by Knapp Architects in February 2013. The preparation of the Historic Resources Report included a windshield survey of the opportunity housing sites and a review of the National Register, California Historical Resources Information System (CHRIS) database, the Historic Property Data File for San Mateo County, the City's 1990 Historic Sites Survey and the Subdivision Maps and/or the 1925 Sanborn Fire Insurance Map (updated as late as 1968). Accessed August 11, 2021. https://www.menlopark.org/DocumentCenter/View/4782/4-4_CulturalResource?bidId=.

Jose was completed. Wealthy families purchased large tracts of land and were more or less self-sufficient, producing their own food. Workers lived within the estate grounds. San Mateo County became independent of San Francisco County in 1856.

During this same period, the downtown area of Menlo Park began to develop along Oak Grove Avenue between the railroad station and El Camino Real. By 1870, twelve buildings situated between the railroad station and El Camino Real in the vicinity of Oak Grove Avenue were constructed, consisting of two general stores, three hotels, livery stables, saloons, and three blacksmith shops. The first store in Menlo Park was on the corner of Oak Grove Avenue and El Camino Real.

On March 23, 1874, Menlo Park became the second incorporated City in San Mateo County, although only for a short time. The purpose was to provide a quick way to raise money for road repairs. This incorporation, which included Fair Oaks (later Atherton) and Ravenswood (later East Palo Alto) lasted only until 1876. Churches were founded, schools were opened, and businesses were established. [...]

Menlo Park's population increased slowly until World War I. In 1917, 27,000 soldiers were stationed at Camp Fremont in Menlo Park. The training camp covered approximately 25,000 acres adjacent to [...] and extending south along El Camino Real. Menlo Park's first gas and water services, its first paved streets, and an increase in businesses were a direct result of the transient military population. Following the closure of Camp Fremont in 1919, Menlo Park reverted to a small town with 2,300 residents.

The original Dumbarton Bridge opened in 1927, connecting the South Bay and East Bay. In 1931, the Bayshore Highway (now Highway 101) linked Menlo Park and San Francisco. In 1940, Menlo Park's population was 3,258. World War II brought about many changes in the small town. Between 1943 and 1946 another military installation, Dibble General Hospital, was built on the old Timothy Hopkins estate to care for the thousands of soldiers injured in the South Pacific in World War II. Following World War II, in the 1950s, the hospital campus became the site of the Menlo Park Civic Center, Stanford Research Institute (today's SRI International), and the United States Geological Survey. Today Menlo Park is a suburban residential community with a variety of businesses, including high-tech industries.[7]

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[7] Chapter 4.4, Cultural Resources, of the City of Menlo Park Housing Element Update, General Plan Consistency Update, and Zoning Ordinance Amendments Environmental Assessment, (City of Menlo Park, CA: 2013).

Residential Estates, 1864-1941

Barron Estate, 1864-1871

In ca. 1864, capitalist William Eustace Barron (1822-1871) built a 40-room Second Empire style mansion, a gatehouse, and several outbuildings on a 280-acre estate that extended northwestward form San Francisquito Creek to present day Ravenswood Avenue, between present day Middlefield Road and the alignment of Caltrain's railroad tracks, which were historically part of the Southern Pacific Railroad's system. Barron's estate was built in the same year as the San Francisco San Jose Railroad, which was consolidated into the Southern Pacific Railroad in 1870, and linked the two cities for which it was named, with stops in between, including one at Menlo (now known as Menlo Park).[8]

The entrance to Barron's estate was marked by a gatehouse situated on Ravenswood Avenue. The gatehouse was later altered and expanded several times by subsequent owners, and still stands at its original location as the only remaining building associated with Barron and subsequent owners Milton Slocum Latham and Mark and Mary C. Hopkins. Commonly known as the Barron-Latham-Hopkins Gate Lodge (hereafter Gatehouse), the building is the oldest existing building in Menlo Park as was individually listed on the National Register of Historic Places in 1986.[9]

Latham Estate (Thurlow Lodge), 1871-1882

In 1871, Milton Slocum Latham (1827-1882), former U.S. Representative, Senator, and Governor of California, purchased the estate and named the former Barron mansion Thurlow Lodge **(Figure 4)**.[10] Latham's estate was referred to as "the greatest showplace in California."[11] During the course of his ownership, Latham brought many outdoor fountains and remnants of ancient ruins sourced from his travels in Europe to the property. One of the fountains still stands near the Gatehouse. Latham had his estate improved with curvilinear drives, a fenced park with deer, and an artificial lake. Latham also had a porter's house built, as well as a building containing a pool table and smoking room that was modeled on a Turkish mosque.[12] Beyond these features, the estate contained many oak trees and lush plantings. Latham's excess ended when he lost his fortune in the Depression of 1875. In 1883, he sold the estate to Mary Hopkins.

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[8] "Thurlow Estate Becomes Dibble General Hospital Becaomes [*sic*] SRI International," Menlo Park City School District, online, accessed June 22, 2021. https://district.mpcsd.org/Page/143.

[9] "Rent the Gate House," Junior League of Palo Alto – Mid Peninsula website, accessed August 11, 2021. https://www.thejuniorleague.org/rent-the-gatehouse/#.

[10] "Thurlow Estate Becomes Dibble General Hospital Becaomes [*sic*] SRI International."

[11] "Hopkins, The Spendthrift," *San Francisco Examiner*, November 1, 1891.

[12] Ibid.

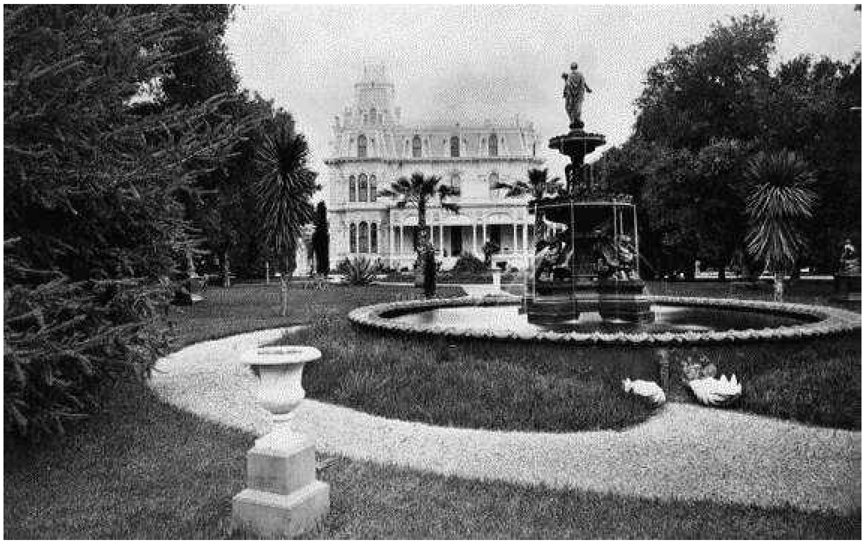

Figure 4. Thurlow Lodge, photographed prior ca. 1871-1882.
Source: Stanford University Special Collections and University Archives.

Hopkins Estate (Sherwood Hall), 1883-1941

Between 1883 and 1888, Mary Frances Sherwood Hopkins, the widow of railroad magnate, Mark Hopkins, owned the 280-acre estate, which she renamed Sherwood Hall. In 1888, she remarried and gifted the property to her adopted son, Timothy Hopkins, and Timothy's wife, Mary C. Hopkins.[13] Timothy's education prepared him for attendance at Harvard University, and his adopted parents were well-connected to Leland and Jane Stanford. Following Mark Hopkins' death in 1878, Timothy took an active role in managing the Hopkins' finances, deferring his enrollment at Harvard. Mary Hopkins legally adopted Timothy in 1879, when he was 20 years old.[14]

During the 1880s, Hopkins rose in the ranks of the Central Pacific Railroad and built ties with the nascent Leland Stanford Junior University. He became treasurer of Central Pacific in 1883, and in 1884 was appointed to the Board of Trustees of Stanford University. Hopkins remained a university trustee for the rest of his life. During the mid-1880s, Hopkins also began to acquire land near the University, which was laid out as the town of University Park in 1887 and adopted the name Palo Alto in 1892. During the 1890s, Hopkins divested of his railroad interests and shifted his attention to managing the Sherwood Hall estate and philanthropic endeavors with Stanford University. He became a major benefactor and funded the Hopkins Seaside Laboratory in Monterey in 1892,

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[13] Steve Staiger, "Timothy Hopkins: The Ironic Journey of Palo Alto's Founder," *Palo Alto Online*, April 28, 1999. Accessed June 22, 2021.
https://www.paloaltoonline.com/weekly/morgue/spectrum/1999_Apr_28.HISTORY.html.

[14] "Timothy Hopkins (1859-1936), Hopkins Marine Station: Seaside History of Marine Science in Southern Monterey Bay, website, 2020, accessed June 22, 2021. https://seaside.stanford.edu/hopkins.

donated to the Lane Medical Library (originally established in San Francisco), and the Stanford Home for Convalescent Children.[15]

In addition to philanthropy, Hopkins used his 280-acre property to establish the Sherwood Hall Nursery Company, which was renamed the Sunset Seed & Plant Co. in 1893, and became one of the largest seed businesses in the Western United States.[16] Hopkins transformed Latham's opulent property into an income-producing estate that balanced retention of the drives, lawns, Gatehouse, and mansion, with the addition of greenhouses, stables, and orchards. By 1890, the Sherwood Hall mansion was vacated, as the Hopkinses did not utilize the residence. The Sunset Seed & Plant Co. cultivated flowers including violets, chrysanthemums, and roses, which supplied markets in San Francisco. The area of the property occupied by the Sunset Seed & Plant Company is roughly depicted on the *Official Map of San Mateo County, California*, published in 1892 **(Figure 5)**.

The 1906 earthquake destroyed many of Hopkins' income properties and also damaged the vacated Sherwood Hall mansion. After the earthquake, Sherwood Hall remained unoccupied, as the Hopkinses took summer residence in the estate's Gatehouse. Over the next two decades, the Hopkinses regained their financial standing and continued to contribute to Stanford University's development. By 1927, Timothy's wife, Mary C. Hopkins, took ownership of the property.[17] In 1936, Timothy Hopkins died and devised income from his estate to his wife and Stanford University. In 1941, Mary C. Hopkins died, and the remainder of the estate was left to Stanford University. By this time, most of the orchards and all but one of the greenhouses of the Sunset Seed and Plant Co. were removed from the property, based on a 1941 historic aerial photograph **(Figure 6, Figure 7, and Appendix B)**.[18]

Stanford University was to use 60 percent of the funds from the estate to maintain the Hopkins Marine Station, while the remainder of the income was divided between supporting the Hopkins Railroad Library at the main campus and the Hopkins Medical Library at the University's San Francisco-based medical school.[19] The remaining contents of the Sherwood Estate were auctioned off. Universal Pictures of Hollywood acquired many items and the mansion. The motion picture company used furniture for movie props, dismantled the long-vacant mansion, and used the wood—a scarce commodity during World War II—to build film sets.[20]

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[15] Staiger, "Timothy Hopkins: The Ironic Journey of Palo Alto's Founder." https://www.paloaltoonline.com/weekly/morgue/spectrum/1999_Apr_28.HISTORY.html.
[16] "Change of Name," *Mendocino Coast Beacon*, December 16, 1893.
[17] *Official Map of San Mateo County California, 1927,* Library of Congress Digital Collections.
[18] Refer to Appendix for historical aerial photographs from 1941.
[19] "Last Rites Are Set For Mrs. Mary Hopkins," *The Fresno Bee*, October 16, 1941.
[20] Steve Staiger, "Timothy Hopkins: The Ironic Journey of Palo Alto's Founder."

Figure 5. Timothy Hopkins' Menlo Park property illustrated on the *Official Map of San Mateo County, California,* published in 1892. Source: Library of Congress. Edited by Page & Turnbull.

Figure 6. Sherwood Hall photographed ca. 1882-1890s by photographer O.V. Lange. Source: California State Library.

Figure 7. Birds-eye view of greenhouses of the Sunset Seed & Plant Co. nurseries on the grounds of the Hopkins Menlo Park estate. Source: Sunset Seed & Plant Co. catalog 1895, via San Mateo County Genealogical Society Blog.

For reference, refer to **Appendix B – Historic Aerial Photographs** and **Appendix C – Historic Campus Maps**.

Dibble General Hospital, 1943-1946

On January 3, 1943, the U.S. War Department acquired approximately 128 acres of the former Hopkins estate, which were owned by Wells Fargo Bank & Union Trust Company (which appears to have been the bank managing the trust for Stanford University) and entered a lease for another 12 acres of land from the former Hopkins estate, owned by real estate developer Claude T. Lindsay.[21] The site's location south of San Francisco placed it near a major port of re-entry for military personnel returning from the Pacific Theater, and within the same region as Letterman General Hospital at the Presidio in San Francisco, where personnel were first taken before being sent to hospitals providing specialized care. The military viewed Menlo Park's warm climate as an "all-year tonic for the patients" who received medical treatment, rehabilitation, and convalescent care at Dibble Hospital.[22]

Groundbreaking for Dibble Hospital occurred on June 15, 1943, and on August 17, 1943, the hospital was activated as a U.S. Army General Hospital, with 62 buildings and a capacity of over 1,800 patients. First named "Palo Alto General Hospital," despite its location in Menlo Park, the facility was renamed in honor of Colonel John Dibble of the U.S. Army Medical Corps, who was killed when the plane he was on vanished en route to the South Pacific in 1942.[23] By October 1943, 94 buildings had been completed and the hospital was deemed ready for "beneficial occupancy."[24] By the end of 1943, additional buildings were constructed on the 140-acre tract, and the total number of buildings and structures built to serve the hospital eventually reached approximately 100, according to a 1945 map published by the hospital.[25] These additional buildings increased the hospital's bed capacity from an original allotment of roughly 1,800 to around 2,400.[26]

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[21] "Corps of Engineers History," Historic California Posts, Camps, Stations and Airfields, Military Museum.org, accessed August 10, 2021. http://www.militarymuseum.org/DibbleGH.html.

[22] *Dibble General Hospital, Menlo Park, California: A History*, (San Francisco: 1946), 7-8.

[23] Ibid., 2; and "New Dibble Hospital at Menlo Completed," *San Mateo Times*, October 29, 1943.

[24] "New Dibble Hospital at Menlo Completed," *San Mateo Times*, October 29, 1943.

[25] *Life Begins: Dibble General Hospital,* (Menlo Park, CA: Dibble General Hospital, 1944), National Library of Medicine Collections, UH 470 A2C2 D5L 1944.

[26] *Dibble General Hospital, Menlo Park, California: A History*, (Menlo Park, CA: Dibble General Hospital,1946), 2; "WACS Help Blind, Maimed," *Oakland Tribune*, February 25, 1945; and, Gerry Smith, "Future of Stanford Village Now Being Decided by FHA," *Stanford Daily*, April 28, 1954.

Dibble Hospital was among 14 general hospitals planned according to the military's standard "Type-A" hospital plan, which specified that most buildings would be one-story in height and would be arranged in a pavilion layout **(Figure 8)**.[27] Pavilion plans were commonly used by the U.S. military beginning in the mid-nineteenth century. Historian William Kostura notes that the pavilion plan:

> [...] was developed to apply a scientific understanding of disease to the design of hospitals. Scientific understanding was applied both to the overall plan and to the buildings and other elements of the plan. The basic unit of the pavilion plan was the ward, a narrow, rectangular one or two-story building set in landscaped grounds and oriented so that maximum sunlight entered the building. The interior was an open space with a radiator under each window and a bed between windows. At either end of the ward was a nurses station and a sunroom or porch. Each ward was provided with a passive or mechanical ventilation system intended to keep air moving. Moving air was to dissipate germs. Sunlight and views of greenery were considered therapeutic. [...] Pavilion plan hospitals continued to be built until the proliferation of new technologies radically changed hospital design in the 1950s. Thus, World War II military hospitals were among the last pavilion plan hospitals to be built.[28]

Across the nation, 66 U.S. Army general hospitals operated during World War II, most of which were built as temporary installations like Dibble Hospital, although several, such as Letterman Hospital at the Presidio in San Francisco, were preexisting hospitals. The Type-A plan was arranged with a tiered system of administration, clinical, ward, community, barracks, and storage buildings. Each hospital's execution of the Type-A plan varied slightly, but in general, layouts were similar. The guide map of Dibble Hospital published in 1945 illustrates how the Type-A plan was adapted to the Menlo Park site. In addition to standard building types shown on the Type-A plan, Dibble Hospital's site featured buildings used as barracks for the Women's Army Corps (WACs), Emergency Medical detention wards for patients under intensive or psychiatric care, a swimming pool, tennis courts, a theater, and a gymnasium. The Gatehouse was used as a Commanding Officer (C.O.) residence during the hospital's operation **(Figure 8)**. Table 3 below lists Dibble Hospital buildings identified on the 1945 guide map. Several buildings on the map were illustrated without a label and their use was not able to be confirmed through archival research; such buildings are referred to as unidentified buildings or structures in the table.

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[27] Clarence McKittrick Smith, *United States Army in World War II The Technical Services: The Medical Department: Hospitalization and Evacuation, Zone of Interior*, (Washington, D.C.: Office of the Chief of Military History, Department of the Navy, 1956), 304-312.

[28] William Kostura, quotation provided in DeWitt General Hospital National Register of Historic Places Nomination Form, Section 7, Page 7, entered into the National Register February 12, 2016.

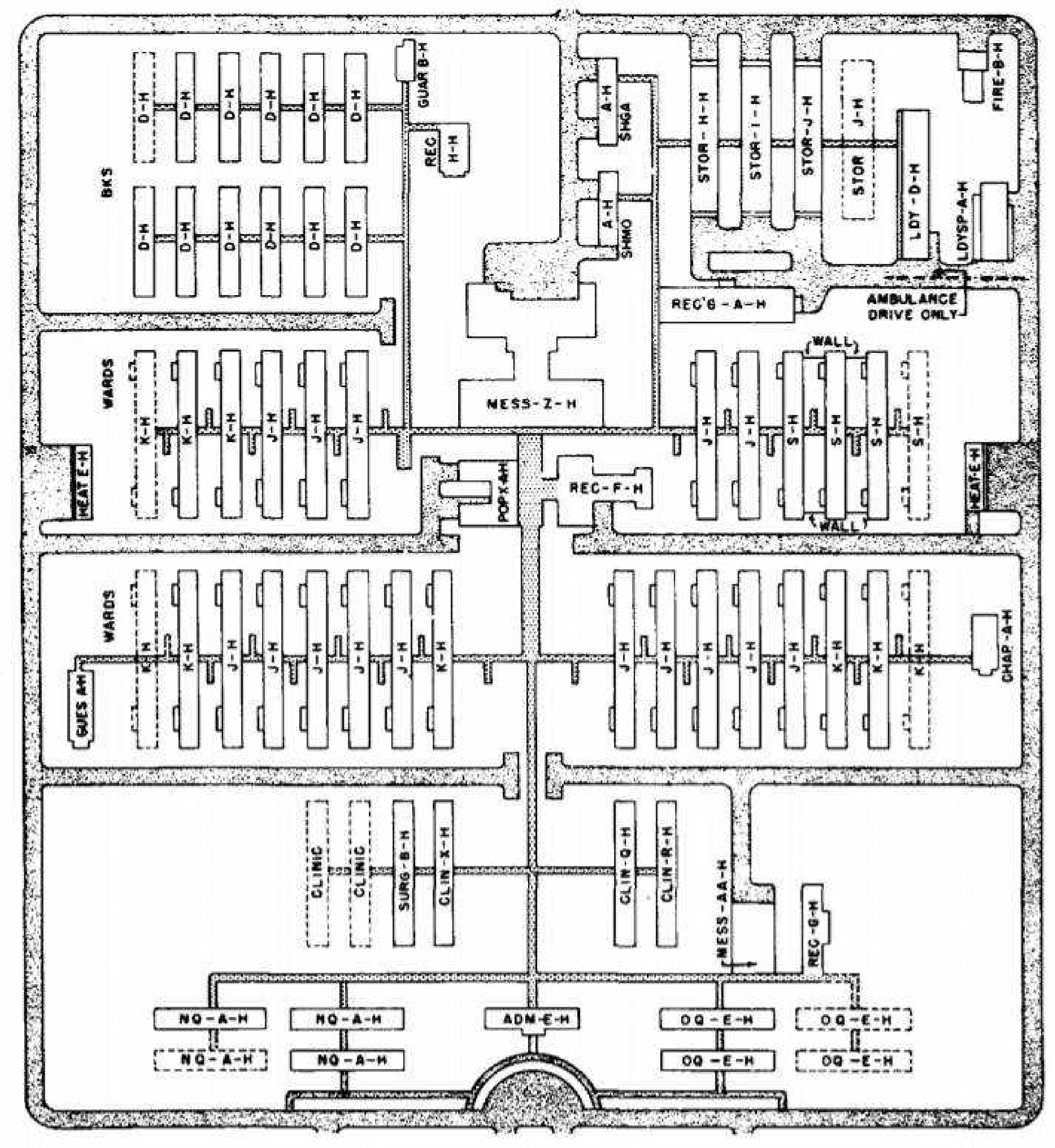

Figure 8. Type-A hospital plan. Source: U.S. Army Medical Department, Office of Medical History.

TABLE 3. BUILDINGS CONSTRUCTED DURING DIBBLE GENERAL HOSPITAL ERA

Buildings (88 total)	**Extant? (Yes, SRI Building Number; or No)**
Administrative building	Yes (Building 100)
4 Nurses Quarters buildings	No
2 Bachelor Officers quarters	Yes (Buildings 108 and 110)
Officers Mess Hall (308-CAF)	No
Officers Club House	No
Surgery building	No
X-Ray and Physical Therapy Building	No
Medical Laboratory building	No
Ear, Nose, Throat (ENT) Clinic/Dental Clinic Building	No
Eye Clinic	No
39 Patient Wards (also included a Music Center and Bowling Alleys)	Yes, 7 of 39 (Buildings 201-205; 305 and 309)
Consolidated Mess building (between detention areas)	No
Library	No
Chapel	No
Guest House	No
6 WAC Detention Area buildings	No
10 Emergency Medical (EM) Detention Area buildings	No
Guard House	No
Mess Hall (attached to Wards)	No
Main Mess Hall at center of site	Yes (Buildings 304 and 306)
Civic Center with Post Office/Post Exchange and Red Cross office	Yes (Buildings 302-CAF and 301)
Receiving and Evacuation Building	Yes (Building 320)
4 Warehouses	No
Fire Station	No
Commanding Officer Residence (Gatehouse)[29]	Yes (outside of property)
Non-Commissioned Personnel Club House	No
Gymnasium (at recreation area)	No
Theatre (at recreation area)	No
Utilities Power Plant	Yes (Building 412)

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[29] Note, this building was adapted for use as the C.O. Residence at Dibble Hospital but existed prior to the hospital's construction. It is included in this table for the purpose of inventorying buildings that were used for Dibble Hospital.

Main Gate Booth	No
Structures (12)	**Extant (Yes, Number/No)**
Officers Tennis Courts	No
Tennis Courts (at recreation area)	No
Swimming Pool (at recreation area)	No
Unidentified Buildings/Structures between Recreation Area and Warehouses (8)	No

Dibble Hospital and other Army general hospitals built ca. 1942-1944 were constructed during peak material shortages, and accordingly, these facilities often utilized a mix of permanent and temporary building specifications in an effort to reduce cost, conserve materials, and to meet rapid construction deadlines.[30] The *War Department Inventory of Owned, Leased and Sponsored Facilities*, published in 1945 described Dibble Hospital's buildings as being Corps of Engineers 800-series mobilization type wood-frame buildings, and its barracks buildings for housing personnel as "theater of operations" type buildings.[31] As explained in the *Historic Context for Department of Defense Facilities World War II Permanent Construction*:

> Permanent construction was intended for use after the war; it typically was built of masonry (brick, tile, or concrete) and metal frame. Semi-permanent construction typically consisted of cinderblock construction, wooden-frame construction clad with synthetic siding, or a mixture of wooden frame and masonry. Semi-permanent construction often resulted from ad hoc compromises between the desire for permanent construction and shortages of time and material. Temporary construction consisted of wooden-frame buildings, typically built according to standardized plans, and of modular metal buildings. Temporary construction was not intended for use after the war. Theater-of-operations (T.O.) construction was the least durable type of construction; it typically consisted of wood lath on wall sheathing covered in felt. Few, if any, examples of T.O. construction survive.[32]

800-series buildings were so named because they followed standardized plans numbered 800-899, and represented updated specifications to 700-series plans that had been prepared by the Army

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[30] R. Christopher Goodwin and Associates, Inc., *Historic Context for Department of Defense Facilities World War II Permanent Construction*, (Prepared for US Army Corps of Engineers—Baltimore District, May 1997). Accessed online August 10, 2021. https://fas.org/man/dod-101/fac/ww2_pc1.htm.

[31] "Historic California Posts, Camps, Stations and Airfields: Dibble General Hospital," Military Museum, accessed online August 10, 2021. http://www.militarymuseum.org/DibbleGH.html.

[32] R. Christopher Goodwin and Associates, Inc., *Historic Context for Department of Defense Facilities World War II Permanent Construction.*

Quartermaster Corps before World War II.[33] "Temporary" construction was designed to last at least five years, while theater of operations constructions was less hardy, and typically accomplished with wood-frame buildings finished with tar paper walls.[34] Dibble Hospital appears to be the only Type-A hospital constructed with "stucco" buildings, while the other Type-A hospitals were built with either "brick" or "brick and tile" buildings.[35] Thus, the specified temporary and theater of operations construction of Dibble Hospitals buildings aligned with an anticipated existence of roughly 5 years. Reporting on construction progress in October 1943, the *San Mateo Times* described:

> The cheerfully colored buildings of the new hospital are set in a pleasing manner on the tree shaded and shrub dotted 151 acres purchased by the government for the hospital. […] The institutional air common to many hospitals is dispelled by a variety of construction in the various units, only a few of which, including the headquarters building, is two stories high. The other structures are finished in apricot, green and peach on the exterior and have pleasing, contrasting colors of trim. […] The buildings are of a modified colonial type of architecture, earthquake proof and protected throughout against fire by a […] sprinkler system. They will be heated by a central boiler plant from a which a mile of concrete tunnel and steam lines radiate. […]
>
> Douglas fir was the material chiefly used and the buildings have three-ply wall of firm construction with both plaster and gypsum board used in interior finish. A second sprinkler system […] will bring water to the verdant lawns and shrubs […] when landscaping is completed. […] [T]otal personnel is expected to number 800 at peak operation. More than 1200 men in all lines of construction were needed during the building operations, the major contract having been completed on October 15 by G.W. Williams and company of Burlingame. […]
>
> Carrying out the likeness to a small city, the hospital will have its own library, laundry, detention units and service buildings for maintenance and upkeep. A chapel, a morgue and entertainment buildings are also included. The large wards for patients are 290

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[33] R. Christopher Goodwin and Associates, Inc., *Historic Context for Department of Defense Facilities World War II Permanent Construction.*

[34] R. Christopher Goodwin and Associates, Inc., *Historic Context for Department of Defense Facilities World War II Permanent Construction.*

[35] Clarence McKittrick Smith, *United States Army in World War II The Technical Services: The Medical Department: Hospitalization and Evacuation, Zone of Interior*, 304-312.

> feet long and 30 feet wide with solariums at either end for the use of convalescent patients. The hospital will have its own post office and a regular army post exchange.[36]

The property was laid out with two Bachelor Officers Quarters (BOQ) and four Nurses Quarters flanking the Administration Building **(Figure 9 and Figure 10)**. Today, only the Administration Building and the two BOQ buildings remain from this group. The hospital's eye, physical therapy, surgery, and dental clinics were located to the rear-left and rear-right of the administrative building and housed in one-story buildings with linear footprints and gable roofs **(Figure 11)**. These clinics were similar to the wards in terms of massing, but featured fewer windows, and lacked the ward's distinct end porches or solariums.

Grouped in the center of the wards, barracks, quarters, and clinics was the patients' kitchen and Mess Hall, a large building roughly 300 feet-by-600 feet.[37] The Mess Hall was located next to and connected via above-ground enclosed corridors to the hospital's "Civic Center," which contained a branch bank location, post office, and a post exchange. Above-ground corridors also connected these central buildings to nearby wards **(Figure 12)**.

Figure 9. The administration building at Dibble Hospital, photographed ca. 1943-1946.
Source: *Dibble General Hospital, Menlo Park, California: A History*.

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[36] Note, the exact acreage of the former hospital property varies in available sources, with acreage ranging from 127 to 151 acres. It appears that although the government purchased 151 acres, they only occupied roughly 140 acres for hospital uses. "New Dibble Hospital at Menlo Completed," *San Mateo Times*, October 29, 1943.
[37] *Dibble General Hospital, Menlo Park, California: A History*, (San Francisco: 1946), 9.

Figure 10. View of the Administration Building and Bachelor Officers Quarters (BOQ) at Dibble Hospital, from Middlefield Road, ca. 1943-1946. Source: MilitaryMuseum.org.

Figure 11. View of the clinic buildings at Dibble Hospital, ca. 1943-1946. The clinic buildings featured fewer windows at their front and rear gabled ends, compared to the ward buildings that featured solarium porches at each end. Source: *Dibble General Hospital: A History*.

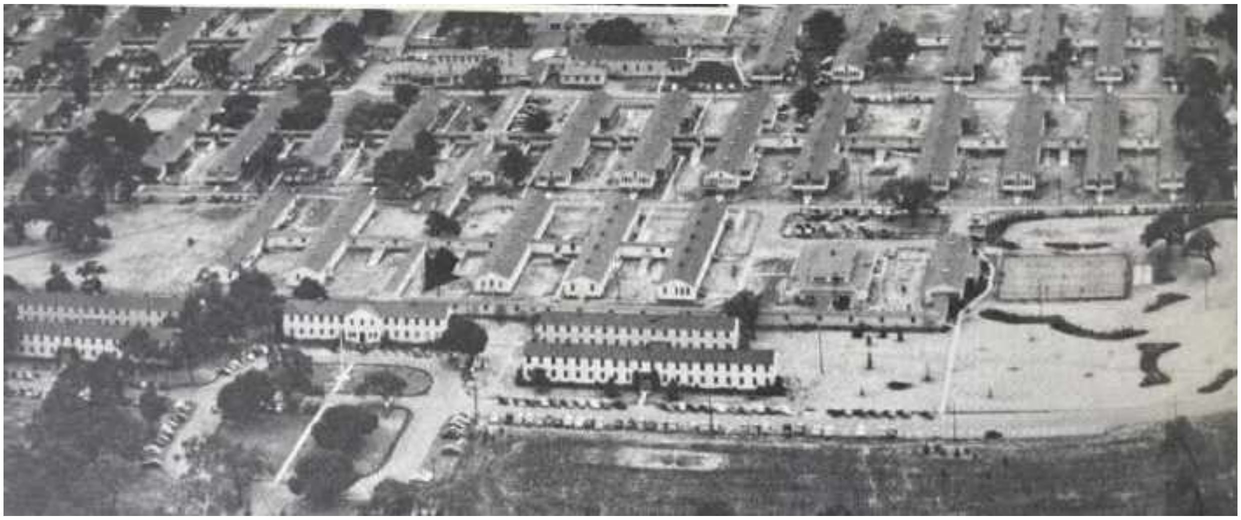

Figure 12. Aerial photograph of a portion of the Dibble Hospital complex, ca. 1945 with the Administration building, BOQ, and Nurses quarters buildings in the left foreground, clinics to the rear, wards (with a greater number of windows) to the rear of the clinics, and the "Civic Center" at the center-background. Source: *SRI The Founding Years*.

The first combat wounded arrived at Dibble Hospital on February 22, 1944. On June 1, 1944, Dibble Hospital became one of two general hospital "centers" with specialization in rehabilitation of blinded personnel, when it took over the blind rehabilitation program established in 1943 at Letterman General Hospital in San Francisco. Dibble Hospital shared this distinct specialization with Valley Forge General Hospital, located in Phoenixville, Pennsylvania near Philadelphia.[38] In August 1944, the hospital was also among nine general hospitals designated as a specialty center for plastic surgery, with the others being Valley Forge, Newton D. Baker, William Beaumont, George W. Crile, H. D. Cushing, Northington, O'Reilly, and Wakeman General Hospitals. When Northington General Hospital closed in 1946, Percy Jones General Hospital was made a plastic surgery center.

Within these combined specializations, surgeons at Dibble Hospital developed several new procedures related to eye surgery and prosthetics. These included: fascia lata transplants to correct sinking of the upper eyelid fold (over 150 cases), basket-type implants to give better movement to prosthetic eyes, dermal implants to fill out deep sockets rather than glass or plastic, plastic plates to fill in fractures of the orbital floor, improvements in eye implants that gave a great range of motion for the implant, orbital rim reconstruction improvements, and transplantation of human vitreous to improve vision in patients who would have previously had no treatment solution.[39]

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[38] *Dibble General Hospital, Menlo Park, California: A History*, 10-11.

[39] *Dibble General Hospital, Menlo Park, California: A History*, 10-11.

By late 1944, a new gymnasium, central service building, an occupational therapy clinic, two small gatehouses at each entrance, and an addition to the post exchange were complete. The Douglass Estate, a separate property in Menlo Park, was opened to Dibble Hospital patients on November 18, 1944 for a roughly one-year period. It provided 100 beds for those undergoing rehabilitation or convalescent care. The mansion was later sold by its owners, Leon Douglass (of RCA Victor) and Victoria Douglass to the Menlo School in 1945.[40] By June 1945, Dibble Hospital had received 10,000 patients, and conversion of the original Enlisted Men's barracks to hospital wards was deemed necessary.

Additionally, a swimming pool, dedicated eye clinic, new library building, bowling alley, and a telephone center were built in 1945. Beyond these new buildings, additional projects included installation of temperature control equipment throughout the hospital, air-conditioning for operating rooms, conversion of one of the four original warehouses for Occupational Therapy, a photographic laboratory, construction of additional dental laboratory facilities, remodeling of an orthopedic brace shop, and installation of a shoe machine in an unidentified building.[41]

During the late spring and summer of 1945, World War II approached its end. May 8, 1945 marked Victory in Europe (V-E) day, yet the war continued in the Pacific. After intense fighting during the summer, the war was brought to an abrupt end following the bombing of the Japanese cities of Hiroshima and Nagasaki in early August. On August 14, Japan formally surrendered to the Allied Powers on what is now known in the United States as Victory Over Japan (V-J) Day.[42] In September 1945, the U.S. House of Representatives passed legislation authorizing the annexation of the hospital by the City of Menlo Park.

In October 1945, the United States General Service Administration (GSA) terminated its lease for land owned by developer Claude T. Lindsay. Lindsay soon after developed the Linfield Oaks neighborhood on this land. Over the next year, options for additional transfer of land and potential new uses for the hospital site were considered. The Army was set to formally abandon the property on June 30, 1946. One consideration in April 1946 was to convert the Dibble Hospital buildings for use as a mental hospital. However, this idea was not further pursued. Instead, the former Dewitt Hospital in Auburn, California was converted to a State mental hospital. Interests from Stanford University (demand for post-war student housing) and the City of Menlo Park (demand for land for a new school and other municipal facilities) were expressed, and the GSA turned over approximately

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[40] "Payne Douglass Mansion, Part 2 — circa 1909–14," Palo Alto Stanford Heritage, online, accessed June 23, 2021. https://www.pastheritage.org/Articles/PayneDouglass2.html.
[41] *Dibble General Hospital, Menlo Park, California: A History,* 12.
[42] "V-J Day," National World War II Museum, online, accessed August 16, 2021. https://www.nationalww2museum.org/war/articles/v-j-day.

130 acres of land to the Federal Public Housing Authority (FPHA) in July 1946. In 1947, 41 acres were turned over the War Assets Administration by the FPHA, and the remaining 85 acres were used by the FPHA for housing student-veterans attending Stanford University, in an off-campus community that became known as Stanford Village. The WAA disposed of its land holdings in 1947 and 1948, and parties who received land included San Mateo County Missionary Church Extension Society of the Methodist Church, Sequoia Union High School District, and the Menlo Park Sanitary District. The site is currently occupied by the following: SRI International, City of Menlo Park (Civic Center and a corporation yard), United States Geological Survey (USGS), West Bay Sanitary District, First Church of Christ Scientist, California Department of Fish and Game, and several private owners. During its three-year existence, Dibble Hospital served over 16,000 patients and employed over 800 personnel.[43]

The following table and map illustrate the extant buildings on the SRI International campus that were constructed during the Dibble Hospital era. Of the approximately 100 buildings constructed for Dibble Hospital between 1943 and 1945, 20 remain extant. For reference, refer to **Appendix B – Historic Aerial Photographs** and **Appendix C – Historic Campus Maps**.

TABLE 4. EXTANT BUILDINGS CONSTRUCTED DURING DIBBLE GENERAL HOSPITAL ERA

Name	Year Built	Architect/Builder	Original Building Use / Alternate Name
Building 100	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Administration Building
Building 108	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Bachelor Officers Quarters (BOQ)
Building 110	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/BOQ
Building 201	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Ward
Building 202	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Ward
Building 203	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Ward
Building 204	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Ward
Building 205	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Ward
Building 301	1943-44	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Civic Center
Building 302-CAF	1943-44	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Civic Center
Building 303	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Altered Corridor
Building 304	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Mess Hall
Building 305	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Ward
Building 306	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Mess Hall
Building 309	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Ward

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[43] Weldon B. Gibson, *SRI The Take-Off Days*, (Los Altos, California: Publishing Services Center, 1986), 227.

Name	Year Built	Architect/Builder	Original Building Use / Alternate Name
Building 320	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Mess Hall
Building 402/404	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Warehouse-Utility
Building 406	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Warehouse-Utility
Building 408	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Warehouse-Utility
Building 412	1943	U.S. Military/G.W. Williams Co.	Dibble General Hospital/Old Steam Power Plant

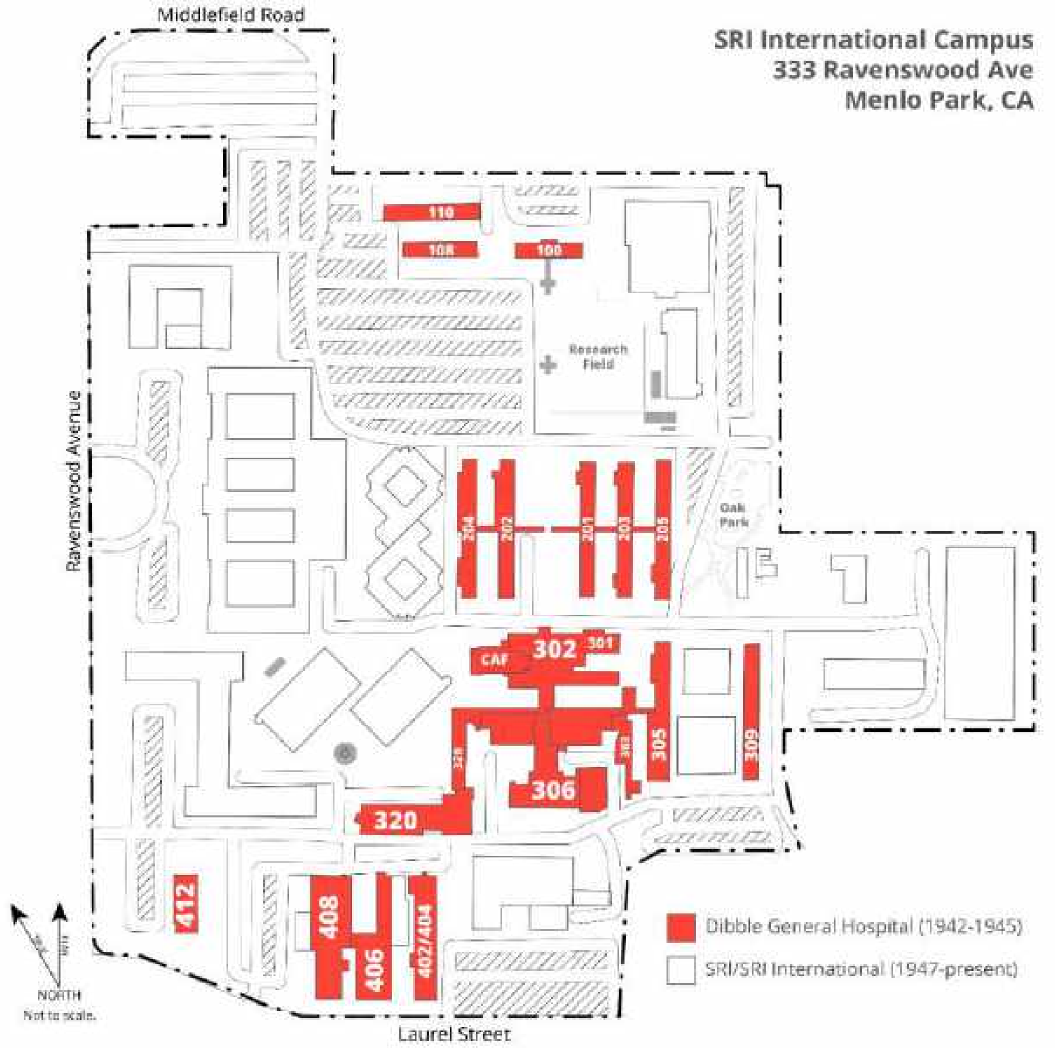

Figure 13. Map of current SRI International campus, showing extant buildings constructed during the Dibble General Hospital era (1943-1946) in red. Source: Base map from Cadmapper. Edited by Page & Turnbull.

Stanford Village, 1946-1969

Stanford Village opened in 1946, on former Dibble Hospital land leased by Stanford University from the United States Government.[44] As reported by *Stanford Daily* writer Gerry Smith, "Under an agreement with the Federal Public Housing Authority (FPHA), the University was to prepare housing for single students and finance the upkeep and eventual razing of the Village. The FPHA was to be responsible for the alteration of wards into one- and two-room apartments for married students."[45] The village was established as an off-campus, veterans-only housing location for single men and women and married couples and families, with a capacity of 1,300 to 1,500 students.[46] The village consisted of some 300 apartments and ultimately accommodated about 2,000 occupants during its first several years of operation. The apartments within the former wards were created by partitioning the interiors and adding doors. Rents were initially set by the FPHA. Some of the student veterans who arrived early reportedly found the facilities, described as "six miles of corridors and rows of double bunks," too similar to the barracks they occupied during wartime and sought other accommodations. By October 1946, the University had taken additional steps to accommodate the veterans and families occupying the buildings. As reported in the *Stanford Daily*:

> The physical plant of the Village has been made immensely more livable. Four-man partitioned cubicles with private desks, and increased locker space have been arranged by the residents themselves from the available furniture and the space left by the many expected students who shunned Village life.[47]

In 1949, the University remodeled the interiors of the residential buildings further, "installing kitchens and bathrooms to provide housing for approximately 2,000 students. A shuttle bus service was also provided to and from the university," as noted by the *Stanford Daily*.[48] By this time, the village was supported by its own grocery, a butcher shop, post office, a baby clinic operated by visiting medical staff, a laundry, and a bowling alley; all of these facilities were housed in buildings constructed for Dibble Hospital.[49] Additional alterations were carried out in 1949 to create "four-man cubicles [divided] by shoulder-high partitions" in the dormitories.[50]

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[44] "Village to Remain In Present Status," *Stanford Daily*, May 6, 1953.

[45] Gerry Smith, "Future of Stanford Village Now Being Decided by FHA," *Stanford Daily*, April 28, 1954.

[46] Cicely Bates, "Stanford Village: Old Houses Finally Going," *Stanford Daily*, April 3, 1968; and Anne Johnson "Little Left in Fading Farm Village," *Stanford Daily*, October 2, 1956; and, Sara Tanke, "SMC Places: Stanford Village, San Mateo County Genealogical Society, online, accessed August 16, 2021. http://smcgs.blogspot.com/2017/05/smc-places-stanford-village.html.

[47] "The Village Experiment," *Stanford Daily*, October 28, 1946.

[48] Barbara Ritz, "Closely Watched Dorm," *Stanford Daily*, October 18, 1968.

[49] Cicely Bates, "Stanford Village: Old Houses Finally Going," *Stanford Daily*, April 3, 1968.

[50] "Village Remodeling Begins this Summer," *Stanford Daily*, May 24, 1949.

During the interwar years between the late 1940s and early 1950s, the University, FPHA, and City of Menlo Park navigated the fluctuating demands for student housing, civic improvements, and the U.S. Government's consideration of selling the land.[51] Although the original terms of the agreement between the FPHA and the University called for the University to use the village for student housing for two years after the wartime housing shortage ended, the University's occupancy period was extended to meet periodic surges in need for additional student housing, with Stanford Village providing overflow housing for veterans and their relatives who could not be accommodated on the main campus. By 1950, occupancy of Stanford Village dropped to below 1,000 in the once "brutally over-crowded" facility.[52] In 1952, the village was opened to non-veterans.

In early 1956, the Village Library, a branch of the University's Western Civilization Library was closed and demolished, along with two dormitories, to accommodate the development of the Stanford Research Institute.[53] The post office also closed later in 1956 as the number of student residents dropped to levels well below capacity. The apartments reserved for married students and their children were the only units that remained fully occupied.[54] The dining hall was closed after fewer than 500 meal tickets were purchased for the facility, which had the capacity to provide meals for 1,000 students; undergraduates were also dining at Stern Hall and Encina Commons at the main campus in greater numbers. By 1956, a "gentlemen's agreement" between Stanford University's Board of Trustees and the City of Menlo Park was in place and held that the "half of the Village owned by Stanford will see nine more years of use and then will be sold to Menlo Park.[55] The same year, the *Stanford Daily* published the headline, "Little Left In Fading Farm Village."[56] By 1959, when the University's Escondido Village housing development was created on the main campus, a nine-month waitlist remained in effect for both housing villages.[57] In the 1960s, the agreement to close Stanford Village in 1965 was overcome by the ongoing need to provide affordable housing to university students who could not find housing on campus or in nearby communities. In 1968, the remaining student dormitories at Stanford Village were planned to be transferred back to SRI; however, housing shortages pressed the University to extend their use to 1969.[58] It does not appear that any new buildings were constructed during the Stanford Village era; rather, buildings constructed for Dibble Hospital were repurposed for student housing and services that supported student residents.

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[51] Ibid., and "Village Available to Non-Veterans," *Stanford Daily*, March 31, 1952.
[52] "Village Has Many Changes Since 1946," *Stanford Daily*, January 4, 1950.
[53] "Village Libe [sic] Closes as SRI Moves In," *Stanford Daily*, January 17, 1956.
[54] Anne Johnson, "Little Left in Fading Farm Village," *Stanford Daily*, October 2, 1956.
[55] Anne Johnson, "Little Left in Fading Farm Village," *Stanford Daily*, October 2, 1956.
[56] Anne Johnson, "Little Left in Fading Farm Village," *Stanford Daily*, October 2, 1956.
[57] Cicely Bates, "Stanford Village: Old Houses Finally Going," *Stanford Daily*, April 3, 1968.
[58] Barbara Ritz, "Closely Watched Dorm," *Stanford Daily*, October 18, 1968.

Figure 14. Stanford Village, pictured in 1956. Photograph by Ed Fayle. Anne Johnson, “Little Left in Fading Farm Village,” Stanford Daily, October 2, 1956.

Figure 15. Drawing of Stanford Village, 1948. Source: Erica Fischer via Flickr. Drawing photographed at Alameda Point Flea Market in 2010.

Stanford Research Institute (SRI)/SRI International, 1946-present

SRI International was originally established by the trustees of Stanford University as Stanford Research Institute (SRI) in 1946 as an independent, nonprofit contract research institute to promote innovation and economic development in the Western United States. The institute is primarily engaged in applied research aimed at solving practical problems, as opposed to “basic” research which is aimed at expanding scientific knowledge and discovering unknowns which might not yet have foreseen applications and is generally the domain of university researchers.[59] Unlike some institutes, SRI does not have an endowment, but relies on income through contracts and grants from clients including government agencies, commercial businesses, and private foundations. When SRI was established, it focused on engineering, science, and economics, but later expanded into the fields of education, government policy, and international development.[60] SRI separated from Stanford University in 1970 and became known as SRI International. SRI International is headquartered in Menlo Park at 333 Ravenswood Avenue, the subject property, and has additional offices in 19 locations in the United States and Japan. The institute has about 1,700 employees.[61]

The following section provides a brief account of the history of SRI International as an institute, including some of its most significant innovations, and a history of the built development on the Menlo Park campus.[62]

Early Vision for SRI, 1920s-1945

Although SRI was not established until 1946, the groundwork for the institute was laid in 1925 when Stanford University professor Robert E. Swain first proposed the idea of a research institute for the West, likely thinking of Mellon Institute in Pittsburg as an example. Herbert Hoover, who was a Stanford University trustee at the time, initially supported the idea, but plans were stalled by the Great Depression in the 1930s and the onset of World War II in the 1940s. In 1945, three former Lockheed executives—Maurice Nelles, Morlan A. Visel, and Ernest Black—established the “Pacific Research Foundation” in Los Angeles to fulfill the same purpose of spurring Western industry that Swain had envisioned, but the venture was short-lived. Later in the same year, the president of Illinois Institute of Technology (IIT), Henry T. Heald, prepared a report recommending the establishment of a West Coast institute associated with Stanford University; IIT by then had its own institute known as the Armour Research Foundation, which had been established in the 1930s. Fred

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[59] Donald Nielson, *A Heritage of Innovation: SRI’s First Half Century* (Menlo Park, CA: SRI International, 2004), xv-xvi.
[60] Nielson, *A Heritage of Innovation*, 1-2.
[61] “About Us,” SRI International, accessed August 22, 2021, https://www.sri.com/about-us/.
[62] Unless otherwise noted, the information on the development of Stanford Research Institute/SRI International was compiled from Nielson, *A Heritage of Innovation: SRI’s First Half Century* (2004); Gibson, *SRI: The Founding Years* (1980); and Gibson, *SRI: The Take-Off Days* (1986).

Terman, Dean of Engineering at Stanford University, also made a proposal that year for a research institute for student and faculty research. While these early efforts were not immediately successful, they paved the way for the establishment of Stanford Research Institute in 1946.

Comparable Early Independent Research & Development Institutions

Stanford Research Institute was one of several research institutes in the mid-twentieth century that were engaged in applied research to further technological innovation and economic development. Like SRI, a number of these institutes were formed within or with close associations to universities. The three major eastern institutes—Mellon Institute of Industrial Research, Battelle Memorial Institute, and Armour Research Foundation (ARF, later IIT Research Institute)—were the primary examples upon which SRI was based. SRI had a strong connection to ARF in its early days, as Thomas Poulter, the first scientific director of ARF, and Jesse Hobson, the second executive director of ARF, both relocated to SRI. Additionally, the CEOs of Mellon and Battelle were both consulted by the principal creators of SRI. Around the same time that SRI was established as a Western institute of applied research and development, other regionally focused applied research institutes were established—Southern Research Institute (1941), Midwest Research Institute (1944), and Southwest Research Institute (1947). Weldon Gibson, the third employee at SRI, identified these independent research institutes, along with Cornell Aeronautical Laboratory, the Franklin Institute (also known as Bartol Research Foundation), and Research Triangle Institute as the "ten independents" that were similar in mission and organization, and had close relationships through their network of executives and top researchers. However, Gibson observed that there were "many other institute-like groups connected with universities created during the late 1940s, the 1950s, and thereafter."[63]

TABLE 5. EARLY INDEPENDENT MULTIDISCIPLINARY RESEARCH INSTITUTES IN THE USA.

Name	Year Founded	Headquarters Location	Description
Mellon Institute of Industrial Research	1911	Pittsburg, PA	Mellon Institute of Industrial Research was founded by Andrew and Richard Mellon as part of the University of Pittsburg; later merged with Carnegie Institute of Technology to form Carnegie Mellon University.
Bartol Research Institute (formerly Bartol Research Foundation)	1924	Philadelphia, PA	Founded by a grant from Henry W. Bartol of the Franklin Institute and later integrated into the Department of Physics & Astronomy at Delaware University in 2005.

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[63] Gibson, *SRI: The Take-Off Days*, 21.

Name	Year Founded	Headquarters Location	Description
Battelle Memorial Institute	1929	Columbus, OH	Charitable trust organized as a nonprofit corporation for applied science and technology development.
IIT Research Institute (formerly, Armour Research Foundation or ARF)	1936-37	Chicago, IL	Independent nonprofit research institute that works collaboratively with Illinois Institute of Technology (IIT).
Southern Research (formerly Southern Research Institute)	1941	Birmingham, AL	Established by Thomas Martin to conduct basic and applied research in drug development, drug discovery, energy, and engineering.
MRIGlobal (formerly, Midwest Research Institute)	1944	Kansas City, MO	Independent, nonprofit contract research organization that also operates research facilities for the DOE and DOD.
SRI International (formerly, Stanford Research Institute)	1946	Menlo Park, CA	Nonprofit contract applied research institute established within Stanford University, before breaking of as SRI International in 1970.
Cornell Aeronautical Laboratory	1946	Buffalo, NY	Associated with Cornell University until 1972, when the lab was reorganized ad the for-profit Calspan Corporation.
Southwest Research Institute (SwRI)	1947	San Antonio, TX	Nonprofit independent applied research and development with regional industrial focus.
RTI International (formerly, Research Triangle Institute)	1958	Research Triangle Park, NC	A nonprofit research organization established with funding from local businesses and three North Carolina universities.

SRI also shares some similarities with research and development organizations that are fully or partially financed by the United States government, such as RAND Corporation (est. 1948) in Santa Monica, Pennsylvania State University Applied Research Laboratory (est. 1945) in University Park, Pennsylvania, and the Jet Propulsion Laboratory or JPL (est. 1936) in Pasadena. Bell Telephone Laboratories in New Jersey (now known as Nokia Bell Labs or Bell Labs), which was established in 1925 to consolidate the research and development activities for the Bell Telephone System, also served as a model for independent research institutes.

Stanford Research Institute (SRI), 1946-1969

Founding of SRI & Move to Stanford Village

Stanford Research Institute finally appeared on its way to becoming a reality in February 1946, when the Stanford University trustees voted to establish a research affiliate. Incorporating articles and bylaws were filed with the State of California in November 1946, officially establishing SRI as a nonprofit subsidiary of the University. The next month, the University trustees appointed a board of directors for SRI and named William F. Talbot, a chemistry researcher, the first director of the institute. The goals of SRI were designed to align with the charter of the University, but with the aim of advancing scientific knowledge to benefit the public at large, not just to provide research opportunities for students and faculty. Talbot, however, struggled with Stanford University President Donald Tresidder's micromanagement of SRI, and resigned after only about one year, and was replaced by Dr. Jesse Hobson, the former director of Armour Research Foundation. Hobson's constructive relationship with Stanford University's acting president Alvin Eurich resulted in a period of growth and relative independence for SRI.

At first, the institute was located at the Physics Corner of the Stanford University quad, but within eight months moved to the former Dibble Hospital buildings at Stanford Village in Menlo Park. SRI moved into Building 100 at Stanford Village in May 1947, sub-leasing from Stanford University **(Figure 16)**. In the ensuing months and years, SRI leased additional buildings as they were "released from housing use" by Stanford Village.[64] This incremental expansion occurred even within single buildings, the practice being "to fix up one office at a time, as the need arose."[65] Stanford Village remained occupied by students, along with their spouses and children, through the late 1960s.[66] SRI had received an advance of some $500,000 to $625,000, which was to be paid back, and $600,000 in bank loans to start to build the institute. With a limited budget and no endowment, the incremental growth afforded by the Stanford Village site suited SRI, as it avoided the need to make a large upfront investment in the construction of a new facility as it was trying to get established.

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[64] Gibson, *SRI: The Take-Off Days*, 129.

[65] Gibson, *SRI: The Take-Off Days*, 129.

[66] Cicely Bates, "Stanford Village: Old Houses Finally Going," *Stanford Daily*, April 3, 1968.

Figure 16. Stanford Research Institute's original headquarters in Building 100, photographed in 1952.
Source: Stanford Historical Photograph Collection, Photo ID 8499.

In April 1950, Stanford University tried to purchase the Stanford Village site from the Public Housing Administration (PHA) under the Lanham Act of 1940, as the government considered the site surplus. However, a freeze on sales of surplus properties during the Korean War paused movement on the transaction, although discussions continued through 1953. In May 1953, representatives from Stanford University and SRI successfully petitioned the Department of Defense to sell the property to Stanford under the Lanham Act; the mayor of Menlo Park supported the sale under the condition that the city could purchase some land from Stanford at cost and that land would not be sold to any organizations that did not pay property taxes, with the exception of churches and the school district. However, agreements stalled over whether the land would be sold at-cost or for market value, and SRI began to look for alternative sites. Ultimately, SRI decided that the possibility of higher land costs than originally anticipated was outweighed by the convenience of not needing to relocate and the cost savings that would come with being able to "spread a building program over several years."[67] In 1955, the Housing and Home Finance Agency (HHFA) sold 79 acres to Stanford University at about $16,000 per acre with the stipulation that all Stanford Village (former Dibble Hospital) buildings be demolished or brought up to code by June 1965.[68] SRI purchased just over 30 acres from Stanford

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[67] Gibson, *SRI: The Take-Off Days*, 134.

[68] "Village: Government Makes Final Proposal," *Stanford Daily*, June 3, 1955.

University in July 1955 and acquired additional parcels from the government and the University throughout the 1950s and 1960s, eventually totaling 79 acres.[69]

By the time SRI director Hobson left SRI at the end of 1955, the institute had grown from a staff of 50 to 1,161 and the annual revenue was over $10 million. In the late 1950s, SRI was the largest taxpayer in Menlo Park and a major employer, leading the mayor at the time to remark that he considered persuading SRI to permanently locate to Menlo Park one of his major achievements. Under SRI's third director, Finley Carter, who served until 1966, the staff reached 3,000 people and the annual revenue rose to $54 million. Although SRI had been founded to innovate for Western industry, the institute's first contract was to investigate alternatives to natural rubber for the Office of Naval Research, and the institute quickly pivoted to accommodate government work. The SRI board also approved contracts for projects beyond the regional Western United States focus, with international projects as early as 1950. During these early decades, SRI's contract clients were approximately 60 percent government clients and 40 percent commercial clients.[70] By the late 1950s, SRI had grown independent from Stanford University in the sense that, while the University trustees were SRI's governing body, SRI's staff rarely had joint appointments at the University and rarely shared projects or clients.

SRI Construction in 1950s & 1960s

During the period in the early 1950s when the land sale was being negotiated, SRI hired architecture firm Skidmore, Owings & Merrill (SOM) to prepare a study for building and laboratory needs; however, the results or recommendations of this study were not uncovered during the course of research and the only building designed by SOM on the campus, Building I, was not completed until 1969. Rather, SRI hired the architecture firm Stanton & Stockwell to design the institute's first purpose-built building, which included space for administration, offices, and labs, replacing Building 100 as the main SRI building. Architect William Stockwell observed in 1953 when first visiting the site that "Stanford Village and SRI were made for each other" and that "Timothy Hopkins surely would want his oak trees kept in place; we'll do just that."[71] Gibson, a long-time SRI employee and author of *SRI: The Take-Off Days*, observed that Stockwell "made good on his promise," indicating that some of the mature oak trees on the site, particularly around Building A, likely date to the Hopkins estate era **(Figure 17)**.[72] Building A was completed in two phases—the first phase was completed in 1958 and the second in 1961.

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[69] Gibson provides an extremely detailed first-hand account of the intricacies of the land negotiations and sales in *SRI: The Take-Off Days*.

[70] Nielson, *A Heritage of Innovation*, 1-3.

[71] Gibson, *SRI: The Take-Off Days*, 127 and 139.

[72] Gibson, *SRI: The Take-Off Days*, 139.

Stanton & Stockwell, after working through an iterative process of exploring site plans for the campus, arrived at a master plan for the campus. Stanton & Stockwell's vision for the site was in the model of the corporate campus, with some 16 new purpose-built buildings, landscaped quads, covered work areas, and tree-lined surfaced parking; all the Dibble era buildings would be demolished, with the exception of the then-functional steam power plant in Building 412 **(Figure 18)**. Four of the buildings proposed in Stanton & Stockwell's master plan were built as designed: Building A (1958-61), Building E (1966), Building G (1964), and Building M (1962). A fifth building designed by Stanton & Stockwell, Building L (1967), did not conform to the original master plan, and all subsequent buildings constructed on the campus, beginning with the SOM-designed Building I (1969), were designed by other architects and did not conform to the master plan. Refer to **Appendix B – Historic Aerial Photographs** and **Appendix C – Historic Campus Maps**.

Figure 17. Building A, the first purpose-built SRI building which serves as the main administrative and office building, surrounded by mature trees, 1958. Source: SRI International Facilities.

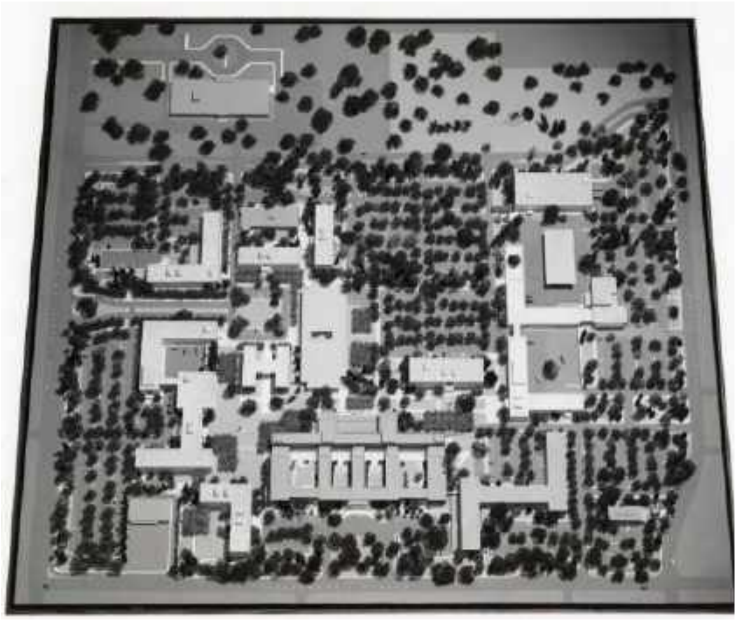

Figure 18. Site master plan by Stanton & Stockwell, circa 1959. Only Building A, Building E, Building G, and Building M were built as shown on this master plan. Source: City of Menlo Park Planning Department.

By 1955, SRI also had office outposts and research groups located in Los Angeles, Pasadena, Washington, D.C., Phoenix, Portland, and Hawaii.[73] SRI also still maintained a location on Hanover Street in Palo Alto, near the University campus.

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[73] Gibson, *SRI: The Take-Off Days*, 206.

SRI International, 1970-present

Separation from Stanford University as SRI International

In the mid-1960s, students protested at university campuses across the country, demonstrating against the United States' involvement in the Vietnam War and for civil rights, and Stanford University was no exception. The classified government contracts and research undertaken by SRI became a target of the anti-Vietnam War protests by Stanford University students, who saw their institution as complicit in the United States military-industrial complex. Nielson, a former SRI employee, provides the following account of student protests:

> Students concerns began to be voiced as early as 1965 when it became known on campus that SRI had two government contracts concerning chemical warfare. The concerns intensified in 1967 when they learned that SRI had also taken on contracts relevant to the war in Southeast Asia. In April of that year some students began picketing in front of SRI's Menlo Park campus, as well as at some of Stanford's engineering laboratories [and SRI's Hanover Street office in Palo Alto]. Their protests soon crystallized into demands to end all war-related or classified work, specifically that involving the war in Southeast Asia. SRI's economic development work for developing countries also came under fire as being conducted only to further the self-interests of large corporate sponsors. Almost all of that work was, inf act, sponsored by foundations and international assistance groups. [...]
>
> By early 1969, the demands of the students had become legitimized in University-sanctioned meetings, and Acting President Robert Glaser formed an ad hoc committee to review the association with SRI and to make recommendations. After 6 months of study, including substantial information that SRI provided the committee, the majority of the committee recommended terminating the association with SRI, asking SRI to compensate the University for its loss of the Institute. [...]
>
> In effect, the thinness of the institutional relationship between Stanford and its research institute could not survive the clamor of the time as amplified on campus, the streets, and in the press. The trustees issued a statement on May 13, 1969, laying the groundwork for SRI's separation from the University. Importantly, they put no restrictions on the kind of research SRI could undertake. But other terms of the agreement that would seriously affect SRI were still to come. [...]
>
> Most onerous was an agreement to pay the University from 0.5% to 1% of its gross revenues in perpetuity. [...]

> By 1989, SRI had given more than $25 million to the University in accordance with the separation agreement. In spite of provisions in the agreement for no payment when SRI's financial health was at stake, some of these annual payments amounted to more than SRI's net profit for the year. [74]

Thus, in 1970, SRI separated from Stanford University as a nonprofit contract research institution, and continued to engage in much the same type of work, including contract work for the United States government. The agreement with Stanford University stated that the institute would have to remove “Stanford” from its name by the fifth anniversary of the agreement, on March 31, 1975, but this deadline was later extended to 1977. By March 1977, the institute was using only the acronym “SRI” in their internal phonebook, and it had adopted the name “SRI International” by that September. However, the articles of incorporation were not amended to officially reflect the new name until April 1980.[75] The new SRI International name provided a continuity, as the SRI acronym had been previously used as shorthand, and it signaled the institute’s increasingly international scope and ambitions. In 1970, SRI opened a division in London, known as SRI Europe, and the International Building (Building I) was dedicated on the Menlo Park campus in late 1969.

Although SRI was continuing to grow successfully in the 1970s, with clients in over 40 countries and about 2,200 active projects in 1977, the institute continued to struggle financially against inflation, government fee structures, and the nature of contract research and development work. In 1979, William Miller, the former provost of Stanford University and a former executive of the Mayfield Fund, one of the earliest venture capital funds in Silicon Valley, became SRI International’s president and CEO. Under Miller’s leadership, in 1982, SRI International began licensing SRI’s inventions and innovations, providing a new revenue stream by monetizing intellectual property.[76] Then, with the passage of the 1984 Bayh-Doyle Act, SRI International was able to leverage intellectual property developed under government contracts. Thus, SRI International began to bring in revenue through “spinning off” start-up companies in the 1980s.[77] Miller also negotiated the acquisition of RCA Laboratories (later known as the Sarnoff Corporation), a research and development company focused on video, vision, and semiconductor technology, in 1988 as a subsidiary of SRI International. Sarnoff Corporation was later fully integrated into SRI International in 2011, and continues to operate from their campus in Princeton, New Jersey.

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[74] Nielson, *A Heritage of Innovation*, B-5 to B-7.
[75] Nielson, *A Heritage of Innovation*, B-7.
[76] Nielson, *A Heritage of Innovation*, B-8.
[77] Nielson, *A Heritage of Innovation*, 1-3.

The 1990s saw the decline of SRI International's Business Consulting Group, which had been a significant division of SRI's early work. After splitting the Business Consulting Group's economic development and business consulting sectors internally in the 1980s, both declined into the 1990s against increasing outside competition. In 1995, then-president William Sommers split off the business consulting operation as a new for-profit subsidiary known as SRI Consulting (SRIC), but SRIC struggled into the 2000s. SRI International continued to conduct economic development research, primarily from their Washington, D.C. office.[78]

In 2015, SRI International reported that the breakdown of its $540 million annual revenue was approximately 63 percent from United States Department of Defense contracts, 11 percent from the National Institutes of Health, eight percent from business and industry, six percent from the National Science Foundation, six percent from other United States government agencies, four percent from the United States Department of Education, and 2 percent from foundations.[79] In 2004, Nielson observed that "SRI's first 2 decades saw solid growth, followed by 2 decades of relative stability, and then a decade of challenge stemming mainly from the restructuring and subsequent demise of its business consulting group [in the 1990s]."[80] Whereas the institute had about 3,000 employees in the mid-1960s, SRI International today has 1,700 employees, but continues to work on about 1,000 projects a year. In addition to the Menlo Park headquarters, these employees are spread across 19 additional offices in the United States and Japan, including campuses in Washington, D.C., Princeton, N.J. and Harrisonburg, VA, and several smaller offices.[81]

SRI International Construction Since 1970

During the last three decades of the twentieth century, SRI International constructed eight new buildings: Building K (1971), Building B (1976), Building P (1980), Building S (1981), Building R (1984), Building U (1986), Building W (1988) and Building 307 (1992). A number of buildings were also altered or expanded during this period. In 1973, architect William L. Pereira Associates was hired to prepare a site develop plan and utilization for SRI International's campus, and the firm would ultimately design and construct two buildings on the site: Building B (1976) and Building P (1980).[82] Buildings B and P expanded the campus's office and laboratory space and were both designed in the Late Modern style. Landscape architecture firm Eckbo Kay designed the landscape around Building

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[78] Nielson, *A Heritage of Innovation*, B-12.

[79] "SRI International Fact Sheet," March 2014, accessed online August 22, 2021 via the Wayback Machine, http://web.archive.org/web/20140403031354/http://www.sri.com/sites/default/files/brochures/sri-fact-sheet.pdf.

[80] Nielson, *A Heritage of Innovation*, 1-2.

[81] "Our Locations," SRI International, accessed August 22, 2021, https://www.sri.com/our-locations/.

[82] "Finding aid for the William L. Pereira & Associates records 0326," Online Archive of California, accessed online July 26, 2021, https://oac.cdlib.org/findaid/ark:/13030/c8k93f3r/.

P, as well as the main employee parking lot. Building P was the last major new office building constructed on the campus. Buildings S, R, U, and W are utilitarian in design, as well as in function in the cases of the cogeneration plant at Building U, waste storage facility at Building W, and storage and shipping and receiving at Building R.

Other structures installed on campus since 1970 include a greenhouse (mid to late 1980s), the Research Field (mid-1980s), Oak Park (early 1990s), the M-1 prefabricated trailer (c. 2000), and a satellite dish (c. 2000). A number of Dibble Hospital era buildings were demolished to accommodate buildings constructed during this period. Other than expansions of Building T, no major new construction has occurred on the site since the 1992. Refer to **Appendix B – Historic Aerial Photographs** and **Appendix C – Historic Campus Maps**.

SRI International Innovations, Advancements & Achievements

Donald Nielson has observed that SRI has had a “visibility problem” wherein their research and development contributions are not recognized and often are attributed to their clients. Nielson elaborates, stating:

> For several reasons SRI has had a bit of a visibility problem over the years. First, and most importantly, contract research by its very nature lets those you are working for determine whether results are disseminated publicly and, if so, the extent of that dissemination. […] Second, perhaps with the exception of professional journals, the Institute often chooses not to publicize even where it was free to do so. Clearly, an increased attention to the commercialization of its intellectual properties feeds the tendency to not publish at all. Finally, there is the lack of distinction between SRI and its parent University that sometime gets blurred.[83]

Nielson points to examples such as innovations in automated banking (Electronic Recording Machine, Accounting or ERMA), personalized computing, the malarial drug halofantrine, the digital fax machine (adopted by Xerox), and partnership with India's National Council of Applied Economic Research (NCAER), but other examples could include SRI’s involvement in the siting and planning of Disneyland and the Monterey Bay Aquarium, or the 9-1-1 emergency call system. SRI also became a global leader in operations research and management sciences (ORMS) with Weldon B. “Hoot” Gibson’s (1917-2001) establishment of the Long Range Planning Service (LRPS) in 1959. LRPS was a “a subscription, non-proprietary research service featuring annual studies across a range of subjects” which continued through the 1990s after later being renamed the Business Intelligence

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[83] Nielson, *A Heritage of Innovation*, A-1.

Program.[84] Seventy-four companies became clients of the LRPS program in its first year and included Ford, Boeing, Standard Oil, Aetna, Bechtel, IBM, Southern Pacific, Dow Chemical, Lockheed, Merck, Technicolor, and may other major corporations.[85] Gibson was the third employee of SRI, headed the Economics Division, and oversaw some 80 international conferences.[86]

Despite the fact that SRI International does not have the same household name recognition as Apple, Google, Xerox, or other Silicon Valley companies, the institute has been instrumental in many computing and robotics advancements that feed the innovation in Silicon Valley, and in sectors such as business and economics, health, education, and physical sciences. SRI International has at least 4,600 patents to date and has worked on well over 50,000 research and development projects.[87] In addition to awards by the Institute of Electrical and Electronics Engineers (IEEE) for innovations in the inception of the ARPANET, Shakey the world's first mobile intelligent robot, and Douglas Engelbart's "Mother of All Demos," which was a public demonstration of online systems and personal computing, SRI International has also been awarded an Academy Award and nine Emmys for advancements related to television and film technology.[88] Additionally, many SRI employees have received some of the highest honors within their respective fields.[89]

Another measure of SRI International's success is the number of spin-off companies, many of which have contributed greatly in their own right to their respective fields. Named "Spin-Off City" by *Business Week*, by most counts, SRI International has spun off at least 60 companies, including companies in the fields of engineering, law, policy, finance, information and computing systems,

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[84] "Stanford Research Institute," Informs, accessed online August 22, 2021, https://www.informs.org/Explore/History-of-O.R.-Excellence/Non-Academic-Institutions/Stanford-Research-Institute.

[85] Nielson, *A Heritage of Innovation*, Appendix I-1.

[86] As SRI's third employee, Gibson also wrote an extremely detailed account of the early years of SRI in two volumes: *SRI: The Founding Years* (1980) and *SRI: The Take-Off Days* (1986).

[87] "About Us," SRI International, accessed online August 17, 2021, https://www.sri.com/about-us/; and Nielson, *A Heritage of Innovation*, xvi.

[88] "Timeline of Innovation," SRI International, accessed online August 17, 2021, https://www.sri.com/timeline-of-innovation/.

[89] Awards to SRI International staff have included awards from American Association for the Advancement of Science, American Association for Artificial Intelligence, American Chemical Society, American Geophysical Union, American Physical Society, Computer Research Association, Institute of Electrical and Electronics Engineers, Oceanography Society, Research Society on Alcoholism, Society for Industrial Microbiology, and Society for Information Display; refer to, "Awards to Staff by Professional Societies," SRI International, captured on April 4, 2014 by the Wayback Machine, accessed August 22, 2021, http://web.archive.org/web/20140404102538/http://www.sri.com/about/awards-honors/professional-societies.

biosciences, and physical sciences.[90] These companies include E-Trade, Verbatim Corporation, Redwood Robotics (later acquired by Google), and Raychem, as well as Siri. Born out of the SRI-led Cognitive Assistant that Learns and Organizes (CALO) project for DARPA's Personalized Assistant that Learns (PAL) program, the company Siri spun off from SRI International in 2007, before being acquired by Apple in 2010. Apple used the name Siri for the first virtual personal assistant that was integrated as a feature of its iPhone 4S in 2011.[91]

Internetworking: ARPANET & The Early Internet

While SRI has innovated across a broad range of fields, some of the most widely used and best-known innovations to come out of SRI are related to personal computing and the internet. SRI was integral to the development of the internet, from its very beginnings with the ARPANET, or Advanced Research Projects Agency Network. The project had been initiated by the U.S. Department of Defenses' Advanced Research Projects Agency (ARPA, later known as DARPA), and SRI was one of four original network nodes—the other three were located at the University of California, Los Angeles (UCLA), University of California, Santa Barbara (UCSB), and University of Utah **(Figure 19)**. The first ARPANET transmission occurred on October 29, 1969 at 10:30 p.m., when UCLA sent the word "LOGIN" to SRI. By 1972, the ARPANET included 37 computers.[92] The project was recognized with an IEEE Milestone Award as the "inception of the ARPANET, the first global digital network based on packet switching and demand access [...] and laid the foundation for the development of the Internet."[93]

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[90] SRI International, "Breakthrough Ideas...Real-World Solutions," 2008, accessed online August 22, 2021 via the Library of Congress Web Archive, https://webarchive.loc.gov/all/20081127074800/http://www.sri.com/about/SRI_infoflyer.pdf.

[91] "Siri," SRI International, accessed online August 17, 2021, https://www.sri.com/hoi/siri/.

[92] "ARPANET," SRI International, accessed online August 17, 2021, https://www.sri.com/hoi/arpanet/; "The Computer History Museum, SRI International, and BBN Celebrate the 40th Anniversary of First ARPANET Transmission," Computer History Museum, October 27, 2009, accessed online August 17, 2021, https://computerhistory.org/press-releases/museum-celebrates-arpanet-anniversary/.

[93] "Milestones: Inception of the ARPANET, 1969," ETHW, accessed online August 22, 2021, https://ethw.org/Milestones:Inception_of_the_ARPANET,_1969.

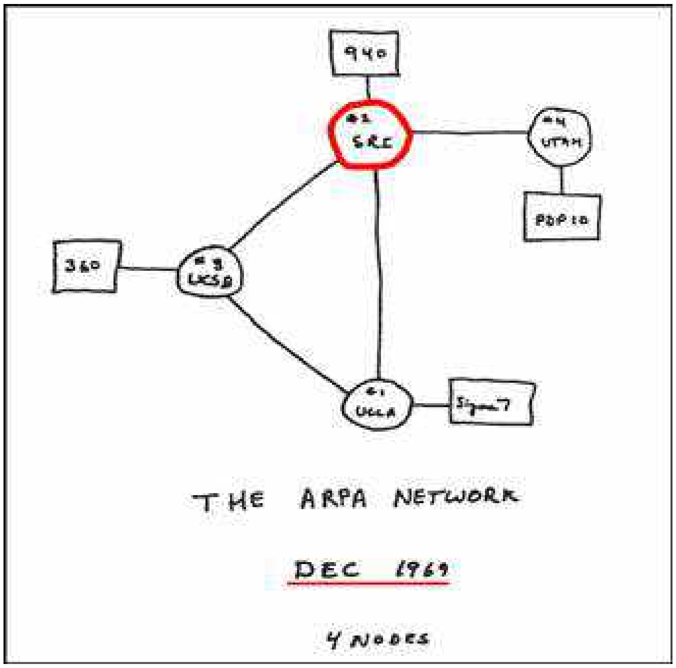

Figure 19. Diagram of the original ARPA Network. Source: SRI International.

Building off the ARPNET, which was a single closed network, dissimilar networks were joined as internetworks. SRI International successfully connected two dissimilar networks for the first time on August 27, 1976, sending its weekly progress report from a mobile van equipped with its Packet Radio Network (PRNET) parked outside the Rossotti's Alpine Inn (3915 Alpine Road) in Portola Valley back to the SRI International campus through the ARPANET **(Figure 20 and Figure 21)**.[94] The team was led by Donald "Don" Nielson, who was then the assistant director of the Telecommunications Sciences Center at SRI International. Nielson had become assistant director in 1973, after joining SRI as a research engineer in 1959 while also finishing his Ph.D. at Stanford University, and went on to become director of the center in 1978, followed by a position as the vice president of the new Computer Science and Technology Division in 1984.[95]

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[94] Marc Weber, "Born In A Van: Happy 40th Birthday To The Internet!" Computer History Museum, November 22, 2017, accessed online August 17, 2021, https://computerhistory.org/blog/born-in-a-van-happy-40th-birthday-to-the-internet/.

[95] "Donald Nielson," SRI International, accessed online August 17, 2021, https://www.sri.com/bios/donald-nielson/.

Figure 20. SRI packet radio research van, circa 1977, parked on SRI campus. Source: SRI International.

Figure 21. Interior of the SRI packet radio research van, circa 1977. Source: Computer History Museum.

In order to make the next leap to connecting three dissimilar networks, Transmission Control Protocol (TCP) for packet switching among network nodes was drafted by Robert “Bob” Kahn of DARPA and Vinton “Vint” Cerf of Stanford University. On November 22, 1977, Nielson’s team successfully demonstrated a connection between three dissimilar networks—the land-based ARPANET, the mobile Packet Radio Network (PRNET), and a Satellite Network (SATNET)—which has, in retrospect, been dubbed the “birth of the internet” and the “first true internet connection.” In this demonstration, the PRNET in the SRI mobile van connected through a packet radio station internetwork gateway at the SRI International Campus, connecting to ARPANET and SATNET locations around the world **(Figure 22)**.

The actual SRI Mobile Packet Radio Van is now located at the Computer History Museum in Mountain View, California. The exact location of the demonstrations on the SRI International campus was not established during the course of historical research; however, based on the fact that Engineering Research Group and the Telecommunications Sciences Center were involved with the project, it was likely Building E and possibly Building G.[96]

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[96] Nielson, *A Heritage of Innovation*, 3-5.

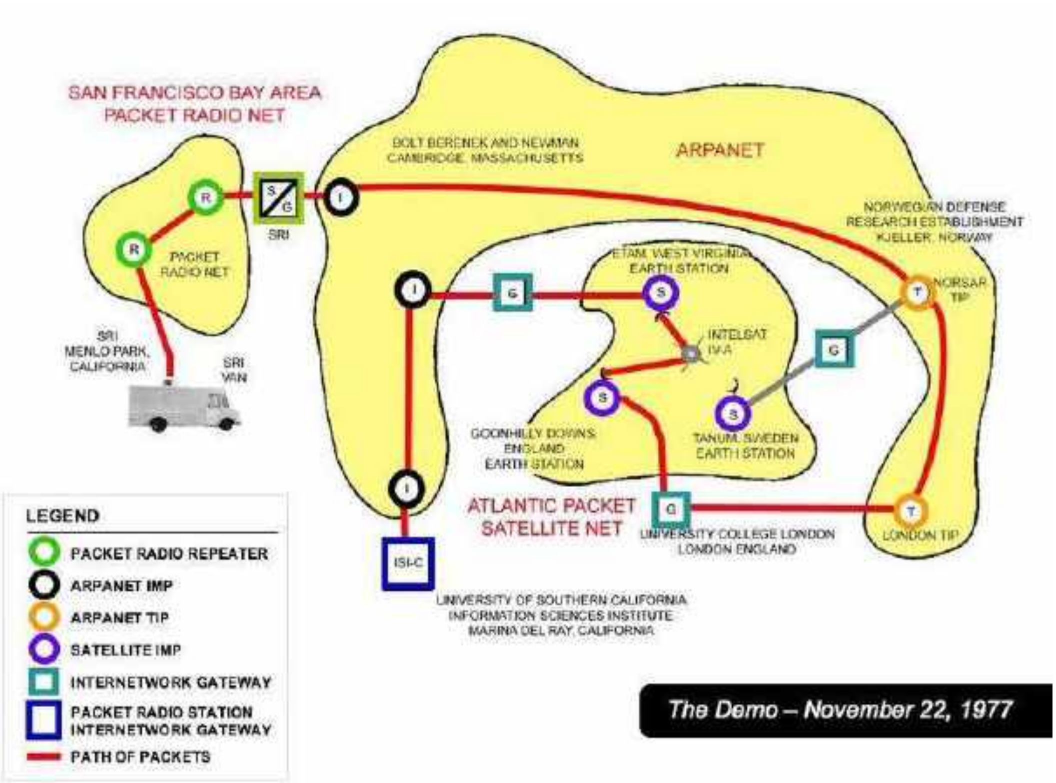

Figure 22. Diagram of the first major TCP Internetwork Demonstration on November 22, 1977.
Source: Computer History Museum.

Personal Computing: Engelbart, The Computer Mouse & The Mother of All Demos

Dr. Douglas Carl Engelbart (1925-2013) is widely recognized as the original inventor of the computer mouse **(Figure 23 and Figure 24)**.[97] He began exploring ways to facilitate interactions between humans and computers in the early 1960s at SRI, and in 1964, his chief engineer, Bill English, built a prototype based on Engelbart's concepts. A patent for the mouse was filed by Engelbart June 21, 1967 for what he then called the "X-Y Position Indicator for a Display System," and was granted on January 17, 1970.[98] The early prototypes had a single or pair of wheels housed in a wood box that were used to translate the motion of the mouse to screen cursor movement, and iterations with multiple buttons followed. SRI licensed the technology to Xerox, Apple, and other computer companies, which eventually led to the mouse being sold commercially in 1984.[99]

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[97] "Historic Firsts: Father of the Mouse," Doug Engelbart Institute, accessed online, August 22, 2021, https://www.dougengelbart.org/content/view/162/000/.

[98] "Computer mouse and interactive computing," SRI, accessed online, August 22, 2021, https://www.sri.com/hoi/computer-mouse-and-interactive-computing/.

[99] "75 Years of Innovation: The computer mouse," Medium, May 7, 2020, accessed online August 22, 2021, https://medium.com/dish/75-years-of-innovation-the-computer-mouse-fef5161ba45d.

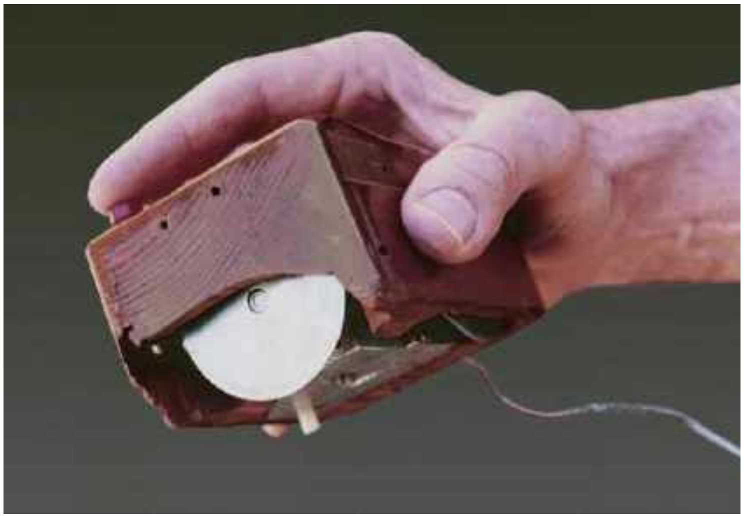

Figure 23. Prototype of Engelbart's design for the computer mouse. Source: APIC / Getty Images.

Figure 24. Douglas Engelbart (right), inventor of the computer mouse, with Guerrino De Luca (left), president of mouse maker Logitech, 1998. Source: Detroit Free Press, December 11, 1998.

Engelbart's 1968 "Mother of All Demos" at the Fall Joint Computer Conference in San Francisco's Civic Auditorium presented a live video run remotely via microwave link from an SDS-90 computer in a room in Building E on the SRI campus. The presentation, "A Research Center for Augmenting Human Intellect," was a 90-minute presentation that described his Augmentation Research Center (ARC) team's revolutionary "oN-Line System" (NLS), and provided a live demo of personal computing features including windows, hypertext, the computer mouse, video conferencing, and word processing, among other elements that would become ubiquitous and fundamental elements of personal computing.[100] The presentation was the first public demonstration of personal computing elements in a single system, and was hugely influential. The technologies were adopted and advanced by Xerox PARC in the 1970s, and by Apple and Microsoft in their personal computer operating systems in the 1980s and 1990s. Additionally, Engelbart's live demonstration format was hailed for being engaging and comprehensible, and initiated a trend in technology that continues today in Silicon Valley with product launch demonstrations. Stewart Brand, at the time best known as the editor of the Whole Earth Catalog, advised the team on how to best present the

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[100] "Doug's Great Demo: 1968," Doug Engelbart Institute, accessed online August 18, 2021, https://www.dougengelbart.org/content/view/209/448/. Historic photographs of the demonstration show rooms that match the design, including structural columns, drop ceilings, and light fixtures, of Building E.

demonstration, and Herman Miller designed custom office furniture, including a swivel keyboard console, for the demo **(Figure 25 and Figure 26)**.[101]

Figure 25. ARC team rehearsing for the 1968 "Mother of All Demos" in a room in Building E at SRI International. Stewart Brand is at the camera. Source: SRI International via the Doug Engelbart Institute.

Figure 26. Engelbart presenting the "Mother of All Demos," sitting in custom Herman Miller office furniture designed for the demo. Source: Arc Bootstrapper.

The Network Information Center (NIC), founded by Engelbart and managed by SRI International from 1970 to 1991, assigned website addresses, also known as top-level domain names (TLDs) to network hosts. Host names with extensions like ".com," ".org" and ".gov" helped direct network traffic, and are still an integral part of how the internet is used today. The NIC also administered Internet Protocol (IP) addresses.[102] SRI has the eighth oldest still existing registered dot com top-level domain in the world.[103] Engelbart's Augmentation Research Center lab was transferred from SRI to Tymshare in the late 1970s, and he retired in 1986. Among other awards, Engelbart was inducted into the National Inventors Hall of Fame in 1998, his Mother of All Demos was awarded an IEEE Milestone In Electrical Engineering and Computing, and in 2000 President Bill Clinton awarded

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[101] "In 1968, Computers Got Personal: How Douglas Engelbart's 'Mother of All Demos' Changed Personal Technology Forever," Vintage Everyday, March 23, 2019, accessed online, August 18, 2021, https://www.vintag.es/2019/03/mother-of-all-demos-1968.html.

[102] "Domain names and the Network Information Center," SRI International, accessed online August 17, 2021, https://www.sri.com/hoi/domain-names-the-network-information-center/.

[103] "List of the oldest currently registered Internet domain names," Wikipedia, accessed online August 22, 2021, https://en.wikipedia.org/wiki/List_of_the_oldest_currently_registered_Internet_domain_names.

him the National Medal of Technology, which is considered the highest technology award in the country.[104]

Artificial Intelligence Center & Shakey The Robot

The Artificial Intelligence Center (AIC) is a laboratory established within the Information and Computing Sciences Division at SRI, founded by Charles Rosen in 1966. Between 1966 and 1972, Rosen and the AIC, funded by DARPA, developed "Shakey the Robot," which as the first mobile intelligent robot, and marked a major advancement in artificial intelligence **(Figure 27)**. Shakey the Robot was covered extensively in the media; in addition to coverage in newspapers, Shakey the Robot was deemed the "first electronic person" by *Life* in 1970 and was covered in an issue of *National Geographic* in the same year. The interest in Shakey was driven by a 24-minute demonstration video published by AIC in 1969, titled "SHAKEY: Experimentation in Robot Learning and Planning," which was filmed in Building E at SRI.[105]

Shakey the Robot could break down commands into smaller tasks using logical reasoning and physical action. While the TV camera, feelers, push bar, and radio antenna hardware were fairly basic technology at the time, Shakey's advancement was in its software algorithm. The project contributed a number of significant advancements including the A* search algorithm, which is used in today's navigation systems like Google Maps, the Hough transform, and visibility graph method. Shakey was the precursor to the technology used in current navigation systems, self-driving cars, and drones. Shakey the Robot was awarded an IEEE Milestone and is now housed at the Computer History Museum in Mountain View.[106] Later robotics projects undertaken by the AIC included Flakey the Robot, which exhibited use of fuzzy logic, in 1985, and Centibots, swarm robots developed in 2003.[107] The AIC later worked on early development of the Cognitive Assistant that Learns and Organizes (CALO), which spun off as Siri Inc., before being acquire by Apple.

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[104] "Douglas Engelbart," National Inventors Hall of Fame, accessed online August 22, 2021, https://www.invent.org/inductees/douglas-engelbart; and "Milestones: 'Mother of All Demos,'" IEEE, accessed online August 22, 2021, http://ieeemilestones.ethw.org/Milestones:%22Mother_of_All_Demos%22.

[105] SRI International, "SHAKEY: Experimentation in Robot Learning and Planning," filmed 1969 at Stanford Research Institute, Menlo Park, video, 24:22, https://www.youtube.com/watch?v=GmU7SimFkpU.

[106] "IEEE Milestone: Shakey, First Mobile Intelligent Robot," IEEE, accessed online August 22, 2021, https://site.ieee.org/scv/2019/06/06/ieee-milestone-shakey-first-mobile-intelligent-robot/.

[107] "Robot teams: Centibots," SRI International, accessed online August 22, 2021, https://www.sri.com/hoi/robot-teams-centibots/.

Figure 27. Charles Rosen with Shakey the Robot, c. 1966-72. Source: SRI International.

Short-List of SRI International Innovations

The following is a short-list of innovations, advancements, and achievements that SRI International led or participated in:[108]

1940s and 1950s

- **Transmission electron microscope.** A revolutionary microscope that improved magnification by 10,000 times.
- **Smog research** to improve air quality in Los Angeles and beyond.
- **Steel super alloys** that can handle high heat.
- **Chemical Economics Handbook.** The sourcebook that is still considered the leading source of global chemical business analysis for more than 300 industrial chemicals (1950).
- **Color television.** RCA Laboratories (now part of SRI) developed full-color home television (1953).
- **Railroad hydra-cushion.** A smoother ride on train rails that helped dramatically reduce damage of freight shipments (1954).

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[108] Adapted from "Timeline of Innovation," SRI International, accessed online August 17, 2021, https://www.sri.com/timeline-of-innovation/.

- **Electronic Recording Machine, Accounting or ERMA.** Banking automation allowed for easier money counting by banks (1955).
- **India's National Council for Applied Economic Research**, which helped the new country how to develop economically (1955).
- **Disneyland.** SRI helped select the location for Disneyland and plan the development of the theme park (1955).
- **Solar energy** development beginning in 1955, leading to several dozen patents.
- **Cancer research** beginning in 1956, continues to the present.
- **Electrostatic discharge rods.** Innovative rods helped to protect aircraft from potentially dangerous levels of static electricity (1956).
- **Movie printing timer.** SRI helped develop technology for faster release of new color prints, and won an Oscar for the advancements in 1959.

<u>1960s</u>

- **Dish radio antenna.**
- **Laser photocoagulation for ophthalmology** to improve eye surgery (1960).
- **All-magnetic logic computer** with virtually indestructible computer circuitry (1960).
- **Anti-viral: Vidarabine.** Originally intended to fight cancer, it was discovered to be effective against herpes complex and varicella zoster viruses (1960).
- **TIROS 1 weather satellite.** The world's first space-based meteorology satellite (1960).
- **Airline reservation systems.** From 1962 to 1964, SRI led development of a real-time communications system for the Scandinavian Airline Service (SAS) to process passenger reservations and check-in.
- **Liquid crystal displays (LCDs)**, which changed the way people view information on a screen (1963).
- **Optical video disk.** Optical recording paved the way for the first video disk recording and playback system (1963).
- **Handwriting recognition**, signature verification, and pen-input computing (1964).
- **Sonar and sea mammals.** First laboratory in North America devoted to studying the behavior of physiology of sea mammals (1964).
- **Malaria treatment: Halofantrine**, a successful treatment for drug-resistant malaria (1965).
- **Eyetracker.** Developed technology that can follow what an eye is looking at, to be used for diagnostic purposes (1965).
- **CMOS integrated circuit,** which is vital technology still found in most of the world's electronic circuitry (1965).

- **Shakey the Robot**, the world's first mobile intelligent robot, which laid the foundation for future innovations in wayfinding software, artificial intelligence, and drone technology. (1966)
- **Acoustic modem.** SRI scientists made vast improvements to the acoustically coupled modem, which had been invented elsewhere in the early 1960s (1966).
- **Computer mouse and interactive computing.** SRI's "X-Y Position Indicator for Display System," which was renamed a "computer mouse" for personal computing (1968).
- **ARPANET.** SRI was integral in inventing the Advanced Research Projects Agency Network (APRANET), which was a computer network funded by the U.S. Defense Department that was forerunner to the internet (1969).
- **Head Start Program.** Assessment of federal efforts to reduce poverty led to groundbreaking research methodology (1969).

<u>1970s</u>

- **Environmental causes of lung disease.** Foundational study helped establish air quality standards (1970).
- **Domain names and the Network Information Center.** "SRI was the first organization to assign website addresses such as "www.sri.com" with extensions such as ".com," ".org," and ".gov." Known as top-level domain names, or TLDs, these addresses were assigned to network hosts by the Network Information Center (NIC), managed by SRI from 1970 until 1991."[109] (1970)
- **Spindt cold cathode for displays.** Revolutionary cathode led to today's "instant-on" flat-panel computers and televisions.
- **Over-the-horizon radar.** Seeing thousands of miles beyond the horizon for advances in detection, tracking, and mapping.
- **Formal software methods.**
- **Digital FAX machine.** SRI developed prototype for world's first digital fax machine.
- **PROSPECTOR computer-based expert system.** One of the first computer-based expert systems aided geologists in mineral exploration.
- **9-1-1 emergency call system.** SRI led design and engineering of emergency call systems throughout the country.
- **Air combat training.** The first instrumented training system in flight.
- **Scenario planning** to make decision-making easier for business and government.

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[109] "Domain names and the Network Information Center," SRI International, accessed online August 17, 2021, https://www.sri.com/hoi/domain-names-the-network-information-center/.

- **Banking guidelines for SWIFT.** The cornerstone of international banking transactions involving 200 countries and trillions of dollars a year.
- **Cash management accounts.** Provided personal access to money, in all its iterations, in one place.
- **Blue light-emitting diode.** The world's first blue light-emitting diode (LED), which laid the foundation for Blu-Ray (1972).
- **Software implemented fault tolerance** for flight control systems for NASA Langley Research Center (1973).
- **Internetworking.** Today's internet was "born" in an SRI van (1976-77).
- **Monterey Bay Aquarium.** SRI assisted in planning and establishing Monterey Bay Aquarium (1977).
- **Deafnet.** National telecommunications system that raised awareness within the deaf community of email's potential (1978).
- **VALS™ market research.** SRI designed the Values and Lifestyles™ (VALS) program, a novel market research tool for determining the motivations behind consumer purchasing decisions (1978).

1980s

- **Longitudinal studies of youth with disabilities.** Pioneering study improved U.S. education for students with disabilities (1985).
- **ImageCalc Software.** Image processing system made it possible to manipulate 3D object models overlaid on imagery.
- **Risks forum.** The single most comprehensive anthology of computer-related mishaps.
- **Innovations in ultrasound for medical diagnostics.**
- **Ozone depletion research.** SRI research provided critical findings on protecting the atmosphere.
- **Fracture Analysis System: FRASTA.** Breaking down how things break down to build them better.
- **Polymers for super strength** to create stronger products from tennis rackets to Mars rovers.
- **Football safety research** developed safety measures for the National Football League (NFL) to reduce the number and severity of injury to players.
- **Blood treatment, Hirudin,** for blood clot prevention stems from a peptide once only found in leeches.
- **Order-sorted algebra.** The first language to implement parametrized programing led to numerous applications in computer science.

- **Random Sample Consensus (RANSAC) algorithm** which became a widely referenced paradigm for computer vision.
- **Environmental testing methods** developed for the U.S. Environmental Protection Agency (EPA), which are still used today.
- **Two-dimensional laser fluorescence technology**. Spectroscopic method now used worldwide to visualize flow and chemical processes in combustion.
- **Computer security theory of noninterference.** SRI researchers developed one of the most influential theoretical approaches to the study of computer security (1982).
- **Human liver tissue bank.** The first human liver tissue bank for testing drugs on humans versus animals.
- **Atmospheric research and radar.** Advanced radar facilities that helped keep the U.S. safe during the Cold War.
- **CCD broadcast camera.** The first commercially available all-solid-state broadcast camera, which delivered clearer, sharper images than before (1984).
- **Surface analysis by laser ionization (SALI).** Extremely sensitive surface analysis now standard for analyzing metals, semiconductors, and more (1984).
- **Open agent architecture software,** which paved the way for distributed systems.

1990s

- **High definition television.** SRI helped develop and standardize HDTV technology, and won an Emmy in 1997 for the contribution.
- **Bioagent detection** using upconverting phosphors to protect humans from harmful exposure.
- **Network intrusion detection** to prevent cyber-attacks.
- **Maude software language.** A high-performance declarative software language that is among the fastest equational rewriting systems in its class, and is free.
- **Radar that penetrates ground and foliage.** Innovative radar helped find unexploded ordnance and other concealed items.
- **Rapid prototyping method for ceramics.**
- **Professional Golfers' Association education.** Training program established standards for 30,000+ golf pros.
- **Virtual advertising insertion** for in-game ads on TV.
- **Virtual private networks (VPNs)** which let people connect to employer's computer network from home (1994).
- **Telerobotic surgery.** Less invasive surgery with steadier "hands" (1995).
- **Twin Research Registry,** which created new opportunities for health and behavior research (1995).

- **Natural language speech recognition technology** resulted in multiple successful spin-off companies.
- **Postal address recognition.** Advanced recognition system brought millions of dollars in cost savings (1997).
- **Hazard waste disposal.** Patented process decomposes hazardous waste to undetectable amounts (1998).
- **Lymphoma treatment Targrtin® (bexarotene)** is approved by the FDA for cutaneous T-cell lymphoma.

2000s

- **Artificial muscle development.** (2000)
- **Venus night-side airglow.** First observation provided new insight into Venus (2001).
- **Robot teams: Centibots.** Robots that coordinate and communicate (2002).
- **Training the National Guard.** Live-training program got soldiers combat-ready from their home stations.
- **Charter school evaluation.** The first national evaluation of public charter schools (2002).
- **Artificial intelligence: CALO.** A cognitive decision-making software that eventually led to the development of Siri. The CALO project with DARPA's Personalized Assistant that Learns (PAL) program is the largest-known AI project in U.S. history (2003).
- **Advanced modular incoherent scatter radar (AMISR),** which ushered in relocatable radar to read atmospheric events, rain, sleet, and tsunamis.
- **Iris recognition for biometric identification.** (2006)
- **Sleep-activated neurons.** Identification of rare neurons that may help treat sleep disorders and understand memory (2008).
- **Cancer treatment: Pralatrexate.** Federal Drug Administration (FDA)-approved treatment for peripheral T-cell lymphoma after years of SRI research (2009).

2010s

- **Siri.** In 2007, SRI spun off Siri, Inc. based on the CALO project, and Apple acquired Siri in 2010, releasing Siri as an integrated feature of the Apple iPhone 4S in 2011.
- **MOBOT.** The first autonomous motorcycle-riding humanoid robot (2016).
- **NASA Parker Solar Probe.** SRI imagers helped revolutionize the understanding of the sun (2018).

Summary of SRI International Menlo Park Campus Development, 1958-Presesnt

The following table and map include the buildings constructed by SRI International on its Menlo Park campus; no buildings constructed by SRI International have been demolished. Refer also to **Appendix B – Historic Aerial Photographs** and **Appendix C – Historic Campus Maps**.

TABLE 6. EXTANT BUILDINGS CONSTRUCTED BY SRI INTERNATIONAL

Name	Year Built	Architect/Builder	Alternate/Previous Name(s) [110]
Building A	1958-61	Stanton & Stockwell	Main Building/Bldg. 1
Building B	1976-77	William L. Pereira Assoc.	Bldg. 22
Building E	1966	Stanton & Stockwell	Engineering Building/Bldg. 40
Building G	1964	Stanton & Stockwell	Engineering Building No. 2/Bldg. 44
Building I	1969	Skidmore, Owings & Merrill (SOM)	International Building/Bldg. 20
Building K	1971	Unknown	Bldg. 16
Building L	1967	Stanton & Stockwell	Health Research Facility II/Bldg. 18
Building M	1962	Stanton & Stockwell	Health Research Building/Bldg. 28 (decommissioned)
Building M-1	c. 2000	Unknown (prefab)	N/A
Building P	1980-81	William L. Pereira Assoc.; Eckbo Kay Associates	Physical Sciences/Bldg. 32
Building R	1984	Unknown (Prefab)	Shipping & Receiving
Building S	1981	R. A. Rotondo (engineers)	High Bay Project
Building T	1962	Robert E. Jones	Animal Facilities – Physical Sciences/Bldg. 255
Building U	1986-87	Bechtel; International Power Technology (IPT)	Cogeneration Plant
Building W	1988	SRI International	Waste Storage Facility
Building 307	1992	Kimbrell Architects, Inc.	N/A
Building 405	c.1948-56	Unknown	N/A
Building 409	c.1948-56	Paul James Huston	N/A
Greenhouse	c. mid- to late 1980s	Unknown	Unknown

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[110] The purpose-built SRI buildings had numbered names until the early 1980s when they were renamed with letters.

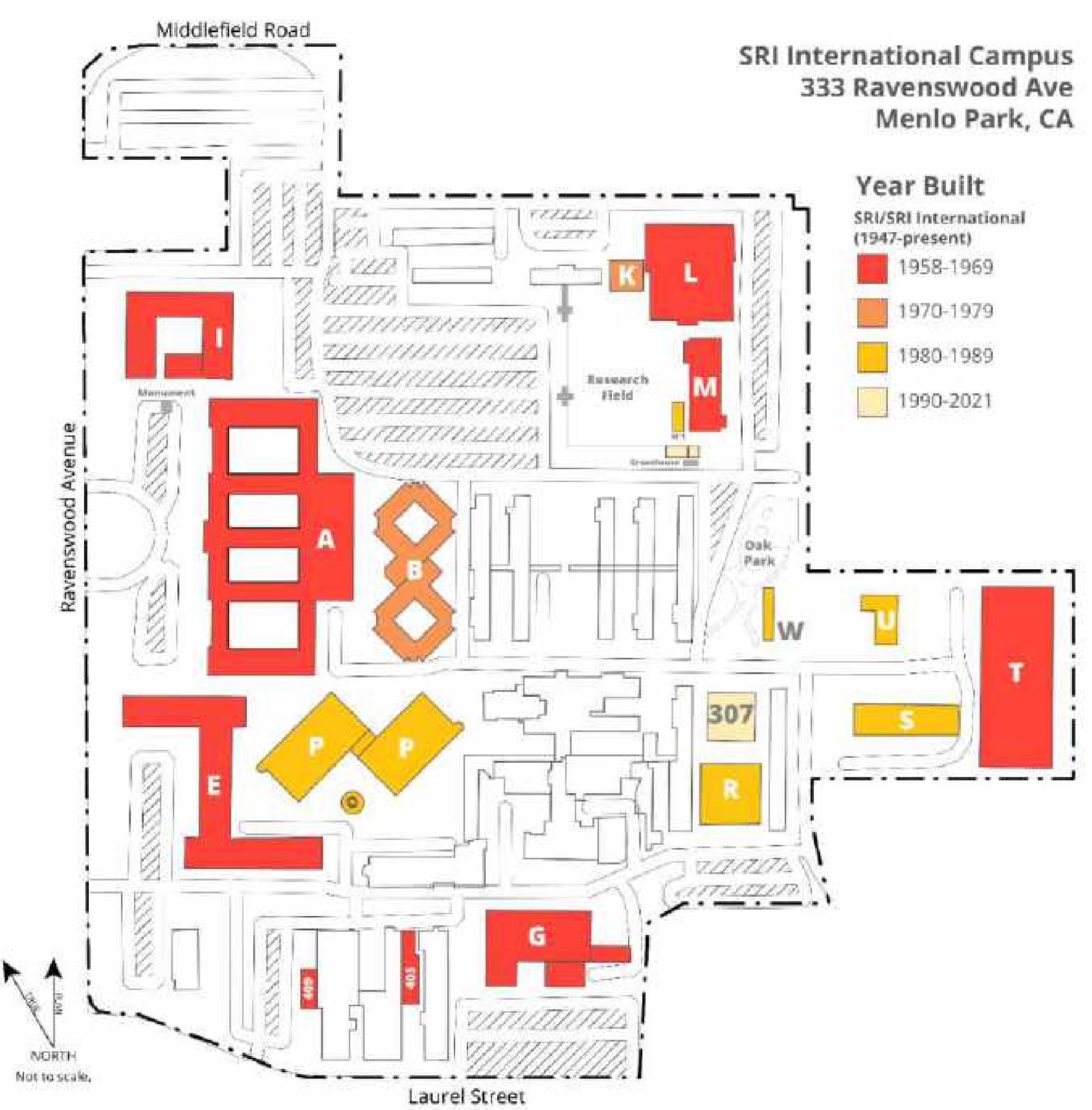

Figure 28. Map of current SRI International campus, showing extant buildings constructed during the SRI International era (1947-present) in red. Source: Base map from Cadmapper. Edited by Page & Turnbull.

IV. ARCHITECTURE CONTEXT

Midcentury Modern Architectural Style

Midcentury Modern is a generalized term that defines a period of adaptation of the International Style after World War II. The International Style was part of the early 20th century Modern Movement that marked a major shift in architecture. Emphasizing functionalism and rationalism, the International Style was characterized by clear expression of structural forms, smooth wall surfaces, rectilinear shapes, lack of ornament, and extensive use of glass. While forms remain geometric in a Midcentury Modern building, elements of texture, materiality, and color began to appear. Often, there is a variation of elements based on a region's climate and topography.

The resulting wide-ranging architecture from the 1940s and 1950s is broadly categorized as Midcentury Modern and generally consists of less strict interpretations of the International Style. The construction techniques that separate building structure from the envelop or skin, mass-produced materials, expansive glass walls, horizontal orientations, open floor plans, and integrated outdoor spaces became the hallmarks of Midcentury Modern in California. Simultaneously, landscape architects, like Thomas Church and Garrett Eckbo, were experimenting with these same modern materials and forms to further develop the outdoors as habitable room-like spaces and part of the casual, informal California lifestyle.

While closely associated with postwar residential work, Midcentury Modern lent itself to several different building types, including commercial, educational, civic, and religious buildings, including college campuses and corporate offices and campuses. In some cases, these institutional and commercial buildings have a residential quality to them, as in the *Sunset* Headquarters (1950) by Cliff May in Menlo Park or the IBM Los Gatos Laboratory (1964, since demolished) in San Jose by Hellmuth, Obata & Kassabaum (HOK) **(Figure 29 and Figure 30)**. In other cases, as in the IBM facilities at Cottle Road in San Jose (1958, since demolished), designed by John Savage Bolles and landscape architect Douglas Baylis, the effect is a more whimsical and colorful twist on the International Style **(Figure 31)**. Many examples have a more symmetrical, modular, and geometric appearance, often with repeating patterns of large glazing and spandrel panels, as in Fairchild Semiconductors (c. 1968, since demolished) in Mountain View, designed by Simpson, Stratta & Associates **(Figure 32)**.

Figure 29 *Sunset* Magazine headquarters (1951), Menlo Park, designed by Cliff May and Thomas Church. Source: Ernest Braun.

Figure 30. IBM Los Gatos Laboratory (1964, since demolished) in San Jose, designed by Hellmuth, Obata & Kassabaum. Source: HOK.

Figure 31. IBM Building 24 (1958, since demolished) on Cottle Road, San Jose, designed by John Bolles and Douglas Baylis. Source: Sourisseau Academy for State and Local History.

Figure 32. Fairchild Semiconductors (c. 1968, since demolished) in Mountain View, designed by Simpson, Stratta & Associates. Source: Computer History Museum.

Additional variants of Modern architectural design, including New Formalism and Brutalism, further modified the International Style beyond Midcentury Modern.

Late Modern Architectural Style

Late Modernism is a broad term that encompasses the varied designs of the 1960s and 1970s within the Modern Movement when backlash against the perceived uniformity and repetitiveness of International Style architecture inspired many architects to explore other architectural forms.[111] Theorist and architectural historian Charles Jencks was one of the first to codify the term "Late Modern" as an architectural style and observed, "There are many ways to characterize Late-Modern architecture and most of them can be reduced to the single notion of exaggeration. Late-Modernism takes Modern architecture to an extreme to overcome its monotony and the public's boredom with it."[112] Some architects drew inspiration from historic architectural examples, giving way to New Formalism and eventually Postmodernism. Others pushed the modern aesthetic to new extremes through advancements in technology, engineering, and materials, leading to Brutalism, Expressionism, and High-Tech Structuralism. Still others transformed the glass-and-steel look into taut glass skin and mirror glass designs, or alternatively, incorporated organic materials and shapes for a more natural, wooded aesthetic. Late Modernism essentially hybridized established Modern rationale and functional forms with aspects of the emerging architectural stylistic trends that would gain prominence from the 1960s through the 1980s.

Because of this interplay of varied forms within a clearly Modern vocabulary, Late Modernism is difficult to define. This is exacerbated by the number of subgenres like traditional Modernism, New Formalism, Brutalism, and Expressionism that have their own defining characteristics; some Late Modern examples feature elements of these styles in various combinations. Typically, Late Modern commercial, institutional, and government buildings were often monumental in scale, had sculptural qualities within the design, including strong linear elements, pronounced structural components, and interplay of plans or volumes, and comprehensive landscape design in plantings, paving, and features to create a cohesive setting.

Practitioners of the Late Modern style included celebrated architects of the Modern Movement at the next phase of their careers experimenting with new forms, such as Marcel Breuer, Louis Khan, and William Pereira, as well as those who were trained modernists but eventually rejected orthodox Modernism, such as Philip Johnson and Cesar Pelli. Examples of Late Modernism in the Bay Area include urban office tower projects such as the Transamerica Pyramid (1972) in San Francisco by

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[111] Kazys Varnelis, "Embracing Late Modern," *L.A. Forum*, accessed December 2, 2020, http://laforum.org/article/embracing-late-modern/.

[112] Charles Jencks, *Architecture Today* (New York: Harry N. Abrams, Inc, Publishers, 1988) cited in "Los Angeles Citywide Historic Context Statement: Architecture and Engineering/LA Modernism/Late Modern, 1966-1990," SurveyLA, prepared for City of Los Angeles, Department of City Planning, Office of Historic Resources (July 2020), 2.

Pereira, the Embarcadero Center (1971-82) in San Francisco by John Portman, the Kaiser Center in Oakland by Welton Beckett (1960), and the Ordway Building in Oakland by Skidmore, Owings & Merrill (1970), as well as suburban office towers and institutional complexes such as the Palo Alto Office Center (1966) by Tallie Maule and Stanford Medical Center (1959) by Edward Durrell Stone.

In Silicon Valley, Modernism was the go-to style for suburban corporate office parks, campuses, and estates, with Midcentury Modernism dominating the post-World War II period through the mid-1960s, and Late Modernism dominating the corporate workplaces of the late 1960s through the 1980s. Examples of the Late Modernist style were designed by local and national practitioners such as HOK, Gensler, and McCue Boone Tomsick, with examples including but not limited to the Hewlett Packard, Fairchild Semiconductor, Xerox, Intel, Memorex, National Semiconductors, Alza, and IBM facilities **(Figure 33 and Figure 34)**.

Figure 33. Xerox Palo Alto Research Center (PARC) (1970), designed by Hellmuth, Obata & Kassabaum. Source: Mkaz.com

Figure 34. IBM Santa Teresa Laboratory (1977) in San Jose, designed by McCue Boone Tomsick and Sasaki, Walker & Associates. Source: Freemanj.tripod.com

Suburban Corporate & Technology Campuses

Suburban corporate campuses arose in the 1940s, becoming increasingly popular in the decades following World War II as large corporations, particularly those with large research and development functions, looked for space to expand their facilities. With the rise in automobile ownership and commuter transit systems, as well as the perceived ills of urban life—pollution, congestion, crime, and so on—white collar workers were increasingly buying homes in the suburbs. Corporations also saw advantages of the suburbs with large swaths of cheaper available land and proximity to the suburban workforce. Unlike large industrial facilities, these corporate campuses were largely dedicated to office headquarters, laboratories, and research and development activities, so-called “smokeless” industries, which were seen as compatible with the surrounding middle class residential areas. In addition to extensive parking for employees, these corporate campuses were set in designed landscapes to create a parklike or pastoral atmosphere.

In her book *Pastoral Capitalism: A History of Suburban Corporate Landscapes*, Louise A. Mozingo, landscape architect and professor at University of California, Berkeley, has identified three typologies of suburban corporate workplaces:

- **Corporate Campus** – The corporate campus, which first appeared in the 1940s, was purpose-built and designed in the manner of a university campus with buildings organized around a landscaped quad and "provided facilities for a singular division of middle management: corporate research. The corporate campus initiated the shift of white-collar work into pastoral suburban settings."[113] One example is the 1956 General Motors Technical Center in Warren, Michigan, designed by architect Eero Saarinen and landscape architect Thomas Church.
- **Corporate Estate** – The corporate estate, which arose in the early 1950s, "consisted of an imposing building complex arrived at by a coursing entry drive through a scenically designed landscape of 200 acres or more."[114] Like corporate campuses, corporate estates were purpose-built for a specific company. An example is the 1971 Weyerhaeuser Corporate Headquarters outside of Tacoma, Washington designed by architects Skidmore, Owings & Merrill and landscape architect Peter Walker of Sasaki, Walker and Associates.
- **Office Park** – The office park, developed in the 1950s, provided a "lower-cost, flexible alterative to the corporate campus and estate. The office park scheme provided lots for office buildings, each encircled by a pool of parking, a matrix of landscape edges, medians, and verges that provided suburban consistency."[115] Developers could sell, lease, or build to provide offices to a number of different companies. An example is the 1951 Stanford Industrial Park, now known as the Stanford Research Park, in Palo Alto, which includes buildings for a variety of companies all designed by different architects.

While most of the earliest influential corporate office parks and corporate estates were located in the Midwest and on the East Coast with companies such as Bell Labs and General Motors, numerous suburban corporate workplaces were constructed in Silicon Valley beginning in the late 1960s with increasing pervasiveness in the 1970s and onward. An essay on the history of the corporate campus

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[113] Louise A. Mozingo, *Pastoral Capitalism: A History of Suburban Corporate Landscapes* (Cambridge, MA: The MIT Press, 2011), 12.
[114] Mozingo, *Pastoral Capitalism*, 12.
[115] Mozingo, *Pastoral Capitalism*, 13.

in Silicon Valley for *The Urbanist*, the publication of non-profit urban and regional planning policy organization SPUR, observes:

> […] these facilities were located near major research universities to capture a highly educated workforce for companies that would commercialize academic innovation, develop new technologies and conduct government and defense research. It was a winning formula, as academics and technology entrepreneurs formed formidable clusters of companies, opportunities and ideas. In various ways, research parks replicated the suburban planning and design controls pioneered in the city of Menlo Park in 1948, deliberately presenting an alternative to industrial factories, where most research and development functions had traditionally been housed. [By the 1970s] It became increasingly important for national technology firms to establish a presence in Silicon Valley. The Peninsula was primed for its explosive growth as the global center of technological innovation — all in a postwar suburban environment that was socially homogeneous, spatially dispersed and utterly dependent on the private automobile.[116]

Stanford Industrial Park in Palo Alto was developed as a suburban office park beginning in 1953 with Varian Associates, and grew to include buildings and complexes for burgeoning technology firms such as Hewlett-Packard, General Electric, Lockheed, and Eastman Kodak **(Figure 35 and Figure 36)**. The 470-acre VALLCO Business and Industrial Park in Cupertino was also initiated with a Varian facility—a factory designed by Rockrise & Watson in 1968.[117] Other early purpose-built corporate campuses in Silicon Valley include IBM facilities at Cottle Road in San Jose and Los Gatos Laboratory (both campuses have since been demolished). In the early postwar period, numerous companies that would become technological and corporate powerhouses were forming, but it was not until the 1970s that most of these companies were large enough to justify the cost and space of a corporate campus or estate, including corporate campuses for Xerox, Intel, Memorex, National Semiconductors, Alza, and IBM **(Figure 33 and Figure 34)**.

The SRI International Campus does not fully represent any of the above typologies. While the campus most closely fits the corporate campus typology, it lacks the overall coherence of siting and design of a corporate campus since the Stanton & Stockwell master plan was only partially implemented.

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[116] Benjamin Grant, "The Corporate Campus: A Local History," *The Urbanist* 553 (September 2016), accessed online February 9, 2021, https://www.spur.org/publications/urbanist-article/2016-09-21/corporate-campus-local-history.

[117] LSA, "Apple Campus 2 Project Environmental Impact Report," Public Review Draft, State Clearinghouse No. 2011082055 (June 2013), 268.

Figure 35. Varian Associates (1953) at Stanford Industrial Park in Palo Alto. Source: PaloAltoHistory.org.

Figure 36. Hewlett-Packard headquarters at Stanford Industrial Park (1960) by Clark, Stromquist, Potter & Ehrlich. Source: Agilent Technologies History Center.

Architect & Builder Profiles

G.W. Williams Co. and Williams & Burrows, Inc., General Contractors (Dibble General Hospital; Bldgs. A, E, G, L & M)

Williams & Burrows, Inc. was a Belmont, California-based general contracting and construction firm that built the first five buildings that were designed for SRI by the architecture firm Stanton & Stockwell. Williams & Burrows, Inc. was the construction arm of Burlingame-based development and construction company, G.W. Williams Co. Inc. The firms were borne out of a partnership between George W. Williams (1901-1986) and Frank Burrows (1901-1997), who founded the firm in 1923.[118] Williams earned a Bachelor of Science degree in commerce at the University of California, Berkeley, in 1918 and began building homes after he graduated.[119] Burrows also studied at the University of California, Berkeley, where he earned a Civil Engineering degree.[120] Burrows served as mayor of Burlingame in 1944, and is credited with steering Williams & Burrows, Inc. toward cutting-edge work.[121] Burrows also served as the national president of the Associated General Contractors of America in 1963.

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[118] "About Us," G.W. Williams Co., online, accessed August 21, 2021, https://www.gwwilliams.com/90-years; and "Wms., Burrows Noted Builders," *San Mateo Times*, August 4, 1954.

[119] "Obituaries: George W. Williams," *News-Ledger* (West Sacramento), February 5, 1986.

[120] "Contractor Receives Top Award," *The Californian* (Salinas, CA) September 13, 1967.

[121] "Frank F. Burrows," The Associated General Contractors of America, online, accessed August 21, 2021.

Prior to their work at Dibble Hospital, as G.W. Williams Co., Williams and Burrows' company focused on construction of single-family homes in communities along the San Francisco Peninsula. In the 1940s, they began to expand into subdivision development on the Peninsula and near Sacramento and Lodi.[122] In 1944, G.W. Williams and Williams & Burrows incorporated. By 1959, shortly after their work at SRI's campus began, Williams & Burrows was identified as "pioneers of pre-cast concrete construction, commonly called 'tilt-up'," in the architectural trade journal, *Architect & Engineer*. The firm was composed of experienced specialists in all construction phases.[123]

By 1954, the company employed 500 workers and established an office at 500 Harbor Boulevard in Belmont, California. Review of architectural journals describing the firm's work indicates that they were often on project teams with prominent architects, including a model house designed by master architect Joseph Esherick in the Mills Park subdivision in San Bruno, and the various corporate and institutional projects they completed.[124]

Recent work of the firm during the 1950s included six buildings at UC Santa Barbara's Goleta campus, with others planned for completion ca. 1960. The firm also participated in master planning efforts in Santa Barbara concurrently. The city awarded the firm for its work in civic and commercial architecture in 1953, 1955, and 1956. Williams & Burrows also worked at Stanford University, where it built the Gardner Dailey-designed Physics Lecture Hall and the Milton T. Pflueger-designed Florence Moore Hall.[125]

The firm's work beyond Santa Barbara and the SRI campus included several corporate and institutional projects along the San Francisco Peninsula. In 1959, Williams & Burrows constructed an addition for the Peninsula Hospital in Burlingame. During the same period, it built an addition to Santa Clara County hospital according to plans prepared by Stone, Marraccini & Paterson, Architects.[126]

Williams & Burrows, Inc.'s renowned construction work continued into the 1960s. The firm received the AIA National Award in 1967 for a residential development called Woodlake in San Mateo.[127] Williams & Burrows, Inc. dissolved in 2001; however, G.W. Williams Co. appears to remain an active firm in the San Francisco Bay Area.

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[122] "Wms., Burrows Noted Builders," *San Mateo Times*, August 4, 1954.

[123] "Contemporary Construction Williams and Burrows General Contractors," *Architect & Engineer* (April 1959), 8.

[124] Advertisement for Revere Quality Home by G.W. Williams Company, *San Francisco Examiner*, April 16, 1949.

[125] "Contemporary Construction Williams and Burrows General Contractors," *Architect & Engineer* (April 1959), 18-19

[126] Ibid., 9-11, 16.

[127] "Contractor Receives Top Award," *The Californian* (Salinas, CA) September 13, 1967.

Stanton & Stockwell (Buildings A, E, G, L & M)

Stanton & Stockwell was a Los Angeles-based firm that earned many high-profile civic commissions during the 1950s and 1960s. The firm was a partnership between Jesse Earl Stanton (1887-1971), who was born in San Francisco and received a Beaux-Arts education (though the institution is unknown), and William Francis Stockwell (1906-1981), who was born in Genoa, Nebraska and educated at Georgia Institute of Technology.[128] Within the Los Angeles Civic Center alone, there are several major buildings that were by the firm, sometimes in collaboration with other architects, including the Police Facilities Building (1955, with Welton Becket & Associates), the Los Angeles County Courthouse (1958, with Paul R. Williams, Adrian Wilson and Austin, Field & Fry), the Kenneth Hahn Hall of Administration (1960, with Paul R. Williams, Adrian Wilson and Austin, Field & Fry), the Junipero Serra State Building (1958), and the Los Angeles Mall (1973-74) **(Figure 37)**. In addition to its work in the Civic Center, the firm of Stanton & Stockwell designed several buildings on the campuses of Pomona College and University of California, Los Angeles (UCLA), as well as Belmont High School.[129] Stanton also collaborated with Pereira & Luckman on the National Institute of Standards (1954) in Boulder, Colorado, which received the AIA Honor Award in 1955 **(Figure 38)**.[130]

Figure 37. Los Angeles County Courthouse (1958) by Paul R. Williams; Austin, Field & Fry; Stanton & Stockwell; and Adrian Wilson. Source: Los Angeles Conservancy.

Figure 38. National Institute of Standards (1954) in Boulder, Colorado, by Pereira & Luckman with Jesse E. Stanton. Source: National Institute of Standards.

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[128] American Institute of Architects (AIA), "Stanton, J(esse) E(arl)" in *American Architects Directory* (R.R. Bowker LLC, 1962), 668; and American Institute of Architects (AIA), "Stockwell, William Francis" in *American Architects Directory* (R.R. Bowker LLC, 1970), 884.

[129] "Stanton & Stockwell," Los Angeles Conservancy, accessed online July 26, 2021, https://www.laconservancy.org/architects/stanton-stockwell.

[130] American Institute of Architects (AIA), "Stanton, J(esse) E(arl)" in *American Architects Directory* (R.R. Bowker LLC, 1962), 668; and "Boulder Laboratories," National Institute of Standards, accessed online July 26, 2021, https://www.nist.gov/ofpm/historic-preservation-nist/boulder-laboratories.

Stanton & Stockwell designed the first five purpose-built buildings for Stanford Research Institute at its Meno Park campus—Buildings A, E, G, L & M—which were constructed in the late 1950s and 1960s. This commission is the firm's only known project in Northern California, based on review of listed projects in the 1962 and 1970 AIA directories, and other available secondary sources.[131] Building A was featured in the April 1959 issue of *Architect & Engineer*, in an article about the general contractors William & Burrows who constructed the Stanton & Stockwell-designed buildings and had also built Dibble General Hospital **(Figure 39)**.[132]

WILLIAMS and BURROWS, Contractors . . .

STANFORD RESEARCH INSTITUTE

Menlo Park, California

J. E. Stanton and William F. Stockwell, Architects.

Brandow & Johnston, Engineers.

CONSTRUCTION DETAIL of building wing.

. . . WILLIAMS and BURROWS, Contractors

AIR VIEW

STANFORD RESEARCH INSTITUTE

Menlo Park, California

ALL BRICK USED IN THE NEW
Stanford Research Institute
Building

STANTON AND STOCKWELL, Architects
WILLIAMS & BURROWS, General Contractors

L. P. McNEAR
BRICK COMPANY

COMMON AND JUMBO BRICK

SAN RAFAEL, CALIF.

Figure 39. Photographs of Building A by Stanton & Stockwell, with general contractors Williams & Burrows. Source: "Williams & Burrows, General Contractors," *Architect & Engineer* 217, no. 1 (April 1959), 14-15.

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[131] Stanton & Stockwell's firm records and drawings are not held at any public archive or repository.
[132] "Williams & Burrows, General Contractors," *Architect & Engineer* 217, no. 1 (April 1959), 10-11, 14-15.

William L Pereira Associates (Buildings B & P)

William Leonard Pereira (1909-1985) was born in Chicago in 1909, and attended the University of Illinois' School of Architecture, graduating in 1931. William L. Pereira Associates was established Pereira in 1958, after his previous firm with Charles Luckman was dissolved. The firm is known for its iconic Modern and Late Modern building designs and comprehensive master plans.[133]

Between 1958 and 1985, William L. Pereira Associates was responsible for numerous airports, hotels, skyscrapers, university campus buildings and plans, corporate headquarters, and other commercial buildings both nationally and internationally. The firm established a distinguishable style of modernism that was monumental and tectonic in composition, while occasionally borrowing historic or classical architectural forms and abstracting them in a very futuristic vocabulary.[134] Pre-cast concrete was a heavily used material by the firm, which was used to compose unique geometric forms that were often applied and repeated in panelized systems. The firm was responsible for many important buildings, including the Los Angeles County Museum of Art (1965), the Geisel Library at UC San Diego (1970), and the Transamerica Pyramid (1972), among others. The firm also had an established reputation for its comprehensive master planning experience, exhibited at locations, campuses, and sites like the University of Southern California (1960 and 1966), the City of Newport Beach (1960), University of California, Irvine (1965), and the San Francisco International Airport (1972) **(Figure 40 and Figure 41)**.

William L. Pereira & Associates designed two buildings on the SRI International Campus—Building B in 1976 and Building P in 1980. Based on the project list compiled by James Steele in his monograph on Pereira, the firm appears to have designed only two other buildings on the San Francisco Peninsula—General Telephone Research Labs, Palo Alto (1960) and United California Bank in San Mateo (1972).[135] Pereira's firm worked on numerous corporate headquarters and research facilities, including Aeronutronics Systems Inc, Newport Beach (1958) and American Airlines Corporate Headquarters, Los Angeles (1978) **(Figure 42 and Figure 43)**.[136]

William L. Pereira and his three firms—William L Pereira (1931-1950), Pereira & Luckman (1950-1958), and William L. Pereira Associates (1958-1983), were prolific, having spanned over five

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[133] "William Pereira," Los Angeles Conservancy, accessed July 26, 2021, https://www.laconservancy.org/architects/william-pereira.

[134] Christopher A. Joseph & Associates, "City of Riverside Modernism Context Statement," prepared for the City of Riverside (2009), 27.

[135] James Steele, editor, *William Pereira* (Los Angeles: Architectural Guild Press, 2002), 243.

[136] Steele, *William Pereira*, 192-253.

decades.[137] In 1958, Pereira was inducted into the American Institute of Architects (AIA) College of Fellows, one of the highest national honors in the profession.[138] Pereira was also featured on the cover of TIME Magazine on September 6, 1963 – one of few architects ever to appear on the cover among the ranks of Le Corbusier, Frank Lloyd Wright, Buckminster Fuller, and Eero Saarinen.[139] After a prolific and lauded career, Pereira died on November 13, 1985.

Figure 40. Transamerica Pyramid (1972) in San Francisco by William L. Pereira Associates. Source: Forbes.

Figure 41. UC San Diego Geisel Library (1970) by William L. Pereira Associates. Source: Wikipedia.

Figure 42. Aeronutronic Systems (1958) in Newport Beach, CA by Pereira & Luckman. Source: Steele, *William Pereira*, 199.

Figure 43. American Airlines Headquarters (1978) in Los Angeles by William L. Pereira Associates. Source: Steele, *William Pereira*, 252.

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[137] Paul Spreiregen, “Pereira, William L(eonard),” in *Contemporary Architects*. ed. Muriel Emanuel (New York: St. Martin’s Press, 1980), 619-21; and James Steele compiled a list of Pereira’s projects in his book: James Steele, editor, *William Pereira* (Los Angeles: University of Southern California University Guild Press, 2002).

[138] Muriel Emanuael, ed., *Contemporary Architects* (New York: St. Martin’s Press, 1980), 619.

[139] Katherine Wisniewski, “92 Years of Architecture Through Time Magazine Covers,” *Curbed*, February 4, 2015, https://www.curbed.com/2015/2/4/9996152/time-magazine-architect-covers.

Skidmore Owings & Merrill (SOM) (Building I)

Skidmore, Owings & Merrill LLP (SOM) is an architectural and engineering firm formed in Chicago in 1936 by Louis Skidmore (1897-1962) and his brother-in-law, Nathaniel Owings (1903-1984). John O. Merrill (1896-1975), a structural engineer, joined the partnership in 1939. The first branch opened in New York City in 1937. By 1950, the firm had grown to include seven partners, including architect Gordon Bunshaft, who assumed leadership of the New York office. By 1952, the company numbered 14 partners and more than 1,000 employees with offices in New York, Chicago, San Francisco, and Portland, Oregon.[140] Chuck Bassett was the Managing Partner of the San Francisco Office of SOM from its opening in 1955 to 1981.[141]

Beginning in the 1950s, SOM became known for following the style promulgated by Mies van der Rohe and Le Corbusier. Since that time, the firm's expertise has been in high-end commercial skyscrapers of International style or "glass box" construction, with clean geometric lines. SOM designed some of the tallest buildings in the world at the time they were built, including the John Hancock Center (1969) and Sears Tower (1973) in Chicago and Burj Khalifa (2010) in Dubai. Other well-known projects include the Lever House (1952) in New York City and the Air Force Academy Chapel (1958) in Colorado Springs, Colorado, as well as the Crown Zellerbach Headquarters (1959), the Alcoa Building (1967), and the Bank of America Headquarters (1969) in San Francisco **(Figure 44)**.

Famous for its high-rises and urban projects, SOM has also designed its share of influential suburban corporate campuses, including the Connecticut General Life Insurance Company (1956) headquarters in Bloomfield, Connecticut; Weyerhaeuser Corporate Headquarters (1971) in Federal Way, Washington; the American Can headquarters in Greenwich, Connecticut (1971); and Baxter Travenol (1975) headquarters in Deerfield, Illinois **(Figure 45)**. However, SOM does not appear to have worked on any of the major early suburban corporate campuses or research parks in Silicon Valley. Despite some early studies on office and laboratory space needs for Stanford Research Institute, SOM only designed one building, Building I, in 1969. Building I at SRI is not included among the 44 built SOM projects featured in the monograph *Architecture of Skidmore, Owings & Merrill, 1963-1973*.

To date, SOM has designed over 10,000 buildings throughout the world and presently maintains offices in New York City, Chicago, San Francisco, Los Angeles, Washington D.C., Seattle, London, Hong Kong, Shanghai, and Dubai.[142]

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[140] Jay *P. Pederson, editor, International Directory of Company Histories.* Vol. 69. Detroit, MI: St. James Press, 2005.
[141] "Skidmore, Owings and Merrill, (SOM), San Francisco, CA (Partnership)," Pacific Coast Architecture Database (PCAD), accessed online July 30, 2021, http://pcad.lib.washington.edu/firm/97/.
[142] "About," SOM, accessed online July 26, 2021, https://www.som.com/about.

Figure 44. Crown Zellerbach Headquarters (1959) in San Francisco by SOM. Source: SOM.

Figure 45. Weyerhaeuser Corporate Headquarters (1971) in Federal Way, Washington by SOM. Source: SOM.

Landscape Architect Profiles

John C. Carmack (Building A)

John C. Carmack (1927-2010) was born in Oakland in 1927, attended college at the University of Oregon and the University of California at Berkeley, and lived in or around San Carlos during most of his career as a landscape architect.[143] Carmack appears to have worked for Huebsch Construction Company the mid-1950s.[144] Relatively little is known about Carmack's professional career, although he was active in the San Mateo County Floral Fiesta, a major annual nursery and garden event, gave a number of lectures, and was frequently quoted in the home and garden section of local newspapers such as the *San Francisco Chronicle*'s "Modern Living" section.[145] Based on mentions in *House Beautiful* and *Sunset*, Carmack's work appears to have been primarily focused on residential gardens. One of his most notable projects appears to have been the garden for a Charles Warren Callister-designed home in the Twin Peaks neighborhood of San Francisco, which was published in *House Beautiful*.[146] A residential pool landscape by Carmack was exhibited in "Landscape Architecture Today" at the San Francisco Museum of Art in 1956, alongside other prominent landscape architects of the time, such as Thomas Church, Lawrence Halprin, and Theodore Osmundson.[147] In 1962,

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[143] "Kingsley Will Hear Talk On Landscaping," *The Sacramento Bee*, February 14, 1964; and U.S., Obituary Collection, 1930-current via Ancestry.com.

[144] Iva Newman, "Sunset Chief Wins Award," *Times*, April 13, 1956.

[145] "Fiesta This Year Offers Many Ideas," *Times*, August 6, 1954.

[146] "The Bold Approach in a magnificent new home," *House Beautiful* (February 1962): 77-89.

[147] "Landscaping Exhibit at S.F. Museum," *Oakland Tribune*, August 19, 1956.

Carmack appears to have worked for the Greek government on a landscape architecture project.[148] Carmack collaborated with architects Stanton & Stockwell on Building A for Stanford Research Institute, including the landscaped courtyards between the building wings. No archive of Carmack's professional career has been identified and no scholarship on his work has been identified. Carmack has not been identified as a master landscape architect.

Garrett Eckbo/Eckbo Kay Associates (Building P & Main Employee Parking Lot)

Garrett Eckbo (1910-2000) is one of the most influential American landscape architects to practice during the postwar years.[149] His approach, designs, and publications were heavily shaped by the progressive politics of the New Deal era and the proliferation of Modernist theories into American design practices. Eckbo was born in Cooperstown, New York in 1910, but moved to Alameda, California with his mother in 1912. Eckbo enrolled at the University of California, Berkeley's Division of Landscape Design and Floriculture in 1932. In 1936, Eckbo received a scholarship to attend Harvard University's Graduate School of Design. Eckbo's work at Harvard under Bauhaus founder Walter Gropius's leadership was characterized by a collaborative and multi-disciplinary approach that became a hallmark of his design theories.

Upon graduating in 1938, Eckbo moved back to California to begin working for the federal New Deal's Farm Security Administration, where he designed resettlement communities meant to accommodate migrant workers throughout the American Southwest. During World War II, Eckbo's focus shifted to the planned housing of defense workers in California. In 1946, Eckbo moved to Los Angeles to start a southern branch of his firm Eckbo, Royston and Williams, which he had founded in San Francisco in 1945, and worked on several influential modern suburban residential developments, including the Mar Vista Housing Tract with architect Gregory Ain and Crestwood Hills with architect A. Quincy Jones. The firm initially worked primarily on residential gardens, but soon expanded into suburban parks, as well as larger planned residential communities such as Ladera on the San Francisco Peninsula. Eckbo crafted public spaces that integrated buildings and people, as demonstrated in his pedestrian walk at the outdoor pedestrian Fulton Shopping Mall in Fresno, California (1966) and Union Bank Plaza (1968) in Los Angeles **(Figure 46 and Figure 47)**.

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[148] "Stockton Artist Will Lecture At Kingsley," *The Sacramento Bee*, March 5, 1962.

[149] Unless otherwise noted, biographical information about Eckbo was developed from the UC Berkeley Environmental Design Archives "Inventory of the Garrett Eckbo Collection," accessed online July 22, 2021, http://www.oac.cdlib.org/findaid/ark:/13030/tf4290044c/; and Dorothée Imbert, "Garrett Eckbo," The Cultural Landscape Foundation, accessed July 22, 2021, https://tclf.org/pioneer/garrett-eckbo.

Figure 46. Fulton Mall (1966) in Sacramento by Garrett Eckbo. Source: Tim Davis, 2007. The Cultural Landscape Foundation.

Figure 47. Union Bank Plaza (1969) in Los Angeles by Garrett Eckbo. Source: Charles Birnbaum, The Cultural Landscape Foundation.

In 1950, Eckbo published *Landscape for Living*, a defining text on Modernist landscape architecture and planning. In 1953, his firm split into two firms—Eckbo, Dean and Williams, and Royston, Hanamoto and Mayes. In 1963, Eckbo returned to Northern California to serve as head of the Landscape Architecture Department at University of California, Berkeley from 1963 to 1969. Eckbo's firm was joined by Donald Austin as a partner in 1964, becoming known as Eckbo, Dean, Austin and Williams and later simply as EDAW. The firm expanded into working on large, international planning projects and had offices in San Francisco, Los Angeles, Berkeley, Honolulu, and Minneapolis.

Eckbo received the Medal of Honor from the American Society of Landscape Architects (ASLA) in 1975, one of the profession's highest honors, and retired as Professor Emeritus at UC Berkeley in 1978. Leaving EDAW in 1979, Eckbo partnered with Kenneth Kay to form Eckbo Kay Associates, refocusing again on residential and smaller commercial projects. Eckbo died in Berkeley in 2000 after gaining a legacy of thousands of gardens, hundreds of public spaces, internationally recognized firms, and several publications that continue to influence the contemporary practice of landscape architecture.

At SRI International, Eckbo Kay designed the landscape around William L. Pereira Associate's Building P and the main employee parking lot in the early 1980s. Eckbo's other known work in Menlo Park includes several residential projects. He also worked on a series of projects at Stanford University, including the Braun Center, Galvez Mall, and Ventura Gardens, in the 1970s through the 1990s.

V. FRAMEWORK FOR EVALUATION OF POTENTIAL HISTORIC PROPERTIES

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) is state legislation (Pub. Res. Code §21000 et seq.) that provides for the development and maintenance of a high-quality environment for the present-day and future through the identification of significant environmental effects.[150] CEQA applies to "projects" proposed to be undertaken or requiring approval from state or local government agencies.[151] "Projects" are defined as "activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps."[152] Historic and cultural resources are considered to be part of the environment. In general, the lead agency must complete the environmental review process as required by CEQA. In the case of a proposed project at SRI International Campus, the City of Menlo Park will act as the lead agency.

According to CEQA, a "project with an effect that may cause a substantial adverse change in the significance of an historic resource is a project that may have a significant effect on the environment."[153] Substantial adverse change is defined as: "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired."[154] The significance of an historical resource is materially impaired when a project "demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources."[155] Thus, a project may cause a substantial change in a historic resource but still not have a significant adverse effect on the environment as defined by CEQA as long as the impact of the change on the historic resource is determined to be less-than-significant, negligible, neutral, or even beneficial.

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[150] California Environmental Quality Act (CEQA), Public Resources Code (PRC), §21000 et seq., accessed online, August 20, 2021, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21000.

[151] California Environmental Quality Act (CEQA), California Code of Regulations (CCR), Title 14 § 15000 et seq., Thomson Reuters Westlaw, accessed August 20, 2021, https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=IEB5FF9F0D48811DEBC02831C6D6C108E&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default).

[152] 14 CCR § 15378.

[153] 14 CCR § 15064.5(b).

[154] 14 CCR § 15064.5(b)(1).

[155] 14 CCR § 15064.5(b)(2).

In general, the lead agency must complete the environmental review process as required by CEQA. The basic steps are:

1. Determine if the activity is a "project;"
2. Determine if the project is exempt from CEQA;
3. Perform an Initial Study to identify the environmental impacts of the Project and determine whether the identified impacts are "significant." Based on the finding of significant impacts, the lead agency may prepare one of the following documents:
    a. Negative Declaration for findings of no "significant" impacts;
    b. Mitigated Negative Declaration for findings of "significant" impacts that may revise the Project to avoid or mitigate those "significant" impacts;
    c. Environmental Impact Report (EIR) for findings of "significant" impacts.

California Register of Historical Resources

The California Register of Historical Resources (California Register) is an inventory of significant architectural, archaeological, and historical resources in the State of California. Resources can be listed in the California Register through a number of methods. State Historical Landmarks and National Register-listed properties are automatically listed in the California Register. Properties can also be nominated to the California Register by local governments, private organizations, or citizens. The evaluative criteria used by the California Register for determining eligibility are closely based on those developed by the National Park Service for the National Register of Historic Places. To be eligible for listing in the California Register, properties must have historic significance and historic integrity.

HISTORIC SIGNIFICANCE

In order for a property to be eligible for listing in the California Register, it must be found significant under one or more of the following criteria.

- **Criterion 1 (Events):** Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

- **Criterion 2 (Persons):** Resources that are associated with the lives of persons important to local, California, or national history.

- **Criterion 3 (Architecture):** Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic values.

- **Criterion 4 (Information Potential):** Resources or sites that have yielded or have the potential to yield information important to the prehistory or history of the local area, California, or the nation.[156]

Evaluation Under Criterion 4 (Information Potential) on SRI International Campus

The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than above-ground built resources. California Register Criterion 4 (Information Potential) is relevant to built resources only when the building itself is the principal source of important construction-related information. The extant built resources on the SRI International Campus were built in 1943 or later using common and conventional construction methods and materials associated with twentieth century military and institutional construction, which is well-documented in historical photographs, architectural drawings, and other existing documentation. Therefore, the built resources on the SRI International Campus would not yield information important to history.

The analysis of potential archeological resources at the SRI International Campus, that may be eligible under Criterion 4, is beyond the scope of this report.

INTEGRITY

In order to qualify for listing in any local, state, or national historic register, a property or landscape must possess significance under at least one evaluative criterion as described above and retain integrity. Integrity is defined by the California Office of Historic Preservation as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance," or more simply defined by the National Park Service as "the ability of a property to convey its significance."[157]

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[156] California Office of Historic Preservation*, Technical Assistance Series #7: How to Nominate a Resource to the California Register of Historical Resources* (Sacramento: California Office of State Publishing, September 4, 2001), 11.

[157] California Office of Historic Preservation, *Technical Assistance Series #7*, 11; and National Park Service, *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: U.S. Department of the Interior, National Park Service, 1995), 44.

To evaluate whether the subject property retains sufficient integrity to convey its historic significance, Page & Turnbull used established integrity standards outlined by the *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*. Seven variables, or aspects, that define integrity are used to evaluate a resource's integrity—location, setting, design, materials, workmanship, feeling, and association. A property must possess most, or all, of these aspects in order to retain overall integrity. If a property does not retain integrity, it can no longer convey its significance and is therefore not eligible for listing in local, state, or national registers.

The seven aspects that define integrity are defined as follows:

> Location is the place where the historic property was constructed or the place where the historic event occurred;
>
> Setting addresses the physical environment of the historic property inclusive of the landscape and spatial relationships of the building(s);
>
> Design is the combination of elements that create the form, plan, space, structure, and style of the property;
>
> Materials refer to the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form the historic property;
>
> Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
>
> Feeling is the property's expression of the aesthetic or historic sense of a particular period of time; and
>
> Association is the direct link between an important historic event or person and the historic property.

CHARACTER-DEFINING FEATURES

For a property to be eligible for national or state designation under criteria related to type, period, or method of construction, the essential physical features (or character-defining features) that enable the property to convey its historic identity must be evident. These distinctive character-defining features are the physical traits that commonly recur in property types and/or architectural styles. To be eligible, a property must clearly contain enough of those characteristics, and these features must also retain a sufficient degree of integrity. Characteristics can be expressed in terms such as form, proportion, structure, plan, style, or materials.

PROPERTIES LESS THAN 50 YEARS OLD

According to California Office of Historic Preservation Technical Bulletin 6, “In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance.”[158] While 50 years is used as a general estimate of the time needed to understand the historical importance of a resource (California Code of Regulations, Title 14, Chapter 11.5 § 4852 (d)(2)), the State of California Office of Historic Preservation recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older.[159]

Evaluating Historic Districts

For a property to be found eligible for the California Register, it must be classified as either: a building, structure, object, site or district. Historic districts are defined by the California Office of Historic Preservation in *Technical Assistance Series #7*:

> Historic districts are unified geographic entities which contain a concentration of historic buildings, structures, or sites united historically, culturally, or architecturally. Historic districts are defined by precise geographic boundaries. Therefore, districts with unusual boundaries require a description of what lies outside the area, in order to define the edge of the district and to explain the exclusion of adjoining areas. The district must meet at least one of the criteria for significance […].[160]

Features in a historic district may be individually distinctive, or lack individual distinction if the grouping achieves significance as a whole within its historic context. However, the majority of the

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[158] California Office of Historic Preservation, *Technical Assistance Series #6: California Register and National Register: A Comparison* (Sacramento: California Office of State Publishing, 2011), 3.

[159] California Register of Historical Resources, California Code of Regulations (CCR), Title 14, Chapter 11.5 § 4850 et seq., Thomson Reuters Westlaw, accessed August 20, 2021, https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=IFEF7DFD0D48511DEBC02831C6D6C108E&bhcp=1&bhhash=1&transitionType=Default&contextData=%28sc.Default%29#IFFC7DA00D48511DEBC02831C6D6C108E.

[160] California Office of Historic Preservation, *Technical Assistance Series #7: How to Nominate a Resource to the California Register of Historical Resources* (Sacramento: California Office of State Publishing, September 2001), Appendix-2.

components should add or contribute to the district's historic character, and each component must possess integrity along with the district as a whole.

DISTRICT BOUNDARIES

The boundaries of a district typically encompass the area of land containing the significant concentration of buildings, sites, structures, or objects that convey a shared significant context. A district's significance and historic integrity should help determine the boundaries with consideration of visual barriers, visual changes, boundaries of a specific time, and clearly differentiated patterns of historic development.

DISTRICT CONTRIBUTORS & NON-CONTRIBUTORS

In addition, historic districts may have contributing and non-contributing buildings, sites, structures, objects, or open spaces. A contributor adds to the historic associations, historic architectural qualities, or archeological values for which a property is significant because:

- It was present during the period of significance, relates to the documented significance of the property, and possesses historic integrity or is capable of yielding important information about the period; or
- It independently meets the California Register criteria.

A non-contributor does not add to the historic associations, historic architectural qualities, or archeological values for which a property is significant because:

- It was not present during the period of significance or does not relate to the documented significance of the property;
- Due to alterations, disturbances, additions, or other changes, it no longer possesses historic integrity or is capable of yielding important information about the period; or
- It does not independently meet the California Register criteria.

DISTRICT INTEGRITY

For a district to retain integrity, the majority of the components that make up the district's historic character must possess integrity even if they are individually undistinguished. The relationships among the district's components also must be substantially unchanged since the period of significance. Intrusions within a district may impact its integrity based on the relative number, size, scale, design, and location of the components. A district is not eligible if it contains so many alterations or new intrusions that it no longer conveys the sense of a historic environment.

VI. HISTORIC DISTRICT EVALUATIONS

Based on the historical research conducted on the subject property, it is evident that there are four distinct periods of use, physical development, and potential significance:

- Residential Estate Era, 1864-1941
- Dibble General Hospital, 1943-1945
- Stanford Village, 1945-1969
- Stanford Research Institute (SRI)/SRI International, 1946-present

The following section evaluates the campus for potential historic significance and integrity for each of these four development periods for eligibility for listing in the in California Register as a historic district under Criteria 1, 2, and/or 3. Refer to "Evaluation Under Criterion 4 (Information Potential) on SRI International Campus" in **Section V. Framework for Evaluation** for more information about California Register Criterion 4.

Residential Estate Era

The subject property does not appear to be eligible under any criteria for its past association with the development of residential estates in Menlo Park. Between ca. 1864 and 1941, the land currently occupied by the SRI International campus was a portion of the successive Barron, Latham, and Hopkins estates. Throughout this Residential Estate Era, the property featured a mansion, gatehouse, curvilinear carriage drives, and expansive grounds across approximately 280 acres. Additional outbuildings and fountains were brought to the property during Latham's ownership, and greenhouses and orchards were developed by Hopkins as part of the Sunset Seed and Plantings Co. Overall the property was bound by San Francisquito Creek, Middlefield Road, Ravenswood Avenue, and El Camino Real/Southern Pacific Railroad's Tracks during this period.

Shortly after the Hopkins estate was sold in 1941, the mansion and other outbuildings (one stable and one greenhouse) were demolished, leaving only the Gatehouse standing on Ravenswood Road. Due to sale and subdivision of the former 280-acre property, the land within the former estate grounds is now occupied by the SRI International campus and separate residential and commercial developments in Menlo Park.

The extant Barron-Latham-Hopkins Gate Lodge is located outside of the boundary of the SRI International campus and has never been occupied by SRI International or related entities. The gatehouse has been previously identified by the City of Menlo Park as a local, individual historic resource and has been listed on the National Register of Historic Places since 1986. The boundary of this individual resource does not include any buildings within the SRI International property.

Overall, as no built resources from this period remain within the subject property, the subject property does not possess features, buildings, or structures that are associated with the development of residential estates during the late nineteenth and early twentieth centuries. Therefore, the property does not appear to contain a potential historic district related to the Barron, Latham, or Hopkins estates.

Dibble General Hospital

Criterion 1 (Events)

The subject property appears to be significant as a potential historic district under Criterion 1 for its association with the significant pattern of national planning, development, and construction of military medical facilities during World War II. The period of significance under this criterion is 1943-1946, beginning the year planning and construction of Dibble Hospital began through the year the hospital was decommissioned by the United States government and its original use ceased. During this period, Dibble Hospital became one of only two hospital centers specializing in rehabilitation of blinded military personnel, and was one of nine hospital centers that specialized in plastic surgery.

In 1943, construction of Dibble Hospital commenced, and the facility formally opened in early January 1944. After several months of operation, Dibble Hospital was assigned specializations. Although not unique in being assigned specializations, with other general hospitals in the nation specializing in general medicine, orthopedic surgery, psychiatry, neuro, and vascular surgery, the care provided at Dibble Hospital as nonetheless significant within the national framework of wartime medical care. Multiple advancements in plastic surgery, and in particular, surgery related to the treatment of blindness and provision of prosthetics, were developed at Dibble General Hospital. Research did not determine exact dates during which specific procedures were invented or adopted. Yet, all medical care was provided within the period 1943-1946.

Within the City of Menlo Park, Dibble Hospital represents a significant property for its association with development during World War II. The hospital’s establishment on the grounds of the former Hopkins estate in 1943 spurred population growth in the city, as over 800 personnel were employed by the hospital. Although the subject property appears to be significant under Criterion 1, the property’s current state of integrity, with respect to the retention of buildings and physical features built during the years 1943-1946, is not highly intact. In order for a property to be eligible under any criteria, it must possess sufficient historic integrity to represent its historic significance. Refer to the integrity analysis below.

Criterion 2 (Persons)

The subject property does not appear to be significant as a potential historic district under Criterion 2. Dibble Hospital was named in honor of Col. John Dibble, who died tragically while en route to the Pacific in 1942. Dibble's honorary association to the hospital does not relate to his productive life. Dibble Hospital employed over 800 individuals during its operation peak, ca. 1945, and although the installation was overseen by several high-ranking individuals, the property's significance and association with wartime medical care is not represented by a single individual. Rather, the contributions of many individuals, including administrators, nurses, surgeons, and civilian employees combined in the day-to-day operations of the hospital.

Criterion 3 (Architecture)

The subject property appears to be significant as a potential historic district under Criterion 3 as a property that represents a Type-A military hospital general hospital constructed during World War II.

Dibble General Hospital was established in 1943 as a Type-A, World War II U.S. Army medical facility, utilizing temporary and theater of operations construction specifications. The Type-A plan for Army general hospitals was designed by the New York-based architectural firm of York and Sawyer and the buildings were constructed by the prominent Burlingame-based general contracting and construction firm, G.W. Williams Co.

Dibble Hospital was one of 62 U.S. Army general hospitals that operated during World War II, most of which were built as temporary installations. Of these 62 general hospitals, 14 were built according to the standard Type-A plan, with Dibble Hospital appearing to be the only example with temporary buildings constructed with wood frames and stucco exteriors, versus the more common brick or brick and clay tile materials used for other Type-A hospitals with either temporary or permanent planned operation. Character-defining features of Type-A hospitals included an arrangement of buildings that related to rank and use. Administrative buildings and quarters for officers and nurses were placed near the main entrance. Beyond, clinics where medical care such as surgery or clinical treatment were performed were positioned in alignment. Wards, arranged in a grid much like streets in a town, were placed beyond the clinic buildings. The center of the site featured a primary mess hall and civic center for patients. The perimeter of the site was dedicated to additional barracks, utilitarian buildings for storage and utilities (such as a power house or plant), and amenities including tennis courts, a gym, a chapel, and a theater.

The hospital's association with the architecture firm of York and Sawyer is notable; however, York and Sawyer's standard plan for a Type-A hospital was applied to multiple hospital facilities across the U.S. and Dibble General Hospital was not strongly associated with York and Sawyer. York and

Sawyer's significance as a prominent firm with national recognition is better represented by the broader impact their design had on hospital construction during World War II, which is not individually embodied by Dibble Hospital. The work of constructing the hospital was commissioned to the firm of G.W. Williams Co., which later expanded to incorporate Williams & Burrows, Inc. By 1943, G.W. Williams Co. developed a considerable body of work along the San Francisco Peninsula. Their projects were featured in national architectural publications including *Architect & Engineer*, including subsequent work for buildings purpose-built for SRI. The construction of Dibble Hospital appears to be among the construction firm's most significant projects given its importance to the pattern of national planning and construction of hospitals.

Although the subject property appears to be eligible under Criterion 3, the property's current state of integrity, with respect to the retention of buildings and physical features built during the years 1943-1946, is not highly intact. In order for a property to be eligible under any criteria, it must possess sufficient historic integrity to represent its historic significance. Refer to the Integrity analysis below.

Integrity

The potential Dibble Hospital historic district retains integrity of location as none of the extant buildings have been relocated from their original construction sites. The historic setting of the district has been impaired by both the demolition of approximately 83 percent of the buildings constructed between 1943 and 1946 and introduction of subsequent unrelated development within the original hospital property. Similarly, these major alterations to the site and loss of 5/6 of the buildings that comprised the hospital has also impaired integrity of design, as the district's representation of the standard characteristics of a Type-A hospital complex are no longer strongly present.

As of this evaluation, the property features the original Administration Building, both BOQ buildings, seven of the original 39 wards, the original Mess Hall (altered), Civic Center (altered), and Power Plant. Although the Administration Building and BOQ still form a distinct three-building group, all of the Nurses Quarters that joined those buildings in forming a seven-building group have been demolished. Similarly, all detention area barracks have been demolished. A group of five wards remains largely intact, with two other wards nearby; yet these wards are no longer readily associated with the Administration and BOQ buildings, due to the introduction of new roads, fencing, parking lots, and landscaping after 1946. Finally, the clinic buildings situated between the Administration building and the wards have been completely demolished, which is particularly impactful to the district's representation of its significance under Criterion 1 and Criterion 3, as the buildings where medical care (surgery and treatment of the blind) was undertaken are no longer present.

Although buildings that remain still feature stucco exteriors, retain main original wood-sash windows, and with the exception the Mess Hall and Civic Center, have undergone few additions that alter their essential form, modern materials post-dating the 1943-1946 period of significance have been introduced to the district. These later materials and the workmanship they represent are tied to later periods of development and undermine the potential district's expression of materials and workmanship associated with the period 1943-1946.

Due to the impairment of setting, design, and limited retention of materials and workmanship, the district does not retain integrity of feeling. Finally, the district's integrity of association, to the pattern of development during World War II, and as in terms of representation of an architectural type, has been impaired by alterations and change of use of the buildings.

Conclusion

Therefore, although the property appeared to possess a potential historic district with significance under Criterion 1 and 3, the district has been found to lack sufficient integrity to support eligibility.

Stanford Village

The subject property does not appear to be eligible under any criteria for its past association with Stanford Village, an off-campus student housing community of Stanford University students that existed between 1946 and 1969. Stanford Village was a veterans-only housing location for single men and women and married couples and families, with a capacity of roughly 1,500 students. In 1952, housing was opened to non-veteran students and their families. During the course of Stanford University's occupancy of the former Dibble Hospital property, some building interiors were altered to create more comfortable interiors within the previously built, temporary, wartime buildings. No documentation of other substantial changes was found, while no new buildings appear to have been constructed specifically for Stanford Village. Thus, the former hospital buildings used by Stanford Village retained their essential physical form. However, during the 1950s, the site began to undergo redevelopment as land was acquired by Stanford Research Institute. Between the 1950s and 1960s, as Stanford University's need for supplemental student housing ebbed, SRI's use of the property expanded, and Stanford University student occupancy of the site trended downward. Overall, the physical changes brought to the site during the years that student housing was provided are more strongly and directly associated with SRI's development and use.

Therefore, the property does not appear to possess a potential Stanford Village historic district.

SRI International Campus

Criterion 1 (Events)

The SRI International campus at 333 Ravenswood Avenue is significant under Criterion 1 for significant contributions to the broad patterns of local history, and to scientific innovation nationally. Stanford Research Institute, later renamed SRI International, was established as the first successful contract-applied research institute of its kind on the West Coast, established to benefit western industry, in 1946. Although established by Stanford University, the institute functioned fairly independently even before formally breaking off as a separate non-profit in 1970. During the second half of the twentieth century, SRI not only functioned as the largest employer in Menlo Park, but also spurred economic development and innovation in Silicon Valley. Advancements made as part of SRI's research and development efforts not only helped in the success of burgeoning Silicon Valley companies, but, in some cases, transformed the world—as in the innovations in early internetworking, dot coms, personal computing, and the computer mouse in the 1960s and 1970s, which would form the backbone of the modern internet and personal computers. Additionally, SRI has spun-off over 60 companies, many of which have been influential in their own right, not least of which includes Siri, which was later bought by Apple and implemented as the first virtual personal assistant in cell phones in 2011. While advancements in computing and the internet are perhaps SRI International's most widely recognized contributions, the institute has worked on over 50,000 projects, many of which resulted in breakthroughs and innovation in sectors such as business and economics, health, education, artificial intelligence, robotics and physical sciences. Therefore, the SRI International Campus is eligible under Criterion 1 as a historic district.

Criterion 2 (Persons)

The SRI International campus at 333 Ravenswood Avenue is not significant under Criterion 2 for association with the lives of persons important to local, California, or national history. Many people are associated with SRI International, its founding and expansion, and its various research activities. The nature of SRI's research and development projects is that numerous employees were typically involved in any one project, and each division of SRI was actively involved in multiple projects at any one time. Individual researchers are more likely to be associated with individual buildings, which are more closely associated with their specific achievements and places of work. Retired chemist William F. Talbot was the first director of SRI in 1946, but was soon replaced by Jesse Hobson in early 1948, who served until 1955. While important figures in the early development of SRI, neither Talbot or Hobson were integral to the conception or founding of SRI such that the SRI International Campus could be said to be eligible under Criterion 2.

Criterion 3 (Architecture)

The SRI International campus at 333 Ravenswood Avenue is not significant under Criterion 3 as a site that embodies the distinctive characteristics of a type, period, or method of construction, or as the work of a master. The SRI International campus has been developed over several decades, beginning with the adaptive reuse of former Dibble General Hospital buildings beginning in 1947 and expanding with purpose-built buildings constructed from 1958 to 1992. Various master plans and site utilization studies were prepared over the years, including an early study by SOM, a master plan by Stanton & Stockwell in the late 1950s, and a second master plan by William L. Pereira Associates in the early 1970s. However, none of these studies and master plans were fully implemented, and the result is a campus that has buildings designed by a number of different architects and in a variety of styles including Midcentury Modern, Late Modern, and utilitarian, in addition to the reused former military buildings. While some buildings have associated landscape features, such as the courtyards at Building A and B, and the designed landscape around Building P, no overall landscape master plan has been implemented. As a result, there is no cohesive sense of space planning, architectural style or design, or landscape design that would be eligible as historic district under Criterion 3. For the same reasons, the campus is not representative of the suburban corporate office park or office campus typologies, as the campus was not cohesively designed or constructed. Thus, the SRI International Campus is not eligible as historic district under Criterion 3.

Period of Significance

The period of significance of the SRI International Campus under Criterion 1 begins in 1947, when the institute first occupied the site. Due to the nature of ongoing research and innovation at SRI International, the campus has an on-going period of significance through the present day.

Integrity

The SRI International Campus retains integrity as a historic district. None of the contributing buildings have been relocated, nor has the campus itself been relocated; thus, it retains integrity of location. The setting surrounding the campus has been developed over time, but the development has been consistent with the existing residential and institutional character of the neighborhood, as well as plans for a civic center and USGS campus that date to the same time that SRI moved to the campus. None of the buildings that were purpose-built for SRI have been demolished, and additions to buildings such as Buildings L, G, and T are consistent with the expanding needs of the institution and the research housed within each building. Alterations to former Dibble General buildings have included minor exterior alterations such as window and door replacements, and small additions; however, overall, the original design, materials, and workmanship of the Dibble General buildings are sufficiently legible, and the alterations have not impacted their ability to contribute to the significance of the district under Criterion 1. Thus, the district retains integrity of design, workmanship, and materials. The campus has a unique feeling of a sophisticated research and development institution that has been built incrementally over many decades, utilizing former on-site military buildings, as well. The campus retains integrity of association with SRI International, as the institution still occupies the campus.

Contributors & Non-Contributors

Contributors to the Eligible SRI International Campus Historic District include buildings that were purpose-built for SRI to serve primary research and development functions, such as offices and laboratories. Former Dibble buildings that were converted to offices and/or laboratories for research and development purpose are also contributors. Buildings that have ancillary or support functions, such as power generation, machine shops, storage, and maintenance, are considered non-contributors.

Conclusion

The SRI International Campus is eligible as a historic district under California Register Criterion 1 (Events) with an on-going period of significance beginning in 1947 through the present day. The eligible historic district has 26 contributing buildings and 2 contributing landscape features, as well as 13 non-contributing buildings.

TABLE 7. ELIGIBLE SRI INTERNATIONAL HISTORIC DISTRICT CONTRIBUTORS & NON-CONTRIBUTORS

Name	Year Built	Contributor/ Non-Contributor	Notes/Reasoning
Building A	1958-61	Contributor	First purpose-built building for SRI
Building B	1976-77	Contributor	Purpose-built SRI offices and labs
Building E	1966	Contributor	Purpose-built SRI Engineering Building
Building G	1964	Contributor	Purpose-built SRI Engineering Building
Building I	1969	Contributor	Purpose-built International Building to expand SRI’s international operations, including as a site to host international business and science conferences.
Building K	1971	Non-Contributor	Appears to be ancillary/support building to Buildings L & M
Building L	1967	Contributor	Purpose-built SRI Health Research Building
Building M	1962	Contributor	Purpose-built SRI Health Research Building
Building M-1	c. 2000	Unknown (prefab)	Prefabricated trailer installed by SRI, but is ancillary to the district significance.
Building P	1980-81	Contributor	Purpose-built SRI offices and labs; last major office and lab investment on campus
Building R	1984	Non-Contributor	Support building with storage and shipping and receiving
Building S	1981	Contributor	Purpose-built SRI high bay project building

Name	Year Built	Contributor/ Non-Contributor	Notes/Reasoning
Building T	1962	Contributor	Purpose-built SRI animal facilities and physical science research building; expanded several times for continued original use.
Building U	1986-87	Non-Contributor	Cogeneration power plant which supports the campus, but is ancillary to the district significance.
Building W	1988	Non-Contributor	Waste storage facility which supports the campus, but is ancillary to the district significance.
Building 100	1943	Contributor	Former Dibble building adapted to serve as the first permanent headquarters for SRI beginning in 1947, until the first purpose-built SRI building (Building A) was constructed in 1958.
Building 108	1943	Contributor	Former Dibble building, utilized for physics labs during transitional period from 1947-58.
Building 110	1943	Contributor	Former Dibble building, adapted for use as offices for SRI.
Building 201	1943	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.
Building 202	1943	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.
Building 203	1943	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.
Building 204	1943	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.
Building 205	1943	Contributor	Former Dibble building, adapted for use as offices for SRI.
Building 301	1943-44	Contributor	Former Dibble building, adapted for use as offices, wet labs, and dry labs for SRI.
Building 302-CAF	1943-44	Non-Contributor	Former Dibble building, converted to cafeteria by SRI; ancillary to district significance.
Building 303	1943	Non-Contributor	Former Dibble building, converted to offices and paint booths by SRI; facilities use is ancillary to district significance.
Building 304	1943	Contributor	Former Dibble building, adapted for use as offices, wet labs, and dry labs for SRI.
Building 305	1943	Non-Contributor	Former Dibble building, converted to offices and a wood shop; facilities use is ancillary to district significance.
Building 306	1943	Contributor	Former Dibble building, adapted for use as offices, wet labs, and dry labs for SRI.
Building 307	1992	Contributor	Purpose-built high bay building for MRI research.
Building 309	1943	Contributor	Former Dibble building, adapted for use as offices, dry labs, and storage for SRI.
Building 320	1943	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.
Building 402/404	1943	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.

Name	Year Built	Contributor/ Non-Contributor	Notes/Reasoning
Building 405	c.1948-56	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.
Building 406	1943	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.
Building 408	1943	Non-Contributor	Former Dibble building, converted to a machine shop by SRI; ancillary to district significance.
Building 409	c.1948-56	Contributor	Former Dibble building, adapted for use as offices and dry labs for SRI.
Building 412	1943	Non-Contributor	Former Dibble building used as a steam power plant; ancillary to district significance and since decommissioned.
Greenhouse	c. mid- to late 1980s	Unknown	Greenhouse building constructed by SRI, but is ancillary to district significance.
Research Field	c.1981-89	SRI International	Research field build by SRI for testing robots.
SRI Intl. Monument	c.1970	Unknown	Installed by SRI International after separating from Stanford University; inscription relates to mission of the institution.

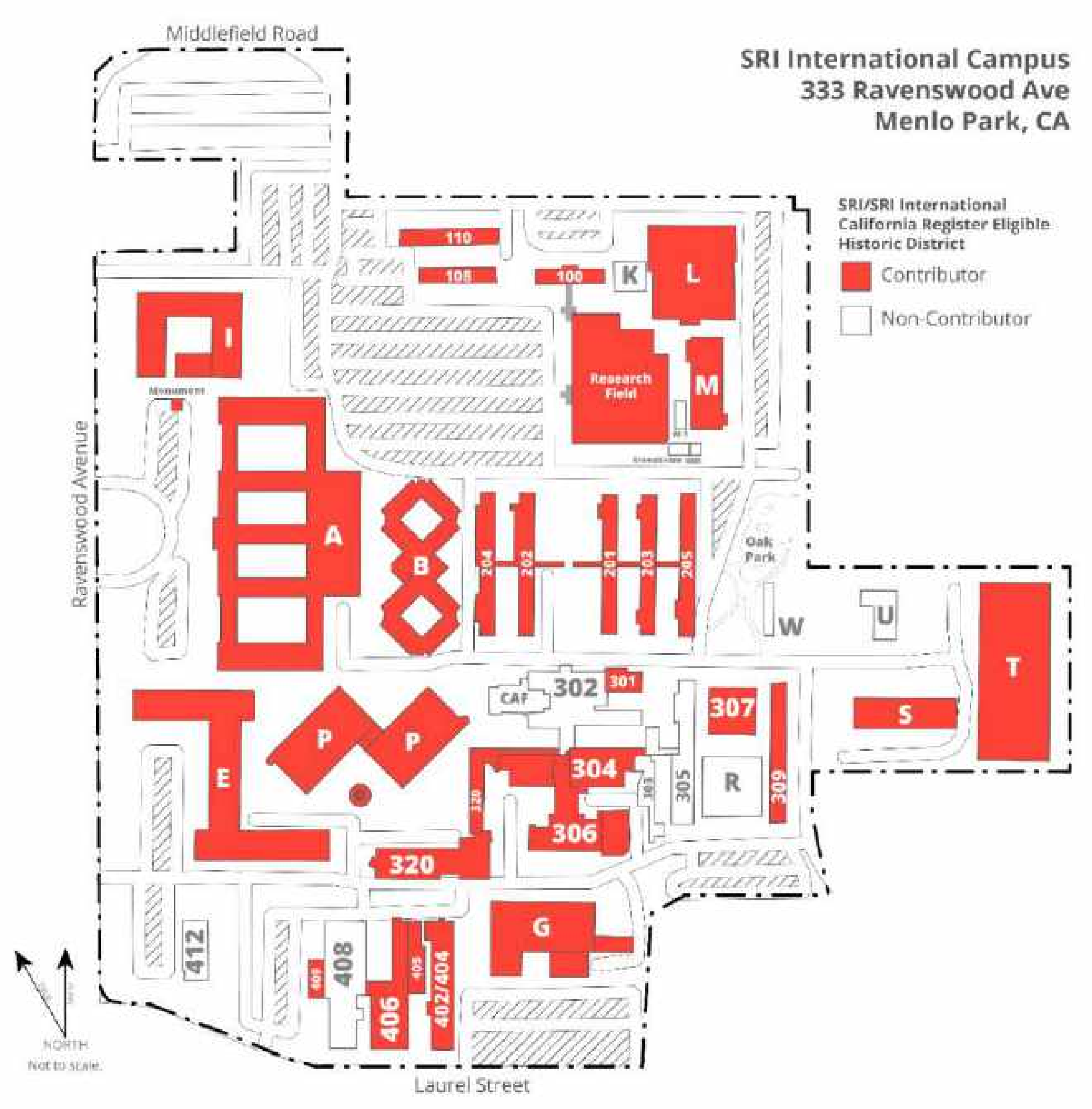

Figure 48. Map of contributing and non-contributing buildings and features in the SRI International California Register-eligible Historic District. Source: Base map from Cadmapper. Page & Turnbull, 2021.

VII. INDIVIDUAL BUILDING & STRUCTURE EVALUATIONS

The following section examines the 39 extant buildings on the SRI International Campus, which were researched and evaluated for eligibility for individual listing in the California Register of Historical Resources under Criteria 1, 2, and 3. Refer to "Evaluation Under Criterion 4 (Information Potential) on SRI International Campus" in **Section V. Framework for Evaluation** for more information about California Register Criterion 4.

TABLE 8. BUILDINGS INDIVIDUALLY ELIGIBLE FOR THE CALIFORNIA REGISTER

Name	Year Built	Architect/Builder	California Register Eligibility Criteria as Individual Resource
Building A	1958-61	Stanton & Stockwell	Criterion 1, Criterion 3
Building B	1976-77	William L. Pereira Associates	None
Building E	1966	Stanton & Stockwell	Criterion 1; Criterion 2
Building G	1964	Stanton & Stockwell	None
Building I	1969	Skidmore, Owings & Merrill (SOM)	None
Building K	1971	Unknown	None
Building L	1967	Stanton & Stockwell	None
Building M	1962	Stanton & Stockwell	None
Building M-1	c. 2000	Unknown (prefab)	None
Building P	1980-81	William L. Pereira Associates; Eckbo Kay Associates	None
Building R	1984	Unknown (prefab)	None
Building S	1981	R. A. Rotondo (engineers)	None
Building T	1962	Robert E. Jones	None
Building U	1986-87	Bechtel; International Power Technology (IPT)	None
Building W	1988	SRI International	None
Building 100	1943	U.S. Military/G.W. Williams Co.	Criterion 1
Building 108	1943	U.S. Military/G.W. Williams Co.	None
Building 110	1943	U.S. Military/G.W. Williams Co.	None
Building 201	1943	U.S. Military/G.W. Williams Co.	None
Building 202	1943	U.S. Military/G.W. Williams Co.	None
Building 203	1943	U.S. Military/G.W. Williams Co.	None
Building 204	1943	U.S. Military/G.W. Williams Co.	None
Building 205	1943	U.S. Military/G.W. Williams Co.	None
Building 301	1943-44	U.S. Military/G.W. Williams Co.	None
Building 302-CAF	1943-44	U.S. Military/G.W. Williams Co.	None
Building 303	1943	U.S. Military/G.W. Williams Co.	None
Building 304	1943	U.S. Military/G.W. Williams Co.	None
Building 305	1943	U.S. Military/G.W. Williams Co.	None
Building 306	1943	U.S. Military/G.W. Williams Co.	None
Building 307	1992	Kimbrell Architects, Inc.	None
Building 309	1943	U.S. Military/G.W. Williams Co.	None

Name	Year Built	Architect/Builder	California Register Eligibility Criteria as Individual Resource
Building 320	1943	U.S. Military/G.W. Williams Co.	None
Building 402/404	1943	U.S. Military/G.W. Williams Co.	None
Building 405	c.1948-56	Unknown	None
Building 406	1943	U.S. Military/G.W. Williams Co.	None
Building 408	1943	U.S. Military/G.W. Williams Co.	None
Building 409	c.1948-56	Paul James Huston	None
Building 412	1943	U.S. Military/G.W. Williams Co.	None
Greenhouse	c. mid- to late 1980s	Unknown	None

This section includes information on each of the evaluated properties, including:

1. Date of construction
2. Type/function
3. Brief architectural description with current photographs
4. Alterations
5. Historic context, including historic photograph(s) if available, and original use and purpose of the building
6. Evaluation utilizing the criteria set forth for the California Register of Historical Resources, as described in detail in section VI. Framework for Evaluation of Historic Properties.
7. Integrity discussion, if the building is found to be individually significant under one or more California Register criteria.
8. List of Character-Defining Features, if found individually eligible
9. Conclusion

The historic context sections include information drawn from the sections **III. Historic Context & Site Development** and **IV. Architecture Context**, so that each resource can be referenced individually within the broader context.

Following the individual building evaluations is a table summarizing the construction, historic context, and potential significance of several structures and designed landscape features on the campus.

Building A

Date of Construction: 1958 – Phase 1; 1961 – Phase 2
Architect/Builder: Stanton & Stockwell, architects; John C. Carmack, landscape architect.
Type/Function: Administration, offices, wet and dry labs, and explosives lab.

Brief Architectural Description: Building A is a reinforced concrete building with a two-story-over-basement portion at the front (Phase 1 of construction in 1958) and a three-story-over-basement portion at the rear (Phase 2 built in 1961). The Phase 1 portion faces west toward Ravenswood Avenue and has five parallel wings—the central three are connected to a parallel wing in an E-shape, and the outer two wings are connected by breezeways with second-story connectors. The Phase 2 portion of the building is connected by short second-story connectors over breezeways at each of the five wings. Aligned with the central three wings of the Phase 1 portion are two wider, shorter wings on the east side of the Phase 2 portion, between which is a covered tiered patio at the first story and basement levels. Three brick-clad mechanical penthouses are located on the roof of the Phase 2 portion of Building A, and large mechanical systems are installed at the south end of the Phase 2 portion enclosed by a solid metal screen. Both the Phase 1 and Phase 2 portions have flat roofs and are clad in brick. At the Phase 1 portion, concrete piers at the exterior façade divide the facades into structural bays.

The primary entrance to Building A features a double-height portico with a colonnade of square concrete columns. Behind the colonnade is a two-story aluminum sash window wall with a central, paired fully glazed aluminum door. The portico is accessed via a wide set of brick stairs flanked by brick walled planters. On either side of the portico are brick walls with vertical rectangular punched openings in offset rows with recessed patterned glass block. The two breezeways connecting the outer two wings are supported by square concrete columns, which are now spanned by metal fences. The second story of the breezeway has concrete cladding and aluminum sash ribbon windows behind vertical metal louvers. At either end of the primary (west) façade, at the west ends of the two outer wings, is a double-height projecting concrete frame with opaque glazing and inset two-tone blue tile mosaics. The rear (east) façade of Building A also includes a flat roofed portico with slender square concrete columns. A central, elevated pedestrian bridge beneath the portico accesses a first story entrance, spanning over a sunken, terraced seating area well at the basement level.

Typical windows are ribbons of aluminum sash windows. The typical window sash arrangement at the Phase 1 portion of the building is a sliding sash with two narrow, fixed lites above and below, with reflective glazing. The typical window sash arrangement at the Phase 2 portion of the building is alternating fixed and casement sashes. The second-story connector above the breezeways at each of the five wings, connecting the Phase 1 and Phase 2 portions of the building, are clad in stucco and also have ribbon windows. The first story below the central connector is enclosed with storefront window systems. Fully glazed sliding doors with fixed upper transoms open into the two central interior courtyards. Other secondary doors are fully glazed swinging doors and hollow metal doors. The four interior courtyards framed by the five wings of Building A each have a lawn with specimen trees, shrubs, and ground cover at the perimeter. The central two courtyards have sunken brick seating areas. The southernmost courtyard has a curvilinear path that cuts through the lawn, several bottlebrush trees, and wood and concrete benches arranged in a loose gravel seating area. Mature specimen trees, including oak trees, are located in front of Building A with low ground covering. A central semi-circular vehicular drive off of Ravenswood Avenue loops around a cluster of mature oak trees—some of which appear to predate Building A—and accesses two visitor parking lots that stretch the length of Building A.

Figure 49. Punched openings with glass block at either side of the primary entrance.

Figure 50. Breezeways along the primary façade with vertical metal louvers at the second story.

Figure 51. One of two double-height concrete framed windows with a two-tone blue mosaic on the primary façade.

Figure 52. Typical breezeway between the Phase 1 (left) and Phase 2 (right) portions of Building A.

Figure 53. Seating area in the southernmost interior courtyard. Typical windows are visible.

Figure 54. Sunken brick seating area in one of the two central interior courtyards, looking west.

Figure 55. Rear portico and sunken seating area well at the east façade.

Figure 56. Partial view of the east façade, which is part of the Phase 2 portion of Building A.

Alterations: The rear portion of the building was designed and planned as a second phase of construction by the architects Stanton & Stockwell, and therefore is not considered an alteration. A two-story fully glazed hyphen corridor connecting the south façade of Building A to the north façade of Building E was added when Building E was constructed in 1966, and an elevated, enclosed pedestrian bridge was constructed in 1969 to connect to the second story of Building I to the north. A remodel of the main lobby was limited to the interior space and did not alter any exterior features. Additional mechanical systems installed on the south end of the Phase 2 portion of the building hidden behind a solid metal screen. Minor exterior alterations have included the addition of metal fences at the front breezeways; the addition of an accessible ramp to the north of the primary entry steps, and replacement of several secondary exterior doors.

Historic Context: Building A, initially known as Building 1, was the first purpose-built building constructed for Stanford Research Institute, after several years of delay due to land purchase negotiations between Stanford University and the federal government.[161] Designed by the architecture firm Stanton & Stockwell, who was initially hired by SRI in 1955, with local landscape architect, John C. Carmack, and built by general contractors Williams & Burrows, the first phase of the building was completed by August 1958 and formally opened that September.[162] The $2,049,000 construction permit for the first phase of construction accounted for about one-third of permitted building construction in Menlo Park in 1957.[163] A second phase of construction was completed in 1961. Phase 2 of Building A required a variance from Menlo Park, as the 58-foot-tall portion of the building exceeded the city's 35-foot height limit.[164] The phased construction was planned to complete a portion of the building sooner in order to move researchers and staff into the new facilities, while construction then commenced on the second phase of the building. The primary administrative functions, as well as main visitor lobby, were relocated from the temporary location within Building 100 to Building A upon completion. Approximately one-third of SRI's 1,330 employees moved into Building A in 1958.

The landscape design included primarily native California trees and shrubs around the building and in the interior courtyards created by the five wings of the building perpendicular to the front (west) wing. These courtyards have maintained lawns with seating to provide a view from the interior offices and labs, and spaces of relaxation for employees. The building and landscape design took

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[161] "Menlo Research Center To Start Expansion Soon," *The Times*, January 7, 1956; and "SRI Calls Bids For Giant Plant," *The Times*, February 22, 1957.
[162] "Science Center Plans Ordered," *The Times*, July 15, 1955; "New SRI Building Ready," *The Times*, August 8, 1958; "SRI Opens $2,225,000 New Building," *The Times*, September 29, 1958; and "$2,000,000 S.R.I. Contract Is Let," *The Times*, May 15, 1957.
[163] "Menlo Permits Hit $6,641,197," *The Times*, January 3, 1958.
[164] "Research Center Plans $2,000,000 Expansion," *The Times*, August 26, 1959.

care to preserve the existing mature oak trees to the extent possible; accounts suggest that only six trees were cut down for construction of Building A.[165] Based on available historic photographs, the landscaping of the interior courtyards appears to have been completed soon after the completion of Phase 2 construction.[166]

In addition to the main lobby, conference rooms and executive offices, Building A initially housed administrative staff and portions of three of SRI's four divisions at the time—economics, physical sciences and Poulter laboratories. Chemistry laboratories were located in each of the end wings and the building housed research facilities for the study of shock waves.[167] A new Plastics Research Lab was established at SRI in 1957 as part of the physical sciences division and was likely housed in Building A.[168]

Figure 57. Building A, circa 1958. Source: SRI International.

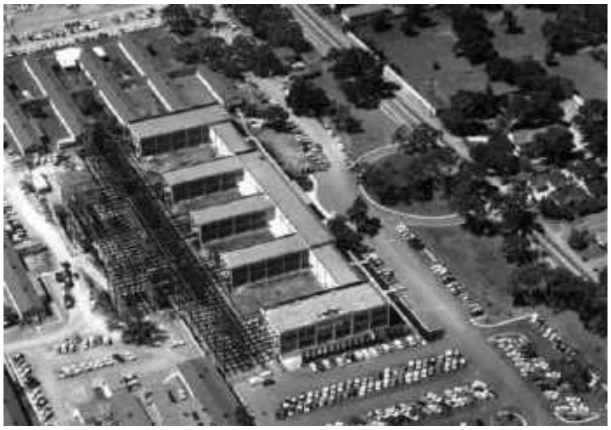

Figure 58. Phase 2 of Building A under construction in May 1960. Source: SRI International Facilities.

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[165] "SRI Opens $2,225,000 New Building," *The Times*, September 29, 1958.

[166] Planting plans for the interior courtyards were not uncovered during the course of research. However, a 1968 aerial (refer to Appendix B) shows the landscaping of the courtyards as they appear today, although some plantings may have been thinned and/or replaced in subsequent years as they matured.

[167] "SRI Opens $2,225,000 New Building," *The Times*, September 29, 1958.

[168] "New Plastics Laboratory Created at Menlo Park," *The Times*, Jun 27, 1957.

Figure 59. Building A soon after construction in 1958. Source: International Facilities.

Evaluation:

Criterion 1: Building A is individually significant under California Register Criterion 1 because it is associated with events that have made a significant contribution to the broad patterns of our history. Stanford Research Institute was previously housed in the former Dibble General Hospital Building 100 for a decade, and more briefly before that in an office on Stanford University campus for a few months. As the first purpose-built building, Building A was the first permanent home of Stanford Research Institute. Building A also serves as the institution's administrative center and most-public facing building. Building A continues to operate as the central headquarters of the SRI International Campus. Thus, as the first permanent home of Stanford Research Institute, Building A is associated with the broad contributions of the institute in fields including computing, business and economics, health, education, robotics, and physical sciences and is individually eligible under Criterion 1.

Criterion 2: Building A is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. Numerous executives, administrative staff members, and researcher have worked in Building A over the decades. However, no persons appear to be individually associated with the function of Building A or have significant achievements associated directly with Building A such that it would be individually eligible under Criterion 2.

Criterion 3: Building A was designed by master architects of regional significance Stanton & Stockwell in the Midcentury Modern style, and it was built in two phases in 1958 and 1961. The building is the most prominent example of the Los Angeles-based firm's work in Northern California and is representative of their best work in the Midcentury Modern style. The massive building retains a human scale as it is broken up by four central landscaped courtyards, the outer two of which are visible from the front of the building through breezeways. However, the double height colonnaded portico at the primary entrance is monumental in scale, if restrained in detailing, announcing the ambition of the institution within. Building A expresses the distinctive characteristics of Midcentury Modern architecture, including in its geometric massing, flat roof, brick cladding, ribbon windows, louvered vertical metal sun shades, breezeways supported by slender columns, a connection to the outdoors with landscaped courtyards, and the relative lack of ornamentation except that created by the abstract pattern of punched openings with glass block on either side of the entrance portico and the two-tone blue tile mosaics inset into windows with large projecting frames at either end of the building. As an exemplary work of master architects Stanton & Stockwell and expressive of the distinctive characteristics Midcentury Modern style, Building A is individually eligible for the California Register under Criterion 3.

Integrity: Building A retains integrity of location as it has not been moved. The setting of Building A has changed somewhat overtime with the construction of new SRI buildings; however, this is consistent with the use of the campus and the building's association with SRI, so it has not negatively affected the setting. The building also retains integrity of design, materials, and workmanship as it been relatively unaltered at the exterior. Minor exterior alterations such as the accessible ramp, several replacement secondary doors, additional screened rooftop mechanical systems, and fences at the front breezeways have not detracted from the original design; the alterations have generally been additive, rather than subtractive, leaving original materials and examples of workmanship intact. The building still retains association with SRI International research operations, and retains the feeling of a late twentieth century institutional building.

Building A Character-Defining Features:

- Overall footprint, geometric massing, and flat roof
- Brick cladding
- Double-height colonnaded entry portico and double-height window wall
- Breezeways supported by square columns along the primary façade
- Vertical metal louvered sunshades
- Small rectangular punched openings with patterned glass block at primary façade
- Original doorway and fenestration pattern, including original aluminum sash ribbon windows
- Two double-heigh projecting concrete frames with opaque glazing and inset two-tone blue tile mosaics
- Rear portico and terraced, sunken area well
- Interior landscaped courtyards.

Conclusion: Building A is eligible for individual listing in the California Register under Criterion 1 and 3. Building A is also a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building A is a historical resource for the purposes of CEQA.

Building B

Date of Construction: 1976-77
Architect/Builder: William L. Pereira Associates
Type/Function: Offices, dry labs, and publications

Brief Architectural Description: Building B is a three-story-over-basement steel frame building clad with precast concrete panels reinforced with an embedded steel frame backing and glazed concrete block. The building is capped with a flat roof behind a low parapet. The building has an approximately figure-8 plan composed of two square volumes with interior square courtyards with rounded corners. The primary entrance to the building is located at a central, projecting chamfered corner volume on the west façade. A semi-circular brick staircase with a central ramp leads to a brick landing at the primary entrance. The entry is recessed at the first story, and the upper volume is supported by a large round column. The doorway includes paired fully glazed aluminum doors set in a storefront window system. On the east side of the building, the exterior wall forms a curved W-shape at the connection between the two square wings. The east and west corners of each wing have three-sided inset corners. The northern- and southern-most corners have inset interior stair towers clad in glazed block. Each stair tower has a hollow metal door at the first-floor exterior. Typical windows are reflective mirror glass ribbon windows with dark aluminum mullions, inset slightly from plane of the walls. Some windows have operable sliding sashes.

A small concrete loading dock accessed via concrete steps is located on the east side of the building, at the south end of the north wing. A secondary fully glazed door leads into the building from the loading dock and adjacent the loading dock is a freight elevator that goes down to the basement. The interior courtyards are paved in brick. Mature trees are planted around the perimeter of the building.

Figure 60. Bird's-eye view of Building B, looking northeast. Source: Google Maps.

Figure 61. Primary entrance at the center of the west façade.

Figure 62. southeast side of the south wing. One of two stair towers is visible at the left.

Figure 63. Loading dock at the curved east façade.

__Alterations:__ No documented exterior alterations were noted during the course of historical research.

__Historic Context:__ William L. Pereira Associates completed a master plan for the SRI International campus in the early 1970s, and Building B was the first of only two buildings that were ultimately constructed based on the master plan. William L. Pereira Associates also designed the adjacent Building P, completed in 1981. The 140,000-square-foot Building B was built to house SRI International's "Urban and Social Systems Division," and was completed in August 1977 at a cost of

$4.9 million by contractors Turner Construction Co.[169] The Urban and Social Systems Division was the most recently established division at SRI International at the time, and focused research on "social problems in the fields of education, welfare and housing."[170] In addition to 350 offices, the building included conference rooms and lounges, and was designed with double-loaded corridors circling two central courtyards to provide operable exterior windows for all offices.

Figure 64. Rendering of the design for Building B, designed by William L. Pereira Associates and completed in 1976. Source: SRI International Facilities.

Individual Evaluation:

Criterion 1: Building B is not individually significant under Criterion 1 because it is not associated with events that have made a significant contribution to the broad patterns of our history. It was constructed in 1976, after the first major building campaign on the SRI campus from 1958 through the 1960s. While associated with various research activities at SRI International, the building is not singularly associated with significant discoveries or inventions such that it could be said to be individually representative of the history and contributions of SRI International.

Criterion 2: Building B is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

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[169] "SRI office building in Menlo Park," *San Francisco Examiner*, September 19, 1976; and "Institute's New Building Finished 4 Months Early," *Los Angeles Times*, September 11, 1977.
[170] "Expansion for SRI division," *San Francisco Examiner*, August 7, 1977.

Criterion 3: Building B was designed by master architect William L. Pereira Associates in the Late Modern style. However, the building was designed relatively late in Pereira's career, after the architect's most prolific and influential years. Of the hundreds of buildings designed by Pereira and his firm, this building did not receive any broad recognition—it was not published in any architecture journals of record and did not receive any awards. Thus, the building cannot be said to be the most representative or best example of the firm's work. The building exhibits traits of the Late Modern style, but in terms of materials, detailing, and design, does not stand out amongst numerous other examples of the style in the Bay Area and beyond, which was a dominant style used in institutional and commercial buildings in the last three decades of the twentieth century. The architectural design of the building does not appear to be particularly innovative or influential. The building does not possess high artistic values. Therefore, Building B is not individually significant under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building B is not eligible for individual listing in the California Register under any criteria. However, Building B is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building B is a historical resource for the purposes of CEQA.

Building E

Date of Construction: 1966
Architect/Builder: Stanton & Stockwell
Type/Function: Offices and dry labs

Brief Architectural Description: Building E is a three-story-over-basement reinforced concrete building with a flat roof with a narrow overhanging eave. The building has three wings; a central wing is perpendicular between offset north and south wings. The building has highly regular facades with exposed aggregate concrete walls and rectangular concrete defining the structural bays at the exterior. Five thin, vertical concrete fins span typical bays. At each of the three floors, thin horizontal concrete sunshades are located between the fins, directly above a row of windows. Typical windows are nearly square, fixed aluminum sash windows; some windows have a central vertical aluminum sunshade. The north and west façades of the north wing which faces Building A, however, feature brick cladding set between the exterior structural columns. This façade does not have vertical fins or horizontal sunshades. Yet, a similar visual pattern is created by articulated vertical expansion joints aligned with ribbons of fixed aluminum sash windows at each floor.

The primary entrance to Building E is located on the south side of the north wing, accessed from the parking lot off of Ravenswood Avenue. The primary entryway, located near the center of the wing, has paired fully glazed door set in a full height aluminum frame storefront window system that extends the length of the first story, south façade of the north wing. The entrance is accessed via concrete steps that lead to a covered walkway that extends the length of the north wing and wraps around open planted areas on either side of the doorway. The walkway is paved in a two-brick basket weave pattern, edged with concrete, and is enclosed with a metal railing along the perimeter. A flat concrete canopy is supported by a central row of square concrete columns. Horizontal concrete beams span over the open planted areas. A second set of concrete steps is located at the west end of the covered walkway.

A two-story hyphen corridor connects the northeast end of the north wing to Building A to the north. The corridor is fully glazed with an aluminum sash window wall with opaque glass spandrels between the floors and fully glazed paired doors on the east and west walls. Mature oak trees and other specimen trees are located around the perimeter of the building, including two oak trees that flank the primary entry steps.

Figure 65. Southwest corner of the south wing, looking northwest from W. 4th Street.

Figure 66. Typical wall and window details at the west façade of the central wing.

Figure 67. Brick-clad north façade of the north wing, looking southeast.

Figure 68. Fully glazed hyphen corridor, connecting Building E (right) to Building A (left), looking east.

<u>Alterations:</u> Minimal exterior alterations include the addition of an accessible concrete ramp to the west (left) of the primary entry steps and repaving of the landing at the bottom of the primary entry stairs. No other notable documented exterior alterations were noted during the course of research.

<u>Historic Context:</u> Building E, originally known as the Engineering Building, was one of five purpose-built buildings designed by Stanton & Stockwell for SRI. The 170,000-square-foot building was estimated to cost about $4,250,000 and was built by general contractors Williams & Burrows. Designed to provide "maximum flexibility to accommodate any of the Institute's research groups," the first occupants were approximately 500 employees from three of SRI's divisions—systems sciences, electronic and radio sciences, and engineering sciences and industrial development.[171] Designed to "blend harmoniously with existing SRI permanent buildings," Building E was designed with brick cladding on the north side of the wing, which faces Building A and the visitor parking lot.[172] Dibble General Hospital Buildings 310, 313, 314, and 316 were demolished to accommodate the new building.

Building E, as home to the Engineering Research Group, was the location of some of the most significant and influential projects at SRI, including the ARPANET and internetworking projects led by the Telecommunications Sciences Center, the Network Information Center (NIC) which managed "dot com" domains, the personal computing advancements led by the Augmentation Research Center (ARC), and the Artificial Intelligence Center (AIC) which developed Shakey the Robot; refer to "SRI International Innovations, Advancements & Achievements" in **Section III. Historic Context & Site Development** for additional information on these projects.

Figure 69. Rendering of the Engineering Building, now known as Building E, designed by Stanton & Stockwell and completed in 1966. Source: SRI International Facilities.

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[171] "$4 Million SRI Building Slated," *The Times*, July 3, 1965.
[172] "$4 Million SRI Building Slated," *The Times*, July 3, 1965.

Figure 70. Rendering of the Engineering Building (Building E) by Stanton & Stockwell, looking southwest from Ravenswood Avenue. A portion of Building A is shown at the left. Source: SRI International Facilities.

Figure 71. Primary entrance to Building E, 1983. Source: Eckbo Collection, UC Berkeley Environmental Design Archive.

Figure 72. Openings in the canopy at Building E, 1983. Source: Eckbo Collection, UC Berkeley Environmental Design Archive.

Criterion 1: Building E is individually significant under Criterion 1 because it is associated with events that have made a significant contribution to the broad patterns of our history. It was constructed in 1966, during a significant period of growth on the SRI International campus, to house engineering-related divisions including systems sciences, electronic and radio sciences, and engineering sciences and industrial development. As such, Building E appears to be the building most closely associated with innovations in early computing and internetworking in the late 1960s and early 1970s. While the exact locations of the computers involved in the 1969 ARPANET demonstration or the packet radio station internetwork gateway involved in the 1976 and 1977 internetworking demonstrations on the SRI International campus were not established during the course of historical research, the projects are most closely associated with the engineering division, housed primarily in Building E. The SRI Mobile Packet Radio Van is no longer owned by SRI

International, and is in the collection of the Computer History Museum in Mountain View. While hundreds of significant innovations and influential research projects have been associated with SRI International over the years, the advancements in internetworking stand out as some of the most consequential to modern life. Additionally, Douglas Engelbart's 1968 "Mother of All Demos" was run from a room in Building E. Building E also housed the Artificial Intelligence Center which developed and tested Shakey the Robot, the world's first mobile intelligent robot from 1966 to 1972. Thus, Building E is individually eligible under Criterion 1.

Criterion 2: Building E appears to be the building most closely associated with the innovative computing and internetworking research of Dr. Douglas Carl Engelbart and Donald Nielson. Originally known as the Engineering Building, the building housed divisions related to computing where Engelbart and Nielson worked. Engelbart is perhaps the single-most significant researcher associated with SRI International, and is widely recognized for his contributions to early personal computing including his 1968 "Mother of All Demos," the patent for the first computer mouse, and other innovations under his leadership of the Augmentation Research Center at SRI International. Nielson, as assistant director of the Telecommunications Sciences Center at SRI International, lead the teams that made the first ARPANET communication with UCLA in 1969, the first connection between two dissimilar networks in 1976, and the first connection between three dissimilar networks—often considered the "birth of the internet"—in 1977. While many notable researchers at the top of their respective fields have worked at SRI International, and many of them likely worked at Building E, Engelbart and Nielson stand out for their involvement in some of the most influential and widely recognized projects associated with SRI International. Therefore, Building E is eligible under Criterion 2 for association with Dr. Douglas Carl Engelbart and Donald Nielson.

Criterion 3: Building E was designed by Stanton & Stockwell in a Midcentury Modern style. Although Stanton & Stockwell have been identified as master architects of regional significance, the building is not the best example of the firm's work at the SRI International campus. The building exhibits traits of the Midcentury Modern style, but lacks the quality of detailing and visual interest exhibited in Building A. As such, Building E does not standout when compared to other Midcentury Modern buildings on the SRI International campus or in the Silicon Valley area, where there are numerous examples of the style in institutional settings. The building does not possess high artistic values. Therefore, Building E is not individually eligible under Criterion 3.

Integrity: Building E retains integrity of location and setting. The building also retains integrity of design, materials, and workmanship as it appears to be relatively unaltered. The building still retains association with SRI International research operations, and retains the feeling of a late twentieth century institutional building.

Building E Character-Defining Features:

- Three-story-over basement massing and flat roof
- Perpendicular Z-shape footprint with central wing between offset, perpendicular north and south wings
- Exposed aggregate concrete and brick cladding
- Exterior concrete columns
- Vertical concrete fins and horizontal concrete sunshades
- Original fenestration, including original aluminum sash fixed windows and vertical aluminum fins, and aluminum frame storefront window system
- Primary entrance ensemble, including the covered walkway with flat concrete canopy, central support columns, horizontal beams over open planted area, and basketweave brick paving
- Fully glazed hyphen corridor connected to Building A.

Conclusion: Building E is eligible for individual listing in the California Register under Criterion 1 and 2. Building E is also a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building E is a historical resource for the purposes of CEQA.

Building G

Date of Construction: 1964
Architect/Builder: Stanton & Stockwell
Type/Function: Offices, dry labs, and conference room.

Brief Architectural Description: Building G is a two-story, reinforced concrete building in the Midcentury Modern style with a flat roof behind flat, low parapets. A metal screen is located on the roof of the 1970s addition, screening rooftop mechanical equipment. The building originally had an L-plan with a patio at the front of the building, between the two wings. A 1970s addition created a U-plan, enclosing the patio on all three sides except the south side. The walls are generally tilt-up concrete walls with exposed aggregate and articulated vertical expansion joints. A small one-story volume on the north façade is exposed concrete block construction. The 1980s addition is cement plaster over concrete block construction. Typical windows are fixed and sliding aluminum sash windows arranged in narrow ribbons with projecting rectangular frames, including windows at the 1970s addition, which were designed to match the original windows.

The primary entrance to the building is located at the west end of the primary (south) façade and features paired, fully glazed aluminum sash doors set in a full-height storefront window system that wraps around to the east-facing wall at the patio. A flat canopy is located above the storefront windows, also wrapping around the corner, and is supported by square posts. The patio has exposed aggregate concrete paving and is enclosed by a metal fence. Secondary doors are hollow metal doors and two large openings on the north and east facades have metal rollup doors. An exterior metal staircase is located along the south side of the 1980s addition, accessing a second-story doorway on the east side of the 1970s addition.

Figure 73. Primary entrance at south façade.

Figure 74. West façade, looking northeast.

Figure 75. South façade of the 1970s addition.

Figure 76. High-bay volume of original building, looking southeast at north façade.

__Alterations:__ Building G has two additions. In 1970, a rectangular, two-story, 8,000-square-foot addition was built at the east end of the primary (south) façade. Designed by architects Cabak Associates, the addition matches the materials and fenestration of the original Stanton & Stockwell-designed building. The addition frames the east side of an original patio. The addition included a multi-purpose room and more offices. Building G was expanded again in 1989 by Cabak Randall Jasper Griffiths Associates. The second addition is a two-story, 5,377-square-foot rectangular addition at the southwest corner of the original building, and included additional offices, vaults, and a conference room. The second addition has a flat roof and stuccoed walls with no fenestration.

Historic Context: Originally known as Engineering Building No. 2 or the Radio Physics Building, Building G was the third of five buildings designed by architects Stanton & Stockwell. Interestingly, the Engineering Building (Building E) was actually built two years after Engineering Building No. 2, seemingly indicating that it was a secondary building to the larger, main engineering building rather than indicating the sequence of construction. Contractors Williams & Burrows preformed the excavation, grading, and foundation work.[173] As initially constructed, the 38,500-square-foot building cost $600,000 to construct. Original architectural drawings indicate that the building included a lobby, offices, a large lab, a machine shop, a conference room, and a large high-bay room for vans and antennas. The drawings by Stanton & Stockwell indicate that the architects intentionally retained mature trees on the site, building "tree aerators" around the existing trees.

Figure 77. Building G under construction, June 12, 1964. The rear (north) façade of the building, which faces into the center of the SRI campus, is visible. Source: SRI International Facilities.

Individual Evaluation:

Criterion 1: Building G is not individually eligible under Criterion 1 because it is not associated with events that have made a significant contribution to the broad patterns of our history. While it was constructed during a period of substantial growth for SRI in the 1960s and is associated with research activities, including radio physics research, the facility does not appear to be individually representative of the history and contributions of SRI International.

Criterion 2: Building G is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

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[173] "The West At Work," *San Francisco Examiner*, October 18, 1963.

Criterion 3: Building G was designed by Stanton & Stockwell in a Midcentury Modern style. Although Stanton & Stockwell have been identified as master architects of regional significance, the building is not representative of their best work. Furthermore, the building is a fairly modest expression of the Midcentury Modern style that has been altered with several additions and does not standout when compared to other Midcentury Modern buildings on the SRI International campus or in the Silicon Valley area, where there are numerous examples of the style in institutional settings. The building does not possess high artistic values. Therefore, Building G is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building G is not eligible for individual listing in the California Register under any criteria. However, Building G is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building G is a historical resource for the purposes of CEQA.

Building I

Date of Construction: 1969
Architect/Builder: Skidmore, Owings & Merrill (SOM)
Type/Function: Auditorium/assembly hall, conference rooms, offices, kitchen, and gym

Brief Architectural Description: Building I is a two-story reinforced concrete building with a partial basement. The footprint of the building is G-shaped, created by a rectangular footprint with a cut out passageway accessing a central rectangular courtyard. The north, east, and south wings of the building are capped by a flat roof behind a low parapet. The west wing has a west-facing shed roof clad in corrugated metal; the shed roof is hidden behind a parapet at the exterior west façade. The building has exposed concrete walls with horizontal expansion joints; the building has been painted white. The primary entrance is located on the south façade and features fully glazed dark metal doors set in storefront window assemblies. The primary entrance is accessed by a set of wide concrete steps from D Street and a wide concrete walkway.

A dedication of the building in the form of metal lettering mounted to the primary façade reads:

EDGAR F. KAISER
WITH HIGH HONOR FOR HIS POLICY LEADERSHIP
IN CREATING SRI'S INTERNATIONAL BUILDING

A second dedication reads:

S D BECTEL SR
LAURA P BECHTEL
WITH GRATEFUL APPRECATION

> FOR HIS ENERGETIC LEADERSHIP
> AND FOR MAKING THEIR GENEROUS SUPPORT
> IN MAKING SRI A SIGNIFICANT
> INTERNATIONAL INSTUTITION

Typical windows at the first story are recessed fixed dark metal sash windows with dark glazing, framed with concrete fins and canted concrete spandrels. The first story of the west wing is unfenestrated. At the second story, typical windows are full-height dark metal frame storefront windows that span the structural bays. At the exterior facades along the north and west perimeters of the courtyard, the first story is deeply recessed behind an arcade of square concrete columns. Typical doors are fully glazed metal doors. An elevated, enclosed pedestrian bridge with black metal cladding and a ribbon of windows connects the second story of the southwest corner of Building I to the northeast corner of Building A.

The interior courtyard is accessible from the visitor parking lot via a set of steps leading to the open passageway at the west façade, immediately south of the north wing. The passageway is enclosed with a swinging metal gate. The courtyard has brick paving set in a grid of concrete that aligns with the columns of the building. A travertine marble-faced fountain is located at the interior courtyard and features a square block with a sunken bowl. The marble block is surrounded by a square moat that leads to a marble-lined channel in the ground with concrete edging, which crosses an adjacent planting area to a drain. An allée of trees is located east of the fountain in a sunken area with a concrete step around the perimeter. The perimeter of the building is landscaped with a mix of ivy ground covering, shrubs, and specimen trees.

Figure 78. South façade of Building I, which faces the visitor parking lot.

Figure 79. Gated passageway at the south façade, accessing the interior courtyard.

Figure 80. View of the south wing from the interior courtyard, looking south.

Figure 81. Marble-faced fountain at the interior courtyard, looking northwest.

Alterations: No notable documented exterior alterations were uncovered during the course of research.

Historic Context: While the architecture firm Skidmore, Owings & Merrill (SOM) had been hired by SRI to do some building needs studies in the early 1950s, the firm did not design a building for the site until the late 1960s. Weldon B. Gibson, former SRI employee and author of *SRI: The Founding Years*, accounts that "[o]n several occasions during the early days when urging SRI to expand its international pursuits, [Stephen D.] Bechtel [Sr.] talked about the day when an International Building might be created at the Menlo Park headquarters. The idea was that the structure would be a center for our worldwide operations."[174] SRI had entered onto the international stage in 1957, when it hosted its first International Industrial Development Conference (IIDC) with Time-Life for international business leaders.[175] Although SOM only designed one building for SRI, the firm appears to have had a more extensive professional relationship with the institute as SOM and SRI worked on a team consulting for the Bay Area Hospital District in Coos Bay, Oregon to "provide a comprehensive study of health facilities and services" in the district.[176]

Building I, originally known as the International Building, was dedicated in September 1969 with a group of 300 senior executives from the international business community, with a keynote speech by David Rockefeller. The construction was paid for by donations from "long-time patrons," including board directors Edgar F. Kaiser and Stephen D. Bechtel Sr.[177] In contrast with the other major purpose-built SRI campus buildings, which are largely dedicated to office and laboratory space,

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[174] Weldon B. Gibson, *SRI: The Founding Years* (Los Altos, CA: Publishing Services Center, 1980), 193.
[175] Gibson, *SRI: The Founding Years*, 195.
[176] "Statement Issued by Rudy Juul," *The World* (Coos Bay, OR), June 12, 1969.
[177] "SRI Plans $2 Million Expansion," *The Times*, January 16, 1968.

Building I was designed as a space to host visitors and events in a large auditorium, several conference rooms, and a dining room. The building is decorated at the interior with a number of gifts from international companies and individuals. The building was featured in the January 1972 issue of *Interiors*, an industry publication, which stated that the "austere and the sensuous are complimentary in the International Building of Stanford Research Institute by Skidmore, Owings & Merrill."[178] SRI International hosted numerous international business and science conferences and events at Building I.

Figure 82. Courtyard of the International Building, now known as Building I, circa early 1970s. Source: Gibson, *SRI: The Founding Years*, 194.

Figure 83. Bird's-eye view of Building I from a larger photograph of the SRI International campus, circa 1988-92. Source: SRI International facilities.

Individual Evaluation:

Criterion 1: Building I is not individually significant under Criterion 1 because it is not associated with events that have made a significant contribution to the broad patterns of our history. The building was constructed to provide event and conference space in support of Stanford Research Institute's expansion into more international projects. The building does not include laboratories or space directly connected with the research and development activities of the institute, and thus is not directly associated with significant discoveries or inventions or representative of the history and contributions of SRI International. While the building has been the site of a number of international business and science conferences hosted by SRI International, this association does not rise to the level of individual significance under Criterion 1.

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[178] "A New Felicity of Simplicity," *Interiors* 131, no. 6 (January 1972): 68-74.

Criterion 2: Building I is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building. While Edgar F. Kaiser and Stephen D. Bechtel Sr. were instrumental in the planning and securing of funding for Building I, their professional accomplishments are not closely linked with the building. Dedications and namesakes alone are not sufficient associations for significance under Criterion 2.

Criterion 3: Building I was designed by master architects Skidmore, Owings & Merrill (SOM) in the Late Modern style. However, of the thousands of buildings designed by SOM, this building did not receive any broad recognition or receive any awards. The building cannot be said to be the most representative or best example of the firm's work. The building exhibits traits of the Late Modern style, which was a dominant style used in institutional and commercial buildings in the last three decades of the twentieth century, but does not stand out amongst numerous other examples of the style in the Bay Area or in SOM's body of work, which includes many published, award-winning, and influential Late Modernist projects. The architectural design of the building does not appear to be particularly innovative or influential. The building does not possess high artistic values. Therefore, Building I is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building I is not eligible for individual listing in the California Register under any criteria. However, Building I is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building I is a historical resource for the purposes of CEQA.

Building K

Date of Construction: 1971
Architect/Builder: Unknown[179]
Type/Function: Specialty labs.

Brief Architectural Description: Building K is a low, one-story reinforced concrete block building with a flat roof clad in corrugated metal. The roof has shallow overhanging eaves with a metal fascia. Building K is an addition to Building L, and the east side of Building K is internally connected to Building L. Building K has no fenestration on the north and south facades. Exterior doors are located on the west façade.

Alterations: Alterations to Building K appear to have been limited to roof fascia and gutter repairs that were made in 1991-92.

Historic Context: Building K was constructed in 1971, and it appears to have supplemented the two adjacent health science research buildings—Building L and M. Available 1991 alteration drawings indicate that kennels existed in the building, which are likely original and appear to be related to

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[179] No original architecture drawings are on file for Building K. The only drawings on file for Building K at SRI Facilities are for minor modifications, by Hoover Associates dated February 21, 1991.

animal testing. The building is labeled “dog runs” on a site plan drawing for the 1972 addition to the adjacent building L.[180]

Individual Evaluation:

Criterion 1: Building K is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI or to the broad patterns of local, state, or national history. Building K is a small laboratory building that was likely associated with the adjacent health research conducted in Buildings L and M, and does not bear any direct association with any significant discoveries or inventions at SRI International such that it could be said to be individually eligible.

Criterion 2: Building K is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building K is a utilitarian industrial building that lacks any architectural style. No builder or designer has been identified, and the building does not possess high artistic values. Therefore, Building K is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building K is not eligible for individual listing in the California Register under any criteria. Building K is not a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building K is not a historical resource for the purposes of CEQA.

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[180] Cabak Associates, “Addition to Bldg. #18, Stanford Research Institute, Menlo Park,” June 27, 1972, Sheet A-1, on file at SRI International Facilities.

Building L

Date of Construction: 1967
Architect/Builder: Stanton & Stockwell
Type/Function: Offices and wet labs

Brief Architectural Description: Building L is a two-story-over-basement reinforced concrete building in the Midcentury Modern style, set on a concrete foundation and capped with a flat roof. The roof has no eaves and rectangular mechanical penthouse located toward the north end of the building. The building currently has an approximately rectangular footprint; however, the building originally had a T-shaped plan with a two-story primary (front) wing at the north aligned with Middlefield Road and a one-story rear (south) wing aligned perpendicularly. The building is clad in brick at the east and west facades at the original portions of the building and at portions of the first story of the rear façade. The primary (north) façade is clad in precast rough aggregate concrete panels located between structural bays defined by reinforced concrete engaged columns. The additions along the east and west facades, and at the center of the rear façade, are clad in stucco.

The primary entrance to Building L is located at the center of the primary (north) façade and is accessed via a set of concrete stairs with a metal railing. A concrete landing is enclosed by a metal railing and covered by a flat cantilevered concrete awning. The doorway has paired fully glazed aluminum doors set in a full height aluminum sash storefront. The fenestration at the primary façade consists of square aluminum sash fixed or pivoting windows arranged in ribbons at the first and second floors. Four window sashes span the full length of each structural bay and rough aggregate panels are located above and below each ribbon of windows. Original exterior stair towers are located the east and west facades of the original north wing of the building. Each stair tower is open at the north and south sides and enclosed by a brick side wall with concrete stairs and metal railings.

Exterior doors include fully glazed aluminum doors and hollow metal doors. Typical windows at the additions are rectangular aluminum sash windows spaced across the second story of the east faced and part of the south facade. The west façade of the addition is unfenestrated. Louvered metal vents are located at the top edge of the east and west facades of the additions. A fully glazed, elevated metal frame pedestrian bridge connects the second story of Building L at the rear façade to the northwest corner of Building L; the bridge is supported by metal columns with concrete footings.

Figure 84. Primary entrance to Building L on the north façade.

Figure 85. Brick-clad east façade of the original north wing of Building L, with an exterior stair tower.

Figure 86. Stucco-clad addition at the south end of Building L, looking southwest.

Figure 87. Elevated pedestrian bridge connecting Building M (left) and Building L (right).

Alterations: In 1971 and 1972, one-story additions to the rear of Building L, along each side of the south wing, were constructed. Designed by Cabak Associates, the additions had concrete-reinforced columns supporting structural bays that aligned with the existing south wing. The rear (south) walls of the addition were clad in brick to match the existing building, but the east and west exterior walls of the additions were stuccoed. A second story addition that spanned the original south wing and two rear additions was constructed by the late 1980s and features stucco-panels; the addition extends several feet above the original two-story portion of Building L, and extends slightly beyond the structural columns of the two rear additions **(Figure 94)**.

Historic Context: Originally known as the Health Research Facility II, Building L was the last of the five purpose-built SRI building designed by architects Stanton & Stockwell and built by general contractors Williams & Burrows. Building L housed the life sciences division of SRI, under the direction of Dr. William Skinner, with labs devoted to pharmacology, biochemistry, enzymology, viral tumorigenesis, and biobehavioral sciences.[181] Building L expanded the health science research facilities in Building M, which was constructed five years earlier. Like Building M, Building L was partially funded by a $500,000 grant from the National Institutes of Health. Dibble General Hospital Buildings 100B, 117, and 119 were demolished to accommodate the construction of Building L. Original architectural drawings indicate that Building L included a main lobby, laboratories, offices, testing, isolation, animal rooms, conference room, storage, a cold lab, a chromatography and dark room, as well as rooms for behavior, neurophysiology, surgery, brain behavior, hematology and pathology, cardiovascular pharmacology, cellular pharmacology, fetal pharmacology, and biochemical pharmacology.

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[181] "Construction Due On SRI Building," *The Times*, April 7, 1966.

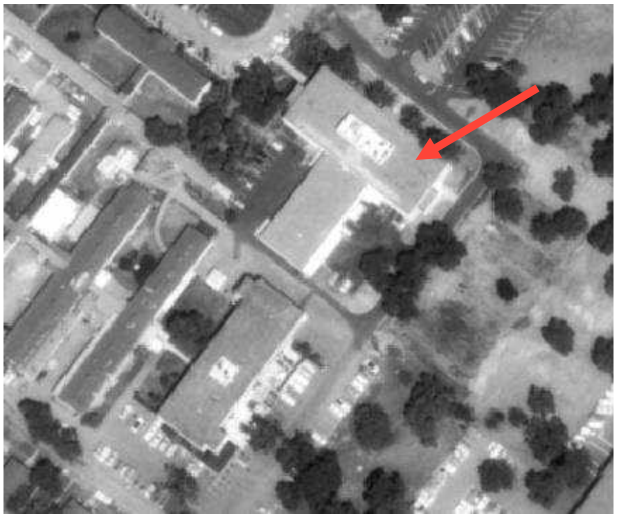

Figure 88. Aerial photograph showing Building L (indicated by red arrow) and Building M, May 1968. Source: Cartwright Aerial Surveys, Flight CAS-2310, Frame 1-26, UC Santa Barbara FrameFinder. Edited by Page & Turnbull.

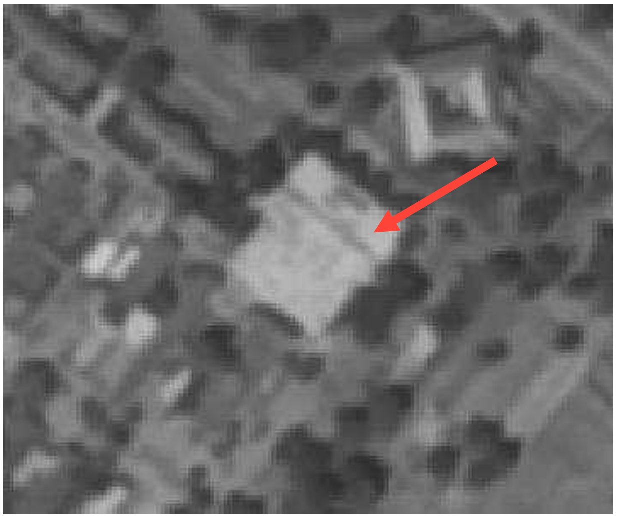

Figure 89. Aerial photograph showing expanded footprint of Building L, April 1981. Source: Western Aerial Photos, Flight GS-VEZR, Frame 4-97, UC Santa Barbara FrameFinder. Edited by Page & Turnbull.

Individual Evaluation:

Criterion 1: Building L is not individually eligible under Criterion 1 because it is not associated with events that have made a significant contribution to the broad patterns of our history. While it was constructed during a period of substantial growth for SRI in the 1960s and is associated with research activities, including health sciences research, the health science innovations to come as a result of SRI International's research and development efforts cannot be directly associated with only one specific building on the campus, as research was spread across multiple buildings on the campus. Thus, the advancements in health science research are better associated with the campus as a district.

Criterion 2: Building L is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building L was designed by Stanton & Stockwell in a Midcentury Modern style. Although Stanton & Stockwell have been identified as master architects of regional significance, the building is not representative of their best work, and has been altered in several major expansions. Furthermore, the building is a fairly modest and typical expression of the Midcentury Modern style and does not standout when compared to other Midcentury Modern buildings on the SRI International campus or in the Silicon Valley area, where there are numerous examples of the style in institutional settings. The building does not possess high artistic values. Therefore, Building L is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building L is not eligible for individual listing in the California Register under any criteria. However, Building L is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building L is a historical resource for the purposes of CEQA.

Building M

Date of Construction: 1962
Architect/Builder: Stanton & Stockwell
Type/Function: Offices and wet labs (decommissioned)

Brief Architectural Description: Building M is a two-story-over-basement reinforced concrete building in the Midcentury Modern style, set on a concrete foundation with a flat roof with no eaves. A square mechanical penthouse is located at the center of the roof. The building is generally rectangular in plan, with exterior staircases located at the northwest and southeast corners. The building has recessed exterior corridors at both the first and second stories, with square concrete support columns. The second story corridor is enclosed with precast rough aggregate concrete panels. The building is primarily clad in red brick, with square precast rough aggregate concrete panels at the exterior stair towers. The interior rooms of the building are primarily accessed from the exterior of the building with doorways located along the open exterior corridors along the east, north, and west facades. A concrete patio is located along the north façade of the building. Typical doors are hollow metal, flush with the exterior facades. Typical windows are square aluminum sash windows arrayed in two rows—the top row is aligned directly above the doorways; windows include fixed glazing, obscure fixed glazing, or louvered sashes. Exterior mechanical pipes and electrical conduit are suspended from the soffits at the open second floor corridor. A fully glazed, elevated, metal frame pedestrian bridge connects the northwest corner of Building M to the south end of Building L at the second story; the bridge is supported by metal columns with concrete footings.

Figure 90. Open, recessed exterior corridors along the west façade.

Figure 91. Exterior stair tower at the southwest corner of Building M.

Figure 92. Typical doors and windows.

Figure 93. Non-original elevated pedestrian bridge connecting Building M and Building L.

__Alterations:__ An enclosed, elevated pedestrian bridge connecting the second story of Building M to the second story of Building L was constructed by the 1980s. No other notable documented exterior alterations were noted during the course of research.

__Historic Context:__ Originally known as the Health Research Building, Building M was the second building designed by architects Stanton & Stockwell, who designed the first five major purpose-built buildings for SRI on the Menlo Park campus. Over half the cost of the building was partially covered by a $300,000 grant from the National Health Foundation.[182] Original architectural drawings indicate that the building included rooms for offices, organic chemistry, biochemistry, microbiology, chromatography, and storage, and an instrument room, incubator, operation room, and animal room. The drawings by Stanton & Stockwell indicate that the architects intentionally retained mature

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[182] "SRI Granted Building OK," *The Times*, May 16, 1961.

trees on the site, building "tree aerators" around the existing trees. The building has since been decommissioned.

Figure 94. Bird's-eye view of the rear sides of Building M (right) and Building L (left) from a larger photograph of the SRI International campus, circa 1988-92. Source: SRI International facilities.

Individual Evaluation:

Criterion 1: Building M is not individually eligible under Criterion 1 because it is not associated with events that have made a significant contribution to the broad patterns of our history. While it was constructed during a period of substantial growth for SRI in the 1960s and is associated with research activities, including health sciences research, the health science innovations to come as a result of SRI International's research and development efforts cannot be directly associated with only one specific building on the campus, as research was spread across multiple buildings on the campus. Thus, the advancements in health science research are better associated with the campus as a district.

Criterion 2: Building M is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building M was designed by Stanton & Stockwell in a Midcentury Modern style. Although Stanton & Stockwell have been identified as master architects of regional significance, the building is not representative of their best work. Furthermore, the building is a fairly modest and typical expression of the Midcentury Modern style and does not standout when compared to other Midcentury Modern buildings on the SRI International campus or in the Silicon Valley area, where there are numerous examples of the style in institutional settings. The building does not possess high artistic values. Therefore, Building M is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building M is not eligible for individual listing in the California Register under any criteria. However, Building M is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building M is a historical resource for the purposes of CEQA.

Building M-1

Date of Construction: c. 2000
Architect/Builder: Unknown
Type/Function: Unknown

Brief Architectural Description: Building M-1 is a one-story, rectangular prefabricated trailer with aluminum slider windows set on a temporary foundation. The building is accessed by a set of wood stairs at the south end.

Alterations: No documented exterior alterations were noted during the course of historical research.

Historic Context: Building M-1 was installed adjacent Building M circa 2000 for an unknown purpose, but it does not appear to have ever served any function directly related to research and development activities.

Individual Evaluation:
Criterion 1: Building M-1 is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI or to the broad patterns of local, state, or national history. The prefabricated trailer serves an ancillary function to the primary research and development of SRI International.

Criterion 2: Building M-1 is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building M-1 is a prefabricated trailer constructed by an unknown manufacture. The building lacks an architectural style and does not possess high artistic values. Therefore, Building M-1 is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building M-1 is not eligible for individual listing in the California Register under any criteria. Building M-1 is not a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building M-1 is not a historical resource for the purposes of CEQA.

Building P

Date of Construction: 1980-81
Architect/Builder: William L. Pereira Associates (architect); Eckbo Kay Associates (landscape architect)
Type/Function: Offices and wet labs.

Brief Architectural Description: Building P is a four-story steel frame building in the Late Modern style with a mechanical rooftop penthouse and a flat roof with no eaves. The building is composed of two rectangular wings—referred to as the north wing and south wing—which are arranged parallel and offset to each other and connected bridges at the top two floors. The ground floor of the building is located below the grade of the primary entrance below the central bridge at the first floor. The ground floor, though, is accessible from the exterior via eight concrete steps located around the building as the area around the building has been excavated to provide landscaped berms. The northwest corner of the north wing and the southeast corner of the south wing each have a rounded projecting bay, which houses an interior stair tower; immediately right of each stair tower is a recessed vertical ribbon of windows that extends the full height of the building.

The building is primarily clad in vertically oriented, rectangular, precast fiber-reinforced concrete panels with articulated expansion joints. The first floor of the west façade of the north wing is clad in concrete block. Typical windows consist of horizontal ribbons of aluminum sash fixed and slider windows with dark mirrored glass at each of the four floors, which extend most of the length of each façade. The vertically oriented rectangular sashes are each the same width as the concrete panel that clad the building; the windows sashes are aligned and flush with the cladding. The full ribbon is surrounded by a narrow flush frame.

The two primary entrances to the building are located at a first-floor central entry courtyard between the two wings. Each entrance has paired, fully glazed aluminum sash sliding doors with dark glazing. Above the two entrances, the two wings are connected by a hyphen with 40-foot-wide elliptical cutouts on the east and west sides; the hyphen serves as an internal pedestrian bridge at the second and third stories as well as at the mechanical penthouse. Two rectangular connectors are located at the second story, on either side of the elliptical-cutout bridge, running perpendicular to the two wings of the building; these connectors appear to be pedestrian bridges from the exterior, but actually each house two conference rooms. The two conference room connectors, the elliptical-cutout bridge, and the walls enclosing the entry courtyard are fully glazed with aluminum sash window walls with dark mirrored glass. The pattern of mirrored glass and aluminum mullions also extends to the underside of the two conference room connectors. The underside of the pedestrian bridge is stuccoed. The elliptical-cutout bridge is clad in typical concrete panels at the mechanical penthouse level.

Secondary entries include four fully glazed metal doors on the ground floor—located at the east end of the north facades of each the north and south wings, and at the west ends of the south facades of each of the two wings. These doorways are set in vertical recesses that extend up the full height of the façade, and are fully glazed with dark mirrored glass windows and spandrel panels. Metal doors are located on the ground floor doors at each of the two round stair towers and near the center of the west façade of the north wing and the east façade of the south wing. Two sets of paired metal doors and two rollup metal doors are located at a concrete loading dock which spans the first floor of the west façade of the north wing.

The area around Building P is landscaped with grass berms, specimen trees along the sides of the buildings, and curvilinear paths that meander to the entry courtyard and around the building connecting to D Street and West 3rd Street. One of the most visual prominent features on campus is a set of six warm-red metal steam exhaust stacks, which are each 72.5-feet tall and 4.5-feet in diameter, in a circle. The exhaust stacks are located in the southwest landscape area of Building P, and are located on a round plinth with concentric concrete steps at the northeast side and a hedge at the southwest side. The exhaust stacks are above a subterranean fan room, which is above an exhaust plenum that is connected to the building's exhaust system. A circular path curves around the edge of the exhaust stacks, and a paved area with seating is located to the north. A circular paved path is overlayed on the intersection of W 3rd Street and the curvilinear path that crosses the street to a circular seating area with three benches surrounded by trees is located at the southwest corner of Building B, but is associated with the landscape plan for Building P.

Figure 95. Bird's-eye view of Building P and associated landscape.
Source: Google Maps, 2021. Edited by Page & Turnbull.

Figure 96. Northeast corner of the north wing, looking southwest.

Figure 97. Typical dark mirrored glass at the windows and glass spandrels around the entrance.

Figure 98. Vertical recessed bay with glazing and secondary entrance at the ground floor.

Figure 99. Round internal stair tower at the corner of one of the wings.

Figure 100. Circle of six exhaust stacks southwest of Building P.

Alterations: Based on visual inspection and comparison with the original architectural drawings, the two primary entrance doors have been replaced; drawings indicate that the doors were originally paired fully glazed metal doors. The doors were likely replaced with the current fully glazed sliding doors for accessibility. No other notable documented exterior alterations were noted during the course of research. Drawings on file at SRI International Facilities indicate a 2010 "regulator upgrade" project at Building P, but was limited to mechanical systems upgrades and air systems segregation that did not affect the exterior design of the building.[183]

Historic Context: Building P was designed by architect William L. Pereira Associates, under the direction of project architect Roland C. Cannan, with landscape architects Eckbo Kay Associates, and completed in 1981. The physical sciences facility cost $12 million to complete and included "79 laboratories and 350 office modules for chemistry, electronic research and molecular and physical science studies."[184] A *Los Angeles Times* article at the time commented on the dark reflective entry and bridges, saying that the "entrance gateway appears to unify and dramatize the design." [185] William L. Pereira Associates had completed a master plan for the SRI International campus in the early 1970s, and Building P was the second building constructed based on the master plan; Pereira

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[183] DGA, "Building – P Regulatory Upgrades," October 22, 2010, Sheet A0.1, on file at SRI International Facilities.
[184] "SRI Dedicates New Menlo Park Unit," *Los Angeles Times*, July 12, 1981.
[185] "SRI Dedicates New Menlo Park Unit," *Los Angeles Times*, July 12, 1981.

had also designed the adjacent Building B, completed in 1977.[186] Building P marked the last major new laboratory and office building constructed on the SRI International campus. Buildings constructed since have included ancillary service buildings such as Buildings R, U, and W, and more utilitarian high-bay Building S. Thus, it appears that Pereira's master plan was only partially implemented.

Figure 101. Building P, looking north, 1983. Source: Eckbo Collection, UC Berkeley Environmental Design Archive.

Figure 102. Covered entryway between the two wings of Building P, 1983. Source: Eckbo Collection, UC Berkeley Environmental Design Archive.

Individual Evaluation:

Criterion 1: Building P is not individually eligible under Criterion 1 because it is not associated with events that have made a significant contribution to the broad patterns of our history. It was constructed in 1980 and was the last major office and laboratory building constructed on the SRI International campus, and marks a decline in the growth of the institute that had occurred in the following decades. While associated with various research activities at SRI International, the building is not singularly associated with significant discoveries or inventions such that it could be said to be individually representative of the history and contributions of SRI International.

Criterion 2: Building P is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building P was designed by master architect William L. Pereira Associates in the Late Modern style. However, the building was designed late in Pereira's career, only three years before the last buildings attributed to the firm and five years before Pereira's death, after the architect's

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[186] "SRI Plans $12-Million Facility in Menlo Park," *Los Angeles Times*, October 14, 1979.

most prolific and influential years. Of the hundreds of buildings designed by Pereira and his firm, this building did not receive any broad recognition—it was not published in any architecture journals of record and did not receive any awards. Thus, the building cannot be said to be the most representative or best example of the firm's work. Additionally, Garrett Eckbo and his firms are considered master landscape architects, but, likewise, the landscape design for Building P is relatively late in Eckbo's career and is not representative of his best or most influential work. The building exhibits traits of the Late Modern style, but does not stand out amongst numerous other examples of the style, which was a dominant style used in institutional and commercial buildings in the last three decades of the twentieth century. The architectural design of the building does not appear to be particularly innovative or influential. The building does not possess high artistic values. Therefore, Building P is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building P is not eligible for individual listing in the California Register under any criteria. However, Building P is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building P is a historical resource for the purposes of CEQA.

Building R

Date of Construction: 1984
Architect/Builder: Unknown; appears to be prefabricated.[187]
Type/Function: Offices and storage

Brief Architectural Description: Building R is a high bay building with an interior mezzanine level. The metal frame building has an approximately square plan, clad in corrugated metal siding, and is capped by a very low-pitched gable roof that is surrounded by a flat corrugated metal parapet. Building R has sliding aluminum sash windows at the mezzanine level on the south façade and south ends of the east and west facades. The building has hollow metal doors, as well as roll-up metal garage doors. Four garage doors at the southwest corner of the building are elevated on a concrete loading dock, whereas other garage doors are at grade.

Alterations: No notable documented exterior alterations were noted during the course of research.

Historic Context: Building R primarily functions as a storage building with facilities for shipping and receiving and property storage, and offices associated with these functions. The building also contains a mail room and space utilized by the facilities department. These functions appear to have

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[187] SRI International Facilities does not appear to have original architecture drawings on file; available drawings for Building R include as-built drawings dating to the early 2000s, which do not identify any original architect or builder.

been housed in other Dibble General Hospital era buildings throughout campus prior to the construction of Building R, which provided a larger centralized facility.

Individual Evaluation:
Criterion 1: Building R is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI or to the broad patterns of local, state, or national history. Building R is a storage and shipping and receiving building, which provides an ancillary function to the research activities on the SRI International campus. The building does not bear any direct association with any significant discoveries or inventions at SRI International.

Criterion 2: Building R is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building R is a utilitarian industrial building that lacks any architectural style. The building appears to be largely prefabricated and no builder or designer has been identified, and the building does not possess high artistic values. Therefore, Building R is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building R is not eligible for individual listing in the California Register under any criteria. Building R is not a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building R is not a historical resource for the purposes of CEQA.

Building S

Date of Construction: 1981
Architect/Builder: R. A. Rotondo (engineers)
Type/Function: Pilot plants, dry labs, and storage.

Brief Architectural Description: Building S is a high bay building with a rectangular plan and a low-pitched gable roof with a raised monitor along the ridge of the roof. The roof eaves are enclosed with a flat parapet that wraps around a portion of the west end of the building. A stepped parapet is located at the east end of the building. The building is clad in vertical wood siding and has fully glazed aluminum doors and large loading bay metal doors. Exterior stairs on the north and south facades access a mezzanine level. Large vents are located along the north and south facades, but the building is unfenestrated. Mechanical equipment penetrates the exterior north and south walls of the building.

Alterations: No notable documented exterior alterations were noted during the course of research.

Historic Context: Building S was constructed during a period of slowed growth at SRI International and has large flexible interior spaces. Primary sources have not revealed any specific projects that are associated with Building S, but sources indicate that the high bay building has dry labs, storage, and pilot plants, which are production systems that are used to produce and test new technology on small scales before commercial use.

Individual Evaluation:
Criterion 1: Building S is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI or to the broad patterns of local, state, or national history. While Building S has pilot plants used to test new technology, no information has been found during the course of historical research that directly relates the building to any significant discoveries such that it could be said to be individually significant to the history and contributions of SRI International.

Criterion 2: Building S is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building S is a utilitarian industrial building that lacks any architectural style. The building designed by engineer R. A. Rotondo, who has not been identified as a master builder, and the building does not possess high artistic values. Therefore, Building S is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building S is not eligible for individual listing in the California Register under any criteria. However, Building S is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building S is a historical resource for the purposes of CEQA.

Building T

Date of Construction: 1962
Architect/Builder: Robert E. Jones
Type/Function: Offices and wet labs

Brief Architectural Description: Building T has a rectangular plan, composed of an original one-story building and one- and two-story additions. The central portion of the building is the original 1962 building, which is a steel-frame building with corrugated metal cladding, a low pitch gable roof, aluminum sash windows and hollow metal doors. South of the original building is a reinforced concrete building clad in corrugated metal with a very low pitch gable roof. The north 2006 addition also has a low pitch gable roof and corrugated metal siding. The south 2006 addition has stucco cladding, a flat roof, and aluminum sash storefront windows. The current primary entrance to Building T is located at the west façade of the south 2006 addition and features a portico clad in corrugated metal.

Figure 103. Bird's-eye view of Building T. The original 1962 building is outlined in red. The 1979 addition is outlined in blue, and 2006 additions are outlined in green. Source: Google Maps, 2021. Edited by Page & Turnbull.

Figure 104. 2006 addition at the south end of Building T.

Figure 105. 2006 addition at the north end of Building T. Original portion of Building T is visible at the right.

__Alterations:__ The original building constructed in 1962 was an approximately L-plan building. In 1979, a rectangular addition was constructed on the south side of Building T. Large rectangular additions were constructed in 2006 at the north and south ends of the building. In 2006, the space between the wings of the original L-plan building was also infilled, so that the resulting footprint of Building T is a single large rectangle. A storage enclosure has been constructed along the primary (west) façade of the original portion of Building T.

Historic Context: Building T was constructed in 1962 as an "animal facilities" building for the Physical Sciences department and used for animal testing in biomedical research. In 1964, SRI had the first laboratory in North America devoted to studying the behavior of physiology of sea mammals.[188] Additional animal rooms were constructed in a 1979 addition. In 1984, Building T was remodeled at the interior for toxicology research. In 2006, two large additions were constructed for storage, offices, and laboratories.

Individual Evaluation:
Criterion 1: Building T is not individually eligible under Criterion 1 because it is not associated with events that have made a significant contribution to the broad patterns of our history. While it was constructed during a period of substantial growth for SRI in the 1960s and is associated with research activities, including animal testing related to biomedical research and physical sciences, the facility does not appear to be directly related to any significant discoveries or inventions such that it could be said to be individually significant to the history and contributions of SRI International.

Criterion 2: Building T is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building T is a utilitarian industrial building that lacks any architectural style and has been substantially altered through three large additions. Original architect Robert E. Jones has not been identified as a master architect, and the building does not possess high artistic values. Therefore, Building T is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building T is not eligible for individual listing in the California Register under any criteria. However, Building T is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building T is a historical resource for the purposes of CEQA.

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[188] "Timeline of Innovation: 1960s," SRI International, accessed online August 17, 2021, https://www.sri.com/tag/1960s.

Building U

Date of Construction: 1986-87
Architect/Builder: Bechtel; International Power Technology (IPT)
Type/Function: Steam cogeneration plant

Brief Architectural Description: Building U is a high bay reinforced concrete block building with an L-shaped plan. At the northeast corner, where the two wings of the building intersect, the volume of the building extends higher than the two wings. A dark, recessed band wraps around the upper portion of the facades. The building is unfenestrated except for one window opening at the upper portion of the south façade. The building has single and paired hollow metal doors. Metal louvered vents are located on the south and west facades and extend only slightly higher than the doorways. Mechanical equipment penetrates the exterior walls of the building, and a fenced mechanical area is located along the west side of the building.

Alterations: No notable documented exterior alterations were noted during the course of research. Mechanical equipment, some of which is visible at the exterior of the building, has likely been upgraded and altered over time.

Historic Context: Dibble General Hospital generated its own power using a steam power plant located in Building 412. As SRI International expanded its facilities, it required an updated and more robust power plant to provide steam and electricity to power, heat, and cool its over two million square feet of office and research lab space. The building was engineered and constructed by Bechtel, while the 5.6-megawatt Cheng Cycle cogeneration power plant was designed by International Power Technology (IPT). The building was constructed in 1986, and the cogeneration plant was operational by spring of 1987.[189]

Individual Evaluation:

Criterion 1: Building U is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI or to the broad patterns of local, state, or national history. As a waste storage facility, the building serves an ancillary function to the primary research and development of SRI International.

Criterion 2: Building U is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building U is a utilitarian industrial building that lacks any architectural style. The building was designed by Bechtel, which was founded in San Francisco in 1898 and is now headquartered in Reston, Virginia and is the largest construction company in the world. Building U is not representative of the complex and ground-breaking projects that Bechtel is best known for, including projects such as the Hoover Dam (1935) and the Bay Area Rapid Transit (BART) System (1976). The building does not possess high artistic values. Therefore, Building U is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building U is not eligible for individual listing in the California Register under any criteria. Building U is not a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building U is not a historical resource for the purposes of CEQA.

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[189] "SRI International (1985 to present)," International Power Technology, accessed online July 30, 2021, http://intpower.com/project-development-services/sri-plant/.

Building W

Date of Construction: 1988
Architect/Builder: SRI International, drawings are stamped by Lawrence R. Jay, civil engineer
Type/Function: Waste storage facility

Brief Architectural Description: Building W is a one-story, rectangular, three-sided building that is open on the east façade. The reinforced concrete block building has a corrugated metal shed roof. The building has nine bays, each divided by concrete block walls. Ancillary metal structures and storage containers are located adjacent Building W.

Alterations: No notable documented exterior alterations were noted during the course of research.

Historic Context: Based on original architectural drawings, Building W was designed as a waste storage facility with separate storage bays for non-flammable storage, corrosive storage, base and oxide storage, acid storage, flammable liquid storage, and a compactor and three bays for pouring flammable liquids. This building was design to support the activities in the research labs on the SRI International campus.

Individual Evaluation:

Criterion 1: Building W is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI or to the broad patterns of local, state, or national history. As a waste storage facility, the building serves an ancillary function to the primary research and development of SRI International.

Criterion 2: Building W is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building W is a utilitarian industrial building that lacks any architectural style. The building appears to have been designed by SRI International Facilities, and the drawings are stamped by civil engineer Lawrence R. Jay, who has not been identified as a master builder. The building does not possess high artistic values. Therefore, Building W is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building W is not eligible for individual listing in the California Register under any criteria. Building W is not a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building W is not a historical resource for the purposes of CEQA.

Building 100

Date of Construction: 1943
Architect/Builder: G.W. Williams Co. according to standard U.S. Military plans.
Type/Function: Administrative Headquarters

Brief Architectural Description:
Building 100 is a two-story, wood-frame building with a rectangular plan, set on a concrete foundation. The building is designed in a modest rendition of the Colonial Revival style, applied to a standard military plan for an administration building at a Type-A general hospital. The building features a symmetrical exterior, with a three-bay, gabled central projection flanked by side-gabled, six-bay wings containing double-loaded corridors. The projecting section and gabled ends of the building feature pediments with wood trim, wood siding, and circular attic vents. The building's exterior is covered with stucco and the roof is covered with asphalt shingles. The main entrance at the center of the primary façade features a set of wood double doors with brass hardware, set beneath a six-lite wood transom. The entrance is surrounded by a wood panel and capped by a simple wood lintel.

Original windows remain in all openings at the primary façade and at the north side façade. The rear façade has been altered with some original windows replaced with one-over-one wood sash or aluminum sash. Wood canopies above the primary entrance and side entrance are non-historic. At the center of the rear (south) façade is an attached low cross-shaped storage structure, which is connected to a T-shaped structure further south by a covered foundation; these structures were formerly part of a network of enclosed corridors that connected the Dibble General Hospital buildings.

Figure 106. Primary entrance to Building 100.

Figure 107. West façade of Building 100.

Figure 108. Attached structure at the rear of Building 100.

Figure 109. Second structure behind Building 100.

Alterations: The window shutters at the windows flanking the primary entrance were added circa 1947, as were the brick pillars at the primary entrance. The wood portico at the primary entrance was added sometime after 1952. The formal entrance to Building 100 from Middlefield Road, which included a looped road around a lawn with a central path and flagpole, was demolished in the 1970s when that parcel was developed with three office buildings that are not part of the SRI property. Several rear windows have been replaced.

Historic Context: Building 100 was originally constructed to house Dibble General Hospital's administrative offices, and was placed at the front and center of the hospital's main entrance on Middlefield Road. Building 100 continued its original use until 1947, when SRI began to occupy the building as its original headquarters. The building's modest architectural detailing and application of Colonial Revival style-inspired form were common features of standard Army general hospital administration buildings during World War II. In 1947, Building 100 was adapted to serve as the first permanent home of Stanford Research Institute (SRI), which had previously been temporarily located for several months at the Physics Building on the Stanford University campus. Building 100 served as the main SRI building for a decade as SRI slowly expanded into additional rooms and buildings on the former Dibble General Hospital campus, before constructing its first purpose-built building in 1958. Even after the construction of Building A, Building 100 continued to be used by SRI.

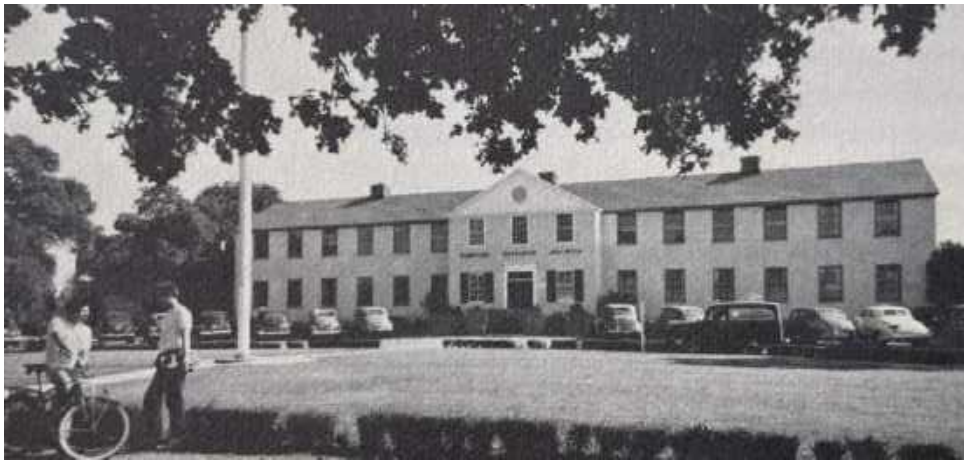

Figure 110. Building 100, a former Dibble General Hospital building, serving as the first headquarters of SRI, c. 1947. Source: Source: Gibson, *SRI: The Founding Years*, 100.

Individual Evaluation:

Criterion 1: Building 100 was originally constructed according to standard plans for general hospitals during World War II, and served as Dibble General Hospital's Administration Building. It was one of over 100 buildings that comprised the General Hospital's campus, and the hospital's role in providing medical care to military personnel was primarily carried out in clinic buildings, with convalescent care provided in separate ward buildings. Thus, while a central administration building, Building 100 does not appear to be individually representative of the larger history of medical care at Dibble General Hospital, and it is not individually significant under Criterion 1 for this association.

In 1947, Building 100 was adapted to serve as the first permanent home of Stanford Research Institute (SRI), which had previously been temporarily located for several months at the Physics Building on the Stanford University campus. Building 100 served as the main SRI building as SRI slowly expanded into additional rooms and buildings on the former Dibble General Hospital campus, before constructing its first purpose-built building in 1958. Thus, Building 100 is closely associated with the earliest history of SRI and its first decade of growth and innovation. Building 100 is individually significant for its association with the origination of SRI, as the building served as the first headquarters location for the institute.

Criterion 2: Building 100 is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. Numerous administrators and staff members at Dibble General Hospital and Stanford Research Institute worked out of Building 100 over the course of decades. However, no one singular individual has been associated with Building 100 such that would be eligible under Criterion 2.

Criterion 3: Building 100 is not individually significant under Criterion 3. Originally designed according to standard military plans and built by local contractor G.W. Williams Co. in 1943, Building 100 was one of approximately 100 buildings that comprised Dibble General Hospital. Although the building's two-story side-gabled form, stucco exterior, and fenestration remain representative of its very modest Colonial Revival-inspired standardized design, it does not stand out individually as a distinct design relative to other military general hospital buildings of its period. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building is only one of many that they constructed at Dibble Hospital, and in its own right does not represent that the firm's work at the hospital, which is represented by the various typologies they constructed during the general hospital's development.

Integrity: This building possesses a high degree of integrity to support its association and use as SRI International's original headquarters building between 1947 and 1958. The building's location has not changed, and its current setting continues to be a research and development campus. The building's essential form as a two-story, wood-frame building originally constructed according to standard Army plans, yet adapted to an office use under SRI, is easily read. The building retains most original multi-lite, wood-sash, double-hung windows that were present between 1947 and 1958, symmetrical composition at its primary and west facades, a gabled roof, and pedimented gabled ends with lapped wood siding and circular attic vents. The wood porticos and brick pillars at the primary entrance, built by Stanford Research Institute, are additive and do not detract from the design, materials, or workmanship for the building; these features are now significant in their own right as they are associated with SRI's use of the building as its first permanent headquarters. The setting of the building was altered when the formal landscaped entrance was demolished in the 1970s; however, this feature was associated with the building's earlier military history, and the loss of the landscape does not substantially impact the integrity of the building for its association with SRI. Building 100 retains the feeling of a reused military building and retains its association with SRI.

Building 100 Character-Defining Features:

- Two-story massing and rectangular plan
- Projecting, two-story central volume at the primary façade
- Symmetrical facades
- Original fenestration pattern, including original eight-over-eight wood double hung windows

- Wood shutters at two windows flanking the primary entrance
- Primary entry ensemble, including paired doors and multi-lite operable wood transom
- Stucco cladding
- Cross-gable roof with shallow eaves, with wood board cladding and a round wood vent in the front gable eave
- Brick steps and wood portico at primary entrance.

Conclusion: Building 100 is eligible for individual listing in the California Register under Criterion 1 and retains historic integrity. The period of significance under Criterion 1 is 1947-1958, the year that SRI first occupied Building 100 as its headquarters to the year when SRI moved into its first purpose-built building (Building A).

Building 100 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 100 is a historical resource for the purposes of CEQA.

Building 108

Date of Construction: 1943
Architect/Builder: G.W. Williams Co. according to standard U.S. Military plans.
Type/Function: Bachelor Officers Quarters (BOQ)

Brief Architectural Description: Building 108 is a two-story, wood-frame building capped by a side gabled roof with short overhangs along the building's long sides. The roof is covered with asphalt shingles. Windows are replacement, one-over-one aluminum sash set at generally even internals and vertically aligned at the first and second stories. The window openings appear to retain original wood frames. The exterior is finished with stucco. The building's exterior walls have been fitted with wall-mount air conditioning units. All exterior doors are replacement flush-steel, some with a single rectangular lite in the upper half. Canopies and steps place at each entrance location are non-original.

Figure 111. Building 108, west and south façades, looking east.

Figure 112. Courtyard between Building 108 (left) and Building 110 (right)

Alterations: A wood-frame pergola/open passageway has been installed between Building 108 and Building 110. Aluminum-sash replacement windows have been installed throughout the building. Non-original stairs and canopies have been installed at each entrance. Flush-steel replacement doors are located at each entrance and wall-mount air conditioning units are set within the exterior. Building 108 also has a one-story concrete block addition at southeast corner.

Historic Context: Building 108 was constructed in 1943 as one of two BOQ buildings at Dibble General Hospital, and as a BOQ, housed commissioned officers, rather than enlisted personnel. After 1946, Building 108 was utilized for physics labs by SRI during the transitional period from 1947-1958.

Individual Evaluation:
Criterion 1: Building 108 is not significant under Criterion 1. The building was constructed to house commissioned officers at Dibble General Hospital and shared that role with the adjacent Building 110. BOQ buildings were common at many military bases and installations. Housing was a component of general hospitals during World War II and does not stand out as a significant aspect of the hospital; housing was among the aspects of the hospital complex that supported the hospital's primary medical purpose. Within the context of SRI's development and scientific achievements, the building's use as an office for SRI has not been found to rise to a level of individual significance.

Criterion 2: Building 108 is not individually significant under Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 108 is not individually significant under Criterion 3. Originally designed according to standard military plans and built by local contractor G.W. Williams Co. in 1943, Building 108 was one of approximately 100 buildings that comprised Dibble General Hospital. Although the building's two-story side-gabled form, stucco exterior, and fenestration remain representative of its very modest Colonial Revival-inspired standardized design, it does not stand out individually as a distinct design relative to other military general hospital buildings of its period. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building is only one of many that the firm constructed at Dibble Hospital. The firm's work is represented by the various typologies it constructed during the general hospital's development.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building 108 is not eligible for individual listing in the California Register under any criteria. However, Building 108 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 108 is a historical resource for the purposes of CEQA.

Building 110

Date of Construction: 1943
Architect/Builder: G.W. Williams Co. according to standard U.S. Military plans.
Type/Function: Bachelor Officers Quarters (BOQ)

Brief Architectural Description: Building 110 is a two-story, wood-frame building capped by a side gabled roof with short overhangs along the building's long sides. The roof is covered with asphalt shingles. Windows are replacement, one-over-one aluminum sash set at generally even internals and vertically aligned at the first and second stories. The window openings appear to retain original wood frames. The exterior is finished with stucco. The building's exterior walls have been fitted with wall-mounted air conditioning units. All exterior doors are replacement flush-steel, some with a single rectangular lite in the upper half. Canopies and steps placed at each entrance location are non-original.

Figure 113. South façade of Building 110, looking north.

Alterations: Wood-frame pergola/open passageway between Building 108 and Building 110; aluminum-sash replacement windows; stairs and canopies at each entrance; staircase at northwest corner; flush steel replacement doors; wall-mount air conditioning units.

Historic Context: Building 110 was constructed in 1943 as one of two BOQ buildings at Dibble General Hospital, and as a BOQ, housed commissioned officers, rather than enlisted personnel. After 1946, Building 110 was utilized for general offices by SRI during the transitional period from 1947-1958.

Individual Evaluation:

Criterion 1: Building 110 is not individually significant under Criterion 1. The building was constructed to house commissioned officers at Dibble General Hospital and shared that role with the adjacent Building 108. BOQ buildings were common at many military bases and installations. Housing was a component of general hospitals during World War II and does not stand out as a significant aspect of the hospital; housing was among the aspects of the hospital complex that supported the hospital's primary medical purpose. Within the context of SRI's development and scientific achievements, the building's use as an office for SRI has not been found to rise to a level of individual significance.

Criterion 2: Building 110 is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 110 is not individually significant under Criterion 3. Originally designed according to standard military plans and built by local contractor G.W. Williams Co. in 1943, Building 110 was one of approximately 100 buildings that comprised Dibble General Hospital. Although the building's two-story side-gabled form, stucco exterior, and fenestration remain representative of its very modest Colonial Revival-inspired standardized design, it does not stand out individually as a distinct design relative to other military general hospital buildings of its period. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building is only one of many that the firm constructed at Dibble Hospital. The firm’s work is represented by the various typologies it constructed during the general hospital’s development.

Integrity: Not applicable, as building is not individually eligible.

Conclusion: Building 110 is not eligible for individual listing in the California Register under any criteria. However, Building 110 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 110 is a historical resource for the purposes of CEQA.

Buildings 201-205: Wards

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Patient Wards

General Architectural Features of Buildings 201-205:
Each of the former wards is one-story in height with a wood frame, set on a concrete foundation, and is capped by a gable roof. Buildings 201-205 each feature tripartite, wood-frame window openings at their north and south ends, which historically created porches or solariums at each end of the building. Retention of original divided-lite wood-sash windows in each of these porch areas varies for each building. Gabled ends also typically have louvered vents with wood frames and metal louvers. Each of the original entrances, both end entrances and side entrances, appears to have replacement steel or wood double doors with a single upper lite. Original double doors were flush or paneled wood with divided lites in the upper half, based on available historic photographs. Canopies, stairs, and ramps at the entrances have either wood or metal pole railings, and appear to be non-original. The roofs are covered in some cases with asphalt shingles and in some cases with built up materials. Exteriors remain stucco, except where bays have been infilled or additions constructed, such as at Building 204. The connectors between the wards are shared features and bisect Buildings 201-205 at the center of their footprints. The connectors are finished with stucco in most areas, but do have some areas of infill and wood paneling. Few of the connectors retain original wood-sash windows, and most have some degree of alteration such as infilling or replacement of windows and doors.

Photos of each building, individual architectural descriptions, and lists of alterations to each building follow the grouped historic context and evaluation below.

Historic Context: Dibble General Hospital was originally constructed with multiple wards intended to house patients who were receiving convalescent care after undergoing surgical and other clinical or rehabilitative treatment. A 1945 map of the hospital complex illustrated 39 wards for convalescent patients, separate from detention wards where patients who were receiving more critical care were housed, none of which are extant. Seven of the original 39 wards remain at Dibble Hospital; a group of five (Buildings 201-205) retain connecting corridors at the middle of their footprint, and a separate group of two (Building 305 and 309) feature slightly different gabled end designs without solarium glazing, which indicates they were likely initially designed as barracks and converted to wards by 1945. Overall, the wards were the basic unit of the pavilion plan hospital, and within the Type-A general hospital standard pavilion plan, these buildings were typically built as one-story, rectangular-plan units, connected by a series of linear corridors.

Individual Evaluation:

Criterion 1: None of the former ward buildings numbered 201-205 appear to be individually significant under Criterion 1. The wards were designed according to standard U.S. Army plans and were arranged as a group of buildings connected by corridors near the middle of their footprint. The wards as a group and as a component of the larger general hospital complex contributed to the provision of medical care and rehabilitation that occurred at Dibble Hospital between 1943 and 1946. Although the wards supported the hospital's mission, they were one component within the process of medical care, rehabilitation, and convalescence that was carried out across the facility in clinics and wards, and managed by administration staff. Buildings 201-204 were adapted for use as offices and dry labs for SRI, while Building 205 was adapted for use as offices. Work carried out in these buildings has not been found to rise to a level of individual significance within the context of SRI's development and scientific achievements.

Criterion 2: Buildings 201-205 do not appear to be individually significant under Criterion 2. Each of the extent ward buildings functioned with a similar purpose, serving the hospital's provision of medical care and rehabilitation. Numerous medical staff, nurses, surgeons, and other staff served patients in the ward buildings. No individuals are known to have made contributions to the work in the any of the ward buildings that stand out more than any other.

Criterion 3: Buildings 201-205 do not appear to be individually significant under Criterion 3. The wards were designed according to standard U.S. Army plans and were built by G.W. Williams Co. The wards were arranged as a group of buildings connected by corridors near the middle of their footprint. The ward buildings lack individual distinction, as they were principally constructed to be identical. The ward buildings do not possess high artistic values or represent a particular style as they were designed as very modest and economical temporary buildings. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, the ward buildings were among many that the firm constructed at Dibble Hospital, which is represented by the various typologies it constructed during the general hospital's development. None of the alterations undertaken during the use of Buildings 201-205 by SRI appear to be significant.

Integrity: Not applicable, as these buildings are not identified as individually significant resources.

Conclusion: Buildings 201-205 are not eligible for individual listing in the California Register under any criteria. However, Buildings 201-205 have been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Buildings 201-205 are historical resources for the purposes of CEQA.

BUILDING 201

__Brief Architectural Description:__ Building 201 is a one-story, wood-frame building set on a concrete foundation and capped with a gable roof covered in built up materials. Building 201 features original divided-lite, wood-sash, double-hung windows (standard at all wards) at its north and south façades. At the south façade, a non-original metal staircase accesses wood double-doors at the center of the façade. Above, the gabled end is finished with stucco and wood, similar to half-timbering. An original gable vent with louvers is placed beneath the gable peak. These gable end features are also present at the other ward buildings, excepting Building 204, described hereafter.

The longer side façades originally contained rectangular window openings with divided-lite double-hung windows. However, Building 201's original windows along its side facades have been largely replaced, if not completely infilled. The north half of the east façade has replacement one-over-one aluminum-sash windows and several infilled bays. The north half of the west façade is completely infilled, including the former open air exterior porch located near the building's northwest corner. The south half of the east façade has replacement aluminum-sash windows in original wood-frame openings.

Figure 114. South end of Building 201, looking northwest.

Figure 115. West façade of Building 201, looking southeast.

__Alterations:__ Many windows have been replaced or infilled at the east and west façades. Infilling and window replacement has also occurred at the connection corridors. Stairs, canopies, and ramps leading to the building's entrances appear to be non-original.

BUILDING 202

Figure 116. North end of Building 202, looking south.

Brief Architectural Description: Building 202 is a one-story, wood-frame building set on a concrete foundation and capped with a gable roof covered in asphalt shingles. Building 202 features original divided-lite, wood-sash, double-hung windows at the north and south façades. A non-original metal staircase accesses wood double-doors at the center of the north façade and a wood ramp with metal railings accesses the south entrance that has similar double doors. The original fenestration and open-air porch on the south half of the west façade have been infilled and appear to be finished with wood paneling and battens. The north half of the west façade has a mix of original divided-lite wood-sash double-hung windows and replacement aluminum windows set in original wood frames. A side entrance door has been replaced by a flush steel door, and several new window openings have been inserted toward the middle of the façade, near the connecting corridor. Ventilation equipment has also been installed on the roof.

Figure 117. West façade at the south end of Building 202, looking south.

Figure 118. South façade of Building 202.

Alterations: The entrance stairs and canopy at the front and rear facades do not appear to be original, nor does the canopy and steps at west façade. Modern HVAC equipment has been installed on the roof and adjacent to the building. The west façade south of the connecting corridor has been completely infilled, and several replacement windows and non-original window openings are located on the east façade.

BUILDING 203

Brief Architectural Description: Building 203 is a one-story, wood-frame building set on a concrete foundation and capped with a gable roof covered in asphalt shingles. Building 203 features original divided-lite, wood-sash, double-hung windows at the north and south façades and along its east façade, south of the connector. Non-original metal staircases access wood double-doors at the center of the north and south façades. The west façade features an infilled porch on its south end, with non-historic aluminum windows. The west façade also features original wood-sash divided-lite windows. The east façade is largely intact and with divided-lite wood-sash double-hung windows retained in most original openings.

Figure 119. South end of Building 203, looking south.

Figure 120. South half of the west façade.

Alterations: An original side porch at the south end of the west façade has been infilled and features a non-original ramp. Entrance stairs and canopies at the front and rear facades are non-original. Overall, few original windows have been replaced.

BUILDING 204

Brief Architectural Description: Building 204 is a one-story, wood-frame building set on a concrete foundation and capped with a gable roof covered in asphalt shingles. This building features original window openings at its north and south end; however, most of the windows in the north end are replacement one-over-one aluminum-sash. Along the east façade, most of the original window openings have been boarded over with wood panels and modern HVAC equipment has been mounted to the façade and roof. Most remaining openings on this façade feature replacement aluminum-sash windows. The west façade has been heavily altered by a horizontal addition that has a tongue-and-groove exterior and is fenestrated with aluminum slider windows and a long aluminum ribbon window. The original open-air porch at the south end of the west façade has been enclosed and has aluminum slider windows and steel doors.

Figure 121. Building 204, looking southwest.

Figure 122. East façade of Building 204.

Alterations: Building 204 is the least intact of the remaining former ward buildings. Alterations include west façade horizontal additions; replacement windows; infilling of window openings on the east façade; replacement of windows at north porch and at east façade; ramps, stairs, and canopies at main and side entrances.

BUILDING 205

Brief Architectural Description: Building 205 is a one-story, wood-frame building set on a concrete foundation and capped with a gable roof covered in built up materials. The south façade has replacement aluminum-sash windows set in original openings. The west façade's south half has replacement windows and an infilled and stuccoed side porch with replacement windows. The east façade features an entrance with a wood canopy near its midpoint and is largely fenestrated with replacement aluminum windows in original openings, excepting near its north end where several original windows remain in place. The north end has original porch windows and the north half of the west façade also has original windows.

Figure 123. View of the east façade looking northwest.

Figure 124. North end of Building 205.

Alterations: Alterations to Building 205 include: an infilled side porch near the southwest corner; replacement windows at south porch, south half of west façade and most of east façade; non-original stairs, canopies, and doors at each entrance.

Building 301

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Dibble Hospital Civic Center (Post Exchange)

Brief Architectural Description: Building 301 is a one-story, wood-frame building set on a concrete foundation and capped by a flat roof covered with composition materials. This building is effectively a northeast wing of the former Civic Center building constructed for Dibble Hospital, and contained the hospital's Post Exchange. The building has a symmetrical primary (east) façade with flush-steel double doors at center, which are surmounted by a non-historic wood canopy supported by wood posts and poured-in-place concrete steps. The entrance is flanked by a replacement aluminum-sash window at the south and a one-over-one wood-sash window at the north. The south façade features eight slightly large one-over-one wood-sash windows at even intervals, while the north façade features four similar windows.

Alterations: The only apparent alteration to this portion of the former Civic Center is the replacement of one wood-sash window with aluminum.

Historic Context: In 1943, the Civic Center at Dibble Hospital was constructed as a standard building for the Type-A general hospital. The Civic Center was a community hub for the hospital and provided a post office, post exchange, and banking branch. The sprawling building has since been divided into Buildings 301 and 302-CAF under its use by SRI.

Individual Evaluation:

Criterion 1: Building 301 is not individually significant under Criterion 1. This building originated as a portion of the Civic Center building at Dibble Hospital in 1943. Building 301 housed the hospital's Post Exchange office, while the Civic Center also housed a Post Office and a branch bank. The building's association with Dibble Hospital is most appropriately analyzed by considering it and Building 302-CAF as one entity, as those buildings comprised the former Civic Center. Overall, the Civic Center was a standard building and feature of Type-A general hospitals during World War II. Although an interesting feature of Dibble General Hospital, the Civic Center was one of the many component buildings of the hospital that supported its primary purpose as a medical facility, but the Civic Center does not appear to rise to a level of individual significance.

Under its use by SRI, Building 301 was adapted for use as offices, wet labs, and dry labs. However, historical research did not find that work conducted in Building 301 is individually significant in its own right.

Criterion 2: Building 301 is not individually significant under Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 301 is not individually significant under Criterion 3. Building 301 is a portion of the former Civic Center at Dibble General Hospital, which originally also included Building 302-CAF. The Civic Center was built according to standard plans and was a common building type constructed at Type-A general hospitals during World War II. The building's designed was distinguishable from the nearby wards and utilitarian warehouses, given its taller gabled profile and massing. Overall, the Civic Center's design did not represent a particular style, or an innovative architectural approach. The building's lack of features that represent an aesthetic ideal of a particular style indicates it does not possess high artistic values. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building is only one of many that the firm constructed at Dibble Hospital. The firm's work is represented by the various typologies it constructed during the general hospital's development.

Integrity: Not applicable, as this building is not identified as an individually significant resource.

Conclusion: Building 301 is not eligible for individual listing in the California Register under any criteria. Building 301 has not been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 301 is a not historical resource for the purposes of CEQA.

Building 302-CAF

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Dibble Hospital Civic Center

Brief Architectural Description: Building 302-CAF is a two-mass building comprised of a primary one-one-story gabled section that intersects a lower one-story rectangular section at the east. The lower one-story section wraps around Building 301 at the east and connects to Building 304 at the south. The building's gable roof is covered with built up materials and is trimmed with modest wood boards along the eave line. The one-story flat-roofed section of the building has composition roofing materials. The exterior is stucco, and the building is fenestrated with a mix of original wood-sash one-over-one windows and replacement aluminum windows, including aluminum box windows at the north façade.


Figure 125. North façade of the taller one-story gabled section, with main cafeteria entrance and replacement aluminum box windows (partially visible behind tree at left).


Figure 126. Detail view of replacement windows within the west gabled end of the building.


Figure 127. North façade of 302-CAF, looking south.

Alterations: Alterations to Building 302-CAF include: an addition along the north façade, between the original gabled section and the section with the flat roof; replacement of many windows and main entrance doors; and existing canopies at entrance locations do not appear to be original.

Historic Context: In 1943, the Civic Center at Dibble Hospital was constructed as a standard building the for the Type-A general hospital. The Civic Center was a community hub for the hospital and provided a post office, post exchange, and banking branch. The sprawling building has since been divided into buildings 302-CAF and 301 under its use by SRI.

Individual Evaluation:

Criterion 1: Building 302-CAF is not individually significant under Criterion 1. This building originated as a portion of the Civic Center building at Dibble Hospital in 1943. According to the 1945 map of Dibble Hospital, the portion of the Civic Center now assigned number 302-CAF was a location for the Red Cross, while the Civic Center also housed a Post Office, Post Exchange, and branch bank. The building's association with Dibble Hospital is most appropriately analyzed by considering it and Building 301 as one entity, as those buildings comprised the former Civic Center. Overall, the Civic Center was a standard building and feature of Type-A general hospitals during World War II. Although an interesting feature of Dibble General Hospital, the Civic Center was one of the many component buildings of the hospital that supported its primary purpose as a medical facility, but the Civic Center does not appear to rise to a level of individual significance.

Under its use by SRI, Building 302-CAF was adapted for use as a cafeteria. However, research did not find that work conducted in Building 301 is individually significant in its own right.

Criterion 2: Building 302-CAF is not individually significant under Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 302-CAF is not individually significant under Criterion 3. Building 302-CAF is a portion of the former Civic Center at Dibble General Hospital, which originally also included Building 301. The Civic Center was built according to standard plans and was a common building type constructed at Type-A general hospitals during World War II. The building's designed was distinguishable from the nearby wards and utilitarian warehouses, given its taller gabled profile and massing. Overall, the Civic Center's design did not represent a particular style, or an innovative architectural approach. The building's lack of features that represent an aesthetic ideal of a particular style indicates that it does not possess high artistic values.

G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building is only one of many that the firm constructed at Dibble Hospital. The firm's work is represented by the various typologies it constructed during the general hospital's development.

Integrity: Not applicable as this building is not identified as an individually significant resource.

Conclusion: Building 302-CAF is not eligible for individual listing in the California Register under any criteria. Building 302-CAF has not been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 302-CAF is not a historical resource for the purposes of CEQA.

Building 303

Date of Construction: ca. 1961 and later
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Possibly originated as a corridor between the Mess Hall and a nearby ward building. A historic aerial photograph indicates that this building is the result of an accretion of work since 1961.

Brief Architectural Description: Building 303 is a small one-story building with a generally rectangular plan and a flat roof. Building 303 abuts the east façade of Building 304 at its north end and houses offices and paint booths. The building has a linear section that extends southward on its east façade. The exterior is covered with stucco and fenestration is mixed, with divided lite wood-sash windows on the one-story east wing's east side and multiple loading docks and industrial steel doors throughout. The north end of the building has replacement aluminum-sash windows.

Figure 128. Stucco finish and typical divided-lite wood-sash windows along the east façade of the wing.

Figure 129. Vehicle bays at the south end of the wing extending southward from the east façade.

<u>Alterations:</u> This building has undergone extensive alterations since it was originally constructed as a connecting corridor. Aside from its east façade, which is covered with stucco and retains several wood windows, all other features appear to be the result of alterations that began ca. 1961.

<u>Historic Context:</u> Building 303 appears to have originated as one Dibble Hospital's above-ground connecting corridors that linked to ward buildings at the east and the Mess Hall and Civic Center buildings at the west. The corridor's stucco exterior and wood-sash windows are partially intact along the east façade of the building, while the building's roof and features along the west façade and its existing footprint result from successive alterations carried out ca. 1961 and later based upon aerial photographs. These alterations transformed a former corridor into a building housing offices and paint shops, and for storing materials beneath shed overhangs on the west façade, under SRI's use.

<u>Individual Evaluation:</u>

Criterion 1: Building 303 is not individually significant under Criterion 1. The building originated as a corridor connecting the Mess Hall of Dibble Hospital to nearby ward buildings and has over time be adapted to use as an office space and paint shop for SRI. The building's roles in association with the hospital and SRI do not rise to a level of individual significance.

Criterion 2: Building 303 is not individually significant under Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 303 is not individually significant under Criterion 3. Building 303 originated in 1943 as one of many corridors used to connected various buildings at Dibble General Hospital. Beginning ca. 1961, the corridor began to be altered to accommodate paint shop and office uses by SRI. The building's design does not represent a particular style, building type, or work of a particular designer. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building is only one of many that the firm constructed at Dibble Hospital. The firm's work is represented by the various typologies it constructed during the general hospital's development.

Integrity: Not applicable, as this building is not identified as an individually significant resource.

Conclusion: Building 303 is not eligible for individual listing in the California Register under any criteria. Building 303 has not been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 303 is not a historical resource for the purposes of CEQA.

Building 304

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co., General Contractor
Type/Function: Mess Hall

Brief Architectural Description: Building 304 is a one-story, wood-frame building with a concrete foundation, stucco exterior, and a flat roof covered with composition materials and monitors. Building 304 originated as the northern section of the Mess Hall built at the center of the Dibble Hospital complex. The building's south façade features several loading docks, with fenestrated bays near the southwest and southeast corners that contain original 12-over-12 divided-lite wood-sash windows arranged in pairs. The building remains connected physically to the south side of Building 302-CAF and the north side of Building 306. The roof originally featured three separate monitors, one at the east, one at center, and one at the west. The center monitor has been removed and replaced by the existing telescope tower that rises above the building.

Figure 130. Connecting section between Building 304 and Building 306 (right)

Figure 131. Detail view of the telescope tower centered on Building 304’s roof.

Alterations: The south façade appears to have been altered by infilling some loading docks and infilling and painting over some windows. The roof has been altered by the removal of one monitor section to accommodate the existing telescope tower. The east façade has been joined to Building 303.

Historic Context: Building 304 is now considered to be a distinct building by SRI, but originated as the north half of the Mess Hall at the center of the Dibble Hospital complex, with Building 306 formerly the south half of the Mess Hall. The Mess Hall served patients at the hospital between 1943 and 1946. After, SRI converted the building for use as offices, wet labs, and dry labs.

Individual Evaluation:

Criterion 1: Building 304 is not individually significant under Criterion 1. The building originated as a section of the Mess Hall at Dibble Hospital and has since been adapted to use as offices, wet labs, and dry labs for SRI. The building’s association with Dibble Hospital is most appropriately analyzed by considering it and Building 306 as one entity, as those buildings comprised the former Mess Hall. Overall, the Mess Hall was a standard building and feature of Type-A general hospitals during World War II. The Mess Hall was one of the many component buildings of the hospital that supported its primary purpose as a medical facility, but the Mess Hall does not appear to rise to a level of individual significance.

Under its use by SRI, Building 304 was adapted for use as offices, wet labs, and dry labs. However, research did not find that work conducted in Building 304 is individually significant in its own right.

Criterion 2: Building 304 is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 304 is not individually significant under Criterion 3. The building originated as a section of the Mess Hall of Dibble Hospital and has since been adapted to use as offices, wet labs, and dry labs for SRI. The building was constructed according to standard architectural plans and represents only a section of the former Mess Hall at Dibble Hospital.

G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building was among many that they constructed at Dibble Hospital. The firm's work is represented by the various typologies they constructed during the general hospital's development, rather than any specific building.

Integrity: Not applicable, as this building is not identified as an individually significant resource.

Conclusion: Building 304 is not eligible for individual listing in the California Register under any criteria. Building 304 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 304 is a historical resource for the purposes of CEQA.

Building 305

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co., General Contractor
Type/Function: Ward

Brief Architectural Description: Building 305 is one-story, wood-frame building set on a concrete foundation and capped by a gable roof with asphalt shingles. The exterior is stucco, and fenestration includes original six-over-six wood-sash windows as well as tripartite windows with six-over-six outer sash and eight-over-eight center sash; all are double-hung. The primary façade retains its solarium porch glazing; however, this building is distinct compared to Buildings 201-205 in that it features divided clerestory lites, which have been painted to block out sunlight. The rear porch has been infilled, except for three windows at the rear of the east façade. Each gabled end has a louvered vent, and the building features roof top monitor vents. The west façade features a one-story horizontal addition with wood sheeting along the exterior and a long ribbon window.

Figure 132. West façade of Building 305, looking southeast.

Figure 133. South (rear) façade and east façade of Building 305.

Alterations: Alterations to Building 305 include: painting over of divided lite clerestory windows at the front façade; rear façade windows have been infilled and the double doors at the rear entrance appear are replacements. Additionally, the front canopy and stairs and rear stairs are not original. There is also a rectangular, horizontal addition off the west façade.

Historic Context: Refer to context for wards discussed for Buildings 201-205.

Individual Evaluation:

Criterion 1: Building 305 is not significant under Criterion 1. The building was used as a ward according to the 1945 Dibble Hospital map, but potentially originated as a barrack. The wards as a group and as a component of the larger general hospital complex contributed to the provision of medical care and rehabilitation that occurred at Dibble Hospital between 1943 and 1946. Although the wards supported the hospital's mission, they were one component within the process of medical care, rehabilitation, and convalescence that was carried out across the facility in clinics and wards, and managed by administration.

Under SRI's use, Building 305 was adapted to house offices and a wood shop, which are not strongly representative of SRI's significance. Work carried out in this building has not been found to rise to a level of individual significance within the context of SRI's development and scientific achievements.

Criterion 2: Building 305 is not individually significant under Criterion 2. This building functioned with a similar purpose to other wards, serving the hospital's provision of medical care and rehabilitation. Numerous medical staff, nurses, surgeons, and other staff served patients in the ward buildings. No individuals are known to have made contributions to the work in the any of the ward buildings that stand out more than any other.

Criterion 3: Building 305 is not individually significant under Criterion 3. This building was designed according to standard U.S. Army plans and were built by G.W. Williams Co. The building was used as a ward according to the 1945 Dibble Hospital map, but potentially originated as a barrack, based on its slightly different glazing at its primary north façade. Nonetheless, this building and the nearby Building 309 were connected to similar since-demolished wards. Building 305 is not individually distinct, relative to the other wards and converted barracks that formed the group of 39 wards at Dibble Hospital. This building does not possess high artistic values or represent a particular style as it was designed as very modest and economical temporary building. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, the ward buildings were among many that they constructed at Dibble Hospital, which is represented by the various typologies they constructed during the general hospital's development. None of the alterations undertaken during the use of building are significant.

Integrity: Not applicable, as these buildings are not identified as individually significant resources.

Conclusion: Building 305 is not eligible for individual listing in the California Register under any criteria and has not been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 305 is not a historical resource for the purposes of CEQA.

Building 306

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Mess Hall

Brief Architectural Description: Building 306 is a one-story, wood-frame building with a generally rectangular footprint, which is joined by a one-story connector to Building 304. These connected buildings originally functioned as the Mess Hall for Dibble Hospital, but have separate uses for SRI. The exterior is finished with stucco along the south façade and plaster with wood battens along the majority of west façade. The northernmost portion of the west façade is set back and is covered with stucco. The roof is flat and is covered with built up materials. Windows are mostly replacement aluminum-sash and appear to be set in original openings along the south façade but in non-original openings along the east façade. The north façade and the recessed portion of the west façade retain original divided-lite windows and transom; however, doors are replacement flush steel.

Figure 134. West façade of Building 306.

<u>Alterations:</u> Most original windows and all doors have been replaced with metal sash windows. It also appears that new window openings have been inserted into the south façade.

<u>Historic Context:</u> Building 306 is now considered to be a distinct building by SRI, but originated as the south half of the Mess Hall at the center of the Dibble Hospital complex, with Building 304 forming the north half of the Mess Hall. The Mess Hall served patients of the hospital between 1943 and 1946. Later, SRI converted the building for use as offices, wet labs, and dry labs.

<u>Individual Evaluation:</u>

Criterion 1: Building 306 is not individually significant under Criterion 1. The building originated as a section of the Mess Hall of Dibble Hospital and has since been adapted to use as offices, wet labs, and dry labs for SRI. The building's association with Dibble Hospital is most appropriately analyzed by considering it and Building 304 as one entity. Overall, the Mess Hall was a standard building and feature of Type-A general hospitals during World War II. The Mess Hall was one of the many component buildings of the hospital that supported its primary purpose as a medical facility, but the Mess Hall does not appear to rise to a level of individual significance.

Under its use by SRI, Building 306 was adapted for use as offices, wet labs, and dry labs. However, historical research did not find that work conducted in Building 306 is individually significant in its own right.

Criterion 2: Building 306 is not individually significant under Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 306 is not individually significant under Criterion 3. The building was constructed according to standard architectural plans and represents only a section of the former Mess Hall at Dibble Hospital. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building was among many that they constructed at Dibble Hospital. The firm's work is represented by the various typologies they constructed during the general hospital's development, rather than any specific building.

Integrity: Not applicable as this building is not identified as an individually significant resource.

Conclusion: Building 306 is not eligible for individual listing in the California Register under any criteria. However, Building 306 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 306 is a historical resource for the purposes of CEQA.

Building 307

Date of Construction: 1992
Architect/Builder: Kimbrell Architects, Inc
Type/Function: Office, dry labs, and storage.

Brief Architectural Description: Building 307 is a one-story high bay building with an approximately square footprint and a flat roof. The walls are clad in corrugated metal siding. The building has fixed and slider windows. Pedestrian doors have hollow metal doors, and a high bay opening on the south façade has a vehicle ramp and is covered with a plastic strip curtain. The primary entrance is located within a projecting vestibule on the north façade. Extensive mechanical equipment is located along the exterior north façade.

Alterations: No documented exterior alterations were noted during the course of research.

Historic Context: Building 307 is the most recent new building constructed on the SRI International campus. The building as originally constructed appears to have included a machine shop, magnet/MRI rooms, a computer room, control rooms, and offices.

Individual Evaluation:

Criterion 1: Building 307 is not individually eligible under Criterion 1. Built in 1992, the building is the most recently constructed new building on the SRI International campus. While the building is associated with MRI research, at only 29 years old, insufficient time has passed to understand the potential historical importance of the scientific contributions to research that occurred in Building 307 for individual eligibility for listing in the California Register. Building 307 has not significantly contributed individually to the broad patterns of local, state, or national history.

Criterion 2: Building 307 is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 307 is a utilitarian industrial building that lacks any architectural style. Kimbrell Architects have not been identified as a master architect, and the building does not possess high artistic values. Therefore, Building 307 is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building 307 is not eligible for individual listing in the California Register under any criteria. However, Building 307 is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 307 is a historical resource for the purposes of CEQA.

Building 309

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Ward (potentially converted from a barrack)

Brief Architectural Description: Building 309 appears to have been built in 1943 as a barrack based upon its lack of end solariums, but was converted to patient ward by 1945, per the 1945 Dibble Hospital map. The building is set on a concrete foundation, has a wood frame, and is capped by a gable roof covered with asphalt shingles. This building features a typical linear plan but is no longer connected to any adjacent wards by a corridor.

Figure 135. South end of Building 309, looking northwest

Figure 136. East façade of Building 309, looking northwest.

Alterations: All original wood-sash windows have been replaced by one-over-one aluminum sash within original wood-frame openings. The entrance at the north end features flush double-doors with a single upper lite, and a non-historic canopy. The rear entrance has been altered with non-historic flush-steel double doors and the original transom has been infilled. A non-historic wood deck is built off of the rear wall of the building.

Historic Context: Refer to context for wards discussed for Buildings 201-205.

Individual Evaluation:

Criterion 1: Building 309 is not individually significant under Criterion 1. The building was used as a ward according to the 1945 Dibble Hospital map, but potentially originated as a barrack. The wards as a group and as a component of the larger general hospital complex contributed to the provision of medical care and rehabilitation that occurred at Dibble Hospital between 1943 and 1946. Although the wards supported the hospital's mission, they were one component within the process of medical care, rehabilitation, and convalescence that was carried out across the facility in clinics and wards, and managed by administration.

Under SRI's use, Building 309 was adapted to house offices, dry labs, and storage, which contribute to SRI's significance. However, work carried out in this building has not been found to rise to a level of individual significance within the context of SRI's development and scientific achievements.

Criterion 2: Building 309 is not significant under Criterion 2. This building functioned with a similar purpose to other wards, serving the hospital's provision of medical care and rehabilitation. Numerous medical staff, nurses, surgeons, and other staff served patients in the ward buildings. No individuals are known to have made contributions to the work in the any of the ward buildings that stand out more than any other.

Criterion 3: Building 309 is not individually significant under Criterion 3. This building was designed according to standard U.S. Army plans and were built by G.W. Williams Co. The building was used as a ward according to the 1945 Dibble Hospital map, but potentially originated as a barrack, based on its slightly different glazing at its primary north façade. Nonetheless, this building and the nearby Building 305 were connected to similar since-demolished wards. Building 309 is not individually distinct, relative to the other wards and converted barracks that formed the group of 39 wards at Dibble Hospital. This building does not possess high artistic value for representing the artistic ideal of a particular style as it was designed as very modest and economical temporary building without features that represented a particular style. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, the ward buildings were among many that they constructed at Dibble Hospital, which is represented by the various typologies they constructed during the general hospital's development.

Integrity: Not applicable as this building is not identified as an individually significant resource.

Conclusion: Building 309 is not eligible for individual listing in the California Register under any criteria. However, Building 309 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 309 is a historical resource for the purposes of CEQA.

Building 320

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Receiving and Evacuation Building

Brief Architectural Description: Building 320 is one-story high across its L-shaped plan, built on a concrete foundation, and is capped by a flat roof covered with built up materials. The east façade of the main rectangular section has an entrance with a canopy formed by an eave extension that is supported by wood posts. The remainder of the building's exterior is fenestrated with rectangular windows. Openings along the north and west façades contain original wood-sash divided-lite windows in most locations. Windows along the south and east façades have replacement aluminum sash.

Figure 137. Primary (east) façade of Building 320

Figure 138. East façade of Building 320's addition that connects to Building 304.

Alterations: Building 320 was illustrated as a building with a rectangular plan on the 1945 Dibble Hospital map, but also featured a narrow connecting corridor to the Mess Hall and Civic Center that ran north-south. Thus, the building's existing L-shaped footprint results from the combination of the original rectangular building corridor and the conversion of a former connecting corridor to a building use. This building retains some original divided-lite wood-sash windows, with replacement windows located along the south and east facades.

Historic Context: Building 320 was built in 1943 and served as a receiving and evacuation building at Dibble Hospital. This building was located to the southwest of the Mess Hall and Civic center, near the center of the hospital complex. Building 320 would have been a place of arrival and departure for patients who were being checked into the complex, returning from a furlough, or leaving the complex for a furlough or discharge. After the hospital's closure in 1946, this building was adapted for use as offices and dry labs by SRI.

Individual Evaluation:
Criterion 1: Building 320 does not appear to be individually significant under Criterion 1. The building was used as Dibble Hospital's Receiving and Evacuation building, a standard feature of Type-A general hospitals. Although the building contributed to the hospital's day-to-day operations related to medical care, by receiving and evacuating patients, its purpose was not more important than other buildings contributing to the hospital's operations and provision of medical care.

Under SRI's use, Building 320 was adapted to house offices and dry labs, which contribute to SRI's significance. However, work carried out in this building has not been found to rise to a level of individual significance within the context of SRI's development and scientific achievements.

Criterion 2: Building 320 is not individually significant under Criterion 2. This building functioned with a similar purpose to other wards, serving the hospital's provision of medical care and rehabilitation. Numerous medical staff, nurses, surgeons, and other staff served patients in the ward buildings. No individuals are known to have made contributions to the work in the any of the ward buildings that stand out more than any other.

Criterion 3: Building 320 is not individually significant under Criterion 3. This building was designed according to standard U.S. Army plans and were built by G.W. Williams Co. The building was used as a ward according to the 1945 Dibble Hospital map, but potentially originated as a barracks, based on the slightly different glazing at its primary north façade. Building 320 is not individually distinct, relative to the other wards and converted barracks that formed the group of 39 wards at Dibble Hospital. This building does not possess high artistic values for representing a particular style, as it was designed as a very modest and economical temporary building. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, Building 320 was among many that it constructed at Dibble Hospital. The firm's work is represented by the various typologies it constructed during the hospital's development, rather than any specific building.

Integrity: Not applicable as this building is not identified as an individually significant resource.

Conclusion: Building 320 is not eligible for individual listing in the California Register under any criteria. However, Building 320 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 320 is a historical resource for the purposes of CEQA.

Building 402/404

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Warehouse

Brief Architectural Description: Building 402/404 is a one-story, wood-frame warehouse with a generally rectangular plan set on a concrete foundation. The building is capped by a flat roof with composition materials, a narrow metal fascia, and short overhang. A small wood-frame addition is located at the northwest corner. The primary façade features a non-original single-entry steel door with a single lite to the east, two bays containing tall 12-over-12 and nine-over-nine wood-sash, and single-hung windows with wood frames and wood sills. An entrance with paneled wood double doors and a tall transom above is set into the center of the façade. The doors and transom have non-historic metal screens for glass protection. An eave extension supported by wood posts and a lintel forms an entrance canopy. The east façade retains 12-over-12 wood-sash windows spaced at even intervals along its length.

Alterations: Minor screen alterations have occurred at the main entrance doors and transom. A small, shed addition has been added to the northwest corner of the building.

Historic Context: As illustrated on the 1945 Dibble Hospital map, the complex included four warehouses. These warehouses were situated toward the perimeter of the site, between recreation areas and the hospital's Power Plant (Building 412). Building 402/404 appears to be the most intact of the former warehouse buildings, which are currently assigned building numbers 402/404, 406, and 408. Building 410 (demolished in 2003) was the fourth warehouse. These warehouse buildings were standard components of a general hospital complex, and were situated close to nearby rail lines that would have served the hospital, and provided for convenient and efficient stocking and storage of supplies.

Figure 139. Bird's-eye view of the 400 group buildings from a larger photograph of the SRI International campus, circa 1988-92. Building 410 was demolished in 2003. Source: SRI International facilities.

Individual Evaluation:

Criterion 1: Building 402/404 is not individually significant under Criterion 1. The building is not directly associated with events that have made a significant contribution to research and development at Dibble General Hospital or SRI or to the broad patterns of local, state, or national history. The building was built as warehouse for Dibble General Hospital and is the most intact of the four warehouse buildings constructed for the hospital in 1943, with two heavily altered and one demolished. Storage of various supplies was common at military installations and does not stand out as a significant aspect of the building's history. The building was adapted for use as offices and dry labs by SRI. Although the building contributes to SRI's significance, the building is not individually linked to significant events at the SRI campus.

Criterion 2: Building 402/404 is not individually significant under Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 402/404 is not individually significant under Criterion 3. This building was designed according to standard U.S. Army plans and was one of three warehouses at Dibble Hospital built by G.W. Williams Co. The warehouses were designed as utilitarian buildings without distinct stylistic features beyond their divided-lite wood-sash windows, which were common to Colonial Revival style buildings, but ubiquitous throughout the hospital complex and military hospitals generally. Building 402/404 does not represent an individually distinct example of a type, period, style, or method of construction and does not possess high artistic value. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building was among many that they constructed at Dibble Hospital and is not an individually important example of their work, which is represented more strongly by the various typologies they constructed during the general hospital's development.

Integrity: Not applicable as this building is not identified as an individually significant resource.

Conclusion: Building 402/404 is not eligible for individual listing in the California Register under any criteria. However, Building 402/404 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 402/404 is a historical resource for the purposes of CEQA.

Building 405

Date of Construction: c.1948-56[190]
Architect/Builder: Unknown
Type/Function: Offices and dry labs.

Brief Architectural Description: Building 405 is a one-story reinforced concrete block building with a flat roof with no eaves. The footprint of Building 405 is composed of two offset rectangles. The west façade of the front (north) portion of Building 405 abuts Building 406 and is connected to Building 406 via an interior corridor. A rear corridor on the south façade of Building 405 connects to Buildings 406 and 404. Mechanical equipment is attached to the exterior of the north and east façade, and visible on the roof. A hollow metal entrance door is located on the north façade.

Alterations: The rear (south) rectangular portion of the building is the original portion of Building 405. A rectangular addition was constructed sometime between 1982 and 1987 on the north side of

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[190] Building 409 is not visible on a 1948 aerial photograph, but is shown on a 1956 aerial photograph; NETROnline, “Historic Aerials,” accessed online July 30, 2021, https://www.historicaerials.com/viewer.

Building 405; this addition is the portion that abuts Building 406.[191] No original architectural drawings are available for Building 405, so the full extent of any other alterations is not known. *Historic Context:* Building 405 was constructed during an early period of development on the SRI campus, when SRI was still only occupying former Dibble General Hospital buildings at Stanford Village. It appears to have been an ancillary building. The original use and occupants of Building 405 were not established during the course of research. **(Figure 139)**

Individual Evaluation:
Criterion 1: Building 405 is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI or to the broad patterns of local, state, or national history. The building appears to have been built by SRI for an ancillary use while SRI occupied former Dibble General Hospital 400 group buildings, and does not rise to the level of individual eligibility based on its association with SRI.

Criterion 2: Building 405 is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 405 is a modest industrial building that lacks any architectural style and has been altered. The builder is unknown and therefore cannot be said to be a master architect, and the building does not possess high artistic values. Therefore, Building 405 is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building 405 is not eligible for individual listing in the California Register under any criteria. Building 405 is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 405 is a historical resource for the purposes of CEQA.

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[191] NETROnline, "Historic Aerials," accessed online July 30, 2021, https://www.historicaerials.com/viewer.

Building 406

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Warehouse

Brief Architectural Description: Building 406 is a one-story, wood-frame warehouse with a generally rectangular plan set on a concrete foundation. The building is capped by a flat roof with composition materials, a narrow metal fascia and short overhang. The building's original rectangular footprint was altered by the addition of Building 405. A small wood-frame addition is located at the northwest corner. The primary façade has been heavily modified, with original openings infilled. A single-entry flush steel door is located near the center of the façade. The west façade features a steel-frame shed addition, which covers an outdoor storage area.

Alterations: The primary façade's original fenestration has been completely infilled and the building's original footprint is no longer discernable, due to the addition of Building 405.

Historic Context: Refer to context provided for Building 402/404.

Individual Evaluation:
Criterion 1: Building 406 is not individually significant under Criterion 1. The building is not directly associated with events that have made a significant contribution to research and development at

Dibble General Hospital or SRI or to the broad patterns of local, state, or national history. The building was constructed as a warehouse for Dibble General Hospital in 1943. Storage of various supplies was common at military installations and does not stand out as a significant aspect of the building's history. The building was adapted for use as offices and dry labs by SRI and contributes to SRI's significance, but it is not individually linked to significant events at the SRI campus.

Criterion 2: Building 406 is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 406 is not individually significant under Criterion 3. This building was designed according to standard U.S. Army plans and was one of three warehouses at Dibble Hospital built by G.W. Williams Co. The warehouses were designed as utilitarian buildings without distinct stylistic features beyond their divided-lite wood-sash windows, which were common to Colonial Revival style buildings, but ubiquitous throughout the hospital complex and military hospitals generally. Building 406 does not represent an individually distinct example of a type, period, style, or method of construction and does not possess high artistic value. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building was among many that they constructed at Dibble Hospital and is not an individually important example of their work, which is represented more strongly by the various typologies they constructed during the general hospital's development.

Integrity: Not applicable as this building is not identified as an individually significant resource.

Conclusion: Building 406 is not eligible for individual listing in the California Register under any criteria. However, Building 406 has been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 406 is a historical resource for the purposes of CEQA.

Building 408

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Warehouse

Brief Architectural Description: Building 408 is a one-story, wood-frame building set on a concrete foundation. The building is capped by a flat roof with a short overhang, narrow metal fascia and composition roofing materials. The building has a generally rectangular plan, with longer west and east façades. Building 409 is adjoined to Building 408 near the center Building 408's west façade. The exterior is stucco and the primary north façade contains two double-door openings with replacement flush-steel double doors set beneath transoms with metal panels. Two former single-entry doors with divided lites set beneath transoms have been partially infilled with concrete and now function as windows. A shed addition is built off of the east façade.

Alterations: The primary façade has been altered with flush-steel double doors set beneath a transom and partially infilled single-entry doors. Windows along the west façade are aluminum-sash replacements and may be set in non-original openings.

Historic Context: Refer to context provided for Building 404.

Individual Evaluation:
Criterion 1: Building 408 is not individually significant under Criterion 1. The building is not directly associated with events that have made a significant contribution to research and development at Dibble General Hospital or SRI or to the broad patterns of local, state, or national history. The

building was built as warehouse for Dibble General Hospital in 1943. Storage of various supplies was common at military installations and does not stand out as a significant aspect of the building's history. The building was adapted for use as a machine shop by SRI and but does not contribute to SRI's significance and is not individually linked to significant events at the SRI campus.

Criterion 2: Building 408 is not individually significant under Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 408 is not individually significant under Criterion 3. This building was designed according to standard U.S. Army plans and was one of three warehouses at Dibble Hospital built by G.W. Williams Co. The warehouses were designed as utilitarian buildings without distinct stylistic features beyond their divided-lite wood-sash windows, which were common to Colonial Revival style buildings, but ubiquitous throughout the hospital complex and military hospitals generally. Building 408 does not represent an individually distinct example of a type, period, style, or method of construction and does not possess high artistic value. G.W. Williams Co. was a prominent general contracting firm along the San Francisco Peninsula during the mid-twentieth century; however, this building was among many that they constructed at Dibble Hospital and is not an individually important example of their work, which is represented more strongly by the various typologies they constructed during the general hospital's development.

Integrity: Not applicable as this building is not identified as an individually significant resource.

Conclusion: Building 408 is not eligible for individual listing in the California Register under any criteria and has not been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 408 is not a historical resource for the purposes of CEQA.

Building 409

Date of Construction: c.1948-56[192]
Architect/Builder: Paul James Huston
Type/Function: Offices and dry labs

Brief Architectural Description: Building 409 is a two-story, rectangular plan building with a flat roof and no eaves. The wood frame building is clad in stucco and has some interior structural steel bracing and one section of the south façade first story wall is reinforced concrete block. The building has large metal doors and non-original hung and sliding vinyl sash windows.

Alterations: Based on comparison with original architectural drawings, alterations include vinyl sash windows that replaced original aluminum sash windows, altered and infilled window openings, added mechanical equipment at the exterior facades, added vertical supports below some window awnings; and added awnings at doorway openings. The doorway on west façade was once an open corridor connecting to Building 410, which was demolished in 2003.[193]

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[192] Building 409 is not visible on a 1948 aerial photograph, but is shown on a 1956 aerial photograph; NETROnline, "Historic Aerials," accessed online July 30, 2021, https://www.historicaerials.com/viewer. Original architectural drawings on file at SRI International Facilities do not have dates.
[193] Google Earth Pro, historic aerial imagery.

Historic Context: Building 409 was originally constructed as an addition between Buildings 408 and 410, and housed offices, a library, and instrument repair & supply room. Building 409 was constructed during an early period of development on the SRI campus, when SRI was still only occupying former Dibble General Hospital buildings at Stanford Village. The adjacent Building 410, since demolished, housed the engineering department in December 1956, which was later moved to the purpose-built Engineering Building, Building E. **(Figure 139)**

Individual Evaluation:
Criterion 1: Building 409 is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI or to the broad patterns of local, state, or national history. The building was constructed as an addition to Dibble General Hospital era Buildings 408 and 410. Building 410 housed the engineering department before it was moved to a purpose-built building, Building E, in the 1960s. The building does not rise to the level of individual eligibility based on this association.

Criterion 2: Building 409 is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 409 is a modest industrial building that lacks any architectural style and has been substantially altered. Paul James Huston has not been identified as a master architect, and the building does not possess high artistic values. Therefore, Building 409 is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: Building 409 is not eligible for individual listing in the California Register under any criteria. Building 409 is a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 409 is a historical resource for the purposes of CEQA.

Building 412

Date of Construction: 1943
Architect/Builder: U.S. Army/G.W. Williams Co.
Type/Function: Steam Power Plant

Brief Architectural Description: Building 412 is an approximately three-story, reinforced-concrete building with a rectangular plan and a low-wide roof with moderate overhang. The building features an octagonal stack adjacent to its east facade, which rises above the height of the building's roof. A lower, roughly two-story section is built off of the rear (south) side of the building. The exterior is concrete. Wood double-doors with wood framed in a chevron pattern are located at the north and east façades, with vertical wood siding placed above the entrances and extending to the roofline. The upper level features four circular vents with louvers at the south façade and two similar vents at the north façade. Historic aerials from 1945 indicate that these vents are alterations.

Alterations: Circular vents at north and south façade do not appear in historic photographs of the building (aerials) from the 1940s. The satellite dish to the east of the building does not appear to be original to the site.

Historic Context: Building 412 was built to provide steam power to the Dibble Hospital complex in 1943. Steam power plants were standard specified buildings for such installations, which relied on a system of conduits that ran in corridors between and within the hospitals buildings. The plant was positioned near the southwest perimeter of the complex, near other utilitarian buildings such as the warehouses, and was the only building in the complex that required a more permanent method of construction, concrete, given its industrial use.

Individual Evaluation:
Criterion 1: Building 412 is not individually significant under Criterion 1. The building was among the standard specified buildings for general hospitals built during World War II. Although the building's purpose was important for the provision of power at the hospital, it has not been found to have been an individually significant example of a steam power plant for its contribution to the hospital's operations or for being associated with advancement in military technology or power technology during World War II. The building's role after 1947 was not directly associated with the scientific research and development work of SRI and is not significant for association with SRI.

Criterion 2: Building 412 is not individually significant under Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: Building 412 is not individually significant under Criterion 3. Building 412 was built in 1943 as a standard military building typology, a steam power plant, and was constructed by G.W. Williams Co. per standard plans. Although the building stands out on the property for being the only World War II era building constructed on concrete and with a distinctive three-story form, it does not represent distinctive characteristics of a type, period, or method of construction, or represent the work of a master, as it was produced according to standard plans. Research did not find that the building's design was innovative or influential, relative to other steam power plants built during World War II.

Integrity: Not applicable as this building is not identified as an individually significant resource.

Conclusion: Building 412 is not eligible for individual listing in the California Register under any criteria and has not been identified as a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, Building 412 is a not historical resource for the purposes of CEQA.

Greenhouse

Date of Construction: circa mid- to late-1980s.
Architect/Builder: Unknown
Type/Function: Greenhouse and storage.

Brief Architectural Description: The greenhouse is a rectangular building with a concrete block foundation and steel frame gambrel roof with a plastic or polycarbonate sheathing to allow in light. Operable skylights are located near the roof ridge to moderate airflow. Behind (east) of the greenhouse is an associated wood storage shed with a low gable roof.

Alterations: No substantial documented exterior alterations were noted during the course of research.

Historic Context: The greenhouse was built in the 1980s, sometime after 1981 and before 1989. While utilized by SRI employees, the greenhouse does not appear to have ever served any significant function directly related to research and development activities.

Individual Evaluation:
Criterion 1: The greenhouse is not individually eligible under Criterion 1 because it is not directly associated with events that have made a significant contribution to research and development at SRI

or to the broad patterns of local, state, or national history. The greenhouse serves an ancillary function to the primary research and development of SRI International.

Criterion 2: The greenhouse is not individually significant under California Register Criterion 2 for being directly associated with the lives of persons significant in our past. There are no prominent individuals who were identified as being instrumental to the function of this building.

Criterion 3: The greenhouse is a utilitarian building that was designed and constructed by unknown builders, lacks an architectural style, and does not possess high artistic values. Therefore, the greenhouse is not individually eligible under Criterion 3.

Integrity: Not applicable, since not individually significant under any criteria.

Conclusion: The greenhouse is not eligible for individual listing in the California Register under any criteria. The greenhouse is not a contributor to the California Register-eligible SRI International Historic District; refer to **Section VI. Historic District Evaluations** for additional information. Therefore, the greenhouse is not a historical resource for the purposes of CEQA.

Structures & Designed Landscape Features

Evaluation of individual trees as potential heritage trees is beyond the scope of this report. The following table includes permanent or long-standing semi-permanent structures and landscape features on the SRI International campus. Of the numerous parking lots on the campus, only the main employee parking lot is discussed, as it was the only parking lot identified during the course of historical research to be designed by a master landscaper architect. The tall ring of exhaust stacks is discussed with Building P, as it is integrated with the construction and design of that building; as is the surrounding designed landscape.

SRI International Monument

Location: South of Building I, on the brick median in the visitor parking lot west of Building A.
Designer/Builder: Unknown
Date of Construction: circa 1970

Square cube marble monument set on recessed footing such that it appears to hover. The inscription on metal cap reads "SRI INTERNATIONAL BUILDING DEDICATED TO THE PEACE AND PROSPERITY OF MANKIND."

Significance: Contributing feature to the SRI International California Register-eligible Historic District.

Main Employee Parking Lot

Location: South of Building 108, north of Buildings B, 202 and 204
Designer/Builder: Eckbo Kay Associates
Date of Construction: circa 1981-82

The main employee parking lot is an asphalt surface parking lot with painted parking stalls, and specimen trees planted in medians with concrete curbs. Two concrete paths meander across the parking lot from north to south.

Significance: None. The main employee parking lot is not an individual historic resource or a contributor to the SRI International California Register-eligible Historic District. The parking lot is not a distinctive example of the work of Eckbo Kay Associates and is not directly related with the significance of SRI International as a research and development institution.

Research Field

Location: West of Building M, southeast of Building L
Designer/Builder: SRI International
Date of Construction: Circa mid-1980s (after 1981 and before 1989)

Several former Dibble General Hospital buildings were demolished and the area was left open as a "research field," including for robotics which are tested on rough terrain.

Significance: The Research Field is a contributor to the SRI International California Register-eligible Historic District, but is not an individual historic resource.

Oak Park

Location: East of Building 205
Designer/Builder: Unknown
Date of Construction: circa early 1990s

Oak Park is a designed landscape with maintained lawns surrounding mature oak trees that predate the design of the park. Crushed aggregate curvilinear paths meander through the park to a volleyball court at the north end. Benches are located throughout.

Significance: None. Oak Park is not an individual historic resource or a contributor to the SRI International California Register-eligible Historic District. The landscape architect has not been identified and Oak Park has not contributed to the significant research at SRI International.

Satellite Dish

Location: West of Building 320.
Designer/Builder: Unknown
Date of Construction: circa 2000

The satellite dish does not appear to be a permanent feature or integral to significant research related to satellites, which appear to have generally occurred at earlier dates and included satellites in remote locations off the Menlo Park campus.

Significance: None. The satellite dish is not an individual historic resource or a contributor to the SRI International California Register-eligible Historic District.

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IX. APPENDICES

Appendix A – Preparer Qualifications

This Historic Resource Evaluation was prepared by Page & Turnbull of San Francisco, California. Page & Turnbull staff responsible for this report include Ruth Todd, FAIA, AICP, LEED AP, Principal-in-charge; Christina Dikas, Associate Principal, project manager; Hannah Simonson, Associate, Cultural Resources Planner, co-primary author; and Josh Bevan, Associate, Cultural Resources Planner, co-primary author, all of whom meet or exceed the Secretary of the Interior's Professional Qualification Standards for Historic Architecture, Architectural History, or History.

Appendix B – Historic Aerial Photographs

The following is a selection of available historic aerial photographs illustrating the development of the site over time. Some of these photographs are reproduced elsewhere in the report, but are repeated here to provide a visual sequence of development.

1930 Aerial

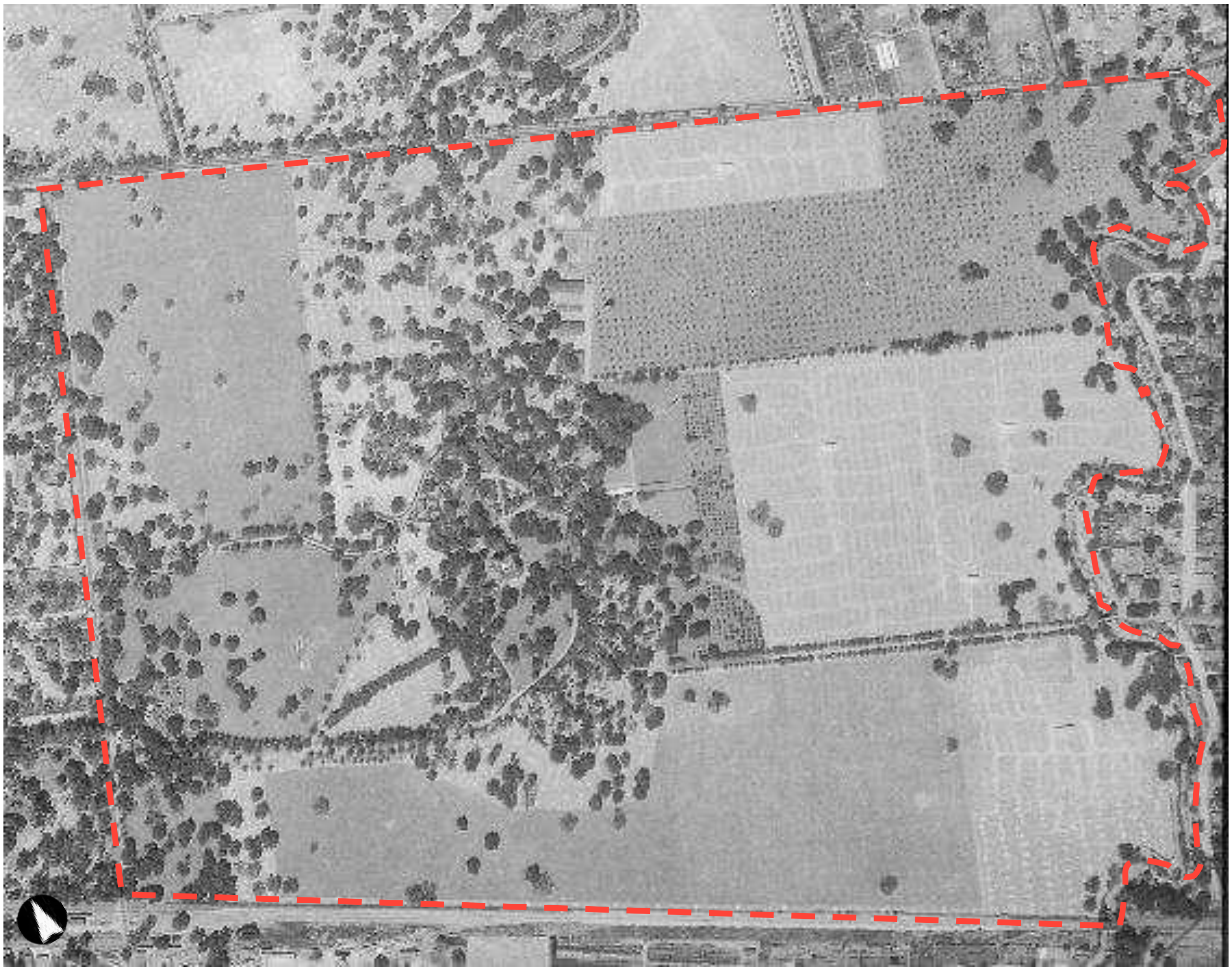


Figure 140: The Hopkins Estate captured by aerial photography, 1930. The approximate boundary of the property is indicated with a red dashed line. Source: Fairchild Aerial Surveys, Flight C-1025, Frame Z-125. UC Santa Barbara Special Collections, FrameFinder Database. Edited by Page & Turnbull.

1941 Aerial

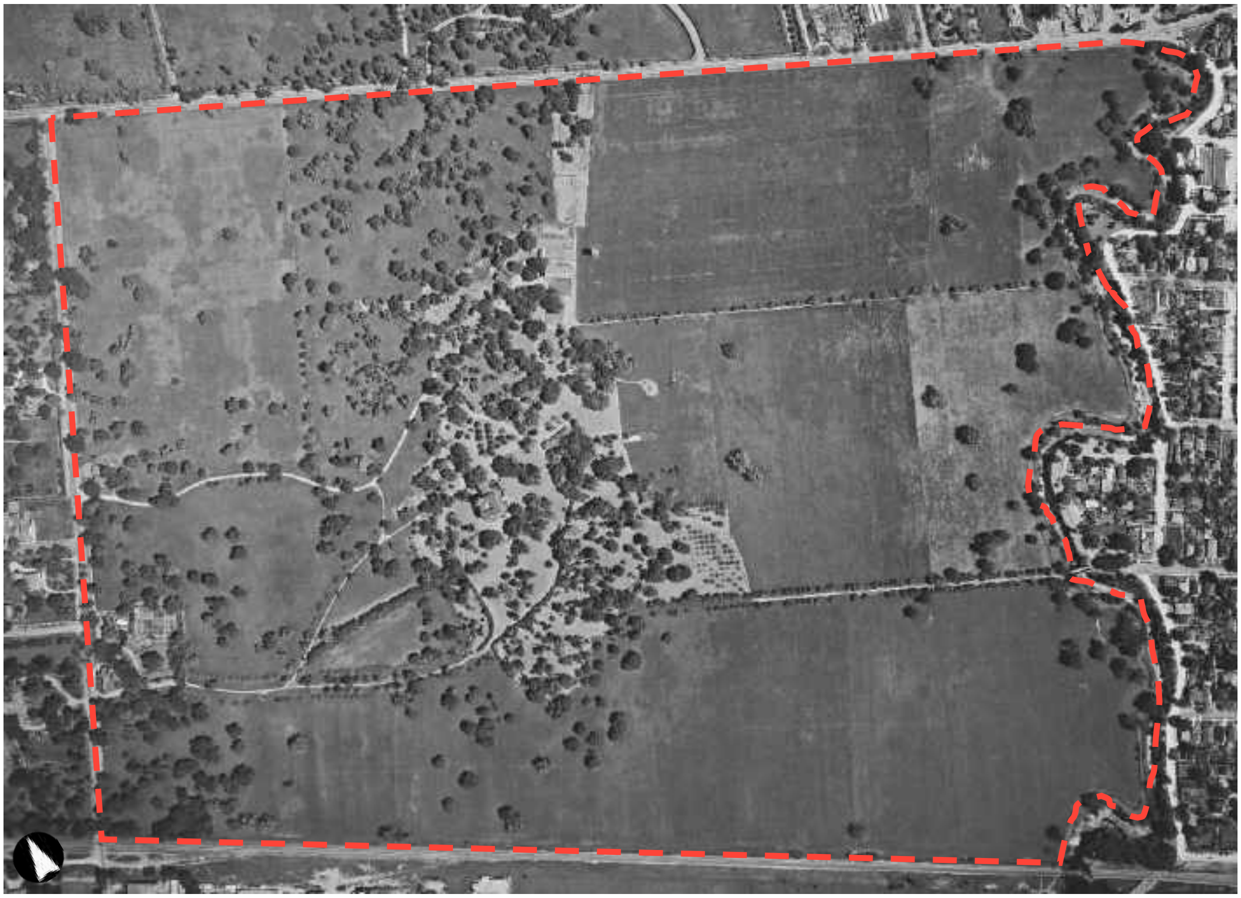


Figure 141: The Hopkins Estate captured by aerial photography during its final years of existence, 1941. The approximate boundary of the property is indicated with a red dashed line. Source: Fairchild Aerial Surveys Flight C-7065, Frame 128. UC Santa Barbara Special Collections, FrameFinder Database. Edited by Page & Turnbull.

1945 Aerial

Figure 142. Dibble General Hospital, September 1945. Middlefield road is at the top of the image, with Building 100 at the center, and Ravenswood Avenue is at the left. Source: U.S. National Library of Medicine.

1950 Aerial

Figure 143. Aerial view of Stanford Village, early 1950. During this period, the SRI also occupied some of the former Dibble buildings. Building 100 is at the center foreground. Source: Gibson, *SRI: The Take-Off Days*, 133.

1956 Aerial

Figure 144. Aerial photograph of Stanford Village, June 1956. During this period, the SRI also occupied some of the former Dibble buildings. Source: Aero Services Corp, Flight DDB-1956, Frame 3R-107, UC Santa Barbara FrameFinder. Edited by Page & Turnbull.

Circa 1958 Aerial

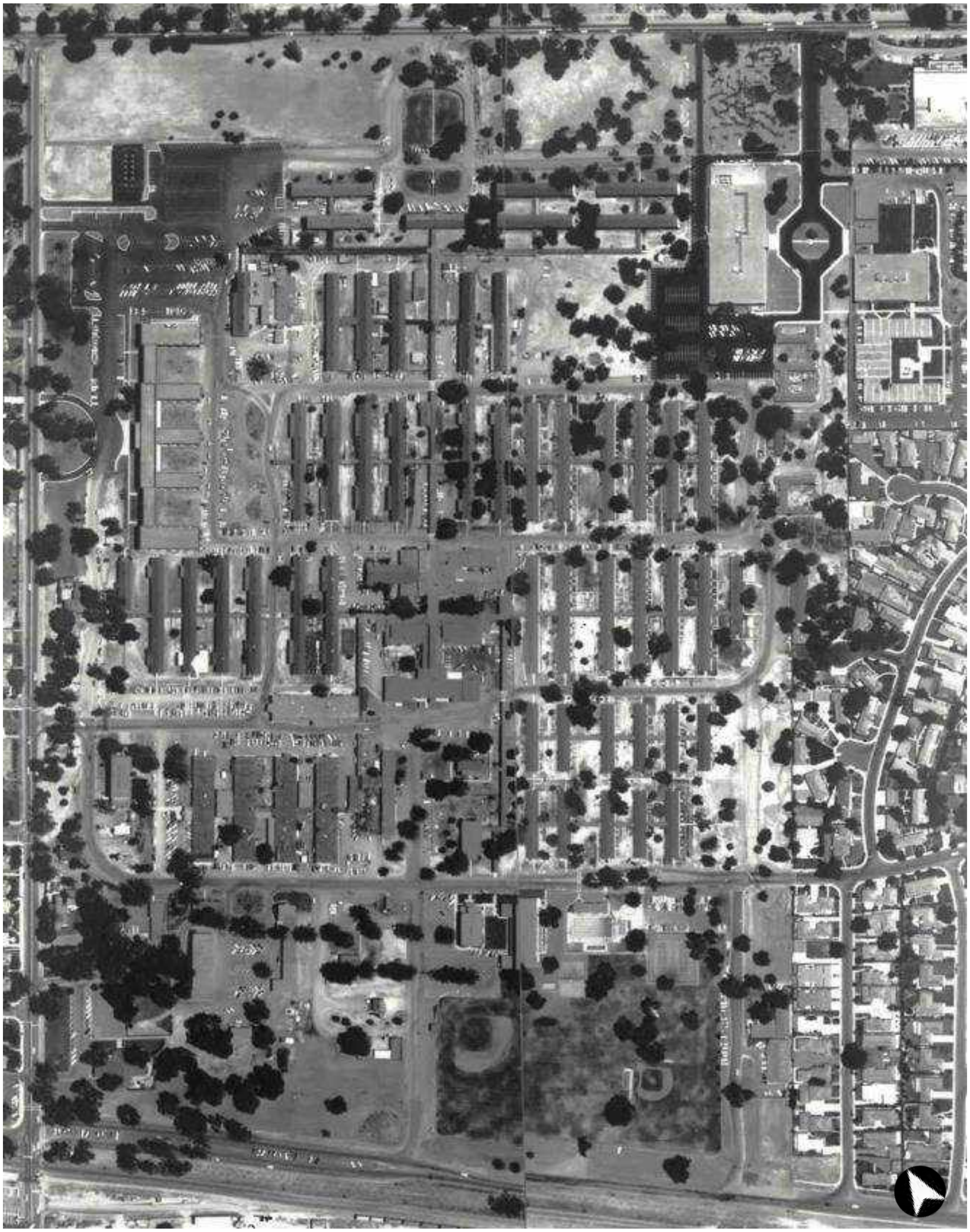


Figure 145. Aerial photograph of Stanford Research Institute and Stanford Village, circa 1958. The first phase of construction of Building A (left) is complete. Source: SRI International Facilities. Edited by Page & Turnbull.

1959 Aerial

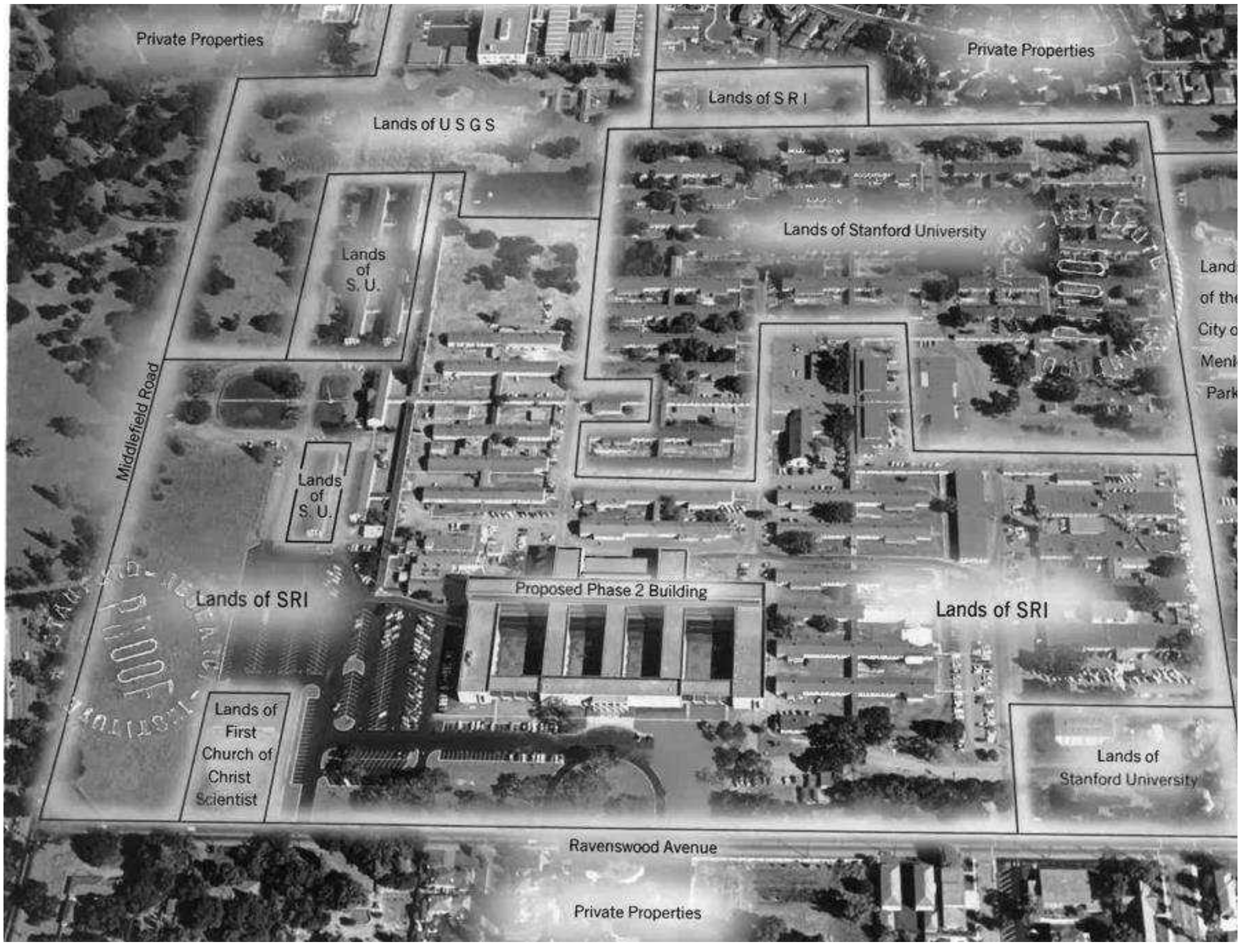


Figure 146. Bird's-eye view of the SRI campus and Stanford Village, 1959. Source: SRI International Facilities.

1960 Aerials

Figure 147. Bird's-eye view of Stanford Research Institute, May 1960. Source: SRI International Facilities.

Figure 148. Bird's-eye view of Stanford Research Institute, May 1960. Source: SRI International Facilities.

Figure 149. Bird's-eye view of Stanford Research Institute, May 1960. Source: SRI International Facilities.

Figure 150. Bird's-eye view of Stanford Research Institute, May 1960. Source: SRI International Facilities.

1968 Aerial

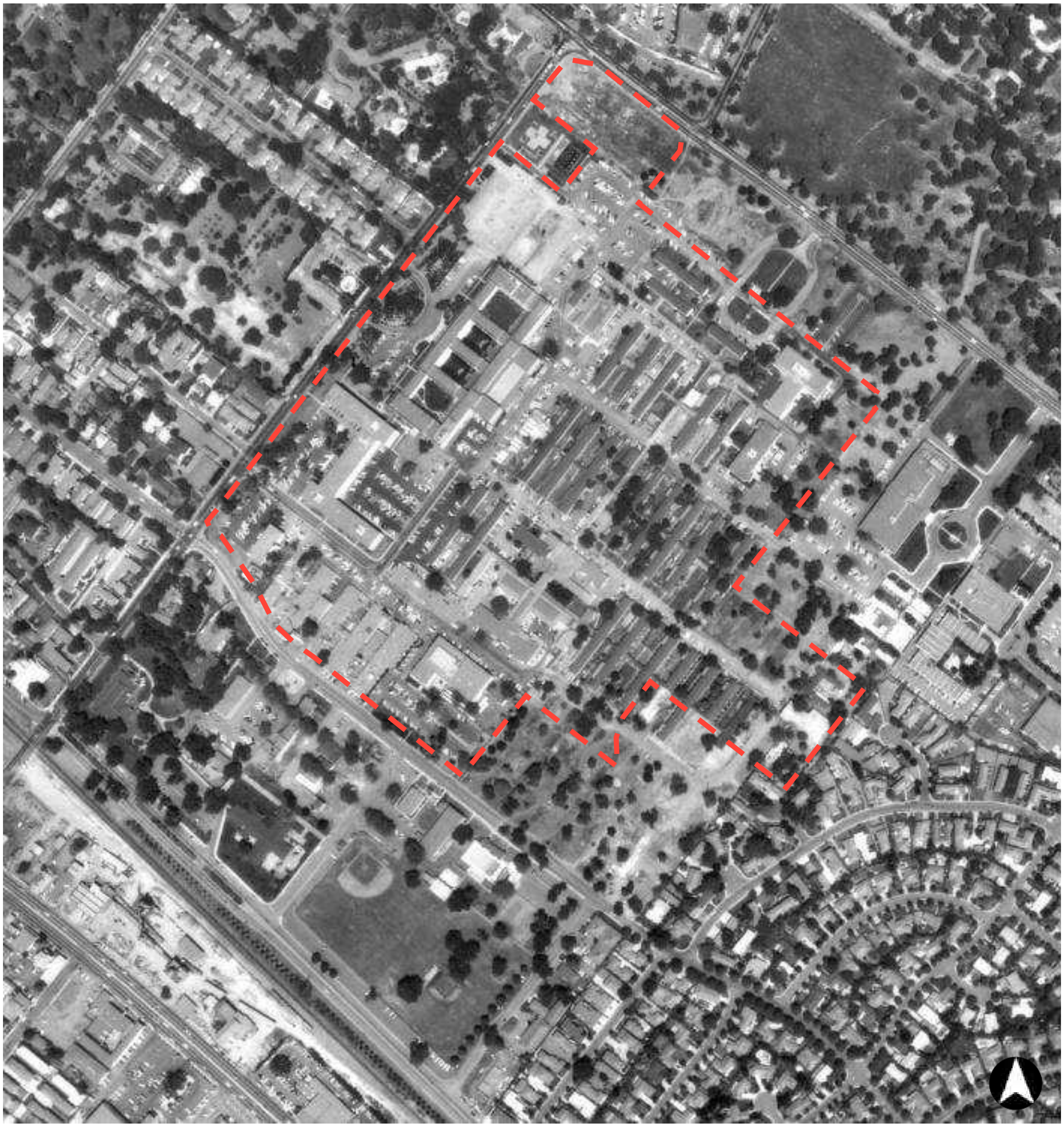


Figure 151. Aerial photograph of the SRI International campus, May 1968. Approximate current campus boundary outlined in red. Source: Cartwright Aerial Surveys, Flight CAS-2310, Frame 1-26, UC Santa Barbara FrameFinder. Edited by Page & Turnbull.

1981 Aerial

Figure 152. Aerial photograph of the SRI International campus, April 1981. Approximate current campus boundary outlined in red. Source: Western Aerial Photos, Flight GS-VEZR, Frame 4-97, UC Santa Barbara FrameFinder. Edited by Page & Turnbull.

Circa 1988-92 Aerial

Figure 153. Bird’s eye view of the SRI International campus, looking east over Ravenswood Avenue, circa 1988-92. Source: SRI International Facilities.

1993 Aerial

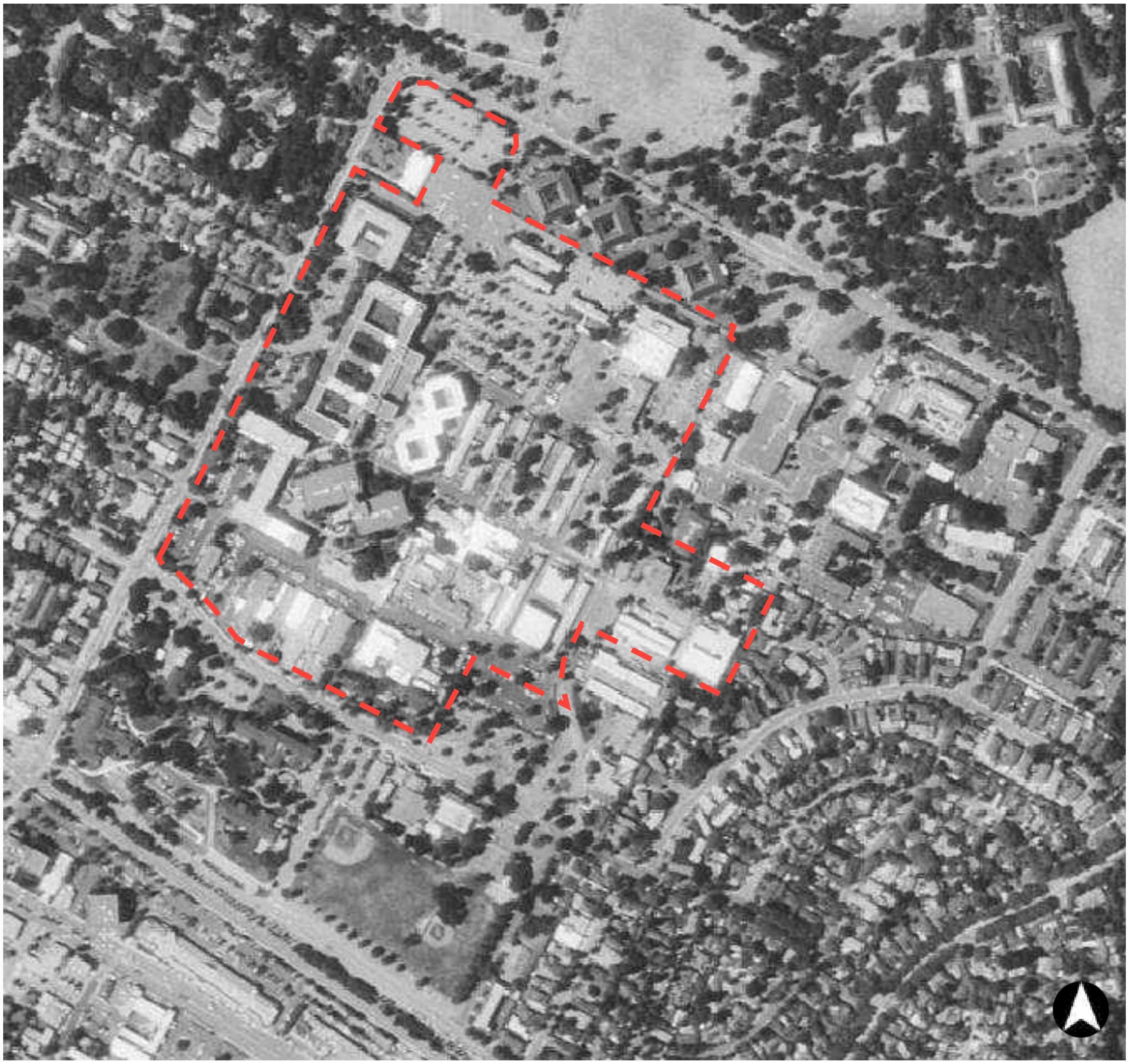


Figure 154. Aerial photograph of the SRI International campus, June 1993. Approximate current campus boundary outlined in red. Source: USGS, Flight NAPP-2C, Frame 6358-143, UC Santa Barbara FrameFinder. Edited by Page & Turnbull.

2000 Aerial

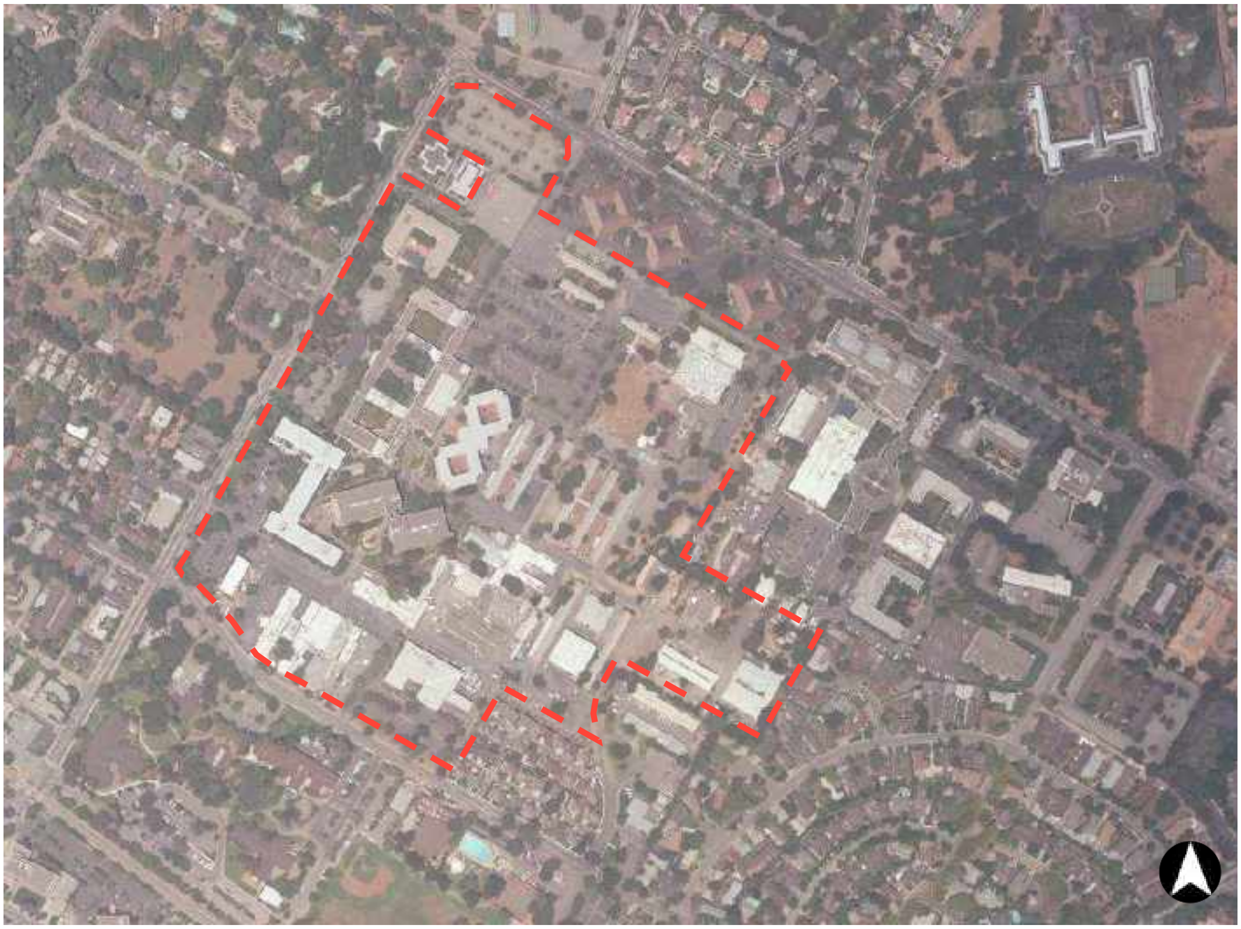


Figure 155. Aerial photograph of the SRI International campus, June 2000. Approximate current campus boundary outlined in red. Source: Hauts-Monts Inc., Flight HM-2000, Frame 1122-206, UC Santa Barbara FrameFinder. Edited by Page & Turnbull.

2010 Aerial

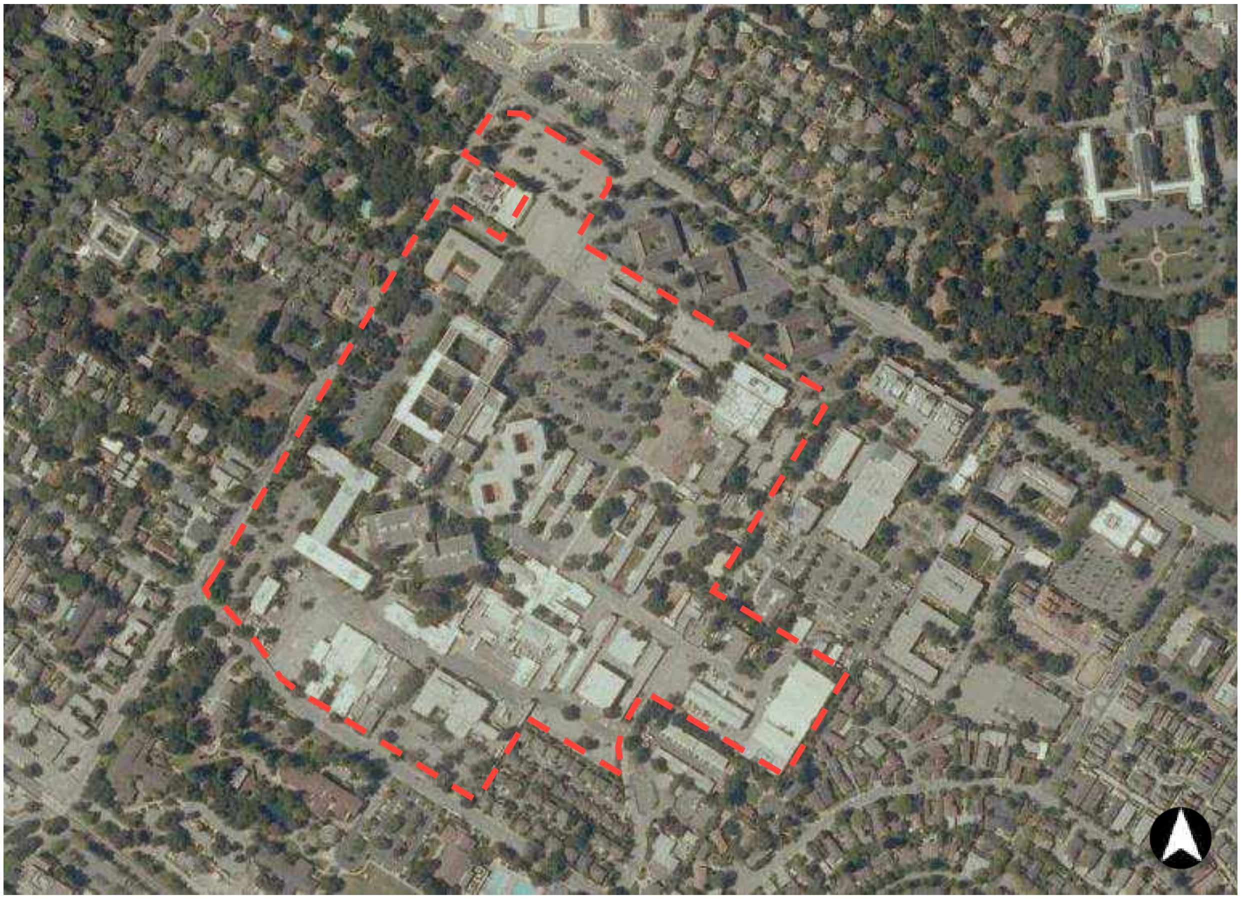


Figure 156. Aerial photograph of the SRI International campus, September 2010. Approximate current campus boundary outlined in red. Source: USDA Farm Service Agency via Google Earth Pro. Edited by Page & Turnbull.

2021 Aerial

Figure 157. Aerial photograph of the SRI International campus, May 2021. Approximate campus boundary outlined in red. Source: Google Maps. Edited by Page & Turnbull.

Appendix C – Historic Campus Maps

The following is a selection of historic campus maps illustrating the development and use of the site.

1944 Dibble General Hospital Map

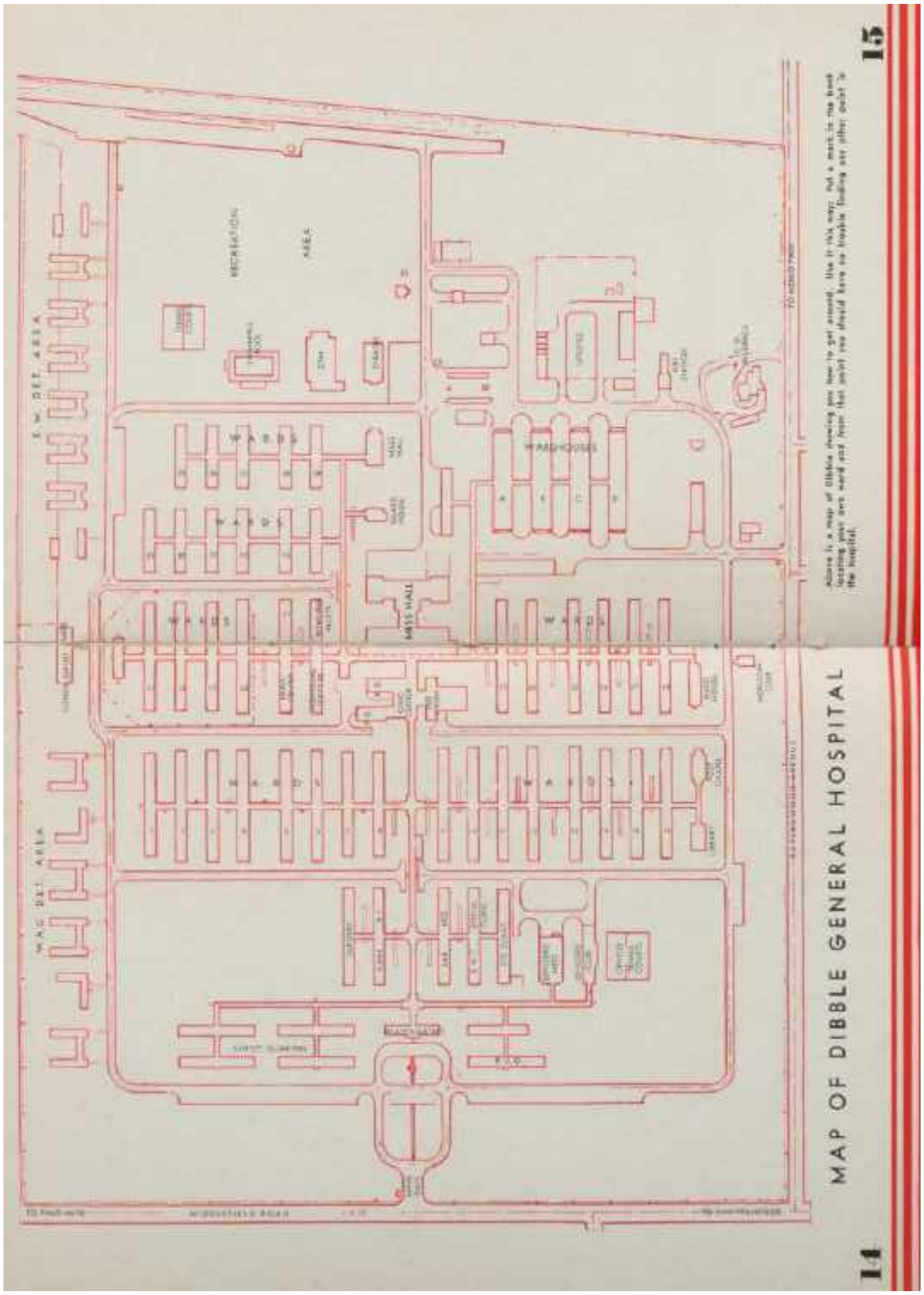
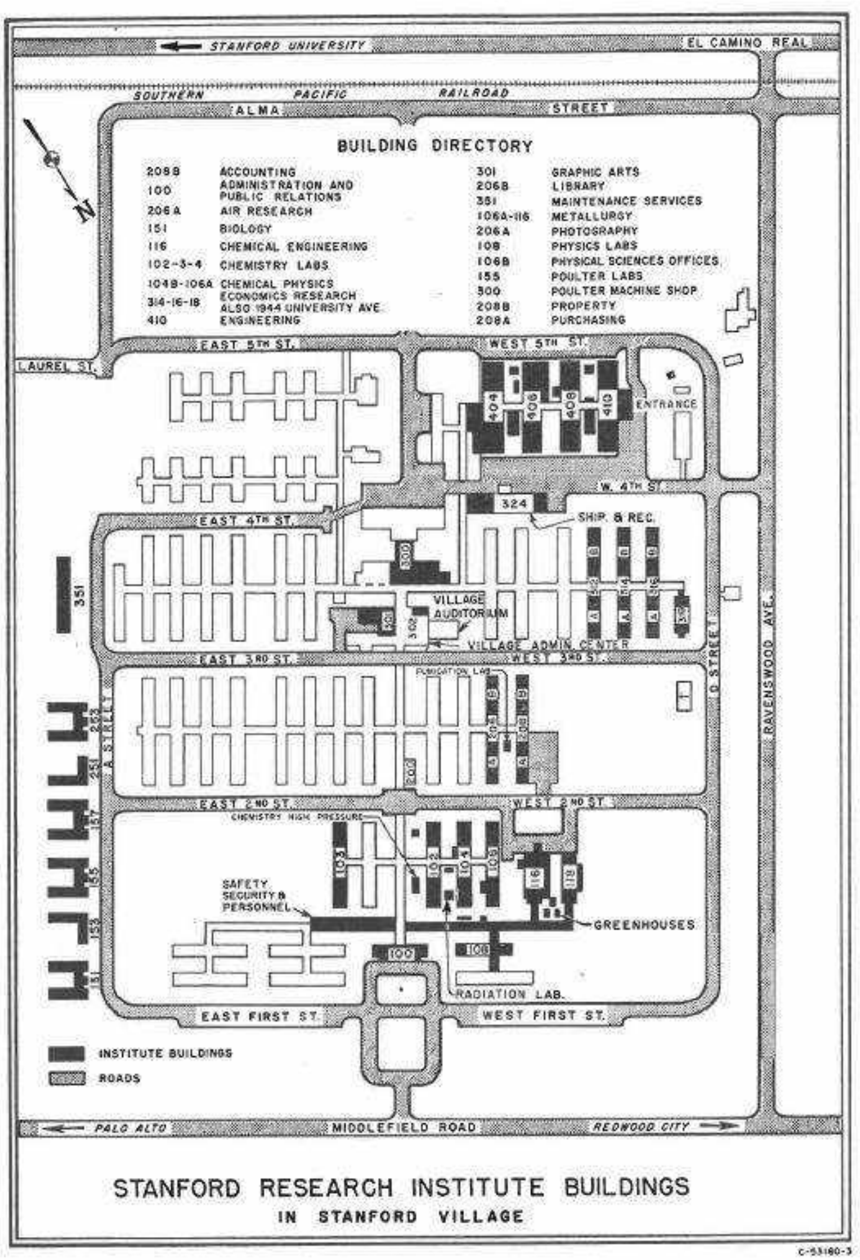


Figure 158. Map of Dibble General Hospital. Source: *Life Begins … Dibble General Hospital* (U.S. Army, 1944), 14-15.

1954 SRI Campus Map



BUILDING DIRECTORY

208B	ACCOUNTING
100	ADMINISTRATION AND PUBLIC RELATIONS
206A	AIR RESEARCH
151	BIOLOGY
116	CHEMICAL ENGINEERING
102-3-4	CHEMISTRY LABS
104B-106A	CHEMICAL PHYSICS
314-16-18	ECONOMICS RESEARCH ALSO 1944 UNIVERSITY AVE.
410	ENGINEERING
301	GRAPHIC ARTS
206B	LIBRARY
351	MAINTENANCE SERVICES
106A-116	METALLURGY
206A	PHOTOGRAPHY
108	PHYSICS LABS
106B	PHYSICAL SCIENCES OFFICES
155	POULTER LABS
300	POULTER MACHINE SHOP
208B	PROPERTY
208A	PURCHASING

Figure 159. Stanford Research Institute campus. Source: SRI Telephone Directory, 1954. SRI International Library & Records.

Circa 1959 SRI Site Master Plan

Figure 160. Site master plan by Stanton & Stockwell, circa 1959. Only Building A, Building E, Building G, and Building M were built as shown on this master plan. Source: SRI International Facilities.

1956 SRI Campus Map

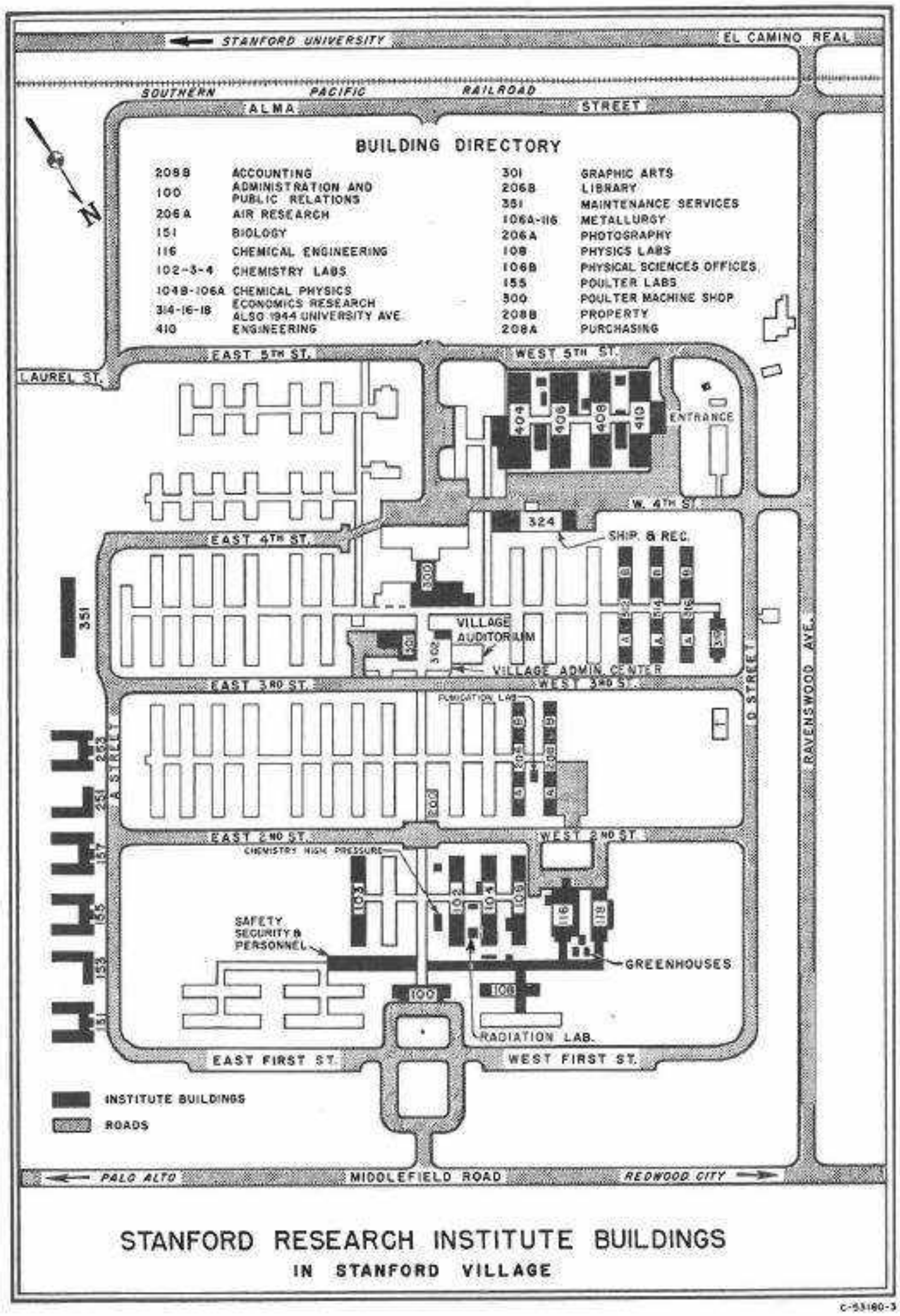


Figure 161. Stanford Research Institute campus. Source: SRI Telephone Directory, December 1956. SRI International Library & Records.

1977 SRI Campus Map

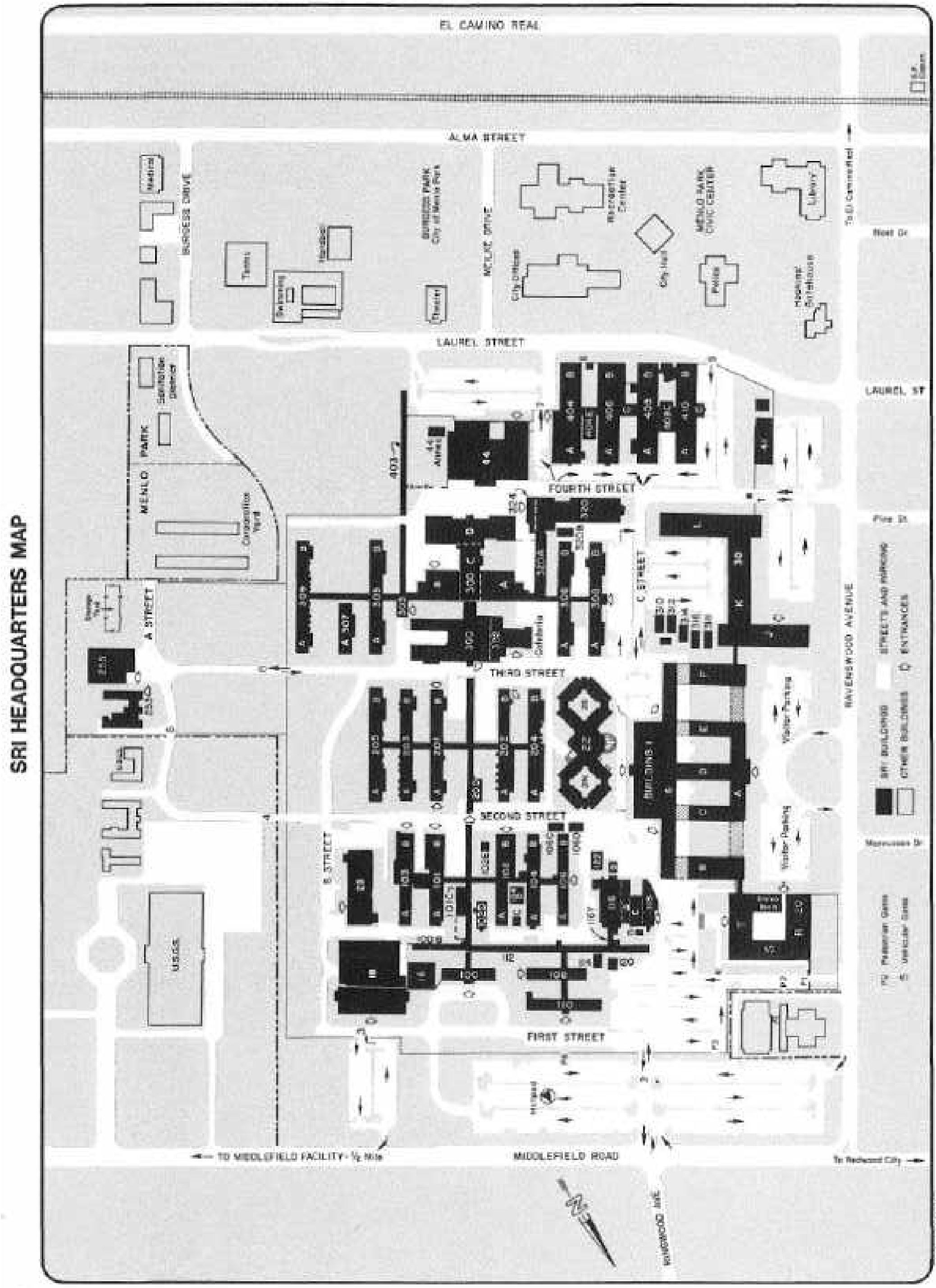


Figure 162. Stanford Research Institute campus. Source: SRI Telephone Directory, March 1977. SRI International Library & Records.

1980 SRI Campus Map

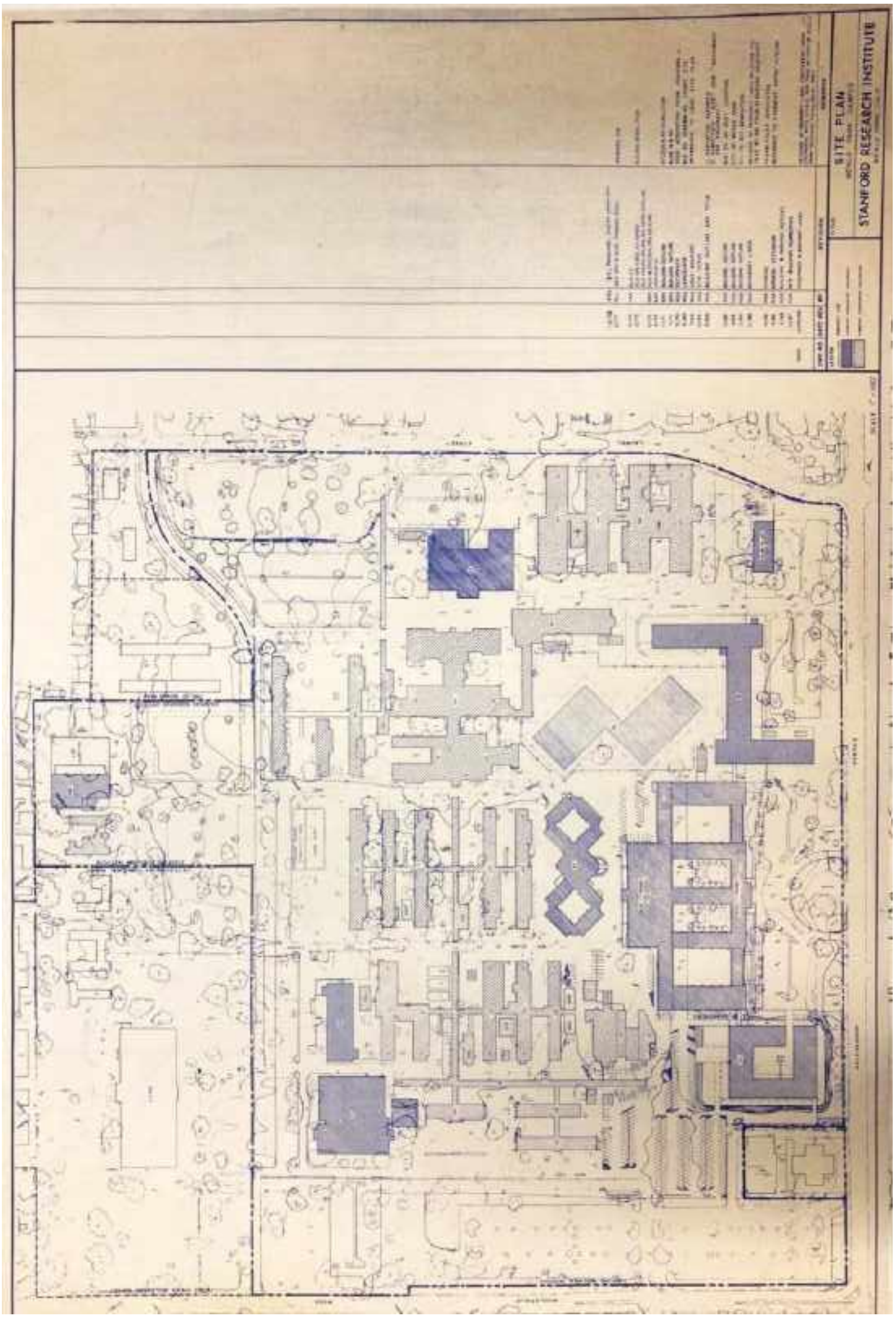


Figure 163. Site Plan for SRI International Campus by Garrett Eckbo, 1980. Source: Eckbo Collection, UC Berkeley, Environmental Design Archive.

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Imagining change in historic environments through
design, research, and technology

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170 MAIDEN LANE, 5TH FLOOR SAN FRANCISCO, CALIFORNIA 94108 TEL 415.362.5154
34-38 WEST SANTA CLARA STREET SAN JOSE, CALIFORNIA 95113 TEL 415.320.7911

Appendix D – 201 Ravenswood Avenue DPR Forms (2024)

The following historic resource evaluation using Department of Parks & Recreation (DPR) 523 survey forms was prepared by Page & Turnbull in April 2024 for the property at 201 Ravenswood Avenue.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 3CS
Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 19 **Resource name(s) or number** (assigned by recorder) 201 Ravenswood Avenue

P1. Other Identifier:
***P2. Location:** ☐Not for Publication ☒Unrestricted ***a. County** San Mateo
***b. USGS 7.5' Quad** Palo Alto, CA **Date** 2021
***c. Address** 201 Ravenswood Avenue **City** Menlo Park **Zip** 94025
d. UTM: Zone mE/ mN
***e. Other Locational Data:** Assessor's Parcel Number 062-039-050

***P3a. Description:**
The property at 201 Ravenswood Avenue (APN 062-039-050) is located north of downtown Menlo Park, on the south side of Ravenswood Avenue between Laurel Street and Middlefield Road, on a rectangular one-acre parcel that is surrounded on three sides by the SRI International Campus **(Figure 1).**[1] The property, originally owned and developed by the First Church of Christ Scientist, contains a cross-shaped chapel on the north portion of the lot, built in 1966, and a rectangular multi-use building to the south, built in 1958 **(Figure 2).** The complex is set back from all property lines and is lined with various plantings, and lined with driveways to the south and east; the surrounding SRI International property includes parking lots to the east, south, and west of 201 Ravenswood Avenue. The rear multi-use building provides spaces for offices, Sunday school, and day school, and was designed in the Midcentury Modern style by architect Leslie Nichols. The main chapel was designed in the Late Modern style by architects Inwood & Hoover.

The square-cross-plan chapel nave is a one-story building with exposed, cruciform structural concrete columns and a tall central roof steeple, and a long, narrow, rectangular narthex attached at the rear. The wood truss roof of the chapel features flat and hip roof forms clad in asphalt shingles, with wide board-formed concrete panel eaves. A steeply pitched hip roof at the center forms a steeple with tapered vertical bands of semi-opaque windows and a metal cap. The primary, cross-shaped form of the chapel houses the nave, while the lower one-story rectangular portion of the building at the rear contains the narthex, as well as the primary and secondary entrances at the east and west, restrooms, and other facilities to support religious services. The narthex is capped by a flared gable roof with flat eaves, clad in asphalt shingles. (Continued on page 3)

***P3b. Resource Attributes:** HP16: Religious Building
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P5a. Photo

P5b. Photo: (view and date)
Oblique view of the north wing, looking southwest, January 31, 2024.

***P6. Date Constructed/Age and Sources:**
☒Historic ☐Prehistoric ☐Both
1958 (*Peninsula Times Tribune*);
1966 (*Peninsula Times Tribune*).

***P7. Owner and Address:**
First Church of Christ, Scientist
201 Ravenswood Avenue
Menlo Park, CA 94025

***P8. Recorded by:**
Page & Turnbull, Inc.
170 Maiden Lane, 5th Floor
San Francisco, CA 94108

***P9. Date Recorded:** February 20, 2024
***P10. Survey Type:** Intensive
***P11. Report Citation:** None

***Attachments:** ☐None ☐Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (list)

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[1] The building is aligned slightly west of true north, but for simplicity, the façade facing Ravenswood Avenue is described as the "north façade", the façade facing Middlefield Road is described as the "north façade," and so on.

State of California — The Resources Agency **Primary #**____________
DEPARTMENT OF PARKS AND RECREATION **HRI#**____________

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 **of** 19 ***NRHP Status Code** 3CS

***Resource Name or #** 201 Ravenswood Avenue

B1. Historic name:

B2. Common name: First Church of Christ, Scientist, Menlo Park

B3. Original Use: Church

B4. Present use: Church

***B5. Architectural Style:** Midcentury Modern (multi-use building); Late Modern (chapel)

***B6. Construction History:** (Construction date, alterations, and date of alterations)

Before the construction of the extant buildings on the subject parcel, the site was undeveloped **(Figure 20).** The First Church of Christ Scientist obtained the subject parcel from the Stanford Research Institute (SRI) in 1957 through a land swap, in exchange for a former Methodist church within the Stanford Village, which was on what is now the SRI International campus.[2] The multi-use building was designed by architect Leslie Nicols and completed in 1958, thirteen months after the parcel was acquired **(Figure 21).** The multi-use building held administrative offices, Sunday schools, and regular religious services until the chapel was constructed in 1966, designed by architects Inwood & Hoover **(Figure 22).** The chapel has undergone no major alterations. **(Figure 23 through Figure 25).**[3]

(Continued on page 10)

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** ______ **Original Location:**______

***B8. Related Features:** None

B9a. Architect: Leslie Nichols (multi-use building); Inwood & Hoover (chapel) b. Builder: Vanderson Construction Co (chapel)

***B10. Significance: Theme** Late Modern Architecture **Area** Menlo Park

Period of Significance 1966 **Property Type** Religious Institution **Applicable Criteria** 3

201 Ravenswood Avenue appears to have an individually eligible resource for listing in the California Register under Criterion 3 (Architecture). The chapel, designed by architects Inwood & Hoover, appears to be eligible at the local level under Criterion 3 as a distinctive example of Late Modern architecture with a period of significance of 1966, the year of construction. However, the earlier multi-use building, completed in 1958 and designed by Leslie Nichols, does not appear to be individually eligible, nor does it contribute to the significance of the chapel.

(Continued on page 11)

B11. Additional Resource Attributes: N/A

***B12. References:** Refer to Continuation Sheet, page 19

B13. Remarks: None

***B14. Evaluator:** Walker Shores & Hannah Simonson, Page & Turnbull, Inc.

***Date of Evaluation:** April 4, 2024

(This space reserved for official comments.)

Source: San Mateo County Property Maps Portal, accessed online April 2024, https://gis.smcgov.org/apps/raster.

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[2] Bob Curlee, "Church History," First Church of Christ, Scientist, Menlo Park, California. Accessed February 1, 2024. https://www.csbayarea.com/Churches/christiansciencemenlopark/ChurchHistory.html.

[3] Permit no. BLD1999-00168, on file at the City of Menlo Park, Community Development – Building Division.

***P3a. Description (Continued)**

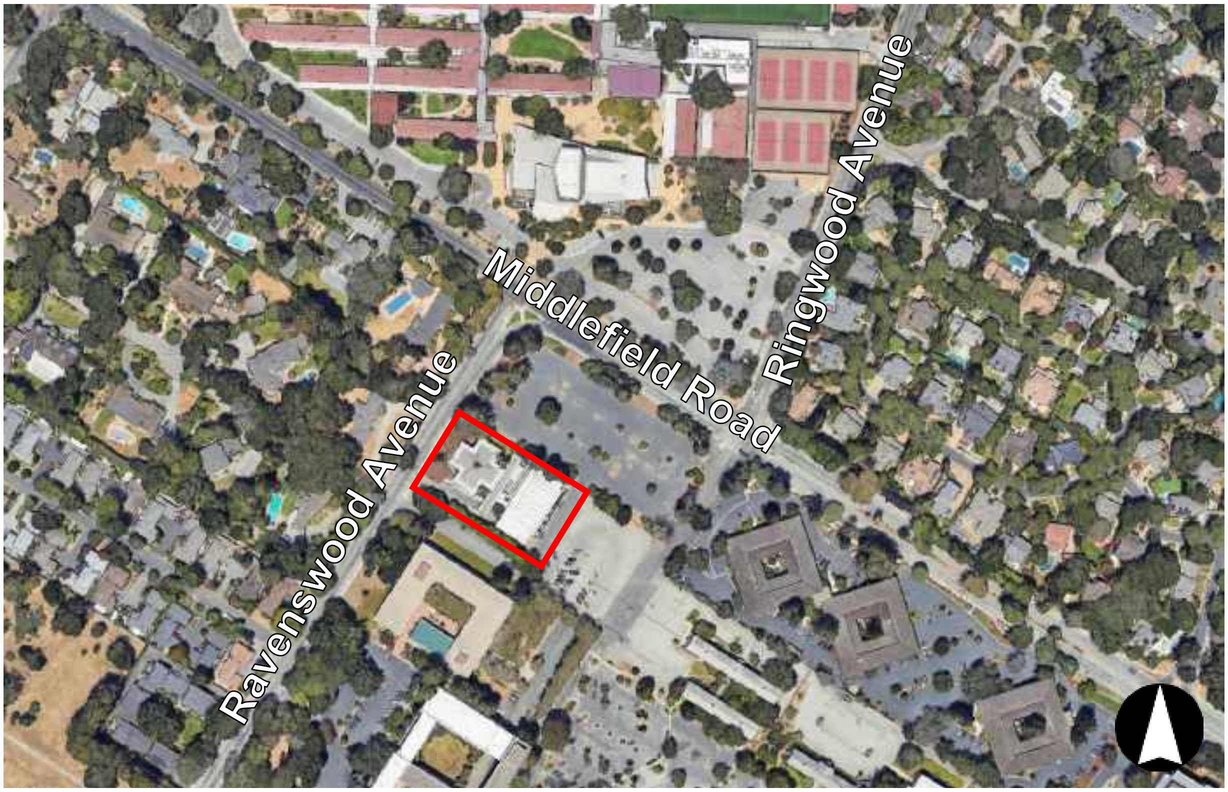

Figure 1. Aerial view of 201 Ravenswood Avenue, outlined in red. Source: Google Maps, 2023, edited by Page & Turnbull.

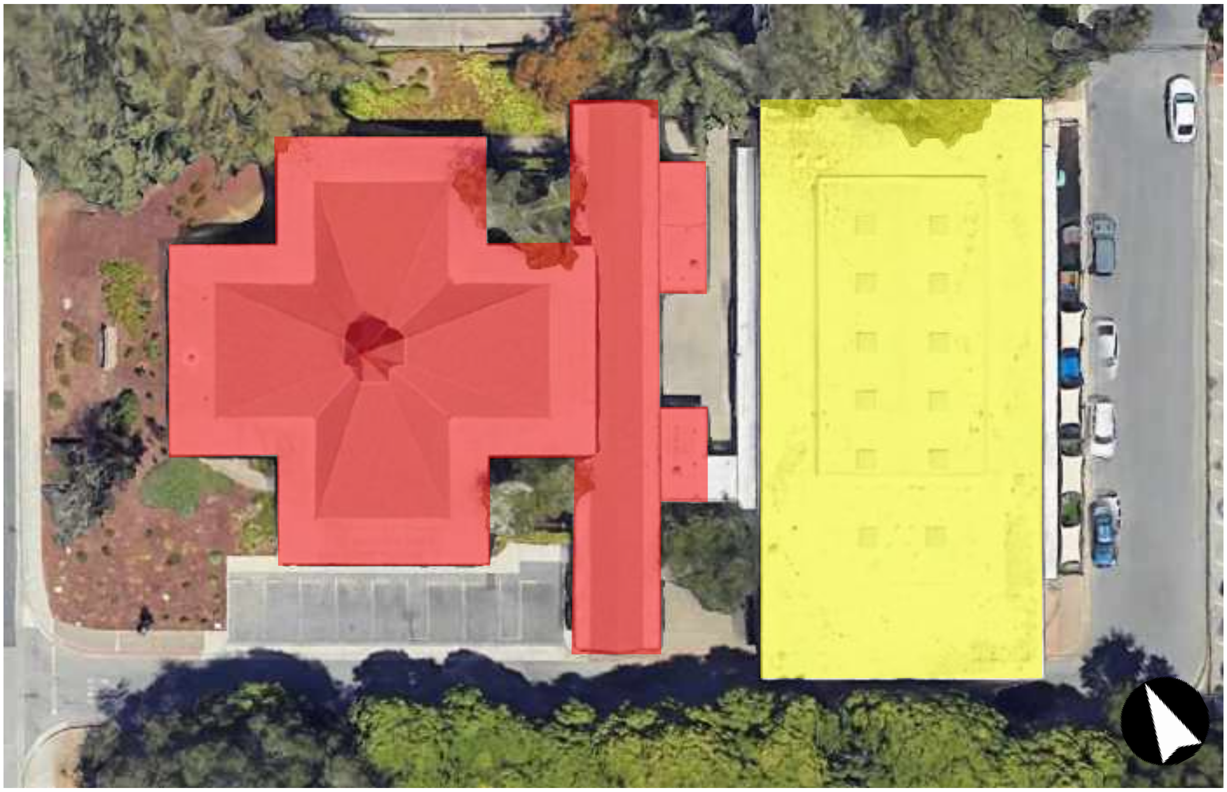

Figure 2. Detail aerial view of 201 Ravenswood Avenue. The footprint of the chapel is shaded red, and the footprint of the multi-use building is shaded yellow. Source: Google Maps, 2023, edited by Page & Turnbull.

Primary # ______
HRI # ______
Trinomial ______

Resource Name or # (Assigned by recorder) 201 Ravenswood Avenue
***Recorded by** Page & Turnbull, Inc.
***Date**: April 4, 2024 ☒ Continuation ☐ Update

The nave has wall panels that span between the cruciform concrete-reinforced support columns that are typically solid Roman brick or ceiling-height semi-translucent window walls. Each exterior wall is divided into bays by the cruciform columns, and the outermost wall of each wing consists of a central bay featuring a multi-panel wood door with a matching, fixed wood panel above, flanked by bays spanned by Roman brick walls **(Figure 3).** All walls feature frameless clerestory windows above their respective bays of glazing or Roman brick. The cruciform concrete columns stop before the roof, connecting with only a central metal post. The frameless clerestories allow the board-formed concrete panels in the eaves to extend inside the building without any visible seams, which, combined with the full-height window walls, create the illusion that roof almost floats. The southeast and southwest corners of the nave, north and south of the nave's east wing, are enclosed gardens consisting of large-grain pebble gravel and wood planter boxes. Free-standing cruciform concrete columns with non-original light fixtures flank the driveway entrance.

The side walls of the north wing of the nave are matching and consist of two bays. The north bays feature three-part metal-frame hung windows with spandrels above. The south bays each have a fully glazed metal door with a matching metal spandrel set in a Roman brick wall **(Figure 4).**

Figure 3: View of north facing walls on the chapel. Looking east.

Figure 4: Detail view of east-facing wall on the north wing of the chapel. Looking south.

The west and east wings of the nave are identical, with typical outermost walls as previously described **(Figure 5)**. The north and south walls of both wings each feature two bays with full-height window walls **(Figure 6)**. The windows on the north-facing walls are semi-opaque, divided-lite windows and feature art glass accents with leaf motifs **(Figure 7).** The windows on the south-facing walls are transparent and consist of fixed lower sashes and awning upper sashes, and face enclosed gardens at the southeast and southwest corners of the chapel **(Figure 8).**

The south wing of the nave is connected internally to the narthex at its south wall with two pairs of multi-panel wood doors **(Figure 11).** The east and west walls of the south wing feature transparent window walls that match the south-facing windows on the east and west wings, facing the enclosed gardens.

Figure 5: West wing of the chapel. Looking east.

Figure 6: North wing (left) and west wing (right) of the chapel. Looking southeast.

Figure 7: Detail view of north-facing wall on the east wing of the chapel. Looking south.

Figure 8: Interior view of south-facing wall on the west wing of the chapel, and an enclosed garden. Looking south.

The interior of the nave features rows of seating occupying the east, south, and west wings, facing the sanctuary and altar at the center **(Figure 9).** The ceiling has open heavy timber joists that support the steeply pitched roof and steeple. Each joist goes through the flat roof soffit that extends into the interior of the nave, and is supported by a cruciform concrete column **(Figure 10).** Light-colored, narrow wood board sheathing is exposed at the ceiling.

Figure 9: Interior view of the nave, from the south wing. Note the light timber ceiling with heavy timber joists. Looking north.

Figure 10: Interior view of the nave, from the west wing. Note each joist is supported by a cruciform concrete column. Looking northeast.

The generally rectangular, east-west oriented narthex is connected to the south wing of the nave, and extends out to the east and west to form a covered entrance walkway. The wood truss gable roof is open with an exposed wood board soffit, supported by cruciform concrete columns that match the chapel nave. The narthex features identical multi-panel wood double-doors on its east and west ends, which function as the primary entrances to the chapel, accessed by pebble-aggregate concrete paths **(Figure 12).** Each of these double-doors features a triangular, frameless transom window, creating a similar visual floating effect of the roof above.

At the interior of the narthex, there are double-doors accessing two restrooms on the south side and accordion doors to coat closets on the north side, both featuring the same multi-panel motif found on all other doors **(Figure 13).** Each restroom projects out to the east from the main rectangle volume of the narthex, creating an enclosed pebble-aggregate concrete courtyard between the chapel and the multi-use building **(Figure 14).** On the south wall of the narthex, between the projecting bathrooms, are two sets of three fully glazed wood-frame doors, set within the bays formed by the cruciform supports. These are the only doors on the chapel that do not conform to the multi-panel motif.

Figure 11: Interior view of the south wall of the nave, connecting to the narthex. Looking southwest.

Figure 12: Detail view of the east entrance to the chapel, under the narthex canopy. Looking west.

Figure 13: Interior view of the west entrance to the chapel. Looking west. To the south (left) is the bathroom entrance, and to the north (right) are the accordion coat closet doors. Note the transoms are set directly into the joists for the roof, and do not have any separate frame system.

Figure 14: Detail view of the entrances to the courtyard formed by the bathrooms projecting to the south of the narthex, between the chapel and the multi-use building. Looking north.

The rectangular, one-story, multi-use building features concrete masonry unit (CMU) construction and a flat built-up roof. The exposed CMU walls are painted white. The roof has a simple wood board fascia and no eaves on the north and south sides, and overhanging eaves with a flat, stuccoed soffit at the east and west sides. Typical fenestration includes original, paired metal-frame windows, each window consisting of a fixed lower sash and awning upper sash.

The primary (west) façade is separated from the south property line by a driveway. The flat roof extends southward past the façade, supported by tapering tubular steel columns **(Figure 15).** The primary entrance is centered on the west façade and consists of two pairs of metal-framed multi-colored glass doors set within an colored glass window wall, divided by metal rounded pilaster supports. The window wall and doors consists of differently sized rectangular, mottled glass panes in various white, yellow, and brown tones.

Figure 15. Oblique view of the primary (east) façade of the multi-use building. Looking southeast.

The south façade is separated from the rear property line by wide driveway **(Figure 16).** An enclosed play area is located between the building and the driveway. The east façade features, from east (left) to west (right), a set of three typical windows, a partially glazed metal door, and eleven pairs of typical windows. A flat, cantilevered awning is located above the ribbon of windows.

The east façade is lined with a paved walkway, and is separated from the east property line by low plantings and redwood trees. The roof is cantilevered slightly northward past the façade. The east façade features, from south (left) to north (right), a typical set of windows, a pair of partially glazed metal-frame doors, and seven pairs of typical windows. On the upper ends of the east façade, above the windows, are elaborated CMU vents.

The north façade faces the chapel across the paved courtyard, and features a cantilevered awning **(Figure 17).** The north façade features, from east (left) to west (right), a pair of fully glazed wood doors, six typical sets of windows, two pairs of fully glazed metal doors with a projecting entrance with stucco sidewalls and a marquee above, a typical set of windows, a pair of partially glazed wood doors, and a typical set of windows **(Figure 18 through Figure 19).**[4] A canopy supported by concrete cruciform columns extends from the chapel bathroom to meet the cantilevered awning of the multi-use building. Low plantings line the north façade on either side of the projecting stucco entryway.

Figure 16: Oblique view of the south and east façades of the multi-use building. Looking northwest

Figure 17: Oblique view of the north façade of the multi-use building. Looking west.

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[4] Note that the projecting entrance with stucco sidewalls is freestanding and not physically attached to the west façade itself, rather, it connects directly into the cantilevered metal awning.

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Figure 18: Oblique view of the north façade of the multi-use building, including the projecting stuccoed entryway and marque. Looking southwest.

Figure 19: Oblique view of the north façade of the multi-use building, where a canopy extends from the chapel restroom. Looking southeast.

***B6. Construction History (continued):**
In 2000, some exterior doors and windows of the multi-use building were replaced and the interior was remodeled. Minor alterations include remodeling of the chapel bathrooms. Other observed alterations include the demolition of an original fountain in the courtyard between the chapel and the multi-use building at an unknown date.[9]

Figure 20: 1941 aerial photograph. Approximate future location of subject parcel outlined in red. The intersection of Ravenswood Avenue and Middlefield Road is at the red arrow. Source: University of California Santa Barbara Library Frame Finder, Fairchild Aerial Surveys, Flight C-7065, Frame 129. Edited by Page & Turnbull.

Figure 21: 1965 aerial photograph. Subject parcel outlined in red. Note the multi-use building is present, and the chapel has not begun construction. Source: University of California Santa Barbara Library Frame Finder, Cartwright Aerial Surveys, Flight CAS-65-130, Frame 2-157. Edited by Page & Turnbull.

Figure 22: 1968 aerial photograph. Subject parcel outlined in red. Note the chapel is present. Source: University of California Santa Barbara Library Frame Finder, Cartwright Aerial Surveys, Flight CAS-2310, Frame 1-26. Edited by Page & Turnbull.

Figure 23: 2000 aerial photograph. Subject parcel outlined in red. Note the building footprints are essentially unchanged. Source: University of California Santa Barbara Library Frame Finder, Hauts-Monts Inc, Flight HM-2000-USA, Frame 1122-206. Edited by Page & Turnbull.

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[9] Permit No. BLD2008-01259, on file at the City of Menlo Park, Community Development – Building Division

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

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Trinomial __________

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***B6. Construction History (continued):**

Figure 24: 1966 photograph of the chapel. Source: “Christian Scientists Move Into New Church,” *The Peninsula Times Tribune,* February 19, 1966.

Figure 25: Note the fountain, shown here in the courtyard between the chapel and the multi-use building, has since been removed. Source: “Christian Scientists Move Into New Church,” *The Peninsula Times Tribune,* February 19, 1966.

***B10. Significance (continued):**

Historic Context – City of Menlo Park:

The area that constitutes Menlo Park was first settled between 12,000 and 6,000 years ago. A number of groups resided in the region over the centuries, and the predominant linguistic group was the Ohlone peoples. The Puichon tribelet lived in the area that now makes up Mountain View, Palo Alto, and Menlo Park. Menlo Park was first incorporated as a city in 1874 but was unincorporated about two years later. During this time, the town consisted of only a handful of buildings, mostly stables, hotels, general stores, and blacksmith shops. The development of the area continued at a relatively slow pace, until the United States entered World War I. In 1917, the U. S. Army established the 25,000 acre Camp Fremont, and 27,000 soldiers came to the area to undergo training. The large population influx spurred new development in Menlo Park, until the camp was closed in 1919 and the population was reduced to that of a small town once again. Menlo Park reincorporated in 1927. As with many towns throughout the Bay Area, development was slow during the 1930s and increased rapidly after the outbreak of World War II. The population of Menlo Park more than doubled between 1940 and 1946, and doubled again between 1946 and 1950.[10] Corresponding with this increase in population, the town’s main thoroughfare, El Camino Real, shifted from its earlier pattern of manufacturing and industrial uses to commercial use, including the mix of shops, restaurants, motels and movie theaters that continue to characterize the strip today. Additionally, more housing and supporting institutions such as schools and religious institutions were built to support the growing population. The emergence of Silicon Valley and the increasing prominence of nearby Stanford University and the Stanford Research Institute, which surrounds the subject parcel on three sides, also had a lasting impact on Menlo Park through the remainder of the twentieth century, turning Menlo Park into a largely suburban residential community with a contemporary population of nearly 33,000 people.[11]

Site History: Ownership & Occupancy

Since the first building was constructed on this site in 1958, the only owner and occupant has been the First Church of Christ Scientist, Menlo Park. Mary Baker Eddy founded Christian Science in 1866 after recovering from chronic illness and an injury through spiritual meditation. In 1875 Eddy published a book on spirituality and healing, *Science and Health with Key to the Scriptures*. By 1879, Eddy had acquired a following through her findings on religious healing and founded “The Church of Christ, Scientist” in Lynn, Massachusetts—a suburb of Boston. In the ensuing years, Christian Science quickly spread across the nation, including to California. Eddy served as the leader of the denomination until her death in 1910.[12]

The First Church of Christ, Scientist Menlo Park was organized in November 1950, and first met at facilities rented from the City of Menlo Park.[13] The Menlo Park Church of Christ Scientist congregation purchased a former Methodist chapel in Stanford Village (on

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[10] “Time Line of Menlo Park”, published by the Menlo Park Historical Association, accessed online at https://sites.google.com/site/mphistorical/home/time-line, July 25, 2014.

[11] Page & Turnbull, “SRI International Campus Historic Resource Evaluation Report,” prepared for Lane Partners LLC at the request of the City of Menlo Park, February 2022.

[12] Page & Turnbull, “Historic Resource Evaluation: First Church of Christ, Scientist, 1700 Franklin Street, San Francisco,” 2008.

[13] Curlee, “Church History.”

what is now the SRI International Campus) in 1953, and in 1957 the church exchanged the former Methodist chapel for the subject parcel through a land swap with Stanford Research Institute (now SRI International). Research did not reveal information about the reason that the multi-use building was built before the chapel, but based on siting of the buildings and the relative quality of design, it appears possible that the congregation prioritized building a more utilitarian multi-use building while the raised sufficient funds for the chapel. The parcel has been owned by the Church of Christ, Scientist Menlo Park since 1957.

Midcentury Modern Architecture

Midcentury Modern is a generalized term that defines a period of adaptation of the International Style after World War II. The International Style was part of the early 20th century Modern Movement that marked a major shift in architecture. Emphasizing functionalism and rationalism, the International Style was characterized by clear expression of structural forms, smooth wall surfaces, rectilinear shapes, lack of ornament, and extensive use of glass.[14] While forms remain geometric in a Midcentury Modern building, elements of texture, materiality, and color began to appear. Often, there is a variation of elements based on a region's climate and topography.

The resulting wide-ranging architecture from the 1940s and 1950s is broadly categorized as Midcentury Modern and generally consists of less strict interpretations of the International Style. The construction techniques that separate building structure from the envelope or skin, mass-produced materials, expansive glass walls, horizontal orientations, low gable or flat roofs, open floor plans, and integrated outdoor spaces became the hallmarks of Midcentury Modern in California.[15] Simultaneously, landscape architects were experimenting with these same modern materials and forms to further develop the outdoors as habitable room-like spaces and part of the casual, informal California lifestyle. In the San Francisco Bay Area, Joseph Eichler became closely associated with the Midcentury Modern style, building more than 10,000 Midcentury Modern style ranch homes in California.

While closely associated with postwar residential work, Midcentury Modern lent itself to several different building types, including commercial, educational, civic, and religious buildings and campuses. Many cities in California experienced extensive commercial, residential, and institutional growth in the post-World War II period and many new buildings were designed in the Midcentury Modern style – including buildings designed by renowned architects or burgeoning young architects, and more modest examples of the style executed by contractors and other builders and developers.

While some more traditional and revival styles were utilized for religious buildings in the 1940s, by the 1950s, the Midcentury Modern style was widely used for religious buildings of all faiths and denominations. Midcentury Modern churches often have dramatic gable roofs, exposed rafter tails, stained glass window walls, and brick, stucco, and wood cladding are typical. Such religious buildings were being constructed in large numbers as suburbs, including the Bay Area, grew exponentially in the post-World War II period. A number of churches in Menlo Park utilize the Midcentury Modern style, including Bethany Lutheran (1095 Cloud Avenue), Church of Jesus Christ of Latter-Day Saints (1105 Valparaiso Avenue), and St. Raymond Catholic Church (1100 Santa Cruz Avenue) **(Figure 26 and Figure 27).**

Figure 26: Church of Jesus Christ of Latter-Day Saints, 1105 Valparaiso Avenue, Menlo Park. This Midcentury Modern church has a distinctive sawtooth profile, roofline, and spire that also draws from the Usonian architecture of Frank Lloyd Wright. Source: Google Maps, 2024.

Figure 27: St. Raymond Catholic Church, 1110 Santa Cruz Avenue, Menlo Park exhibits the Midcentury Modern with its gable roof, exposed rafter tails, and stained-glass window wall. Source: Google Maps, 2024.

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[14] San Francisco Planning Department, *San Francisco Modern Architecture and Landscape Design, 1935-1970, Historic Context Statement*, January 12, 2011, 174.
[15] San Francisco Planning Department, 121.

The multi-use building at 201 Ravenswood Avenue expresses the Midcentury Modern style through its rectilinear massing, flat roof and eaves, elaborated concrete masonry unit vents, tapered tubular steel columns, and colored glass window wall with rounded metal pilaster supports.

Late Modern Architecture

Late Modernism is a broad term that encompasses the varied designs of the 1960s and 1970s within the Modern Movement when backlash against the perceived uniformity and repetitiveness of the International Style and orthodox Modernism inspired many architects to explore other architectural forms.[16] Theorist and architectural historian Charles Jencks was one of the first to codify the term "Late Modern" as an architectural style and observed, "There are many ways to characterize Late-Modern architecture and most of them can be reduced to the single notion of exaggeration. Late-Modernism takes Modern architecture to an extreme to overcome its monotony and the public's boredom with it."[17] Some architects drew inspiration from historic architectural examples, giving way to New Formalism and eventually Postmodernism. Others pushed the modern aesthetic to new extremes through advancements in technology, engineering, and materials, leading to Brutalism, Expressionism, and High-Tech Structuralism. Still others transformed the glass-and-steel look into taut glass skin and mirror glass designs, or alternatively, incorporated organic materials and shapes for a more natural, wooded aesthetic. Late Modernism essentially hybridized established Modern rationale and functional forms with aspects of the emerging architectural stylistic trends that would gain prominence from the 1960s through the 1980s. Typically, Late Modern commercial, institutional, and government buildings were monumental in scale, had sculptural qualities within the design, including strong linear elements, pronounced structural components, and interplay of plans or volumes, and often included comprehensive landscape design in plantings, paving, and features to create a cohesive setting.

Practitioners of the Late Modern style included celebrated architects of the Modern Movement at the next phase of their careers experimenting with new forms, such as Marcel Breuer, Louis Khan, and William Pereira, as well as those that were trained modernists but eventually rejected orthodox Modernism, such as Philip Johnson and Cesar Pelli. Eero Saarinen explored a more Expressionistic idiom of Late Modernism, utilizing more organic forms and swooping curves in projects such as the TWA Terminal (1962, John F. Kennedey International Airport, New York City). Examples of Late Modernism in the Bay Area include urban office tower projects such as the Transamerica Pyramid (1972, William Pereira) by Pereira and the Embarcadero Center (1971-82, John Portman) both in San Francisco, as well as suburban office towers and institutional complexes such as the Palo Alto Office Center (1966) by Tallie Maule and Stanford Medical Center (1959) by Edward Durrell Stone.

Architects often adopted more Expressionistic forms for religious architecture, as the soaring volumes worked well for creating the dramatic space and lighting desired in a house of worship. In suburban areas, the strong geometric forms of Late Modernist architecture might also be softened with more familiar Organic and Ranch style features. New religious institutions were built to serve the growing suburban residential communities which expanded significantly in the Bay Area into the 1960s and 1970s, especially on the Peninsula with the burgeoning of Silicon Valley, and by the late 1960s, Late Modernism was one of the common architectural style utilized in religious architecture throughout the Bay Area, but by the 1970s and into the 1980s more eclectic historical features and revival styles became prevalent in religious architecture. Examples of Bay Area religious institutions designed in the Late Modern style include Cathedral of St. Mary of the Assumption (1971, 1111 Gough Street, San Francisco, Pier Luigi Nervi, Pietro Belluschi, John Michael Lee, Paul A. Ryan, and Angus McSweeney), Saint John the Baptist Roman Catholic Church (1966, 960 Caymus Street, Napa, Henry Schubart and Germano Milano), and Central United Methodist Church (1964, 3700 Pacific Avenue, Stockton, Anshen & Allen), and Sunnyvale United Methodist Church (1962, 535 Old San Francisco Road, Sunnyvale, Donald Powers Smith) **(Figure 28 and Figure 29).** [18]

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[16] Kazys Varnelis, "Embracing Late Modern," *L.A. Forum*, accessed via Internet Archive, February 12, 2024, https://web.archive.org/web/20220122105238/http://laforum.org/article/embracing-late-modern/

[17] Charles Jencks, *Architecture Today* (New York: Harry N. Abrams, Inc, Publishers, 1988) cited in "Los Angeles Citywide Historic Context Statement: Architecture and Engineering/LA Modernism/Late Modern, 1966-1990," SurveyLA, prepared for City of Los Angeles, Department of City Planning, Office of Historic Resources (July 2020), 2.

[18] "Travel and Leisure: Sacred Architecture Edition," Docomomo US/Northern California, November 17, 2021, accessed online February 14, 2024, https://www.docomomo-noca.org/news/sacred-architecture.

Figure 28: Cathedral of St. Mary of the Assumption (1111 Gough Street, San Francisco), designed by Pier Luigi Nervi; Pietro Belluschi; John Michael Lee; Paul A. Ryan; and Angus McSweeney, completed 1971. Source: Page & Turnbull.

Figure 29: Sunnyvale United Methodist Church (535 Old San Francisco Road, Sunnyvale) designed by Donald Powers Smith, completed in 1962. Source: Google Street View, 2021.

In Menlo Park, there are few examples of Late Modernist religious architecture beyond the subject property at 201 Ravenswood Avenue. Home Christ Church (71 Bay Road, built c.1960-68) has a curved vaulted roof that has some Expressionistic character associated with the Late Modern style, but has limited additional detailing and a large, traditional style addition **(Figure 30).** The Mt. Olive A.O.H. Church of God (605 Hamilton Avenue, built c. late 1970s) has an unusual asymmetrical A-frame roof, but more traditional detailing and cannot be described as a full expression of Late Modernism **(Figure 31).** The chapel at 201 Ravenswood Avenue fully expresses the Late Modern style through its strong geometric forms, cruciform plan, dramatic roof and steeple, and floor-to-ceiling glazing systems. The chapel also features integrated structural elements, and careful use of light timber, heavy timber, and exposed concrete as both structural and decorative materials. Notable details include the cruciform concrete structural columns which replicate the shape of the chapel itself, and the frameless clerestory windows in the chapel nave and above the entrances in the narthex.

Figure 30: Home of Christ Church, 71 Bay Road, Menlo Park, built c.1960-68. The curved roof and triangular stained-glass wall have some limited Expressionistic characteristics associated with Late Modernism. Source: Google Street View, 2023.

Figure 31: Mt. Olive A.O.H. Church of God, 605 Hamilton Avenue, Menlo Park, built c. late 1970s. The church has a dramatic roofline but much borrows detailing from more traditional historical sources and is not a full example of Late Modernism. Source: Google Street View, 2023.

Leslie Nichols, Architect (multi-use building)

Leslie Nichols (1896-1969) was born in Chicago, and graduated from the College of Architecture at Cornell University in 1920. He lived and worked in Palo Alto for the majority of his career. His work includes numerous single-family homes and institutional buildings throughout the region, designed in a variety of revival styles and in the Midcentury Modern Style. His body of work includes: 419 Maple Street (1921), a residence in Palo Alto in the French Eclectic style, one of Palo Alto's City Halls at 1313 Newell Road (1953) in the Midcentury Modern style, and the First Congregationalist Church in Santa Cruz (1957) in an Expressionist

Modernist style **(Figure 32 and Figure 33).**[19] Nichols was a member of the First Church of Christ, Scientist in Menlo Park, and attended services there from their founding through his death in 1969.[20]

Figure 32: 1313 Newell Road, Palo Alto. Designed in 1953 by Leslie Nichols. Originally constructed as a new Palo Alto City Hall, now Palo Alto Art Center. Source: Palo Alto Stanford Heritage.

Figure 33: First Congregational Church, Santa Cruz. Designed in 1957 by Leslie Nichols. Source: Gloria Z., Yelp.com.

Inwood & Hoover, Architects (chapel)

Inwood & Hoover was a Palo Alto-based architecture partnership between Reginald F. Inwood (1902-1974) and Albert A. Hoover (1922-2004) that spanned from 1962 to 1967. During the five years they worked together, Inwood and Hoover designed at least nine churches in Northern California, all extant, including the chapel at 201 Ravenswood Avenue. The only works by Inwood & Hoover were church and church campus designs, and they were clearly listed in directories as church architects.[21] Their Late Modern designs consistently utilize massive geometric forms and rooflines combined with sections of ceiling-height windows. These include the Hope Evangelical Lutheran Church in San Mateo (1962) and the Santa Anita Church in Arcadia (1965) **(Figure 34)**. The Santa Anita Church is the only known work by Inwood & Hoover outside of Northern California **(Figure 35).**[22] Little is known about Reginald Inwood or Albert Hoover's works before forming Inwood & Hoover. Inwood & Hoover's last known work was completed in 1967, and by 1968, Hoover appears to have begun practicing on his own, briefly collaborating with architect Cliff May on several office park projects in Menlo Park.[23] Hoover's later works include the Sonoma State College Health Center (1971) and contributing work to the Superior Court of California, County of Santa Clara, Hall of Justice #2 (1988) in San Jose.[24]

Figure 34: 1980 photograph of the Hope Evangelical Lutheran Church, San Mateo. Designed by Inwood & Hoover in 1962, extant. Source: San Mateo Public Library.

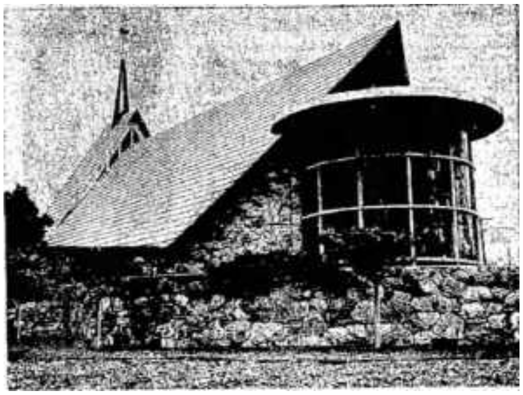

Figure 35: 1965 photograph of the Santa Anita Church, Arcadia. Designed by Inwood & Hoover in 1965, extant. Source: "Church of the Week," ***The Independent Star News,*** **March 21, 1965.**

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[19] Palo Alto Stanford Heritage; "Palo Alto Art Center," Mark Cavagnero associates, September 19, 2023, accessed February 4, 2024. https://www.cavagnero.com/project/palo-alto-art-center/.
[20] "Leslie Nichols," *Peninsula Times Tribune,* December 17, 1969.
[21] Palo Alto City Directories, Ancestry.com
[22] "New Lutheran Sanctuary Set," *The San Mateo Times,* October 13, 1962; "Church of the Week," *The Independent Star News,* March 21, 1965.
[23] "Saga Administrative Corp to Double Menlo Headquarters," *Redwood City Tribune,* July 1, 1968.
[24] Student Health Center is to Start This Year at SCC," *Petaluma Argus-Courier,* August 18, 1971; Pacific Coast Architecture Database (PCAD), accessed online February 2 2024.

Evaluation

The property at 201 Ravenswood Avenue is not currently listed in the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register). The property is not listed in the most recent published version of the California Historical Resources Information System (CHRIS) Built Environment Resource Directory (BERD) for San Mateo County, last updated in 2023, indicating that no record of a previous survey or evaluation affiliated with the State of California Office of Historic Preservation (OHP) is on file. The City of Menlo Park does not maintain a local register of historical resources.

In order for a property to be considered eligible for the California Register of Historical Resources (California Register), the property must possess historic significance and retain integrity to convey that significance.

Criterion 1 (Events)

201 Ravenswood Avenue does not appear to be individually eligible for listing in the California Register under Criterion 1 (Events) associations with any events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. The subject buildings were constructed during a wave of post-World War II suburban expansion in the Bay Area. In addition to residential development, associated institutions such as schools and religious buildings were constructed in new and growing suburban communities. The buildings at 201 Ravenswood do not stand out as a particularly representative or unique examples of post-World War II suburban institutional development in Menlo Park such that the property would rise to the level of significance required for listing in the California Register. No significant events are known to have taken place at the subject building that would allow the building to rise to the level of significance necessary to be individually eligible for the California Register under Criterion 1.

Criterion 2 (Persons)

201 Ravenswood Avenue does not appear to be individually eligible for listing in the California Register under Criterion 2 (Persons) for associations with the life of a person important to local, state, or national history. None of the First Church of Christ Scientist, Menlo Park's religious leaders or congregation members, nor any other individual associated with the subject property, appear to have made a significant impact on local, state, or national history such that the building could be found significant under Criterion 2.

Criterion 3 (Architecture)

201 Ravenswood Avenue appears to have an individually eligible resource for listing in the California Register under Criterion 3 (Architecture). The chapel appears to be eligible at the local level under Criterion 3 as a distinctive example of Late Modern architecture. However, the earlier multi-use building does not contribute to this significance and is not, itself, individually eligible.

The multi-use building, designed by architect Leslie Nichols, does not embody the distinctive characteristics of the Late Modern style, nor is it a distinctive example of Midcentury Modern design. Except for a few details such as the colored glass window wall and tapered front columns, its modest use of massing, materials, and utilitarian fenestration result in an overall restrained design. The building appears to have been built on a more restrictive budget by the Church before building the main chapel, and does not express the same level of distinctive design character as the chapel. The Midcentury Modern design of the multi-use building does not stand out among the many examples of Midcentury Modern style buildings constructed in Menlo Park and the region during the 1950s.

The chapel, designed by architects Inwood & Hoover does embody the distinctive characteristics of the Late Modern style. The chapel's design features strong geometric forms in a symmetrical composition, a dramatic and soaring roofline, and floor-to-ceiling glazing systems with selective use of decorative art glass. The cruciform concrete columns not only integrate structural elements into the interior and exterior design, but also reference the shape of the cruciform chapel itself—this strong design parti is characteristic of Late Modernist design which often highlights structural features as integral design elements. In addition to embodying distinctive characteristics of the Late Modern style, details such as the frameless clerestory windows at the nave create a dramatic sense that the roof is floating above the building, coupled with the enclosed gardens and ceiling-height glazing, there is a strong sense of indoor-outdoor connection. These details cause the chapel's design to stand out as distinctive amongst Late Modern style buildings, including amongst other religious buildings, constructed in Menlo Park and the region during this period. As such, the chapel rises to the level of significance for individual eligibility for listing in the California Register under Criterion 3 at the local level. The period of significance for the chapel is 1966, the year of completion.

Criterion 4 (Information Potential)

The property at 201 Ravenswood Avenue does not appear to be individually eligible for listing in the California Register under Criterion 4 (Informational Potential) as a building or property that has the potential to provide information important to the prehistory or history of the City of Menlo Park, state, or nation. The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When Criterion 4 does relate to built resources, it is relevant for cases when the building itself is the principal source of important construction-related information. The subject property does not feature construction or material types, or embody engineering practices that would, with additional study, provide important information. Evaluation of this property was limited to age-eligible resources above ground and did not involve survey or evaluation of the subject property for the purposes of archaeological information.

Integrity of 201 Ravenswood Avenue

In order to qualify for listing in any local, state, or national historic register, a property or landscape must possess significance under at least one evaluative criterion as described above and retain integrity. Integrity is defined by the California Office of Historic Preservation as “the authenticity of an historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance,” or more simply defined by the National Park Service as “the ability of a property to convey its significance.”[25]

The seven aspects that define integrity are defined as follows:

> Location is the place where the historic property was constructed or the place where the historic event occurred;
>
> Setting addresses the physical environment of the historic property inclusive of the landscape and spatial relationships of the building(s);
>
> Design is the combination of elements that create the form, plan, space, structure, and style of the property;
>
> Materials refer to the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form the historic property;
>
> Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
>
> Feeling is the property’s expression of the aesthetic or historic sense of a particular period of time; and
>
> Association is the direct link between an important historic event or person and the historic property.

Location
201 Ravenswood Avenue retains integrity of location. The chapel has remained situated at its location of original construction since 1966.

Setting
201 Ravenswood Avenue retains integrity of setting. The subject parcel has undergone no major alterations or changes to landscaping and circulation since the construction of the chapel in 1966, and the parcels’ surrounds are still open areas with parking or buildings of the SRI International campus.

Design
201 Ravenswood Avenue retains integrity of design. The chapel has undergone no major alterations since its construction in 1966, and retains its key design features including its symmetrical cruciform plan, full-height window walls and corner gardens, and integrated structural features such as cruciform columns and heavy timber roof joists. Thus, 201 Ravenswood Avenue retains the integrity of its original design.

Materials
201 Ravenswood Avenue retains material integrity. The chapel has undergone no major alterations since its construction in 1966, and all structural and decorative materials on the exterior and interior are original, including the full-height window walls, roman bricks, cruciform columns, frameless clerestory windows, and multi-panel wood doors. Thus, 201 Ravenswood Avenue retains material integrity.

Workmanship
201 Ravenswood Avenue retains integrity of workmanship. The chapel’s exposed structural elements, including the cruciform concrete columns and exposed roof joists, are integrated into the interior and exterior design and display a high level of workmanship for the period of construction. Thus, 201 Ravenswood Avenue clearly represents methods of construction and architectural detailing from its period of construction.

Feeling
201 Ravenswood Avenue retains integrity of feeling. The chapel was originally designed as a religious sanctuary and has been continuously occupied as a church throughout its existence. The building’s cruciform footprint and tall steeple contribute to a strong aesthetic connection to the religious use of the building, and structural features such as the cruciform concrete columns, Roman

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[25] California Office of Historic Preservation, *Technical Assistance Series No. 7: How to Nominate a Resource to the California Register of Historical Resources* (Sacramento: California Office of State Publishing, 4 September 2001) 11; U.S. Department of the Interior, National Park Service, *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: National Park Service, 1995) 44.

brick, and full-height windows are strongly associated with 20th century Modernist architecture. The building's location, setting, design, materials, and workmanship have been retained enabling the building to retain the overall feeling of a suburban church in the Late Modern style.

Association
201 Ravenswood Avenue retains integrity of association. Due to the fact that it retains integrity of location, design, setting, materials, workmanship, and feeling, particularly the cruciform plan and tall steeple, the chapel at 201 Ravenswood Avenue is identifiable as a Late Modern style church constructed in the 1960s. It therefore retains integrity of association.

Overall, 201 Ravenswood Avenue retains integrity.

Character Defining Features
For a property to be eligible for national or state designation under criteria related to type, period, or method of construction, the essential physical features (or character-defining features) that enable the property to convey its historic identity must be evident. These distinctive character-defining features are the physical traits that commonly recur in property types and/or architectural styles. To be eligible, a property must clearly contain enough of those characteristics to be considered a true representative of a particular type, period, or method of construction, and these features must also retain a sufficient degree of integrity. Characteristics can be expressed in terms such as form, proportion, structure, plan, style, or materials.

The character-defining features of the chapel at 201 Ravenswood Avenue include:

- Mass, scale, and proportions of the nave, including its cruciform footprint and steeply pitched roof and steeple with tapered vertical bands of semi-opaque windows and metal cap, and rectangular, flared gable roofed narthex.
- Roof eaves with concrete soffits that extend into the interior space
- Concrete cruciform columns
- Frameless clerestory windows
- Roman brick walls
- Full-height window walls, including art glass
- Exposed structural heavy timber roof joists
- Enclosed gardens
- Multi-panel wood doors.

The 1958 multi-use building does not contribute to the architectural significance of the chapel under Criterion 3, and is, therefore, not considered a character-defining feature of the property.

Conclusion
The chapel at 201 Ravenswood Avenue appears to be individually eligible for listing in the California Register of Historical Resources under Criterion 3 (Architecture) as a distinctive example of a Late Modern religious building. As such, California Historical Resource Status Code (CHRSC) of "3CS" has been assigned to the property, meaning "Appears eligible for the California Register as an individual property through survey evaluation."[26] Therefore, the property is considered a historical resource for the purposes of the California Environmental Quality Act (CEQA).

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[26] California State Office of Historic Preservation Department of Parks and Recreation, *Technical Assistance Bulletin #8: User's Guide to the California Historical Resource Status Codes & Historical Resource Inventory Directory*, Sacramento, November 2004.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ____________
HRI # ____________
Trinomial ____________

Page 19 **of** 19
Resource Name or # 201 Ravenswood Avenue
*__Recorded by__ Page & Turnbull, Inc.
***Date**: April 4, 2024 ☒ Continuation ☐ Update

***B12. References:**

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Appendix 3.8-2

SRI International Campus Preservation Alternatives Analysis Report

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PARKLINE PROJECT
SRI INTERNATIONAL CAMPUS
PRESERVATION ALTERNATIVES ANALYSIS REPORT

333 RAVENSWOOD AVENUE
MENLO PARK, CALIFORNIA
[21144]

PREPARED FOR:
LANE PARTNERS

SUBMITTED TO:
MENLO PARK PLANNING DEPARTMENT

June 4, 2024

REVISED & RESTATED

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TABLE OF CONTENTS

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I. INTRODUCTION

This Preservation Alternatives Analysis Report has been prepared at the request of the City of Menlo Park to analyze preservation alternatives for the Parkline Project (Project) which proposes the redevelopment of the SRI International Campus (333 Ravenswood Avenue) (Project Site) as a transit-oriented, mixed-use campus with new residential units, open space, community serving uses, and office/R&D space for both SRI International and other tenants. The Project Site is currently owned and occupied by SRI International, a non-profit contract research and development (R&D) institution. Lane Partners (Project Sponsor) is proposing to redevelop the Project Site with the Parkline Project. The property at 201 Ravenswood Avenue (surrounded on three sides by the Project Site) is being acquired from the First Church of Christ, Scientist congregation by Lane Partners, and is included in an Increased Development Variant (Variant) studied as part of the variant for purposes of environmental review under the California Environmental Quality Act.

The SRI International Campus was evaluated in April 2022 by Page & Turnbull in a report titled, *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation* (Historic Resource Evaluation) and determined to be eligible for listing as a historic district in the California Register of Historical Resources (California Register) under Criterion 1 (Events) for association with SRI International as an innovative research and development institution that has contributed numerous advancements in a variety of fields including computing, business and economics, health and medicine, and physical sciences. Often called the birthplace of the internet, some of the most significant advances include those related to ARPANET, internetworks, dot coms, and personal computing, including the invention of the computer mouse. The eligible historic district has 26 contributing buildings and two contributing landscape features, as well as 13 non-contributing buildings. In addition, the Historic Resource Evaluation found three buildings to be individually eligible for listing in the California Register: Building A, under Criterion 1 (Events) and Criterion 3 (Architecture); Building E, under Criterion 1 and Criterion 2 (Persons); and Building 100, under Criterion 1. Thus, these three individual buildings and the historic district are historic resources for the purposes of the California Environmental Quality Act (CEQA).

The property at 201 Ravenswood Avenue was evaluated in February 2024 by Page & Turnbull. The former Church of Christ, Scientist chapel (Chapel), built in 1966 by architects Inwood & Hoover, was found to be individually eligible for listing in the California Register as a distinctive local example of Late Modernist architecture under Criterion 3 (Architecture); another 1958 multi-use building on the property was found to be ineligible for listing in the California Register. Therefore, the Chapel is an individual historic resource for the purposes of CEQA.

The Project would redevelop the SRI International Campus by creating a new office/R&D campus with no increase in office/R&D square footage; up to 550 new rental dwelling units at a range of affordability levels; new bicycle and pedestrian connections; and open space. The Project would demolish 35 of the 38 existing buildings on the Project Site; existing Buildings P, S, and T, would remain onsite and be operated by SRI International and its tenants, and a six-megawatt natural gas cogeneration plant would be decommissioned. In total, the Project would result in approximately 1,768,802 sf of mixed-use development, with approximately 1,093,602 sf of office/R&D uses and approximately 675,200 sf of residential uses. Approximately 26 acres of open space areas and supporting amenities would be developed at the Project Site, including a network of publicly accessible bicycle and pedestrian trails, open spaces, and active/passive recreational areas that would be available to the public. In addition, the Project Site would include community-oriented facilities, such as a community playing field, a children's playground area, and a community amenity building that would accommodate retail uses. **(Figure 1 and Figure 2)**

Figure 1. Aerial view of the SRI International Campus at 333 Ravenswood Avenue (Project Site), indicated by red outline. Buildings S, P, and T, which are proposed to be retained, are outlined in yellow. The property at 201 Ravenswood Avenue (shaded blue) is not included in the Project, but is included in the Variant and would be demolished. Under both the Project and Variant, all other buildings would be demolished. Source: Google Maps, 2021. Edited by Page & Turnbull.

The Project and Variant are described in greater detail in **Section III. Project and Variant Descriptions** of this report.

In addition to a No Project Alternative, this report describes three Preservation Alternatives to the Project for the purposes of CEQA review and includes a brief discussion of existing limitations of the Project Site, preservation alternatives that were considered but rejected, and the project sponsor's objectives.

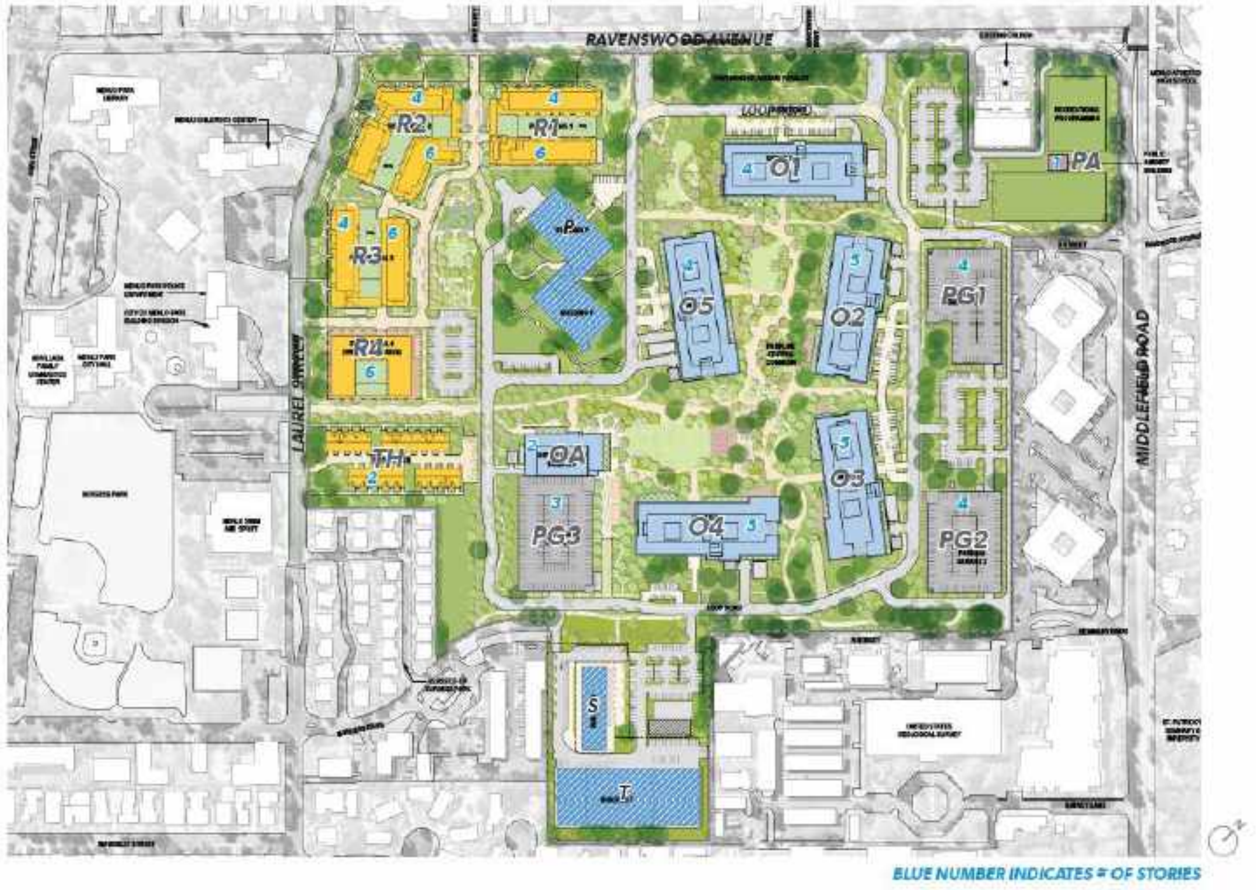

Figure 2. Conceptual master plan of the Project (Office or R&D Buildout) with office/R&D/life science buildings shown in blue and residential buildings shown in yellow, and parking garages shown in grey.
Source: STUDIOS Architecture, "Lane Partners Parkline: Historic Resource Evaluation – Site Plan Alternatives," May 26, 2023.[1]

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[1] The building labeled "PA" and "Public Amenity" is also known as the "Community Amenity" building, and is referenced in this report by that name.

Methodology

This report was produced for the City of Menlo Park in order to inform the CEQA Environmental Impact Report for the Parkline project. The first sections of this report summarize the significance of the historic resources, inclusive of the eligible SRI International Campus historic district and individually eligible Buildings 100, A, and E and the Chapel; list their character-defining features; and describe the Project and Variant. The report then describes the three preservation alternatives to the Project and analyzes impacts to the identified character-defining features of the historic resources.

In preparation of this report, Page & Turnbull referred to the Historic Resource Evaluation for the SRI International Campus completed in April 2022, which provides a detailed site development history, relevant historic contexts regarding the architectural design of the property and technology and innovation at SRI, and evaluation of the property as a historic resource. Page & Turnbull also referred to the Historic Resources Technical Report (HRTR) that was submitted to the City (Final, November 29, 2023; Revised & Restated, March 11, 2024), which evaluated the potential impacts to historical resources based on the Project in accordance with CEQA. The Revised & Restated HRTR also includes an appended historic evaluation of 201 Ravenswood Avenue by Page & Turnbull using California Department of Parks and Recreation (DPR) 523 survey forms.

Project alternative studies were provided by the Project Sponsor, and were developed in consultation with Page & Turnbull, the City of Menlo Park, and the city's environmental consultant, ICF. The Preservation Alternatives descriptions are based on the graphics package prepared by STUDIOS Architecture, design consultant for the Project Sponsor, titled "Lane Partners Parkline: Historic Resource Evaluation – Site Plan Alternatives" (dated August 11, 2023) and "Lane Partners Parkline: Historic Resource Evaluation – Site Plan Alternatives: Variant (2024)" (dated March 20, 2024) (refer to the **Appendix B**). The Project alternative studies provided in the Graphics Package illustrate the Preservation Alternatives options discussed in this report.

Determination of Significant Adverse Change Under CEQA

According to CEQA, a "project with an effect that may cause a substantial adverse change in the significance of an historic resource is a project that may have a significant effect on the environment."[2] Substantial adverse change is defined as: "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired."[3]

---

[2] CEQA Guidelines subsection 15064.5(b).

[3] CEQA Guidelines subsection 15064.5(b)(1).

For purposes of CEQA, the significance of a historical resource is materially impaired when a project "demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance" or that justify or account for its inclusion in, or eligibility for inclusion in a local register of historical resources pursuant to local ordinance or resolution.[4] Thus, a project may cause a change in a historic resource but still not result in a significant adverse effect on the environment as defined by CEQA as long as the impact of the change on the historic resource is determined to be less-than-significant, negligible, neutral or even beneficial.

The three preservation alternatives presented in this report are analyzed within this framework for impacts to the historic significance of the California Register eligible SRI International Campus historic district and individually eligible Buildings 100, A, and E. In the case of the Variant, the same three preservation alternatives also consider impacts to the individually eligible Chapel.

Secretary of the Interior's Standards (SOI Standards)

The Secretary of the Interior's Standards for the Treatment of Historic Properties (SOI Standards) are standards developed by the National Park Service within the U.S. Department of the Interiors to provide guidance for reviewing proposed work on historic properties. They are accompanied by the illustrated guidelines, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* (SOI Guidelines), that offer general design and technical recommendations in applying the SOI Standards.[5]

The Secretary of the Interior offers four sets of standards to guide the treatment of historic properties: Preservation, Rehabilitation, Restoration, and Reconstruction. Typically, one set of standards is chosen for a project based on the project scope. For the purposes of the alternatives analysis, the Standards for Rehabilitation would be the appropriate treatment, as it addresses adaptive reuse of historic buildings. Refer to **Appendix A** for the ten SOI Standards for Rehabilitation.

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[4] CEQA Guidelines subsection 15064.5(b)(2).

[5] Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings,* (U.S. Department of the Interior National Park Service Technical Preservation Services, Washington, D.C.: 2017), accessed August 31, 2023, https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf.

DISTRICT INTEGRITY

For a district to retain integrity, the majority of the components that make up the district’s historic character must possess integrity even if they are individually undistinguished. The relationships among the district’s components also must be substantially unchanged since the period of significance. Intrusions within a district may affect its integrity based on the relative number, size, scale, design, and location of the components. A district is not eligible if it contains so many alterations or new intrusions that it no longer conveys the sense of a historic environment.

II. SUMMARY OF SIGNIFICANCE

333 Ravenswood Avenue (SRI International Campus)

The SRI International campus was evaluated under the Historic Resource Evaluation, which determined the site to be eligible for listing as a historic district in the California Register of Historical Resources (California Register) under Criterion 1 (Events) for association with SRI International as an innovative research and development institution that has contributed numerous advancements in a variety of fields including computing, business and economics, health and medicine, and physical sciences. The eligible historic district has 26 contributing buildings and two contributing landscape features, as well as 13 non-contributing buildings. In addition, the Historic Resource Evaluation found three buildings to be individually eligible for listing in the California Register: Building A, under Criterion 1 (Events) and Criterion 3 (Architecture); Building E, under Criterion 1 and Criterion 2 (Persons); and Building 100, under Criterion 1. Thus, these three individually eligible buildings and the eligible historic district are historic resources for the purposes of CEQA review.

The following map, **Figure 3**, and **Table 1** provide a summary of Page & Turnbull's findings in the HRE. In the table, individually eligible buildings are shaded red and contributors to the eligible SRI International Campus historic district are shaded light pink.

TABLE 1. SUMMARY OF FINDINGS FOR HISTORIC RESOURCES ON SRI INTERNATIONAL CAMPUS

Name	Year Built	Individual Historic Resource Eligible for CR[6]	CR-Eligible SRI International Campus Historic District Contributor/Non-Contributor	Historical Resource for CEQA
Building A	1958-61	Yes – Criterion 1; 3	Contributor	Yes
Building B	1976-77	No	Contributor	Yes
Building E	1966	Yes – Criterion 1; 2	Contributor	Yes
Building G	1964	No	Contributor	Yes
Building I	1969	No	Contributor	Yes
Building K	1971	No	Non-Contributor	No
Building L	1967	No	Contributor	Yes
Building M	1962	No	Contributor	Yes
Building M-1	c. 2000	No	Non-Contributor	No
Building P	1980-81	No	Contributor	Yes
Building R	1984	No	Non-Contributor	No
Building S	1981	No	Contributor	Yes
Building T	1962	No	Contributor	Yes
Building U	1986-87	No	Non-Contributor	No
Building W	1988	No	Non-Contributor	No
Building 100	1943	Yes – Criterion 1	Contributor	Yes

---

[6] CR = California Register.

Name	Year Built	Individual Historic Resource Eligible for CR[6]	CR-Eligible SRI International Campus Historic District Contributor/Non-Contributor	Historical Resource for CEQA
Building 108	1943	No	Contributor	Yes
Building 110	1943	No	Contributor	Yes
Building 201	1943	No	Contributor	Yes
Building 202	1943	No	Contributor	Yes
Building 203	1943	No	Non-Contributor	No
Building 204	1943	No	Contributor	Yes
Building 205	1943	No	Contributor	Yes
Building 301	1943-44	No	Contributor	Yes
Building 302-CAF	1943-44	No	Non-Contributor	No
Building 303	1943	No	Non-Contributor	No
Building 304	1943	No	Contributor	Yes
Building 305	1943	No	Non-Contributor	No
Building 306	1943	No	Non-Contributor	No
Building 307	1992	No	Contributor	Yes
Building 309	1943	No	Contributor	Yes
Building 320	1943	No	Contributor	Yes
Building 402/404	1943	No	Contributor	Yes
Building 405	c.1948-56	No	Contributor	Yes
Building 406	1943	No	Contributor	Yes
Building 408	1943	No	Non-Contributor	No
Building 409	c.1948-56	No	Contributor	Yes
Building 412	1943	No	Non-Contributor	No
Greenhouse	c. mid- to late 1980s	No	Non-Contributor	No
Objects & Landscape Features				
Main Employee Parking Lot	c.1981-2	No	Non-Contributor	No
Oak Park	c. early 1990s	No	Non-Contributor	No
Research Field	c.1981-9	No	Contributor	Yes
Satellite Dish	c.2000	No	Non-Contributor	No
SRI International Monument	c.1970	No	Contributor	Yes

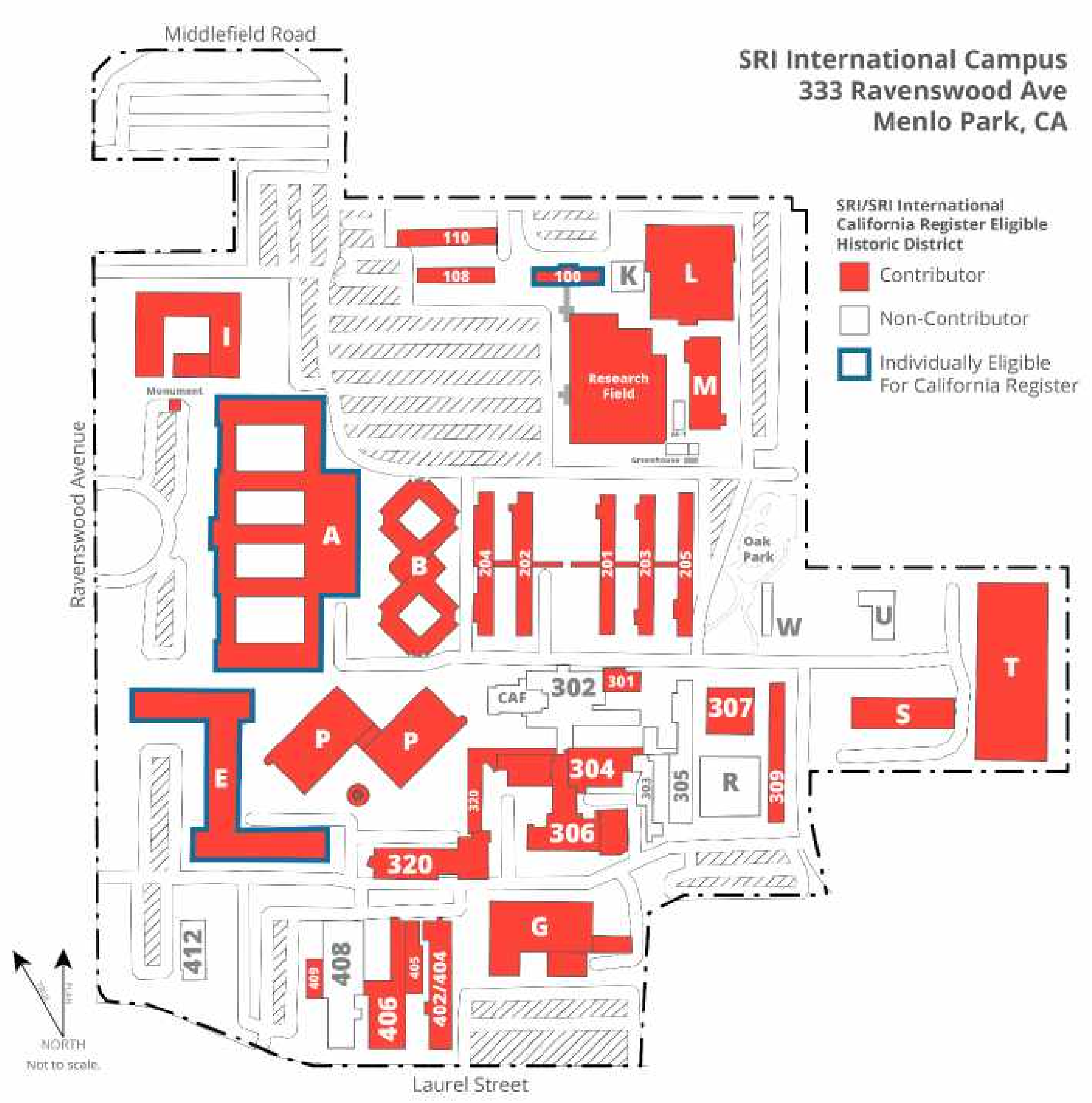

Figure 3. Map showing summary of findings for California Register eligibility. Source: Page & Turnbull, *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation* (2022), 9.

ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

Page & Turnbull identified a California Register-eligible SRI International historic district, which is eligible under Criterion 1 (Events). As stated in the 2022 HRE:

> The SRI International campus at 333 Ravenswood Avenue is significant under Criterion 1 for significant contributions to the broad patterns of local history, and to scientific innovation nationally. Stanford Research Institute, later renamed SRI International, was established as the first successful contract-applied research institute of its kind on the West Coast, established to benefit western industry, in 1946. Although established by Stanford University, the institute functioned fairly independently even before formally breaking off as a separate non-profit in 1970. During the second half of the twentieth century, SRI not only functioned as the largest employer in Menlo Park, but also spurred economic development and innovation in Silicon Valley. Advancements made as part of SRI's research and development efforts not only helped in the success of burgeoning Silicon Valley companies, but, in some cases, transformed the world—as in the innovations in early internetworking, dot coms, personal computing, and the computer mouse in the 1960s and 1970s, which would form the backbone of the modern internet and personal computers. Additionally, SRI has spun-off over 60 companies, many of which have been influential in their own right, not least of which includes Siri, which was later bought by Apple and implemented as the first virtual personal assistant in cell phones in 2011. While advancements in computing and the internet are perhaps SRI International's most widely recognized contributions, the institute has worked on over 50,000 projects, many of which resulted in breakthroughs and innovation in sectors such as business and economics, health, education, artificial intelligence, robotics and physical sciences. Therefore, the SRI International Campus is eligible under Criterion 1 as a historic district. […]
>
> Contributors to the Eligible SRI International Campus Historic District include buildings that were purpose-built for SRI to serve primary research and development functions, such as offices and laboratories. Former Dibble buildings that were converted to offices and/or laboratories for research and development purposes are also contributors. Buildings that have ancillary or support functions, such as power generation, machine shops, storage, and maintenance, are considered non-contributors. […]

> The SRI International Campus is eligible as a historic district under California Register Criterion 1 (Events) with an on-going period of significance beginning in 1947 through the present day. The eligible historic district has 26 contributing buildings and 2 contributing landscape features, as well as 13 non-contributing buildings.[7]

INDIVIDUALLY ELIGIBLE BUILDINGS

In addition to the California Register-eligible district, the Historic Resource Evaluation identified three buildings that are individually eligible for listing in the California Register: Building 100, Building A, and Building E.

Character Defining Features

For a property to be eligible for national, state or local designation under one of the significance criteria, the essential physical features (or character-defining features) that enable the property to convey its historic identity must be evident. To be eligible, a property must clearly contain enough of those characteristics, and these features must also retain a sufficient degree of integrity. Characteristics can be expressed in terms such as form, proportion, structure, plan, style, or materials. The character-defining features of each individually eligible building are summarized below.

Building 100 Character-Defining Features

- Two-story massing and rectangular plan
- Projecting, two-story central volume at the primary façade
- Symmetrical facades
- Original fenestration pattern, including original eight-over-eight wood double hung windows
- Wood shutters at two windows flanking the primary entrance
- Primary entry ensemble, including paired doors and multi-lite operable wood transom
- Stucco cladding
- Cross-gable roof with shallow eaves, with wood board cladding and a round wood vent in the front gable eave
- Brick steps and wood portico at primary entrance.

---

[7] Page & Turnbull, *SRI International, 333 Ravenswood Avenue: Historic Resource Evaluation* (submitted to Menlo Park Planning Department, April 21, 2022), 87-9.

Figure 4. Building 100.

Building A Character-Defining Features

- Overall footprint, geometric massing, and flat roof
- Brick cladding
- Double-height colonnaded entry portico and double-height window wall
- Breezeways supported by square columns along the primary façade
- Vertical metal louvered sunshades
- Small rectangular punched openings with patterned glass block at primary façade
- Original doorway and fenestration pattern, including original aluminum sash ribbon windows
- Two double-height projecting concrete frames with opaque glazing and inset two-tone blue tile mosaics
- Rear portico and terraced, sunken area well
- Interior landscaped courtyards.
-

Figure 5. Building A.

Building E Character-Defining Features

- Three-story-over basement massing and flat roof
- Perpendicular Z-shape footprint with central wing between offset, perpendicular north and south wings
- Exposed aggregate concrete and brick cladding
- Exterior concrete columns
- Vertical concrete fins and horizontal concrete sunshades
- Original fenestration, including original aluminum sash fixed windows and vertical aluminum fins, and aluminum frame storefront window system
- Primary entrance ensemble, including the covered walkway with flat concrete canopy, central support columns, horizontal beams over open planted area, and basketweave brick paving
- Fully glazed hyphen corridor connected to Building A.

Figure 6. Building E.

201 Ravenswood Avenue (Chapel)

INDIVIDUALLY ELIGIBLE BUILDINGS

Date of Construction: 1966
Architect/Builder: Inwood & Hoover
California Register Significance Criteria: Criterion 3 (Architecture)

The property at 201 Ravenswood Avenue in Menlo Park is a one-acre rectangular site, surrounded on three sides by the SRI International Campus at 333 Ravenswood Avenue. The property was developed by the First Church of Christ Scientist with two buildings—first a multi-use building in 1958, then a chapel in 1966. The multi-purpose building, designed by Leslie Nichols in the Midcentury Modern style, was found *not* to be eligible for listing in the California Register under any criteria. The cross-plan chapel (Chapel), designed by Inwood & Hoover, was found to be a distinctive local example of a religious building designed in the Late Modern style, and is individually eligible for listing in the California Register under Criterion 3 (Architecture). Therefore, only the Chapel is a historical resource for the purposes of CEQA.

As stated in the February 2024 DPR forms:

> 201 Ravenswood Avenue appears to have an individually eligible resource for listing in the California Register under Criterion 3 (Architecture). The chapel appears to be eligible at the local level under Criterion 3 as a distinctive example of Late Modern architecture. However, the earlier multi-use building does not contribute to this significance and is not, itself, individually eligible.
>
> The multi-use building, designed by architect Leslie Nichols, does not embody the distinctive characteristics of the Late Modern style, nor is it a distinctive example of Midcentury Modern design. Except for a few details such as the colored glass window wall and tapered front columns, its modest use of massing, materials, and utilitarian fenestration result in an overall restrained design. The building appears to have been built on a more restrictive budget by the Church before building the main chapel, and does not express the same level of distinctive design character as the chapel. The Midcentury Modern design of the multi-use building does not stand out among the many examples of Midcentury Modern style buildings constructed in Menlo Park and the region during the 1950s.
>
> The chapel, designed by architects Inwood & Hoover does embody the distinctive characteristics of the Late Modern style. The chapel's design features strong

geometric forms in a symmetrical composition, a dramatic and soaring roofline, and floor-to-ceiling glazing systems with selective use of decorative art glass. The cruciform concrete columns not only integrate structural elements into the interior and exterior design, but also reference the shape of the cruciform chapel itself—this strong design parti is characteristic of Late Modernist design which often highlights structural features as integral design elements. In addition to embodying distinctive characteristics of the Late Modern style, details such as the frameless clerestory windows at the nave create a dramatic sense that the roof is floating above the building, coupled with the enclosed gardens and ceiling-height glazing, there is a strong sense of indoor-outdoor connection. These details cause the chapel's design to stand out as distinctive amongst Late Modern style buildings, including amongst other religious buildings, constructed in Menlo Park and the region during this period. As such, the chapel rises to the level of significance for individual eligibility for listing in the California Register under Criterion 3 at the local level. The period of significance for the chapel is 1966, the year of completion.[8]

Figure 7. Chapel at 201 Ravenswood Avenue. Source: Page & Turnbull, January 31, 2024.

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[8] Page & Turnbull, 201 Ravenswood Avenue, Department of Parks and Recreation Primary Record (523A) and Building, Structure, Object Record (523B), prepared February 20, 2024.

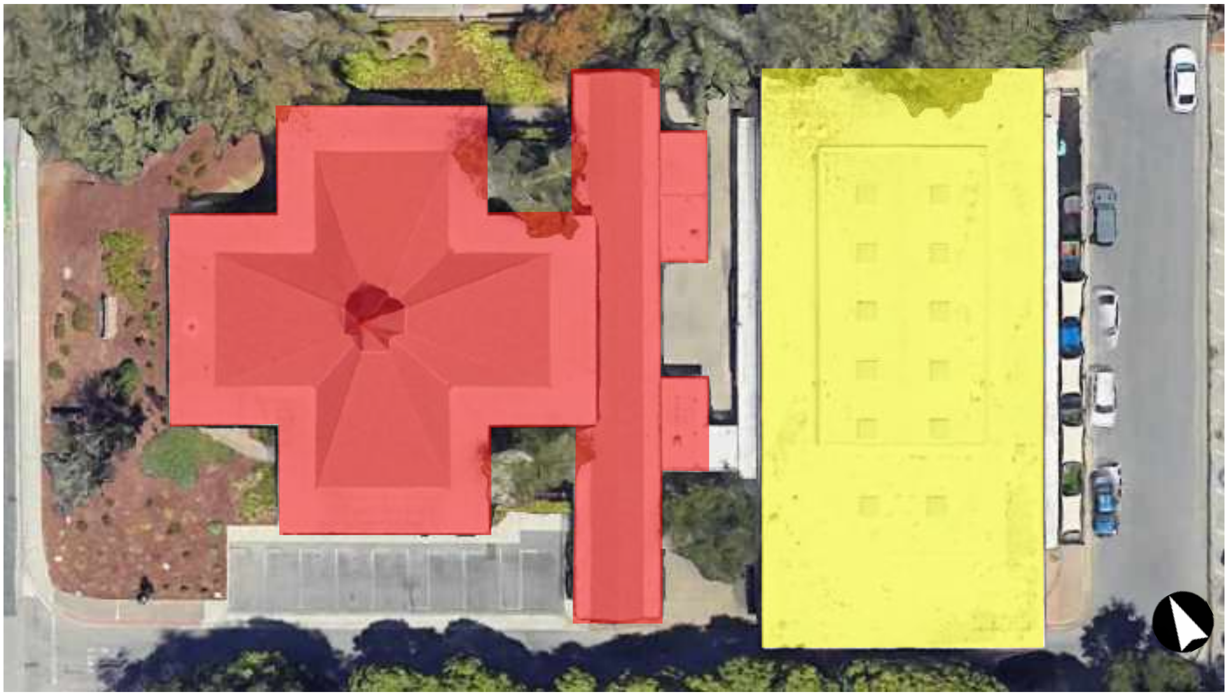

Figure 8. Aerial view of 201 Ravenswood Avenue. The 1966 Chapel (shaded red) is an eligible historic resource. The 1958 Multi-Use Building (shaded yellow) is *not* an eligible historic resource and does not contribute to the historic significance of the property. Source: Google Maps, 2023, edited by Page & Turnbull.

Chapel Character-Defining Features:

- Mass, scale, and proportions of the nave, including its cruciform footprint and steeply pitched roof and steeple with tapered vertical bands of semi-opaque windows and metal cap, and rectangular, flared gable roofed narthex.
- Roof eaves with concrete soffits that extend into the interior space
- Concrete cruciform columns
- Frameless clerestory windows
- Roman brick walls
- Full-height window walls, including art glass
- Exposed structural heavy timber roof joists
- Enclosed gardens
- Multi-panel wood doors.

III. PROJECT AND VARIANT DESCRIPTIONS

This project description is based on the “Parkline Master Plan, Menlo Park, CA: Project Description” dated October 31, 2022 (revised December 5, 2022), prepared by STUDIOS Architecture for Lane Partners and SRI International and submitted to the City of Menlo Park, as well as an updated Variant description dated February 2024, provided by the Project Team. The description is also based on site plans and data summary tables provided by Project Sponsor to Page & Turnbull for the Project (dated August 2023) and the Variant (dated March 20, 2024) included in **Appendix B**.

Project Description

The Project proposes to redevelop the outdated SRI International (SRI) research and development (R&D) campus by creating a revitalized transit-oriented, mixed-use campus adjacent to City Hall and proximate to the City’s Downtown Area and Caltrain Station. The Project will transform the existing site into an open and inviting mixed-use neighborhood with new sustainable research and development campus with no net increase in commercial square footage, new housing units at a range of affordability levels, new bicycle and pedestrian connections, and approximately 26 acres of open space.

The Project is anticipated to attract leading R&D and life science companies. Under current conditions, the Project Site includes 38 existing buildings that have been utilized by SRI over the years for a range of R&D purposes. The majority of these existing buildings are now underutilized and/or functionally obsolete for contemporary R&D or life science uses. As such, the Project (and Variant) will demolish most of the existing structures and site features – with exception for Buildings P, S, and T – and will decommission the existing natural gas cogeneration power plant facility and convert most of the site to a sustainable all-electric design.[9]

In the Project, five new four- to five-story office/R&D buildings would be constructed in the central portion of the site; two new four-story parking garages on the north side of the site; one new two-story office amenity building and three-story parking garage on the south end of the site; four new four- to six-story residential buildings on the south end of the site, off of Laurel Street; and a new cluster of two-story townhouses east of the other new residential buildings, also off of Laurel Street. The Project includes the construction of 450 residential units within three residential buildings (Residential Buildings R1, R2, R3) and townhomes; these market rate buildings and townhouses will include 15 percent below market rate (BMR) affordable units, per City requirements. An additional up to 100 future residential units for 100 percent affordable or special needs housing to be

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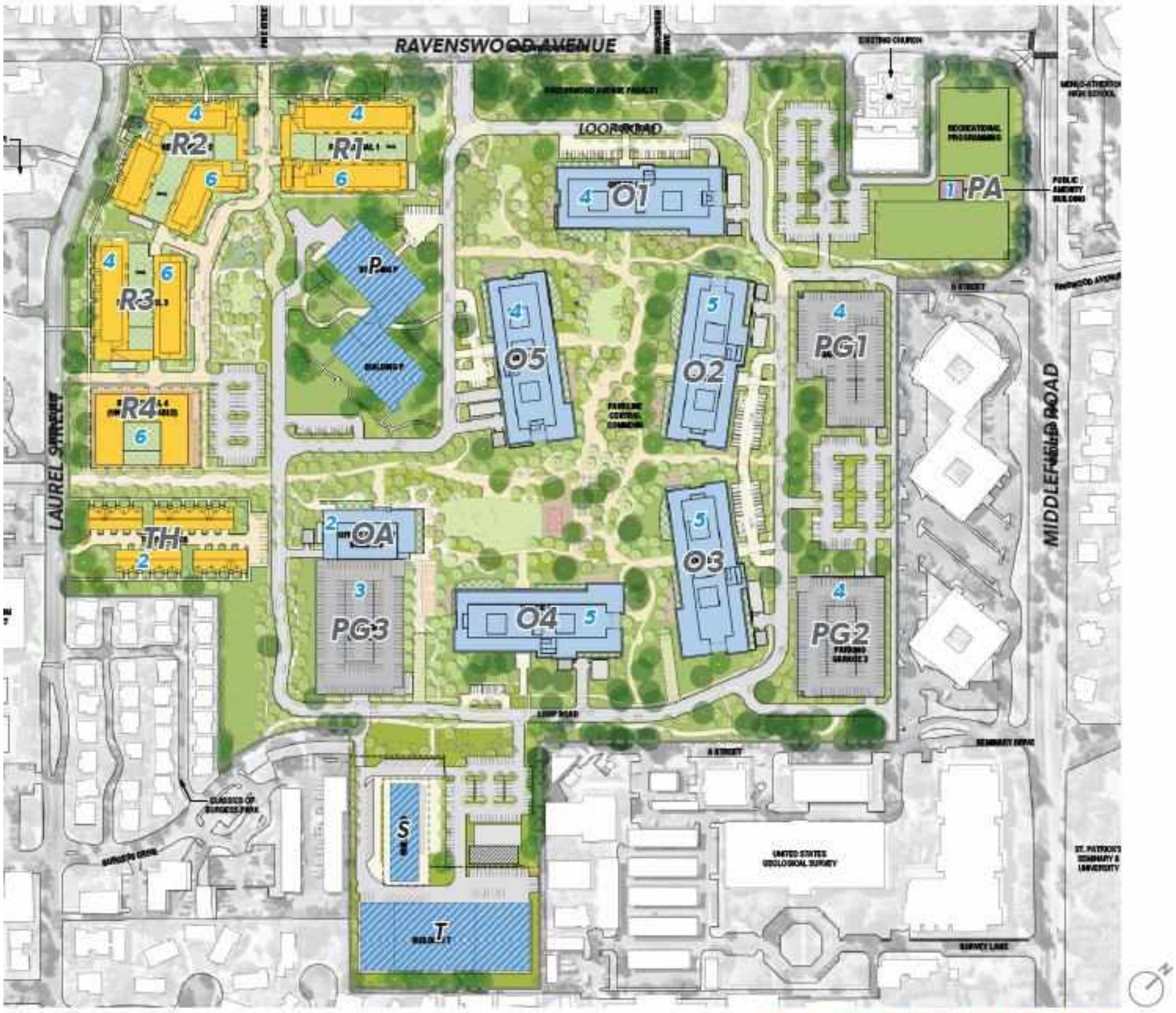
[9] Lane Partners & SRI International, “Parkline Master Plan, Menlo Park, CA: Project Description” (submitted to City of Menlo Park, October 31, 2022, rev. December 5, 2022), 1.

developed by an affordable housing developer on a one-acre portion of the residential area (Residential Building R4). **(Figure 9)**. The total number of residential units developed in the Project is 550 units.

The SRI International Monument, a contributing landscape feature to the historic district, is proposed to be relocated on-site. The monument is a marble cube that was installed c.1970 by SRI International after separating from Stanford University, located south of Building I, on the brick median in the visitor parking lot west of Building A; the inscription relates to mission of the institution. The future location of the SRI International Monument has not yet been determined, but will be reinstalled in an outdoor location that is publicly accessible such as near the Ravenswood Avenue public right-of-way or near one of the buildings that will continue to be used by SRI International.



BLUE NUMBER INDICATES # OF STORIES

Figure 9. Site plan for Project. Source: STUDIOS Architecture, “Lane Partners Parkline: Historic Resource Evaluation Site Plan Alternatives,” August 11, 2023.

In addition to various new vehicular and pedestrian circulation paths, a number of surface parking areas would be located throughout the site, as well as an open space known as “Parkline Central Commons” and a recreational programing area and one-story community amenity building at the north corner of the site, northeast of the existing church at 201 Ravenswood Avenue.

Variant Description

The Variant would include up to 250 additional residential rental dwelling units compared to the Project (an increase from 550 to 800 units, inclusive of up to 154 affordable units to be developed by an affordable housing developer in the northeast corner of the Project Site at Ravenswood Avenue and Middlefield Road). The Variant site plan includes the parcel located at 201 Ravenswood Avenue to create a continuous project frontage along Ravenswood Avenue. Under the Variant, the existing First Church of Christ, Scientist—inclusive of the 1966 Chapel and 1958 Multi-Use Building—would be demolished to accommodate the additional residential units, recreational open space area, and the emergency water reservoir. The Variant would not make any changes to the proposed office/R&D buildings.

Under the Variant, the R1, R2, and R3 multifamily buildings would be reduced to two buildings, R1 and R2, both of which accommodate 300 units for a total of 600 units in the northwest corner of the Project site. The Variant would maintain the 19 two-story townhouses included under the Project along Laurel Avenue (TH1). The Variant would include residential buildings in the northeastern portion of the Project Site, including the 6-story multifamily 100 percent affordable building with up to 154 units (R3; to be developed separately by an affordable housing developer) at the corner of Ravenswood Avenue and Middlefield Road, along with 27 additional townhomes located immediately south of R3 (referred to as TH2). Total gross residential floor area would increase from approximately 520,000 square feet under the Project to 1.096 million square feet under the Variant.

The Variant would reduce the underground parking footprint within the site, both by removing underground parking from the residential buildings and removing the underground parking connection between Buildings Office/R&D 1 and Office/R&D 2. As a result, the commercial parking garages PG1 and PG2 increase in square footage and one-level of height (from four to five stories) compared to the Project.

The Variant would include a recreational open space area in the northeast corner of the Project Site, along with associated surface parking. The Variant would also include space for an approximately 2-million-gallon underground water reservoir under the recreational open space area and an associated aboveground facilities room to be developed and operated by the City at a later date if the site is selected by the City for that use.

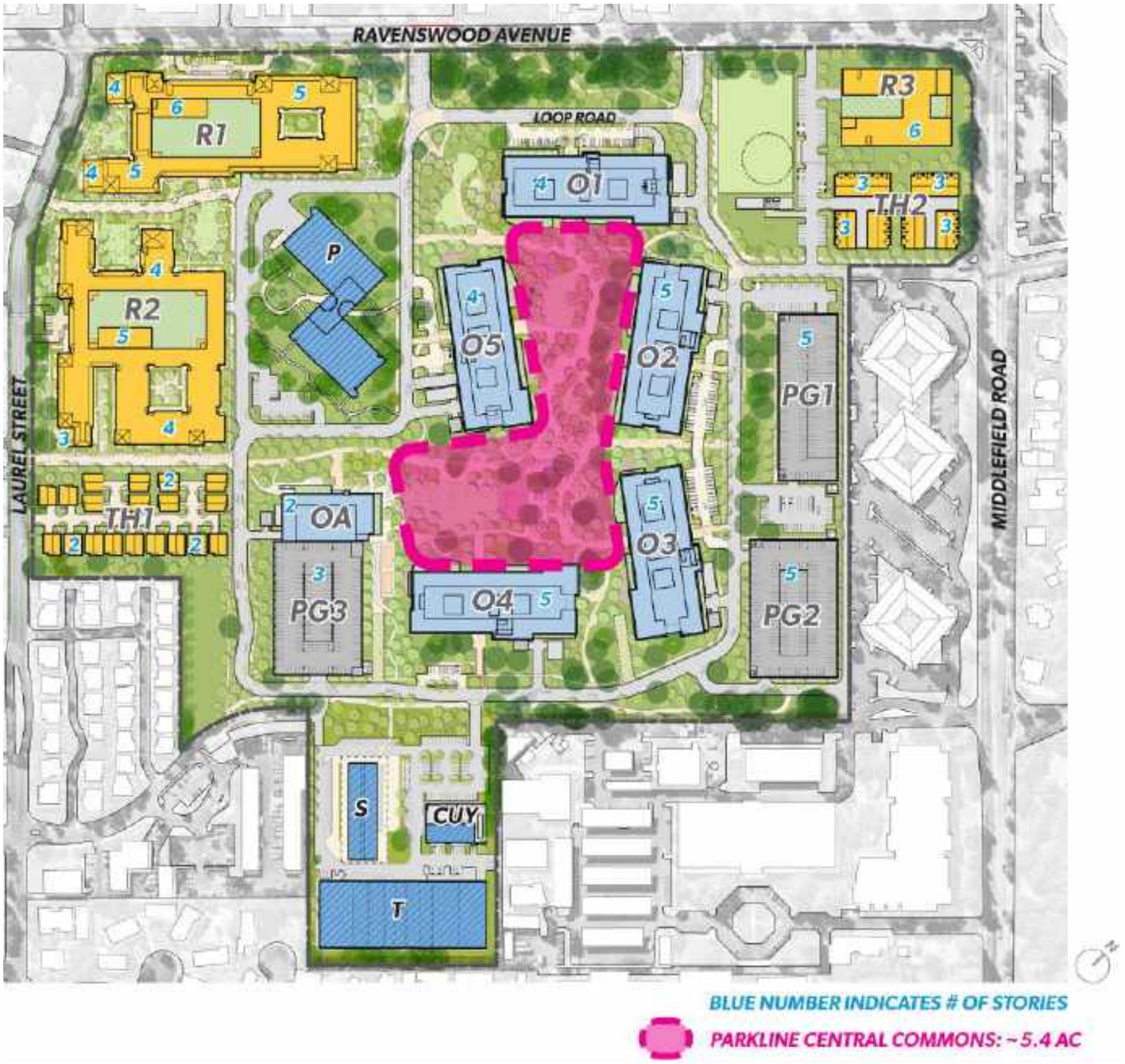


Figure 10. Project Site plan for Variant. Source: STUDIOS Architecture, "Lane Partners Parkline: Historic Resource Evaluation - Site Plan Alternatives – Variant (2024)," March 20, 2024.

Table 2 summarizes the development data for the Project and Variant.[10] A site plan for each the Project **(Figure 9)** and Variant **(Figure 10)** are provided in larger scale versions in **Appendix B** of this report.

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[10] This summary data was provided to Page & Turnbull by the Project Sponsor for the Historic Resources Technical Report. Refer to: Page & Turnbull, *Parkline Project: Historic Resources Technical Report - Revised & Restated* (submitted to City of Menlo Park, March 11, 2024).

TABLE 2. PARKLINE PROJECT – SUMMARY OF PROJECT & VARIANT

Project Metric	**Project (Office or R&D Buildout)**	**Variant**
Total Site Area	2,754,035 sf	2,797,797 sf
Total <u>Replacement</u> Commercial Gross Floor Area (GFA)		
Office/R&D:	1,051,600 sf	1,051,600 sf
Office Amenity Building:	40,000 sf	40,000 sf
Community Amenity Building:	2,002 sf	2,002 sf (Program included in Residential Building 3)
Total Residential GFA *Residential GFA inclusive of 100% Affordable Housing Site, assumed at 120,000sf	675,200 sf	1,096,000 sf
Total Number of Residential Units *Residential units inclusive of 100% Affordable Housing Site,	up to 550 units	up to 800 units
Total GFA, Other Uses	0 sf	1,500 sf (Pump station for the below-grade water reservoir.)
Total GFA to be Demolished	1,093,602 sf	1,106,302 sf
Existing Office/R&D to be Retained *Retained Buildings P, S, T	286,730 sf	286,730 sf
Total Building Coverage Area	752,117 sf	918,000 sf
Total Open Space *Area excludes onsite roadways and the outdoor areas directly adjacent to Buildings P, S, & T	26 acres	29 acres
Building Heights *Heights provided here are inclusive of mechanical screens and equipment.	110 ft. – Office/R&D 85 ft. – Residential	110 ft. – Office/R&D 90 ft. – Residential
Total Impervious Area / Pervious Area	1,588,300 sf / 1,165,750 sf	1,633,600 sf / 1,164,200 sf
Total Area of Ground Disturbance *Area inclusive of right-of-way and off-site improvements along project site frontages	2,981,000 +/- sf	3,133,000 +/- sf
Trees to be Removed	741	802
Trees to be Planted	873	860
Total Parking Spaces Assumes 0.5 space/DU for 100% Affordable Housing Site.	2,800 spaces – Office 519 spaces – Residential	2,800 spaces – Office 919 spaces – Residential
Emergency Generators	13	13

Another summary table indicating the number of stories of each proposed new building and buildings to be retained is provided in **Table 3**.

TABLE 3. PARKLINE PROJECT & VARIANT – SUMMARY OF BUILDING HEIGHTS

Building Name	**Retained or New**	**Use**	**Project # Stories**	**Variant # Stories**
Building P	Retained	Office/R&D	4 stories	
Building S	Retained	Office/R&D	1 story (high bay)	
Building T	Retained	Office/R&D	1 and 2 stories	
Building 01	New	Office/R&D	4 stories	
Building 02	New	Office/R&D	5 stories	
Building 03	New	Office/R&D	5 stories	
Building 04	New	Office/R&D	5 stories	
Building 05	New	Office/R&D	4 stories	
Building 0A	New	Office Amenity	2 stories	
Building PA	New	Community Amenity	1 story	*Included in R3*
Parking Garage 1 (PG1)	New	Parking	4 stories	6 stories
Parking Garage 2 (PG2)	New	Parking	4 stories	6 stories
Parking Garage 3 (PG3)	New	Parking	3 stories	
Building Residential 1 (R1)	New	Residential	4 and 6 stories	4, 5, 6 stories
Building Residential 2 (R2)	New	Residential	4 and 6 stories	3, 4, 5 stories
Building Residential 3 (R3) **In Variant R3 is* *100% Affordable*	New	Residential	4 and 6 stories	6 stories
Building Residential 4 (R4) **In Project only* 100% Affordable	New	Residential	6 stories	N/A
Townhouses 1 (TH1)	New	Residential	2 stories	
Townhouses 2 (TH2) **In Variant only*	New	Residential	N/A	3 stories
Chapel	Retained	TBD – Community Amenity or Leased	1 Story (outside Project site)	*Demolished*

Project Sponsor’s Objectives

Section 15124(b) of the CEQA Guidelines requires a project description to contain a clear statement of project objectives, including the underlying purpose of the project. The underlying purpose of the Project is to redevelop the outdated SRI International Campus by creating a revitalized transit-oriented, mixed-use campus adjacent to city hall and proximate to the City’s downtown area and Caltrain station.

The Project Sponsor has also identified the following objectives for the Project:

1. Redevelop an aging R&D campus into a financially viable residential and commercial mixed-use neighborhood that cohesively balances office/R&D uses, multifamily residential uses, open space, and community-serving uses, with no increase in office/R&D square footage compared to existing conditions.
2. Increase the city's housing supply and progress towards its state-mandated housing goals by providing at least 550 new housing units with a mix of types and sizes, including approximately 68 units (15 percent of 450) for low- and moderate-income households within an approximately 10-acre residential area along Laurel Avenue, and dedicate a portion of the Project Site to an affordable housing developer for future development of up to approximately 100 units of affordable or special-needs housing.
3. Ensure the continuity of SRI International's on-going use of existing satellite transmission equipment on-site, which requires unobstructed sightlines to the horizon to ensure no disruption to ongoing research operations.
4. Replace 35 obsolete and unsustainable commercial buildings with five new state-of-the-art, highly sustainable commercial buildings with flexible floor plates that can accommodate a variety of office and/or R&D tenants.
5. Orient new office/R&D buildings in a configuration that leverages operational efficiencies, such as the ability to share amenity spaces, parking, and ensures that the business and security needs of future commercial tenants are met.
6. Improve bicycle and pedestrian connectivity and safety within and between the site and adjacent neighborhoods to promote an active public realm and establish interconnected neighborhoods.
7. Create separation between the residential uses along Laurel Avenue and the Office/R&D District by providing independent vehicular access, circulation, and parking/loading areas.
8. Provide approximately 26 acres of accessible open space throughout the Project Site, including a large central commons area adjacent to the office/R&D buildings, to create a vibrant park-like setting that emphasizes preservation of heritage trees where feasible, encourages passive and active recreational activities and promotes health and wellness for residents, tenants, and visitors.
9. Use advances in architectural, landscape design, and site planning practices to create distinctive and viable residential and commercial areas within the Project site that complement the adjacent neighborhoods.
10. Incorporate complementary community recreational and retail uses that encourage an active and healthy lifestyle for residents, tenants, and visitors.
11. Create a thriving transit-oriented development that facilitates efforts to reduce single-occupancy vehicle miles traveled by siting commercial and residential uses near existing

transit corridors and public transportation facilities, and promoting alternatives to automobile transit through implementation of TDM, new bicycle/pedestrian access, and ease of movement between buildings.

12. Support local and regional efforts to reduce greenhouse gas emissions, respond to climate change, and promote energy and water efficiency and resource conservation by incorporating sustainable design features and resource conservation measures that align with the city's goals.
13. Decommission the existing onsite cogeneration plant to achieve significant reductions in greenhouse gas emissions within the city and region.
14. Generate a positive fiscal impact on the local economy and revenue for the city's general fund and other public agencies through enhancing property values, increasing property tax revenue, creation of jobs, and payment of development fees.
15. Ensure the flexibility to phase construction of the Project in response to market conditions.
16. Bolster the city's reputation as a hub for technological advancement and innovation and recognize SRI International's contributions to society and the growth of Silicon Valley.
17. Facilitate the city's desire to implement an emergency water supply and storage project on the Project Site, as feasible, to increase Menlo Park's resilience in the event of an emergency.[11]

Note: Project Sponsor Objective #2 has two aspects: (1) a minimum of 450 new housing units (generally market rate, with 15 percent below market rate to meet City requirements), and (2) a one-acre dedicated area for 100 units of 100 percent affordable or special needs housing. Thus, the total minimum number of residential units that make up this objective is 550 residential units.

Impact of the Project and Variant on Eligible SRI International Campus Historic District

As described in the Historic Resources Technical Report, the Project and Variant will have a significant and unavoidable impact on the eligible historic district.[12] The Project (inclusive of R&D and office buildout scenarios) and Variant, as proposed, will demolish 23 of the 26 contributing buildings, leaving only three contributing buildings intact. One of two contributing landscape features—the Research Field—will be demolished, and the contributing SRI International Monument is proposed to be relocated on site. Due to the proposed demolition, the eligible historic district would lose its historic integrity and ability to convey its significance. These alterations would cause a significant adverse change that would result in the loss of California Register eligibility of the SRI

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[11] City of Menlo Park, "Parkline Administrative Draft Environmental Impact Report" (October 2023), 2-6 to 2-7.

[12] Page & Turnbull, *Parkline Project: Historic Resources Technical Report – Revised & Restated* (submitted to the City of Menlo Park), March 11, 2024.

International Campus as a historic district, and therefore the impact on the historic district would be Significant and Unavoidable under CEQA.

Impact of the Project on Individual Historic Resources (Buildings 100, A and E)

As described in the Historic Resources Technical Report, the Project would have a significant and unavoidable impact on the three individual historic resources at 301 Ravenswood Avenue—Buildings 100, A, and E.[13] The Project does not include 201 Ravenswood Avenue. The Project (inclusive of R&D and office buildout scenarios) would demolish Building 100, Building A, and Building E, thereby rendering each of the buildings ineligible for listing in the California Register of Historical Resources, and causing a Significant and Unavoidable impact.

Impact of the Variant on Individual Historic Resources (Buildings 100, A, E & Chapel)

As described in the Historic Resources Technical Report, the Variant would have a significant and unavoidable impact on the three individual historic resources at 301 Ravenswood Avenue—Buildings 100, A, and E—as well as the one individual historic resource—the Chapel—at 201 Ravenswood Avenue.[14] The Variant would demolish Building 100, Building A, Building E, and the Chapel, thereby rendering each of the buildings ineligible for listing in the California Register of Historical Resources, and causing a Significant and Unavoidable impact.

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[13] Page & Turnbull, *Parkline Project: Historic Resources Technical Report – Revised & Restated,* March 11, 2024.

[14] Page & Turnbull, *Parkline Project: Historic Resources Technical Report – Revised & Restated,* March 11, 2024.

IV. DEVELOPMENT OF PRESERVATION ALTERNATIVES

Several alternative designs were developed to retain the historic district and individual historic resources either in full or in part. The Project Sponsor and STUDIOS Architecture, in collaboration with Page & Turnbull, identified the No Project Alternative and three Preservation Alternatives for both the Project and Variant that are included in this report. The Preservation Alternatives outlined below were reviewed by the City of Menlo Park and their environmental consultant, ICF, who provided comments on the alternatives and approved their use for this report. Several additional options were considered but ultimately rejected; these are briefly discussed below.

Site Limitations and Project Considerations

The Project site plan (for both the Project and Variant) was developed through taking into account the existing Project Site constraints, including to address the outmoded and functionally obsolete existing SRI structures; the mix of existing buildings and structures from a variety of eras and prior uses; the lack of existing coherent master plan continuity within the Project Site; and the proximity of the offsite residential communities along the south and west sides of the Project Site. Additionally, the Project Sponsor sought to have no net increase in commercial office/R&D square footage on the site.

Many of the existing buildings were built as temporary structures for Dibble General Hospital for the wartime effort during World War II. Other buildings were purpose-built for specific research functions at SRI International, but no longer meet many of the needs of contemporary office and R&D facilities, especially for flexible, leased tenant space. The mostly one-story former Dibble General Hospital buildings that have been adaptively reused by SRI International have significant constraints in terms of their size, configuration, and lack of amenities for contemporary office and R&D uses, which is why many of them have already been demolished and replaced by SRI International, or significantly adapted in the past.

Although purpose-built for office and R&D uses, the purpose-built SRI International buildings also present certain limitations and constraints for reuse in the twenty-first century. The SRI International buildings were built in the second half of the twentieth century for specific SRI International needs, rather than for leasable commercial tenant space or current standards for modern R&D/life science users. Current office, R&D, and life-science uses require a greater level of internal flexibility, and generally require a minimum width of 90 to 100 feet to better accommodate lab space, adjacent office or computational functions, circulation (hallways, aisles, stairs, elevators, etc.), and building core functions (such as restrooms, HVAC shafts, etc.). The existing buildings include narrower widths (for example, Building A is approximately 35 to 55 feet wide, Building B is approximately 35 feet wide, and Building E is approximately 60 feet wide). Making the existing buildings wider to accommodate these current tenant expectations is not feasible while still being compliant with the Secretary of the Interior's Standards, as extensive exterior alterations would be required, including moving exterior walls, changing the building footprints, and infilling courtyards. The existing SRI Buildings, including some of the larger buildings, also have very large basements with no access to natural light. For example, Buildings A, B, and E have a combined 162,000 square feet of basement floor area, which currently contain storage, mechanical equipment storage, secured zones, data centers and limited administrative office functions, but due to the lack of natural light are not conducive to adaptation for leasable office, R&D, or life science tenant space.

The existing SRI International buildings also have a number of constraints and deficiencies relative to current code requirements and needs of current R&D and life science tenants. Elevators, stairs, and restrooms do not comply with current ADA and most of the mechanical, electrical, and plumbing (MEP) systems have exceeded their useful life and do not comply with current R&D and life science functions which require higher volumes of conditioned air, levels of air changes, special exhaust systems, and higher levels of electrical power to support specialized equipment. Existing buildings on site (including Buildings A, E, B, and 100) contain regulated levels of Asbestos Containing Materials, lead based paint, and Polychlorinated Biphenyl (PCB), per a 2021 Hazardous Materials Study prepared by ATC Group Services.[15]

The planned residential area of the Parkline project is located along Laurel Street, adjacent to an existing residential area. The amount of residential density that can be accommodated on the Parkline site is limited primarily due to SRI International's on-going use of existing satellite transmission equipment on-site, which requires unobstructed sightlines to the horizon to ensure no disruption to ongoing research operations. Because the height of adjacent new buildings on the Project Site must remain below the sight plane, the maximum building height that can be constructed is approximately six stories within the Residential District. In addition to the constraints of the on-going satellite use, the residential density is constrained by market feasibility, a desire to build new residential buildings that are compatible with the surrounding community context, and to respond to community feedback. The neighboring residences are generally two-story single-family residences.

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[15] ATC Group Services, LLC, "Limited Hazardous Materials Survey, SRI International, 333 Ravenswood Avenue, Menlo Park, California, ATC Project Number: NPLANE2002," March 12, 2021.

Considered but Rejected Preservation Alternatives

Preservation alternatives that were considered, but ultimately rejected, included a variety of concepts, as discussed below.

1. **Relocating Buildings 100, A and/or E.**
   The possibility of relocating one or more of the individually eligible buildings 100, A, and E was considered but was rejected as infeasible. Although retaining historic resources in their original location is always a preferred treatment, relocation is often considered as an alternative to demolition. The relocation of Building A would be technically challenging and very expensive prospect due to its size, construction methods and materials, and configuration. Additionally, relocation of Building A would result in the loss of the spatial relationship of the building to the entrance of the campus and the landscaped interior courtyards. Likewise, the size, construction methods and materials, and configuration of Building E would present substantial technical challenges. Additionally, no locations within the larger Project Site were identified as feasible alternate locations for Building A or E. The preservation of Building 100 at its existing location is considered as Preservation Alternative 1 in this analysis, which is preferred over relocation, and no additional benefits to the project would be gained by relocating Building 100 on the site.

2. **Retain Building A and Building E.**
   The option of retaining and rehabilitating Building A and Building E, but not Building 100, was considered but rejected because it is not any more feasible than Preservation Alternative 2 (Retain Buildings A, E, and 100) and would not retain the integrity of the eligible historic district. The preservation of Buildings A and E, as discussed in Preservation Alternative 2, would result in a reduction of housing units, reduction in new highly sustainable office/R&D square footage, reduction in open space, and compromise of the non-vehicular circulation on site. As such, the preservation of Building A and Building E would not be more feasible that Preservation Alternative 2 in terms of meeting project objectives, would not retain the integrity of the eligible historic district, and would not have a better preservation outcome for the individual historic resources than Preservation Alternative 2. Refer to the description of Preservation Alternative 2: Retain Buildings A, E, and 100 for additional information.

3. **Converting Building E to residential use.**
   The conversion of Building E to residential use was considered yet rejected as the conversion to residential, particularly in a manner that would retain the historic character of the building at the exterior, would be infeasible. Building E was built primarily for offices, with some

laboratory and R&D spaces, and as such does not have the plumbing that would be required for residential use. Mechanical and electrical systems have also reached or exceeded their useful life. The building contains regulated levels of Asbestos Containing Materials, lead based paint, and Polychlorinated Biphenyl (PCB), per a 2021 Hazardous Materials Study. Additionally, the configuration of the double-loaded narrow corridor with small offices would need to be substantially reworked to accommodate residential floor plans. The windows are generally fixed windows, and the upper floors have no exterior egress or outdoor access. Upgrades, including for ADA compliance, would require substantial alteration to architectural components including stairs, elevators, restrooms, windows, and entrances. Furthermore, 42,000 square feet—which constitutes a large amount of the overall floor area of the building—is located in the basement level which does not have windows to the exterior, making it unusable for residential living or amenity space beyond storage. The exterior alterations required to meet accessibility and seismic codes, as well as requirements for emergency egress, would require substantial alterations to the exterior features of the building and would likely impact the historic integrity. Additionally, a solution to required residential parking could not be identified adjacent to the building given the constraints of other existing buildings and/or proposed new buildings. Furthermore, the conversion of Building E to residential would necessitate that additional office/R&D square footage be made up elsewhere on-site in order to achieve the project objectives. Thus, the conversion of Building E was rejected as an alternative as it does not feasibly address the project objectives for a balance of housing and office/R&D on-site or preservation impacts.

4. **Constructing an addition to Building A to accommodate new office/R&D space.**
   An addition to the rear of Building A with new office/R&D space was considered yet rejected as it would likely result in diminished historic integrity of the individually eligible historic resource, and possibly result in its ineligibility for California Register listing, while not providing substantial benefit to the overall project objectives and development plan. An addition would be limited in size based on the character-defining interior courtyards and proximity to retained Building P, as well as proposed Buildings 2 and 5. An addition to Building A would likely necessitate the relocation of proposed Buildings 2 and 5 on the site, reducing the amount of open space and reconfiguring circulation patterns. As this alternative would not reduce potential impacts to historic resources more than Preservation Alternative 2 or Preservation Alternative 3, and would not provide any additional benefit to meeting the Project Sponsor’s objectives, the alternative was rejected.

Summary of Preservation Alternatives

The three preservation alternatives, in addition to a No Project Alterative, that were ultimately selected and further developed are briefly described below and more fully discussed in their individual analyses (refer to **Section VI. Alternative 1: Retain Building 100 & Chapel, Section VII. Alternative 2: Retain Buildings 100, A, E & Chapel** and **Section VIII. Retain Buildings 100, A, E, B & Chapel)**. Unless otherwise noted, the Preservation Alternatives have the same alterations and metrics for both the Project and Variant.

Project Preservation Alternative 1 (Retain Building 100) would retain the existing office Building 100, an individually eligible historic resource and district contributor, for support functions/amenity space. Individually eligible Buildings A and E would be demolished, as would all other historic district contributing buildings proposed for demolition in the Project.[16] All new office and residential buildings included in the Project would be built as proposed.

Variant Preservation Alternative 1 (Retain Building 100 & Chapel) would retain the existing office Building 100, an individually eligible historic resource and district contributor, for support functions/amenity space. Individually eligible Buildings A and E would be demolished, as would all other historic district contributing buildings proposed for demolition in the Variant. The Chapel would be retained; a future use is to be determined, but options might include use as a community amenity space or leasable tenant space. In Variant Preservation Alternative 1, the footprint of Residential Building 3 would be reduced to accommodate the retained Chapel, resulting in a reduction of 90 affordable housing units. The footprint of Parking Garage 1 would be reduced to accommodate Building 100, and Parking Garages 1 and 2 would be increased to six stories to accommodate necessary commercial parking spaces. All other new office and residential buildings would be built as proposed in the Variant.

Project Preservation Alternative 2 (Retain Buildings 100, A, & E) would retain all three Individually eligible buildings on the Project Site: Buildings 100, A, and E.[17] Buildings A and E would continue to be used for office and R&D, but would need to be upgraded. Building 100 would be used for support functions/amenity space. In Project Preservation Alternative 2 the siting, footprint, and massing of several of the proposed new buildings would need to be altered to accommodate the retention of Buildings A and E, resulting in the loss of 200 housing units. Several proposed buildings would not be constructed to meet the objective of no net increase in commercial square footage.

Variant Preservation Alternative 2 (Retain Buildings 100, A, E & Chapel) would retain all four Individually eligible buildings on the Variant Site: Buildings 100, A, E & Chapel. Buildings A and E

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[16] The Chapel is not included in the Project Site, and therefore is not included in the Project Preservation Alternative 1 site.
[17] The Chapel is not included in the Project Site, and therefore is not included in the Project Preservation Alternative 1 site.

would continue to be used for office and R&D, but would need to be upgraded. Building 100 would be used for support functions/amenity space. In Variant Preservation Alternative 2 the siting, footprint, and massing of several of the proposed new buildings would need to be altered to accommodate the retention of Buildings A and E, resulting in the loss of 200 housing units. Several proposed buildings would not be constructed to meet the objective of no net increase in commercial square footage. The Chapel would be retained; a future use is not known at this time and would be determined at a future date, but potential options might include use as a community amenity space or leasable tenant space. In Variant Preservation Alternative 2, the footprint of Residential Building 3 would be reduced to accommodate the retained Chapel, resulting in a reduction of 90 affordable housing units (for a total loss of 290 housing units across the Project Site). The footprint of Parking Garage 1 would be reduced to accommodate Building 100, and Parking Garages 1 and 2 would be increased to six stories to accommodate necessary commercial parking spaces.

Project Preservation Alternative 3 (Retain Buildings 100, A, E & B) would retain all three individually eligible buildings on the Project Site—Buildings 100, A, and E—as well as historic district contributor Building B.[18] These buildings would be retained in addition to Buildings P, S, and T, which would be retained as part of the Project. Retaining Building B in addition to the three individually eligible buildings was explored due to its proximity to Buildings A, E, and P, for the potential to reduce impacts to the eligible historic district, and because it is a larger office building that was built more recently and had more reuse potential for commercial tenants than other, more specialized purpose-built SRI International Buildings. Buildings A, E, and B would continue to be used for office and R&D, but would need to be upgraded. Building 100 would be used for support functions/amenity space. In Project Preservation Alternative 3 the siting, footprint, and massing of several of the proposed new buildings would need to be altered to accommodate the retention of Buildings A, E, and B, resulting in the loss of 200 housing units. Several proposed buildings would not be constructed to meet the objective of no net increase in commercial square footage.

Variant Preservation Alternative 3 (Retain Buildings 100, A, E, B & Chapel) would retain all four individually eligible buildings on the Variant Site—Buildings 100, A, E, and the Chapel—as well as historic district contributor Building B. These buildings would be retained in addition to Buildings P, S, and T, which would be retained as part of the Variant. Retaining Building B in addition to the three individually eligible buildings was explored due to its proximity to Buildings A, E, and P, for the potential to reduce impacts to the eligible historic district, and because it is a larger office building that was built more recently and had more reuse potential for commercial tenants than other, more specialized purpose-built SRI International Buildings. Buildings A, E, and B would continue to be used for office and R&D, but would need to be upgraded. Building 100 would be used for support

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[18] The Chapel is not included in the Project Site, and therefore is not included in the Project Preservation Alternative 1 site.

functions/amenity space. In Variant Preservation Alternative 3 the siting, footprint, and massing of several of the proposed new buildings would need to be altered to accommodate the retention of Buildings A, E, and B, resulting in the loss of 200 housing units. Several proposed buildings would not be constructed to meet the objective of no net increase in commercial square footage. The Chapel would be retained; a future use is not known at this time and would be determined, but potential options might include use as a community amenity space or leasable tenant space. In Variant Preservation Alternative 3, the footprint of Residential Building 3 would be reduced to accommodate the retained Chapel, resulting in a reduction of 90 affordable housing units (for a total loss of 290 housing units across the Project Site). The footprint of Parking Garage 1 would be reduced to accommodate Building 100, and Parking Garages 1 and 2 would be increased to six stories to accommodate necessary commercial parking spaces.

Table 4, on the following page, provides a comparison between the Project and Variant, the No Project Alternative, and three Preservation Alternatives, based on square footage and number of stories for residential and office/R&D buildings, square footage of open space, and number of parking spaces.

TABLE 4. SUMMARY COMPARISON OF PROPOSED PARKLINE PROJECT, VARIANT, AND PRESERVATION ALTERNATIVES

PARKLINE - HRE QUANTITIES: MAY 31, 2024																									
		BASE PROJECT												VARIANT 2024											
SCHEME		BASE			ALT 1			ALT 2			ALT 3			BASE			ALT 1			ALT 2			ALT 3		
DESCRIPTION		-			KEEP 100			KEEP 100, A & E			KEEP 100, A, E & B			-			KEEP 100 & CHURCH			KEEP 100, CHURCH, A & E			KEEP 100,CHURCH, A, E, & B		
NUMBER OF STORIES - RESIDENTIAL	RESIDENTIAL 1	4 - 6 STORIES			4 - 6 STORIES			N/A			N/A			4 - 6 STORIES			4 - 6 STORIES			4 - 6 STORIES			4 - 6 STORIES		
	RESIDENTIAL 2	4 - 6 STORIES			4 - 6 STORIES			4 - 6 STORIES			4 - 6 STORIES			3 - 5 STORIES			3 - 5 STORIES			3 - 5 STORIES			3 - 5 STORIES		
	RESIDENTIAL 3	4 - 6 STORIES			4 - 6 STORIES			4 - 6 STORIES			4 - 6 STORIES			6 STORIES			6 STORIES			6 STORIES			6 STORIES		
	RESIDENTIAL 4	6 STORIES			6 STORIES			6 STORIES			6 STORIES			N/A			N/A			N/A			N/A		
	RESIDENTIAL 5	N/A			N/A			6 STORIES			6 STORIES			N/A			N/A			N/A			N/A		
	TOWN HOMES 1	2 STORIES			2 STORIES			N/A			N/A			2 STORIES			2 STORIES			2 STORIES			2 STORIES		
	TOWN HOMES 2	N/A			N/A			N/A			N/A			3 STORIES			3 STORIES			3 STORIES			3 STORIES		
NUMBER OF STORIES - OFFICE / R&D	OFFICE 1	4 STORIES			4 STORIES			N/A			N/A			4 STORIES			4 STORIES			N/A			N/A		
	OFFICE 2	5 STORIES			5 STORIES			3 STORIES			3 STORIES			5 STORIES			5 STORIES			3 STORIES			3 STORIES		
	OFFICE 3	5 STORIES			5 STORIES			3 STORIES			3 STORIES			5 STORIES			5 STORIES			3 STORIES			3 STORIES		
	OFFICE 4	5 STORIES			5 STORIES			4 STORIES			4 STORIES			5 STORIES			5 STORIES			4 STORIES			4 STORIES		
	OFFICE 5	4 STORIES			4 STORIES			3 STORIES			N/A			4 STORIES			4 STORIES			3 STORIES			N/A		
	OFFICE AMENITY BUILDING	2 STORIES			2 STORIES			2 STORIES			2 STORIES			2 STORIES			2 STORIES			2 STORIES			2 STORIES		
	PUBLIC AMENITY BUILDING	1 STORY			1 STORY			1 STORY			1 STORY			INCLUDED IN RESIDENTIAL 3			INCLUDED IN RESIDENTIAL 3			INCLUDED IN RESIDENTIAL 3			INCLUDED IN RESIDENTIAL 3		
NUMBER OF STORIES - PARKING	PARKING GARAGE 1	4			4			5			5			5			6			6			6		
	PARKING GARAGE 2	4			4			4			5			5			6			6			6		
	PARKING GARAGE 3	3			3			3			3			3			3			3			3		
TOTAL RESIDENTIAL GFA (SF)		675,200			675,200			607,200			607,200			1,096,000			990,000			722,000			722,000		
TOTAL NUMBER OF RESIDENTIAL UNITS		550			550			506			506			800			710			510			510		
NUMBER OF RESIDENTIAL UNITS PER BUILDING		MARKET	100% AFFORDABLE	TOTAL	MARKET	100% AFFORDABLE	TOTAL	MARKET	100% AFFORDABLE	TOTAL	MARKET	100% AFFORDABLE	TOTAL	MARKET	100% AFFORDABLE	TOTAL	MARKET	100% AFFORDABLE	TOTAL	MARKET	100% AFFORDABLE	TOTAL	MARKET	100% AFFORDABLE	TOTAL
	RESIDENTIAL 1	150	0	150	150	0	150	0	0	0	0	0	0	300	0	300	300	0	300	100	0	100	100	0	100
	RESIDENTIAL 2	150	0	150	150	0	150	120	0	120	120	0	120	300	0	300	300	0	300	300	0	300	300	0	300
	RESIDENTIAL 3	131	0	131	131	0	131	131	0	131	131	0	131	0	154	154	0	64	64	0	64	64	0	64	64
	RESIDENTIAL 4	0	100	100	0	100	100	0	100	100	0	100	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	RESIDENTIAL 5	N/A	N/A	N/A	N/A	N/A	N/A	155	0	155	155	0	155	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TOWN HOMES 1	19	0	19	19	0	19	0	0	0	0	0	0	19	0	19	19	0	19	19	0	19	19	0	19
	TOWN HOMES 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27	0	27	27	0	27	27	0	27	27	0	27
	TOTAL	450	100	550	450	100	550	406	100	506	406	100	506	646	154	800	646	64	710	446	64	510	446	64	510
TOTAL OPEN SPACE AREA (SF)		1,150,671			1,150,671			1,123,099			1,141,514			1,278,050			1,258,050			1,258,300			1,278,800		
PARKLINE CENTRAL COMMONS AREA (ACRES)		5.4 ACRES			5.4 ACRES			4.3 ACRES			3.3 ACRES			5.4 ACRES			5.4 ACRES			4.3 ACRES			3.3 ACRES		
TOTAL PARKING SPACES		RESIDENTIAL: 519 SPACES OFFICE: 2,800 SPACES			RESIDENTIAL: 519 SPACES OFFICE: 2,800 SPACES			RESIDENTIAL: 456 SPACES OFFICE: 2,800 SPACES			RESIDENTIAL: 456 SPACES OFFICE: 2,800 SPACES			RESIDENTIAL: 919 SPACES OFFICE: 2,800 SPACES			RESIDENTIAL: 870 SPACES OFFICE: 2,800 SPACES			RESIDENTIAL: 620 SPACES OFFICE: 2,800 SPACES			RESIDENTIAL: 620 SPACES OFFICE: 2,800 SPACES		
TOTAL EXISTING OFFICE GROSS FLOOR AREA TO REMAIN (SF)		286,730			295,736			743,829			878,939			286,730			295,736			743,829			878,939		
GROSS FLOOR AREA TO BE DEMOLISHED AND REPLACED (SF)		1,094,197			1,084,596			636,503			501,393			1,094,197			1,084,596			636,503			501,393		

V. NO PROJECT ALTERNATIVE

Description

Under the No Project Alternative, no modifications would be made to the existing historic resources, including the SRI International eligible historic district contributors and individually eligible buildings: Building 100, Building A, Building E, and the Chapel. No new residential or office/R&D buildings would be added. No modifications, repairs, or restoration activities would be conducted. All eligible SRI International historic district contributors, as well as Buildings 100, A, and E would retain their existing office/R&D uses. The Chapel would retain its use as a religious institution.

No Project Alternative Analysis

The No Project Alternative would not demolish or make any modifications to the eligible historic district or the individually eligible buildings. All buildings and landscape features that contribute to the historic district would be retained. All character-defining features of Building 100, Building A, Building E, and the Chapel would be retained. However, none of the Project Sponsor’s objectives would be met under the No Project Alternative.

VI. ALTERNATIVE 1: RETAIN BUILDING 100 & CHAPEL

Project Preservation Alternative 1

DESCRIPTION

Project Preservation Alternative 1 (Retain Building 100) would retain the existing two-story office Building 100, an individually eligible historic resource and eligible historic district contributor, and rehabilitate it for office or support functions such as visitor functions, conferencing, etc. Alterations to interior floor plans may be required for alternative uses such as amenity space, but no exterior alterations are likely to be required. The other individually eligible Buildings A and E would be demolished, as would all other contributing buildings proposed for demolition in the Project. All new office and residential buildings included in the Project would be built as proposed. The property at 201 Ravenswood Avenue, like in the Project, is excluded from the Preservation Alternative 1 to the Project. The site plan for Preservation Alternative 1 to the Project is in **Figure 11**.

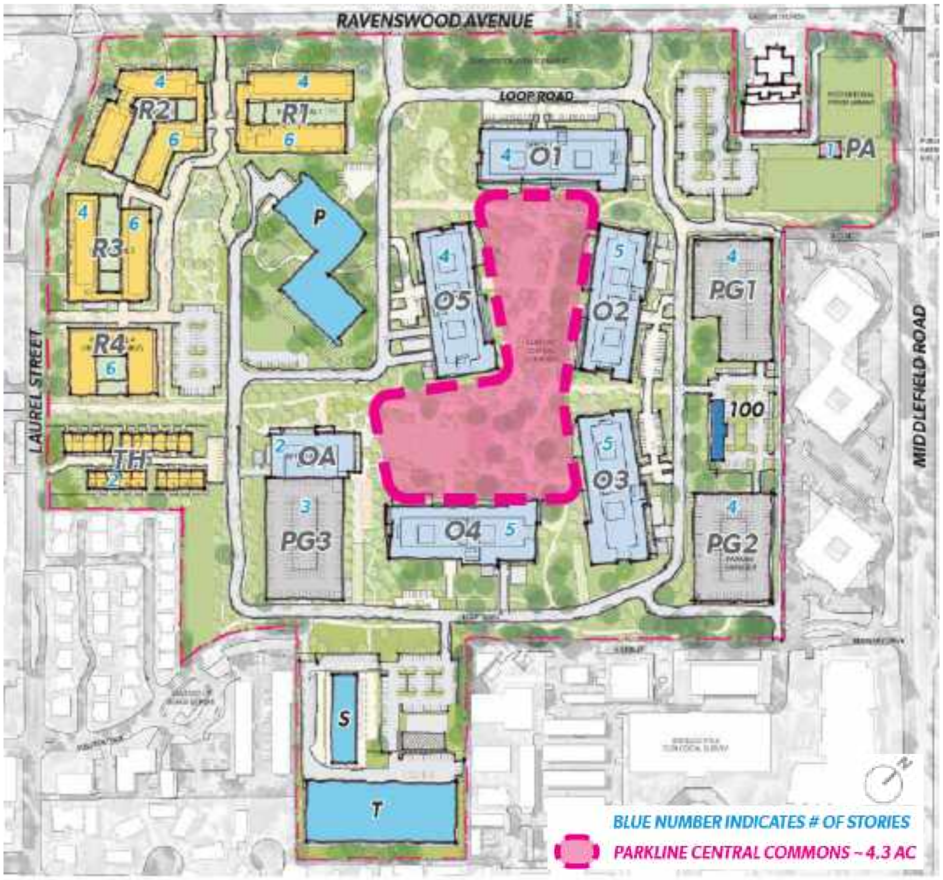

Figure 11. Project Preservation Alternative 1 site plan. Source: STUDIOS Architecture, "Lane Partners Parkline: Historic Resource Evaluation – Site Plan Alternatives: Parkline Central Commons Areas," September 7, 2023. Legend edited by Page & Turnbull.

Existing Building Renovation

Building 100 is currently used for offices by SRI International. In order to maintain ongoing usage of Building 100, significant upgrades would be required, including: updated building systems (such as mechanical and electrical); seismic upgrades to meet current code requirements; and remediation of hazardous materials as the building includes regulated levels of Asbestos Containing Materials, lead based paint, and Polychlorinated Biphenyl (PCB), as further detail in the 2021 Hazardous Materials Study. Interior renovations required for ongoing use of Building 100 would likely include removal of existing hallway and room partitions, ceilings, and other interior features to reconfigure the spaces for more optimal functionality as well as to accommodate ADA accessible elevators, stairs, and restrooms.

No exterior alterations to Building 100 as part of Preservation Alternative 1. As in the Project, no exterior alterations to Buildings P, S, and T are included in Preservation Alternative 1. Therefore, the adaptive reuse of Building 100 and the on-going use of Buildings P, S, and T appear to meet the SOI Standards for Rehabilitation.

Proposed Office Buildings

In Preservation Alternative 1 to the Project, the proposed new office/R&D buildings would remain the same height and number of stories as in the Project. In order achieve the Project Sponsor's objective of no net increase in office/R&D square footage compared to existing conditions (Objective #1), the floor area of proposed new office buildings would be decreased approximately 9,000 square feet (commensurate with the square footage of Building 100); this could be achieved either by reducing the footprint of Office Buildings 2 and 3 would be reduced by 900 square feet, or by reducing the footprints of Office Buildings 1, 2, 3, 4, and 5 each by approximately 391 square feet per building.

Proposed Residential Buildings

In Preservation Alternative 1 to the Project, no changes would result to the proposed new residential buildings; each residential building would remain the same height and number of stories as in the Project. Preservation Alternative 1 would result in no loss of residential units).

Proposed Amenity Space, Open Space & Parking

In Preservation Alternative 1 to the Project, the proposed new amenity buildings and parking garages would remain the same height and number of stories as in the Project. Preservation Alternative 1 would have no impact to below-grade parking below Buildings 1 and 5. Preservation Alternative 1 would displace 50 surface parking stalls from the surface parking lot between Parking Garages 1 and 2. However, these 50 spaces could be accommodated within Parking Garages 1 and

2 so that there is no net loss in parking spaces on the Project Site. Preservation Alternative 1 would have no impact on the total amount of open space or the Parkline Central Commons area.

IMPACT ON THE ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

Project Preservation Alternative 1 proposes the demolition of 22 of the 26 contributing buildings in the California Register-eligible SRI International Campus historic district. The only four buildings that contribute to the eligible historic district that would remain are Buildings 100, P, S, and T. As in the Project, the Research Field, a contributing landscape feature, would be demolished, and the contributing SRI International monument would be relocated on site to an as-yet-undetermined outdoor location that is publicly accessible on the project site.

The number of buildings and landscape features that would be demolished in Project Preservation Alternative 1 would cause the eligible historic district to lose historic integrity. The four buildings proposed to be retained are not sufficiently representative of the significance of SRI International's contributions as a research and development institution and are not clustered in a manner that would remain eligible as a historic district. Furthermore, the spatial relationships and siting of the buildings that convey the sense of a large institutional campus would be lost. As such, the site would no longer be eligible for listing in the California Register as a historic district. Therefore, the impact of Project Preservation Alternative 1 on the eligible historic district would remain Significant and Unavoidable.

IMPACT ON INDIVIDUALLY ELIGIBLE HISTORIC RESOURCES

Project Preservation Alternative 1 would retain and rehabilitate Building 100 for a new office and/or amenity space. It is not anticipated that reuse would require any exterior alterations. As such, Building 100 would remain individually eligible for listing in the California Register. However, Preservation Alternative 1 proposes the demolition of individually eligible Buildings A and E, which would result in the two buildings becoming ineligible for listing in the California Register and constituting a significant adverse change. Therefore, while there would be No Significant Impact on Building 100, the impact on Buildings A and E would remain Significant and Unavoidable.

PROJECT PRESERVATION ALTERNATIVE 1 ANALYSIS

The purpose of Project Preservation Alternative 1 is to consider a plan that would lessen the significant and unavoidable impacts of the Project on one of the individually eligible historic resources—Building 100. However, while Preservation Alternative 1 would avoid an impact to Building 100, Preservation Alternative 1 would still have a significant and unavoidable impact on the SRI International Campus eligible historic district and on individual historic resources Building A and Building E.

Preservation Alternative 1 would retain Building 100 in full. Compared to the Project, Preservation Alternative 1 would not result in any net loss in residential units, parking spaces, amenity space, or open space. While Building 100 is located within an area in the Project Site that would be developed with surface parking spaces to serve tenants and potentially other users, those parking spaces would be able to be accommodated elsewhere on the site if Building 100 were to be retained. All proposed new office buildings and parking garages would be constructed in the same location and with the same approximate footprint and number of stories as in the Project. In order achieve the Project Sponsor's Objective #1 of no net increase in office/R&D square footage compared to existing conditions, the floor area of proposed new office buildings would be decreased approximately 9,000 square feet (commensurate with the square footage of Building 100).

Preservation Alternative 1 would substantively meet 16 of 17 of the Project Sponsor objectives, and would partially meet Objective #4 of replacing "35 existing obsolete and unsustainable commercial buildings" as 34 of the buildings would be replaced and the size of retained Building 100 would not displace a substantial amount of the new commercial square footage. **Table 5** in **Section IX.** The **Analysis of Project Sponsor's Objectives** provides a summary of the project sponsor's objectives, and which are met by each of the studied preservation alternatives.

Variant Preservation Alternative 1

DESCRIPTION

The Variant Preservation Alternative 1 would retain Building 100 and the Chapel in their entireties. Variant Preservation Alternative 1 would have the same open space and circulation configuration as the Variant, as described above **(Figure 12)**. Buildings P, S, and T would also be retained, as described above in the Project Preservation Alternative 1. As in the Project Preservation Alternative 1, Building 100 would continue to be used as office space with necessary upgrades. A future use of the Chapel is to be determined, but options might include use as a community amenity space or leasable tenant space.

The proposed new office buildings, office amenity, Residential Building 1, Residential Building 2, Townhouses 1, Townhouses 2, and Parking Garage 3 would all remain as proposed in the Variant. Due to the location and footprint of Parking Garage 1 in the Variant, in Preservation Alternative 1 the footprint of the garage would be reduced to accommodate the retention of Building 100. Parking Garages 1 and 2 would be increased from five to six stories to avoid the loss of any commercial parking spaces; however, the increased scale of the parking garages would result in a less efficient structure in terms of level-of-service. In order to accommodate the retention of the Church in Variant Preservation Alternative 1, the footprint of the 100-percent affordable housing building (R3) would be reduced, resulting in a loss of 90 affordable residential units compared to the Variant. The alternative would have 49 fewer residential parking spaces than the Variant.

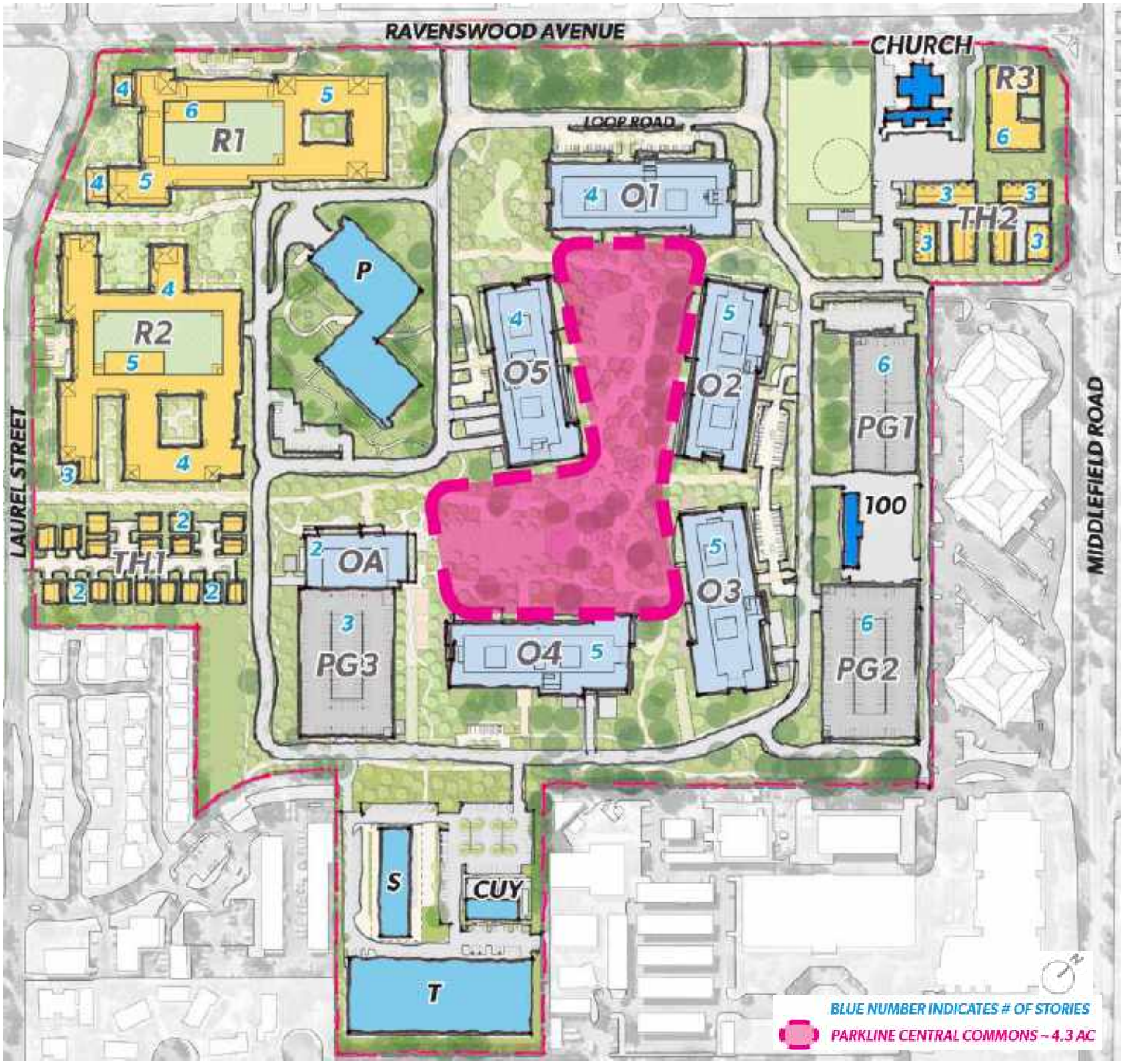

Figure 12. Variant Preservation Alternative 1. Source: STUDIOS Architecture, "Parkline Historic Resource Evaluation – Site Plan Alternatives – Variant (2024)," March 20, 2024. Legend edited by Page & Turnbull.

IMPACT ON THE ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

Variant Preservation Alternative 1 would result in the demolition of the same historic district contributors as the Project Preservation Alternative 1. As such, the site would no longer be eligible for listing in the California Register as a historic district. Therefore, the impact of Variant Preservation Alternative 1 on the eligible historic district would remain Significant and Unavoidable.

IMPACT ON INDIVIDUALLY ELIGIBLE HISTORIC RESOURCES

Variant Preservation Alternative 1, like Project Preservation Alternative 1, would retain Building 100 and demolish Buildings A and E. Additionally, Variant Preservation Alternative 1 would retain the Chapel, which is included within the Variant site. Therefore, while there would be No Significant Impact on Building 100 or the Chapel, the impact on Buildings A and E would remain Significant and Unavoidable.

VARIANT PRESERVATION ALTERNATIVE 1 ANALYSIS

The purpose of Variant Preservation Alternative 1 is to consider a plan that would lessen the significant and unavoidable impacts of the Variant on two of the individually eligible historic resources—Building 100 and the Chapel. However, while Preservation Alternative 1 would avoid an impact to Building 100 and the Chapel, Preservation Alternative 1 would still have a significant and unavoidable impact on the SRI International Campus eligible historic district and on individual historic resources Building A and Building E.

Variant Preservation Alternative 1 would retain Building 100 and the Chapel in their entireties. Compared to the Variant, Preservation Alternative 1 would not result in any net loss in amenity space or commercial parking spaces, but would result in a loss of 90 affordable residential units (Residential Building 3), 20,000 square feet of open space, and 49 residential parking spaces. To retain the Chapel, the footprint of Residential Building 3 would be reduced. All proposed new office buildings would be constructed in the same location and with the same approximate footprint and number of stories as in the Project. In order achieve the Project Sponsor’s Objective #1 of no net increase in office/R&D square footage compared to existing conditions, the floor area of proposed new office buildings would be decreased approximately 9,000 square feet (commensurate with the square footage of Building 100).

Variant Preservation Alternative 1 would substantively meet 15 of 17 of the Project Sponsor objectives. Variant Preservation Alternative 1 would partially meet Objective #2 related to the Project goals as it would include only 64 affordable units, 36 units fewer than the stated goal of “up to approximately 100 units of affordable or special needs housing” on a dedicated portion of the site for future development. Furthermore, the alternative falls short of the upper thresholds of the residential capacity for all residential unit types that is intended in the Variant. Variant Preservation Alternative 1 would partially meet Objective #4 of replacing “35 existing obsolete and unsustainable commercial buildings” as 34 of the buildings would be replaced and the size of retained Building 100 would not displace a substantial amount of the new commercial square footage. **Table 5** in **Section IX. Analysis of Project Sponsor’s Objectives** provides a summary of the project sponsor’s objectives, and which are met by each of the studied preservation alternatives.

VII. ALTERNATIVE 2: RETAIN BUILDINGS 100, A, E & CHAPEL

Project Preservation Alternative 2

DESCRIPTION

Project Preservation Alternative 2 (retain Buildings 100, A, E) would retain three individually eligible buildings and historic district contributors: existing two-story office (Building 100), the existing two-story office/R&D (Building A), and existing three-story office/R&D (Building E). These buildings would be retained in addition to Buildings P, S, and T, which will be retained as part of the Project. The property at 201 Ravenswood Avenue, like in the Project, is excluded from the Project Preservation Alternative 2, and the Chapel would remain unaltered.

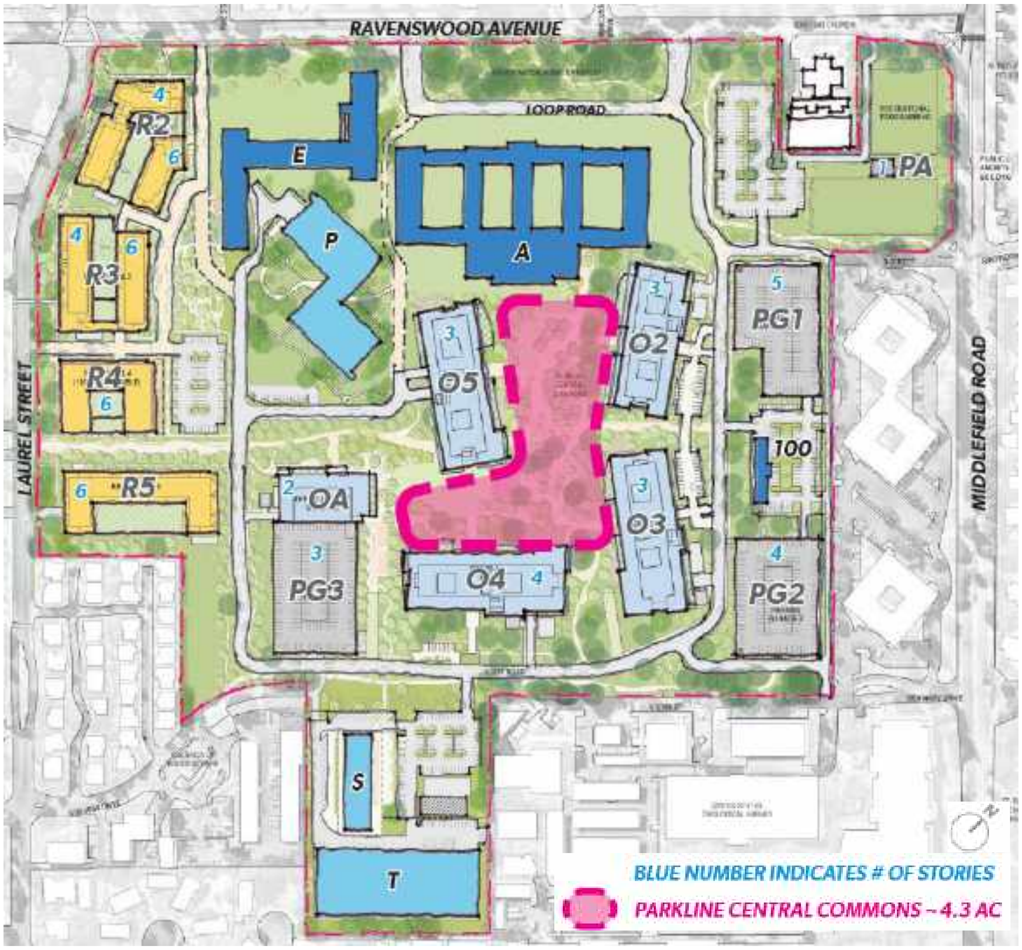

Figure 13. Preservation Alternative 2 site plan overlayed on Project. Source: STUDIOS Architecture, “Lane Partners Parkline: Historic Resource Evaluation – Site Plan Alternatives: Parkline Central Commons Areas,” September 7, 2023. Legend edited by Page & Turnbull.

Under Preservation Alternative 2, Building 100 would be rehabilitated for office or support functions such as visitor functions, conferencing, etc. Alterations to interior floor plans of Building 100 may be required for use as amenity space, but no exterior alterations are likely to be required. Buildings A and E would be rehabilitated and retained for office/R&D use. Buildings A and E would require substantial upgrades to meet current code requirements, but even with such upgrades, the buildings are not anticipated to meet the market needs of contemporary state-of-the-art office/R&D facilities in Silicon Valley based on general floor plan configurations and other existing physical constraints. Under Preservation Alternative 2, all other eligible historic district contributing buildings proposed for demolition in the Project would be demolished. The site plan for Preservation Alternative 2 to the Project is included in **Figure 13.**

Existing Building Renovation

As with Preservation Alternative 1, under Preservation Alternative 2 to the Project, upgrades to Building 100 would be required include updated building systems (such as mechanical and electrical), seismic upgrades to meet current code requirements, and remediation of hazardous materials as the building includes regulated levels of Asbestos Containing Materials, lead based paint, and Polychlorinated Biphenyl (PCB), per the 2021 Hazardous Materials Study. Interior renovations would likely include removal of existing hallway and room partitions, ceilings, and other interior features to reconfigure the spaces for more optimal functionality as well as to accommodate ADA and accessible elevators, stairs, and restrooms.

Similarly, required upgrades to Buildings A and E would also include updated building systems (such as mechanical and electrical), seismic upgrades to meet current code requirements, and remediation of hazardous materials as the building includes regulated levels of Asbestos Containing Materials, lead based paint, and Polychlorinated Biphenyl (PCB), per the 2021 Hazardous Materials Study.

No exterior alterations would be made to Buildings 100, A, and E, as part of Preservation Alternative 2. As in the Project, no exterior alterations to Buildings P, S, and T are included in Preservation Alternative 2. Therefore, the adaptive reuse of Buildings 100, A, and E, and the on-going use of Buildings P, S, and T appear to meet the SOI Standards for Rehabilitation.

Proposed Office Buildings

As the footprints of Buildings A and E are located on the site of several proposed office/R&D and residential buildings, Preservation Alternative 2 would affect the development feasibility and the footprints and massing of several of the proposed new office/R&D to accommodate the retention of Buildings A and E. Specifically, under Preservation Alternative 2, proposed Office Building 1 would not be constructed; proposed Office Buildings 2 and 5 would be reduced in footprint and number of stories; and proposed Office Buildings 3 and 4 would be reduced in number of stories in order to meet the project objective of no net increase in office/R&D square footage (one aspect of Objective #1). Additionally, Office Building 2 would be reduced to three stories (from five under the Project) and the footprint would be reduced to accommodate retained Building A. Office Building 5 would be reduced to three stories (from five) and relocated further south on the site to accommodate the retained Building A. Office Building 3 would be reduced to three stories (from five) and Office Building 4 reduced to four stories (from five).

Overall, in Preservation Alternative 2, would result in the loss of approximately 457,099 square feet of new office/R&D development as 743,829 square feet GFA of existing office/R&D would remain (compared to the 286,730 square feet GFA that would remain in the Project). As a result, the total commercial square footage within the Project Site would be consistent with the Project, but would result in a reduction of new, highly sustainable commercial square footage with state-of-the-art facilities in lieu of preservation of Buildings 100, A and E.

Proposed Residential Buildings

Project Preservation Alternative 2 would also affect the development feasibility and the footprints and massing of several of a portion of the Project's residential component, resulting in a net reduction in total units. Under Preservation Alternative 2, the proposed residential Building R1 would not be constructed and the footprint of residential Building R2 would be reduced, as they are on the location of existing Building E that would be retained.

In the Project Preservation Alternative 2, to accommodate the displaced residential units elsewhere, the area for the proposed two-story townhouses would instead be developed as a new six-story residential building (R5) in the same location. While Residential Building R2 would decrease in footprint, the massing would remain at four and six stories, and the massing and footprints of Residential Buildings R3 and R4 would remain unchanged.

In the Project Preservation Alternative 2, there would be a net decrease of 44 units (from 550 to 506 units) and a decrease of 68,000 square feet in residential GFA. Building R4 would still be developed in the future by a separate affordable housing developer with 100 units of 100 percent affordable housing. The other 406 units would be market rate housing, with 15 percent of the 406 units meeting the City's below market rate (BMR) housing requirements.

Proposed Amenity Space, Open Space & Parking

In the Project Preservation Alternative 2, the proposed new office amenity and community amenity buildings would be the same height and number of stories as in the Project, and the open recreational fields would be retained.

In Project Preservation Alternative 2, the size of the Parkline Central Commons open space area would be reduced from approximately 5.4 acres to 4.3 acres as the commercial office/R&D buildings would shift further south; specifically, the retained existing Building A and the shifted new Office/R&D Building 5 would both encroach onto Parkline Central Commons, including the planned flexible lawn and event pavilion area. The square footage of overall open space would decrease by 27,572 square feet to 1,123,099 square feet under the Project. Under Preservation Alternative 2, the emergency access road between Residential Building R2 and the Commercial Loop Road would need to be shifted to the south, encroaching on the open space between Building P and the residential area.

The shifted location of Building 5 would also eliminate the line of sight from Laurel Street to the center of the Project Site, and thereby decrease the overall visual permeability of the site. A net loss of trails around retained Buildings A and E and proposed Office Building 2 would also diminish site permeability and compromise the non-vehicular circulation network on the site, diminishing the pedestrian and bicycle connectivity of the site.

Project Preservation Alternative 2 would also impact the Project’s onsite vehicular circulation. The retention of Buildings A and E will compromise the proposed Commercial Loop Road, creating a “dead end” at Office Building 5 because the clearance between Buildings A and E is not sufficient for vehicular traffic; as a result, vehicles accessing Building P, Building 5, and Parking Garage 3 would need to drive around the whole Project Site from the Project entrance on Ravenswood Avenue.

With respect to parking, under Project Preservation Alternative 2, there would be no net loss in the number of office/R&D parking spaces. Under Project Preservation Alternative 2, below-grade parking below Office Building 1 would not be constructed due to retention of Building A, as well as reduced surface parking in the vicinity of Building P and Building 100 due to the siting of retained Buildings A, E, and 100. However, this commercial parking would be instead provided by either increasing the height of Parking Garage 1 by one additional level (increased from four to five stories), or increasing Parking Garage 3 (from three to four stories).

The number of residential parking spaces would decrease commensurate with the necessary number of parking spaces for the number of residential units that would be built in each of the alternatives. Under the Project Preservation Alternative 2, the loss of 44 residential units would result in a commensurate parking reduction of 63 spaces to a total of 456 residential parking spaces.

IMPACT ON THE ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

Project Preservation Alternative 2 proposes the demolition of 20 of the 26 contributing buildings in the California Register-eligible SRI International Campus historic district. The six buildings that contribute to the eligible historic district that would remain are Buildings 100, A, E, P, S, and T. As in the Project, the Research Field, a contributing landscape feature, would be demolished, and the contributing SRI International monument would be relocated on site to an as-yet-undetermined outdoor location that is publicly accessible on the project site.

The number of buildings and landscape features that would be demolished in Project Preservation Alternative 2 would cause the eligible historic district to lose historic integrity. The six buildings proposed to be retained are not sufficiently representative of the significance of SRI International's contributions as a research and development institution and are not clustered in a manner that would remain eligible as a historic district. Furthermore, the spatial relationships and siting of the buildings that convey the sense of a large institutional campus would be lost. As such, the site would no longer be eligible for listing in the California Register as a historic district. Therefore, the impact of Project Preservation Alternative 2 on the eligible historic district would be Significant and Unavoidable.

IMPACT ON INDIVIDUALLY ELIGIBLE HISTORIC RESOURCES

Project Preservation Alternative 2 would retain and rehabilitate all three individually eligible buildings on the Project site: Buildings 100, A, and E. While interior and structural upgrades are anticipated to be required for all three buildings, it is not anticipated that reuse would require exterior alterations. As such, Buildings 100, A, and E would remain individually eligible for listing in the California Register. Therefore, Project Preservation Alternative 2 would result in a Less Than Significant impact on Buildings 100, A and E.

PROJECT PRESERVATION ALTERNATIVE 2 ANALYSIS

The purpose of Project Preservation Alternative 2 is to consider a plan that would lessen the significant and unavoidable impacts of the Project on the three individually eligible historic resources—Buildings 100, A & E—on the Project Site. Project Preservation Alternative 2 would have a Less Than Significant impact on three individual historic resources, including Building 100, Building A, and Building E. However, the Project Preservation Alternative 2 would still have a significant and unavoidable impact on the SRI International Campus eligible historic district.

Project Preservation Alternative 2 fully or substantively meets nine of the Project Sponsor's 17 objectives, and only partially meets seven objectives. Project Preservation Alternative 2 does not meet Objective #2 related to residential development in the Project. **Table 5** in **Section IX. Analysis Project Sponsor's Objectives** provides a summary of the project sponsor's objectives, and which are met by each of the preservation alternatives.

Project Preservation Alternative 2 would retain individual historic resources, Buildings 100, A, and E, in their entireties. However, the retention of the three buildings, particularly Buildings A and E, would result in changes to the Project site plan, and would reduce the number of residential units as compared to the Project, as well as result in a decrease in new state-of-the-art, highly sustainable commercial office/R&D square footage by approximately 457,099 square feet as compared to the Project. The retention of Buildings 100, A, and E would result in almost half a million square feet (457,099 square feet) of new state-of-the-art, highly sustainable commercial square footage not being constructed. This reduction in both unit count and new office/R&D square footage impacts the financial feasibility of the Project. As such, Project Preservation Alternative 2 would only partially meet the project sponsor's objectives to "redevelop an aging R&D campus into a financially viable mixed-use neighborhood" (Objective #1) and to "replace 35 obsolete and unsustainable commercial buildings with five new state-of-the-art, highly sustainable commercial buildings with flexible floor plates that can accommodate a variety of office and/or R&D tenants" (Objective #4). The mix of retained older, existing buildings and proposed new office buildings would only partially meet the project sponsor's Objective #9 of utilizing "advances in architectural, landscape design and site planning practices to create distinctive and viable residential and commercial areas within the Project site that complement the adjacent neighborhoods" as the Project Site would be less architecturally cohesive overall.

Project Preservation Alternative 2 also only partially meets the sustainability objectives in Objectives #4 and #12 related to the incorporation of sustainable design features, as the existing buildings may not meet contemporary energy efficiency standards. However, existing buildings have embodied energy and their reuse would require less use of new construction materials and production. Due to the retention of Buildings 100, A, and E, the circulation of the site would need to be reconfigured and the site loses some circulation connectivity and operational efficiencies and, as such, only partially meets Objectives #5 and #6.

The Project Preservation Alternative 2 would not meet the Project Sponsor's objective related to housing, which is to increase the City's housing supply by providing at least 450 new housing units with a mix of unit types and sizes, *in addition to* dedicating a portion of the Project for the future development of up to approximately 100 units of affordable or special needs housing for an objective of a total of 550 residential units, at minimum (Objective #2). Under the Project

Preservation Alternative 2, the total residential unit count would be reduced to 506 units (from 550 units). While Project Preservation Alternative 2 would still include a dedicated site for future development by an affordable housing developer for 100 units of 100 percent affordable housing (Building R4), the number of other residential units developed on site would be reduced to 406 units, 44 less than the Project Sponsor's objective.[19] As such, under the Project Preservation Alternative 2, the Project Sponsor's objective related to housing would not be met.

Variant Preservation Alternative 2

DESCRIPTION

The Variant Preservation Alternative 2 would retain Buildings 100, A and E, and the Chapel in full **(Figure 12)**. Variant Preservation Alternative 2 would have the same reduced Central Commons open space and circulation configuration as Project Preservation Alternative 2, as described above, and the changes to Office Buildings 1, 2, 3, 4, and 5 would be the same as in the Project Preservation Alternative 2. Like in the Project Preservation Alternative 2, Building 100 would continue to be used as office space with necessary upgrades. A future use of the Chapel is to be determined, but options might include use as a community amenity space or leasable tenant space.

In Variant Preservation Alternative 2, the proposed new office amenity, Residential Building 2, Townhouses 1, Townhouses 2, and Parking Garage 3 would all remain as proposed. Due to the location and footprint of Parking Garage 1 in the Variant, in Preservation Alternative 2, the footprint of the garage would be reduced to accommodate the retention of Building 100. Parking Garages 1 and 2 would be increased from five to six stories to avoid the loss of any commercial parking spaces; however, the increased scale of the parking garages would result in a less efficient structure in terms of level-of-service.

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[19] The 406 units developed in the Preservation Alternative 2 Project would generally be market rate, with 15 percent of the 406 units as BMR to meet the City's requirements.

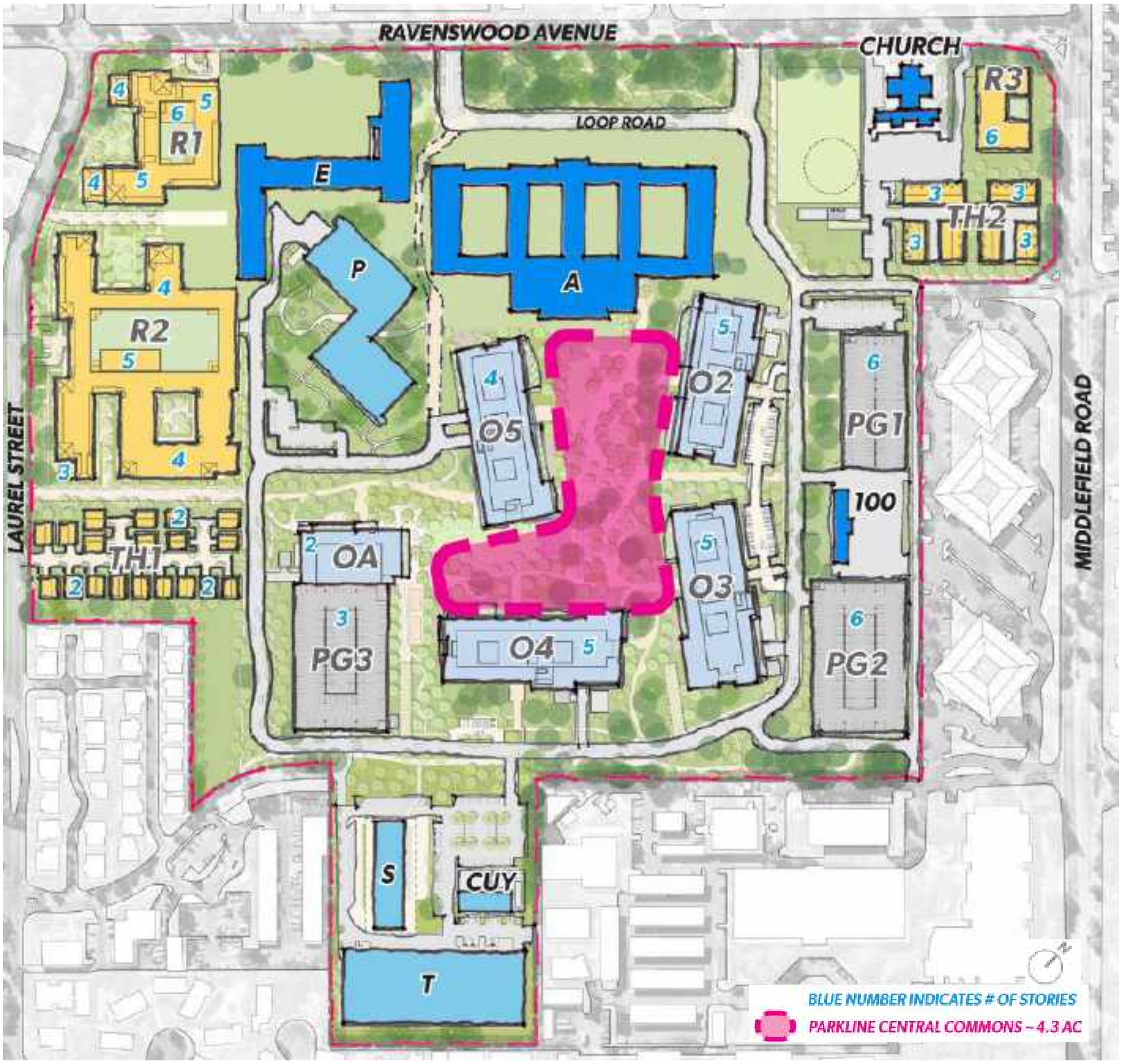

Figure 14. Variant Preservation Alternative 2. Source: STUDIOS Architecture, "Parkline Historic Resource Evaluation – Site Plan Alternatives – Variant (2024)," March 20, 2024. Legend edited by Page & Turnbull.

In order to accommodate the retention of the Church in Variant Preservation Alternative 2, the footprint of the 100-percent affordable housing building (R3) would be reduced, resulting in a loss of 90 affordable residential units compared to the Variant. To accommodate the retained Building E, the footprint of Residential Building 1 would have to be significantly reduced as well, resulting in a loss of 200 units from the market rate residential building.[20] Compared to the 800 total residential units in the Variant, the Variant Preservation Alternative 2 would have 510 units. This alternative would also result in 299 fewer residential parking spaces than the Variant.

Variant Preservation Alternative 2 would also result in a decrease in the total open space area (from 1,278,050 s.f in the Variant to 1,258,050 s.f.), a decrease in the size of the Parkline Central Commons (from 5.4 acres in the Variant to 4.3 acres), and only partially meet the objectives related to open space and to improved bicycle and pedestrian connectivity. The reconfiguration of the site plan would result in less connectivity within the Project Site and would result in less efficient vehicular traffic flows as the Commercial Loop Road would dead end (rather than loop through) in the site, resulting in longer vehicle trips and resulting trip emissions within the Project Site in order to access certain buildings.

IMPACT ON THE ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

Variant Preservation Alternative 2 would result in the demolition of the same historic district contributors as the Project Preservation Alternative 2. As such, the site would no longer be eligible for listing in the California Register as a historic district. Therefore, the impact of Variant Preservation Alternative 2 on the eligible historic district would remain Significant and Unavoidable.

IMPACT ON INDIVIDUALLY ELIGIBLE HISTORIC RESOURCES

Variant Preservation Alternative 2, like Project Preservation Alternative 2, would retain and reuse individually eligible Buildings 100, A and E. Additionally, Variant Preservation Alternative 2 would retain the Chapel, which is included within the Variant site. Therefore, there would be a Less Than Significant Impact on Building 100, Building A, Building E, and the Chapel.

VARIANT PRESERVATION ALTERNATIVE 2 ANALYSIS

The purpose of Variant Preservation Alternative 2 is to consider a plan that would lessen the significant and unavoidable impacts of the Variant on all four of the individually eligible historic resources—Building 100, Building A, Building E and the Chapel—by retaining all four buildings in their entireties. Variant Preservation Alternative 2 would have a Less Than Significant impact on four individual historic resources (Building 100, Building A, Building E, and the Chapel); however, Variant Preservation Alternative 2 would still have a significant and unavoidable impact on the SRI International Campus eligible historic district.

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[20] The 446 units developed in the Preservation Alternative 2 Variant would generally be market rate, with 15% of the 446 units as BMR to meet the City's requirements.

Variant Preservation Alternative 2 fully or substantively meets nine of the Project Sponsor's 17 objectives, and only partially meets seven objectives; Variant Preservation Alternative 2 does not meet Objective #2 related to residential development. **Table 5** in **Section IX. Analysis Project Sponsor's Objectives** provides a summary of the project sponsor's objectives, and which are met by each of the preservation alternatives.

The retention of the four historic buildings would result in changes to the site plan, and would reduce the number of residential units as compared to the Variant, as well as result in a decrease in new state-of-the-art, highly sustainable commercial office/R&D square footage by approximately 457,694 square feet as compared to the Project. This reduction in both unit count and new office/R&D square footage impacts the financial feasibility of the Project. As such, Variant Preservation Alternative 2 would only partially meet the project sponsor's objectives to "redevelop an aging R&D campus into a financially viable mixed-use neighborhood" (Objective #1) and to "replace 35 obsolete and unsustainable commercial buildings with five new state-of-the-art, highly sustainable commercial buildings with flexible floor plates that can accommodate a variety of office and/or R&D tenants" (Objective #4). The mix of retained older, existing buildings and proposed new office buildings would only partially meet the project sponsor's Objective #9 of utilizing "advances in architectural, landscape design and site planning practices to create distinctive and viable residential and commercial areas within the Project site that complement the adjacent neighborhoods" as the Project Site would be less architecturally cohesive overall.

Variant Preservation Alternative 2 also only partially meets the sustainability objectives in Objectives #4 and #12 related to the incorporation of sustainable design features, as the existing buildings may not meet contemporary energy efficiency standards. Due to the retention of Buildings 100, A, E, and the Chapel, the circulation of the site would need to be reconfigured and the site loses some circulation connectivity and operational efficiencies and, as such, only partially meets Objectives #5 and #6.

The Variant Preservation Alternative 2 would not meet the Project Sponsor's objective related to housing, which is to increase the City's housing supply by providing at least 550 new housing units with a mix of unit types and sizes, *in addition to* dedicating a portion of the Project for the future development of up to approximately 100 units of affordable or special needs housing for an objective of a total of 550 residential units, at minimum (Objective #2). Under the Variant Preservation Alternative 2, the total residential unit count would be reduced to 510 units (from 800 units). While Variant Preservation Alternative 2 would still include a dedicated site for future development by an affordable housing developer for 100 percent affordable housing (Building R3), the footprint of R3 would be reduced to accommodate the retained Chapel and only provide 64 affordable units (rather than the 154 included in the Variant). Also, the number of market rate residential units developed on site would be reduced to 446 units, 200 less than the Project Sponsor's objective.[21] Due to issues of construction methods and cost as well as concerns from the adjacent residential neighbors, it is not feasible to increase the density of the residential buildings along Laurel Street if Building E is retained. Therefore, the net units lost from displacement of Building R1 cannot be regained elsewhere on the Project Site. As such, under the Project Preservation Alternative 2, the Project Sponsor's objective related to housing would not be met, and it falls substantially short of the upper thresholds of the residential capacity for all residential unity types that is intended in the Variant.

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[21] The 446 units developed in the Variant Preservation Alternative 2 would generally be market rate, with 15 percent of the 446 units as BMR to meet the City's requirements.

VIII. ALTERNATIVE 3: RETAIN BUILDINGS 100, A, E, B & CHAPEL

Project Preservation Alternative 3

DESCRIPTION

Project Preservation Alternative 3 (Retain Buildings 100, A, E & B) would retain all three individually eligible Buildings, as well as historic district contributor Building B. These buildings would be retained in addition to Buildings P, S, and T, which will be retained as part of the Project. The property at 201 Ravenswood Avenue, like in the Project, is excluded from the Project Preservation Alternative 3, and the Chapel would remain unaltered.

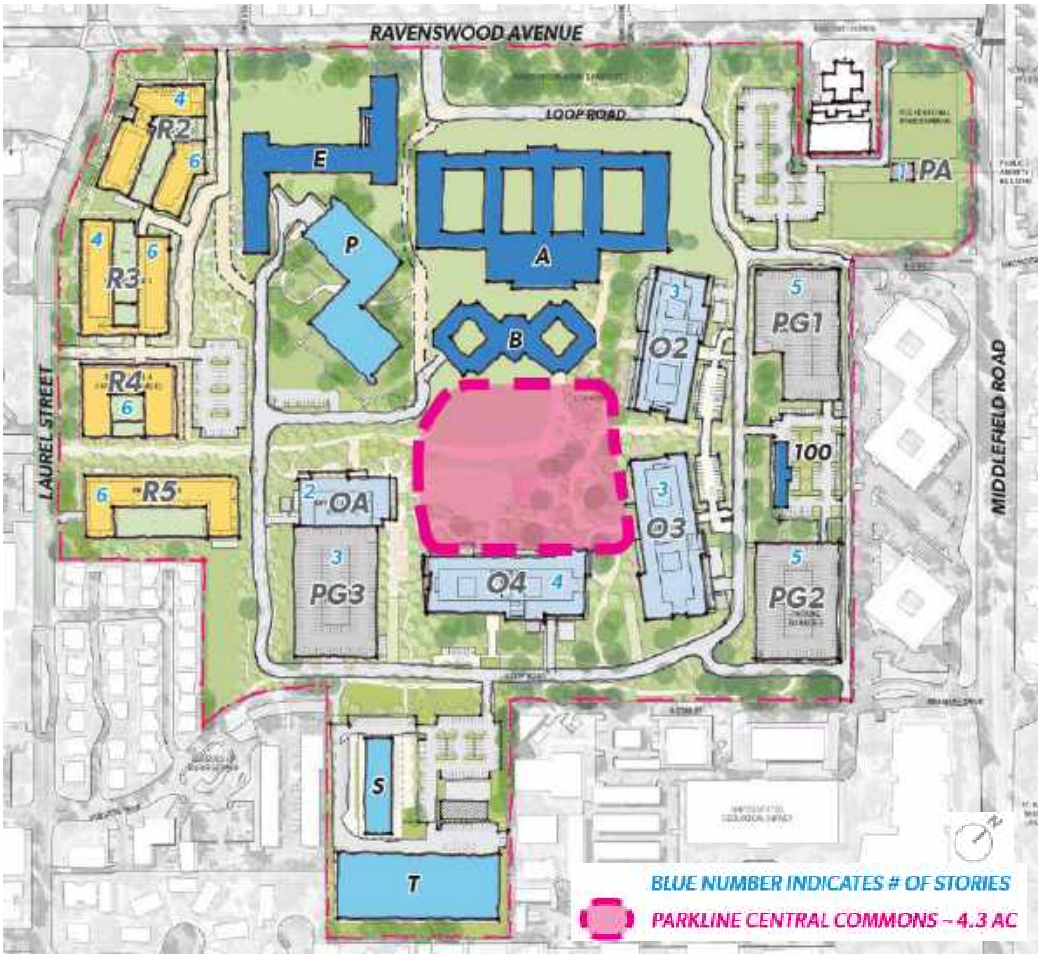

Figure 15. Preservation Alternative 3 site plan overlayed on Project. Source: STUDIOS Architecture, "Lane Partners Parkline: Historic Resource Evaluation – Site Plan Alternatives: Parkline Central Commons Areas," September 7, 2023. Legend edited by Page & Turnbull.

Under Project Preservation Alternative 3, Building 100 would be rehabilitated for office or support functions such as visitor functions, conferencing, etc. Alterations to interior floor plans of Building 100 may be required for use as amenity space, but no exterior alterations are likely to be required. Buildings A and E would be rehabilitated and retained for office/R&D use. Buildings A, B, and E would require substantial upgrades to meet current code requirements, but even with such upgrades, the buildings are not anticipated to meet the market needs of contemporary state-of-the-art office/R&D facilities in Silicon Valley based on general floor plan configurations and other existing physical constraints. Under Project Preservation Alternative 3, all other eligible historic district contributing buildings proposed for demolition in the Project would be demolished. The site plan for Project Preservation Alternative 3 is included in **Figure 15**.

Existing Building Renovation

As with Preservation Alternatives 1 and 2, in Project Preservation Alternative 3, upgrades to Building 100 that would be required include updated building systems (such as mechanical and electrical), seismic upgrades to meet current code requirements, and remediation of hazardous materials as the building includes regulated levels of Asbestos Containing Materials, lead based paint, and Polychlorinated Biphenyl (PCB), per the 2021 Hazardous Materials Study. Interior renovations would likely include removal of existing hallway and room partitions, ceilings, and other interior features to reconfigure the spaces for more optimal functionality as well as to accommodate ADA accessible elevators, stairs, and restrooms.

Similarly, required upgrades to Buildings A, B, and E would also include updated building systems (such as mechanical and electrical), seismic upgrades to meet current code requirements, and remediation of hazardous materials as the building includes regulated levels of Asbestos Containing Materials, lead based paint, and Polychlorinated Biphenyl (PCB), per the 2021 Hazardous Materials Study.

No exterior alterations to Buildings 100, A, B, and E, are part of Project Preservation Alternative 3. As in the Project and Variant, no exterior alterations to Buildings P, S, and T are included in Project Preservation Alternative 3. Therefore, the adaptive reuse of Buildings 100, A, B, and E, and the on-going use of Buildings P, S, and T appear to meet the SOI Standards for Rehabilitation.

Proposed Office Buildings

As the footprints of Buildings A, B, and E are located on the site of several proposed office/R&D and residential buildings, Project Preservation Alternative 3 would affect the development feasibility and the footprints and massing of the proposed new office/R&D buildings would need to be altered to accommodate the retention of Buildings A, B, and E. Specifically, proposed Office Buildings 1 and 5 would not be constructed, proposed Office Building 2 would be reduced in footprint and number of stories, and proposed Office Buildings 3 and 4 would be reduced in number of stories in order to meet the project objective of no net increase in office/R&D square footage (one aspect of Objective #1). Specifically, Office Building 2 would be reduced to three stories (from five under the Project) and the footprint would be reduced to accommodate retained Building A. Office Building 3 would be reduced to three stories (from five) and Office Building 4 reduced to four stories (from five).

Overall, Project Preservation Alternative 3 would result in the loss of approximately 592,209 square feet of new office/R&D development as 878,939 square feet GFA of existing office/R&D would remain (compared to the 286,730 square feet GFA that would remain in the Project). As a result, the total commercial square footage within the Project Site would be consistent with the Project, but would result in a reduction of new, highly sustainable commercial square footage with state-of-the-art facilities in lieu of preservation of Buildings 100, A, B and E.

Proposed Residential Buildings

Project Preservation Alternative 3 has the same effect as Preservation Alternative 2 in terms of the reduction in residential area and total unit count as compared to the Project, as Project Preservation Alternative 3 would also affect the development feasibility and the footprints and massing of several of the residential buildings.

Under Project Preservation Alternative 3, the proposed residential Building R1 would not be constructed and the footprint of residential Building R2 would be reduced, as they are on the location of existing Building E that would be retained. To accommodate residential units elsewhere, the area for the proposed two-story townhouses would instead be occupied with a new six-story residential building (R5) in the same location. While Residential Building R2 would decrease in footprint, the massing would remain at four and six stories, and the massing and footprints of Residential Buildings R3 and R4 would remain unchanged.

Like in Preservation Alternative 2, in the Project Preservation Alternative 3, there would be a net decrease of 44 units (from 550 to 506 units) for a decrease of 68,000 square feet in residential GFA. Building R4 would still be developed in the future by a separate affordable housing developer with 100 units of 100 percent affordable housing. The other 406 units would be market rate housing, with 15 percent of the 406 units meeting the City’s below market rate (BMR) housing requirements.

Proposed Amenity Space, Open Space & Parking

In Project Preservation Alternative 3, for both the Project and Variant, the proposed new office amenity and community amenity buildings would be the same height and number of stories as in the Project, and the open recreational fields would be retained.

In Project Preservation Alternative 3, the size of the Parkline Central Commons open space area would be reduced from approximately 5.4 acres to 3.3 acres as the commercial office/R&D buildings would shift further south; specifically, the retained existing Building A and the shifted new Office/R&D Building 5 would both encroach onto Parkline Central Commons, including the planned flexible lawn and event pavilion area. The square footage of overall open space would decrease by 9,157 square feet to 1,141,514 square feet. Like in Preservation Alternative 2, the emergency access road between Building R2 and the Commercial Loop Road would need to be shifted to the south, encroaching on the open space between Building P and the residential area.

Compared to Preservation Alternative 2, the visual permeability from Laurel Street would still be retained. However, under Project Preservation Alternative 3, a net loss of trails around retained Buildings A and E and proposed Office Building 2 would diminish site permeability and compromise the non-vehicular circulation network on the Project Site.

Project Preservation Alternative 3 would also impact the Project's onsite vehicular circulation. As with Preservation Alternative 2, under Preservation Alternative 3, retention of Buildings A and E would compromise the Commercial Loop Road, creating a “dead end” at Office Building 5 since the clearance between Buildings A and E is not sufficient for vehicular traffic; as a result, vehicles accessing Building P, Building 5, and Parking Garage 3 would need to drive around the whole Project Site from the Project entrance on Ravenswood Avenue.

With respect to parking, in Project Preservation Alternative 3, there would be no net loss in the number of office/R&D parking spaces. Below-grade parking below Office Buildings 1 and 5 (which would not be constructed due to retention of Buildings A and B), as well as reduced surface parking in the vicinity of Building P and Building 100 due to the siting of retained Buildings A, E, and 100. However, the loss of below-grade parking below Office Buildings 1 and 5 and surface parking in the vicinity of Building P and Building 100 would be made up by increasing the height of Parking Garage 1 or Parking Garage 2 an additional level, to each become five stories tall, or increasing Parking Garage 3 to four stories tall.

The number of residential parking spaces would decrease commensurate with the necessary number of parking spaces for the number of residential units that would be built in each of the alternatives. Under the Project Preservation Alternative 3, the loss of 44 residential units would result in a commensurate parking reduction of 63 parking spaces to a total of 456 residential parking spaces.

IMPACT ON THE ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

Project Preservation Alternative 3 would retain more contributors to the SRI International Campus eligible historic district than the Project and Preservation Alternatives 1 and 2. Project Preservation Alternative 3 proposes the demolition of 19 of the 26 contributing buildings in the California Register-eligible SRI International Campus historic district. The seven buildings that contribute to the eligible historic district that would remain are Buildings 100, A, B, E, P, S, and T. As in the Project, the Research Field, a contributing landscape feature, would be demolished, and the contributing SRI International monument would be relocated on site to an as-yet-undetermined outdoor location that is publicly accessible on the project site.

However, in Project Preservation Alternative 3, the retention of seven out of 26 contributing buildings (less than one-third of contributing buildings) would still result in the loss of historic integrity of the district. The rule of thumb for determining historic integrity in historic districts is often a ratio of at least two-thirds contributors, but always more than half – Preservation Alternative 3 achieves neither metric. While Buildings A, B, E, and P are clustered together, Buildings 100, S, and T are spread across the remainder of the site, and would be physically and visually separated by proposed new office/R&D buildings and parking garage, which impacts the ability of the remaining contributors to convey a cohesive sense of the historic districts’ significance. While the contributors that would be retained represent the range of construction eras, ranging from the former Dibble General Hospital (Building 100) to the first purpose-built SRI International building (Building A), and through later construction in the 1980s (Buildings B, P, and S), the buildings are primarily office buildings and do not fully represent the range of research activities that were undertaken on the SRI International campus; for example, the cluster of health research buildings (Buildings K, L, and M) would be demolished, along with the high-bay engineering building (Building G), conference building (Building I), and the former Dibble buildings that were converted to R&D use. Due to the extent of demolition of contributing buildings in Project Preservation Alternative 3, the eligible historic district would not retain sufficient historic integrity to convey its significance.

Therefore, the impact of Project Preservation Alternative 3 on the eligible historic district would remain Significant and Unavoidable.

IMPACT ON INDIVIDUALLY ELIGIBLE HISTORIC RESOURCES

Project Preservation Alternative 3 would retain and rehabilitate all three individually eligible buildings on the Project Site: Buildings 100, A, and E. While interior and structural upgrades are anticipated to be required for all three buildings, it is not anticipated that reuse would require exterior alterations. As such, Building 100, A, and E would remain individually eligible for listing in the California Register. Therefore, Preservation Alternative 3 would result in a Less Than Significant impact on Buildings 100, A and E.

PROJECT PRESERVATION ALTERNATIVE 3 ANALYSIS

The purpose of Project Preservation Alternative 3 is to consider a plan that would lessen the significant and unavoidable impacts of the Project on all three individually eligible historic resources—Buildings 100, A & E—as well as Building B and the eligible SRI International Campus historic district. Preservation Alternative 3 would have a Less Than Significant impact on individual historic resources, including Building 100, Building A, and Building E, as the buildings would be retained in full. However, Preservation Alternative 3 would still result in a significant and unavoidable impact on the eligible SRI International Campus historic district.

Project Preservation Alternative 3 fully or substantively meets nine of the Project Sponsor’s 17 objectives, only partially meets seven objectives. Project Preservation Alternative 3 does not meet Objective #2 related to residential development in the Project. Overall, Project Preservation Alternative 3 meets the same set of objectives that are met by Preservation Alternative 2. **Table 5** in **Section IX. Analysis Project Sponsor’s Objectives** provides a summary of the project sponsor’s objectives, and which are met by each of the preservation alternatives.

The retention of additional existing buildings, particularly Buildings A, B, and E, would change the Project Site plan, would reduce the number of residential units as the compared to Project, and would result in a decrease in new state-of-the-art, highly sustainable commercial square footage. As one of the project objectives is no net increase in office/R&D square footage, the retention of Buildings 100, A, B, and E would result over half a million square feet (592,209 square feet) of new state-of-the-art, highly sustainable commercial square footage not being constructed. This reduction in both unit count and new office/R&D square footage impacts the financial feasibility of the Project. As such, Project Preservation Alternative 3 would only partially meet the project sponsor’s objectives to “redevelop an aging R&D campus into a financially viable mixed-use neighborhood” (Objective #1) and to “replace 35 existing obsolete and unsustainable commercial buildings with five new state-of-the-art, highly sustainable commercial buildings with flexible floor plates that can accommodate a variety of office and/or R&D tenants” (Objective #4). The mix of retained older, existing buildings and proposed new office buildings would only partially meet the project sponsor’s Objective #9 of utilizing "advances in architectural, landscape design and site planning practices to create distinctive and viable residential and commercial areas within the Project site that complement the adjacent neighborhoods" as the campus would be less architecturally cohesive.

Preservation Alternative 3 also only partially meets the sustainability objectives in Objectives #4 and #12 related to the incorporation of sustainable design features, as the existing buildings may not meet contemporary efficiency standards. However, existing buildings have embodied energy and their reuse would require less use of new construction materials and production. Due to the retention of Buildings 100, A, and E, the circulation of the site would need to be reconfigured and the site loses some circulation connectivity and operational efficiencies and, as such, only partially meets Objectives #5 and #6.

The Project Preservation Alternative 3 would not meet the Project Sponsor's objective related to housing, which is to increase the City's housing supply by providing at least 450 new housing units with a mix of unit types and sizes, *in addition to* dedicating a portion of the Project Site for the future development of up to approximately 100 units of affordable or special needs housing for an objective of a total of 550 residential units, at minimum (Objective #2). Under the Project Preservation Alternative 3, the total residential unit count would be reduced to 506 units (from 550 units). While Project Preservation Alternative 3 would still include a dedicated site for future development by an affordable housing developer for 100 units of 100 percent affordable housing (Building R4), the number of other residential units developed on site would be reduced to 406 units, 44 less than the Project Sponsor's objective.[22] As such, under the Project Preservation Alternative 3, the Project Sponsor's objective related to housing would not be met.

Project Preservation Alterative 3 would result in a decrease in the size of the Parkline Central Commons, and only partially meet the objectives related to open space and to improved bicycle and pedestrian connectivity. The reconfiguration of the site plan would result in less connectivity within the Project Site, and would result in less efficient vehicular traffic flows as the Commercial Loop Road would dead end (rather than loop through) in the site, resulting in longer vehicle trips and resulting trip emissions within the Project Site in order to access certain buildings, as further described above.

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[22] The 406 units developed in the Preservation Alternative 3 Project would generally be market rate, with 15 percent of the 406 units as BMR to meet the City's requirements.

Variant Preservation Alternative 3

DESCRIPTION

The Variant Preservation Alternative 3 would retain Buildings 100, A, E, and B, and the Chapel in their entireties **(Figure 12)**. Variant Preservation Alternative 3 would have the same reduced Central Commons open space and circulation configuration as Project Preservation Alternative 3, as described above. The changes to Office Buildings 2, 3, and 4 would be the same as in the Project Preservation Alternative 3; likewise, Office Buildings 1 and 5 would be eliminated. Buildings P, S, and T would also be retained, as described above in the Project Preservation Alternative 3. As in the Project Preservation Alternative 3, Building 100 would continue to be used as office space with necessary upgrades. A future use of the Chapel is to be determined, but options might include use as a community amenity space or leasable tenant space.

In Variant Preservation Alternative 3, the proposed new office amenity, Residential Building 2, Townhouses 1, Townhouses 2, and Parking Garage 3 would all remain as proposed in the Variant. Due to the location and footprint of Parking Garage 1 in the Variant, in Preservation Alternative 3 the footprint of the garage would be reduced to accommodate the retention of Building 100. Parking Garages 1 and 2 would be increased from five to six stories to avoid the loss of any commercial parking spaces; however, the increased scale of the parking garages would result in a less efficient structure in terms of level-of-service.

In order to accommodate the retention of the Church in Variant Preservation Alternative 3, the footprint of the 100-percent affordable housing building (R3) would be reduced, resulting in a loss of 90 affordable residential units compared to the Variant. To accommodate the retained Building E, the footprint of Residential Building 1 would have to be significantly reduced, resulting in a loss of 200 units from the market rate residential building.[23] Compared to the 800 total residential units in the Variant, the Variant Preservation Alternative 3 would have 510 units. The alternative would have 299 fewer residential parking spaces than the Variant.

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[23] The 446 units developed in the Preservation Alternative 3 Variant would generally be market rate, with 15% of the 446 units as BMR to meet the City's requirements.

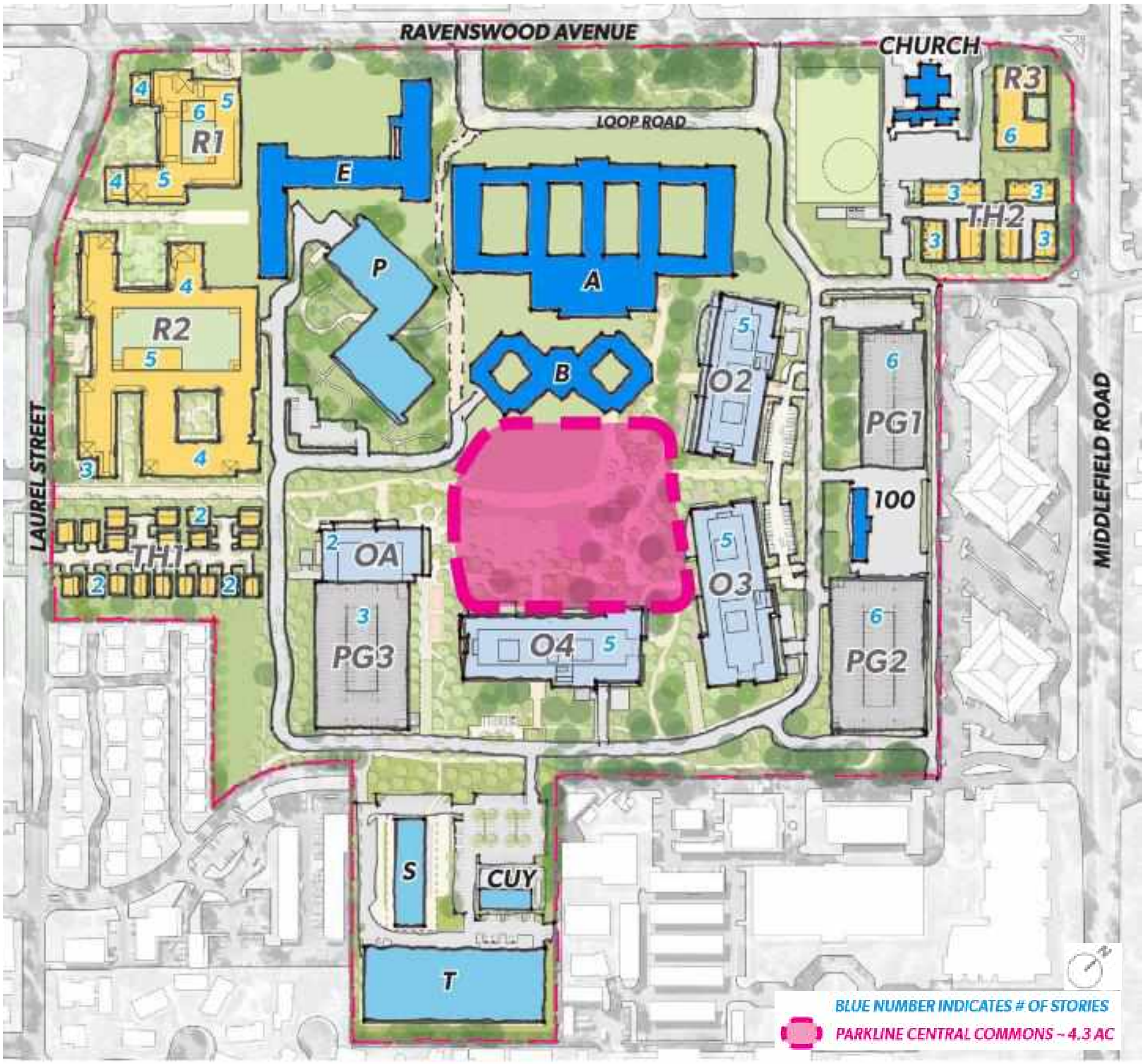

Figure 16. Variant Preservation Alternative 3. Source: STUDIOS Architecture, “Parkline Historic Resource Evaluation – Site Plan Alternatives – Variant (2024),” March 20, 2024. Legend edited by Page & Turnbull.

Variant Preservation Alterative 3 would also result in a decrease in the size of the Parkline Central Commons compared to the Variant, and only partially meet the objectives related to open space and to improved bicycle and pedestrian connectivity. The reconfiguration of the site plan would result in less connectivity within the Project Site and would result in less efficient vehicular traffic flows as the Commercial Loop Road would dead end (rather than loop through) in the site, resulting in longer vehicle trips and resulting trip emissions within the Project Site in order to access certain buildings.

IMPACT ON THE ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

Variant Preservation Alternative 3 would result in the demolition of the same historic district contributors as the Project Preservation Alternative 3. As such, the site would no longer be eligible for listing in the California Register as a historic district. Therefore, the impact of Variant Preservation Alternative 3 on the eligible historic district would remain Significant and Unavoidable.

IMPACT ON INDIVIDUALLY ELIGIBLE HISTORIC RESOURCES

Variant Preservation Alternative 3, like Project Preservation Alternative 3, would retain and reuse individually eligible Building 100, Building A, and Building E. Additionally, Variant Preservation Alternative 3 would retain the individually eligible Chapel, which is included within the Variant site. Therefore, while there would be a Less Than Significant Impact on Building 100, Building A, Building E, and the Chapel.

VARIANT PRESERVATION ALTERNATIVE 3 ANALYSIS

The purpose of Variant Preservation Alternative 3 is to consider a plan that would lessen the significant and unavoidable impacts of the Variant on all four of the individually eligible historic resources—Building 100, Building A, Building E, and the Chapel—by retaining all four buildings in their entireties. Variant Preservation Alternative 3 would have a Less Than Significant impact on four individual historic resources, including Building 100, Building A, Building E, and the Chapel. However, Variant Preservation Alternative 3 would still have a significant and unavoidable impact on the SRI International Campus eligible historic district.

Variant Preservation Alternative 3 fully or substantively meets nine of the Project Sponsor’s 17 objectives, and only partially meets seven objectives. Variant Preservation Alternative 3 does not meet Objective #2 related to residential development in the Project. **Table 5** in **Section IX. Analysis Project Sponsor’s Objectives** provides a summary of the project sponsor’s objectives, and which are met by each of the preservation alternatives.

Variant Preservation Alternative 3 would retain individual historic resources, Buildings 100, A, and E, and the Chapel, in full. However, the retention of the four buildings, particularly Building A, Building E, and the Chapel would result in changes to the proposed site plan, and would reduce the number of residential units as compared to the Variant, as well as result in a decrease in new state-of-the-art, highly sustainable commercial office/R&D square footage by approximately 457,694 square feet as compared to the Project. This reduction in both unit count and new office/R&D square footage impacts the financial feasibility of the Project. As such, Variant Preservation Alternative 3 would only partially meet the project sponsor’s objectives to “redevelop an aging R&D campus into a financially viable mixed-use neighborhood" (Objective #1) and to "replace 35 obsolete and unsustainable commercial buildings with five new state-of-the-art, highly sustainable commercial buildings with flexible floor plates that can accommodate a variety of office and/or R&D tenants" (Objective #4). The mix of retained older, existing buildings and proposed new office buildings would only partially meet the project sponsor's Objective #9 of utilizing "advances in architectural, landscape design and site planning practices to create distinctive and viable residential and commercial areas within the Project site that complement the adjacent neighborhoods" as the Project Site would be less architecturally cohesive overall.

Variant Preservation Alternative 3 also only partially meets the sustainability objectives in Objectives #4 and #12 related to the incorporation of sustainable design features, as the existing buildings may not meet contemporary energy efficiency standards. Due to the retention of Buildings 100, A, E, and the Chapel, the circulation of the site would need to be reconfigured and the site loses some circulation connectivity and operational efficiencies and, as such, only partially meets Objectives #5 and #6.

The Variant Preservation Alternative 3 would not meet the Project Sponsor's objective related to housing, which is to increase the City's housing supply by providing at least 450 new housing units with a mix of unit types and sizes, *in addition to* dedicating a portion of the Project for the future development of up to approximately 100 units of affordable or special needs housing for an objective of a total of 550 residential units, at minimum (Objective #2). Under the Variant Preservation Alternative 3, the total residential unit count would be reduced to 510 units (from 800 units). While Variant Preservation Alternative 3 would still include a dedicated site for future development by an affordable housing developer for 100 percent affordable housing (Building R3), the footprint of R3 would be reduced to accommodate the retained Chapel and only provide 64 affordable units (rather than the 154 included in the Variant). Also, the number of market rate residential units developed on site would be reduced to 446 units, which is over 200 units less than the Project Sponsor's minimum objective for delivery of new residential units.[24] Due to issues of construction methods and cost as well as concerns from the adjacent residential neighbors, it is not feasible to increase the density of the residential buildings along Laurel Street if Building E is retained. Therefore, the net units lost from displacement of Building R1 cannot be regained elsewhere on the Project Site. As such, under the Project Preservation Alternative 3, the Project Sponsor's objective related to housing would not be met, and it falls substantially short of the upper thresholds of the residential capacity under the Variant.

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[24] The 446 units developed in the Variant Preservation Alternative 3 would generally be market rate, with 15 percent of the 446 units as BMR to meet the City's requirements.

IX. ANALYSIS OF PROJECT SPONSOR'S OBJECTIVES

The Project Sponsor seeks to achieve several objectives by undertaking the Project. **Table 5**, following, provides a matrix to understand how well the Project and each preservation alternative meet the project sponsor's objectives. The data within **Table 5** relies on the analysis of each preservation alternative discussed in the prior sections.

TABLE 5. ABILITY OF PROJECT & PRESERVATION ALTERNATIVES TO MEET PROJECT SPONSOR'S OBJECTIVES

Project Sponsor's Objective ✓ = *Fully/substantially meets Objective.*		**Project** Base & Variant	**Alt. 1** Base & Variant	**Alt. 2** Base & Variant	**Alt. 3** Base & Variant
1	Redevelop an aging R&D campus into a financially viable residential and commercial mixed-use neighborhood that cohesively balances office/R&D uses, multifamily residential uses, open space, and community-serving uses, with no increase in office/R&D square footage compared to existing conditions.	✓	✓	Partially meets	Partially meets
2	Increase the city's housing supply and progress towards its state-mandated housing goals by providing at least 550 new housing units with a mix of types and sizes, including approximately 68 units (15 percent of 450) for low- and moderate-income households within an approximately 10-acre residential area along Laurel Avenue, and dedicate a portion of the Project Site to an affordable housing developer for future development of up to approximately 100 units of affordable or special-needs housing.	✓	*Project:* Meets *Variant:* Partially Meets	Does Not Meet	Does Not Meet
3	Ensure the continuity of SRI International's on-going use of existing satellite transmission equipment on-site, which requires unobstructed sightlines to the horizon to ensure no disruption to ongoing research operations.	✓	✓	✓	✓

Project Sponsor's Objective ✓ = *Fully/substantially meets Objective.*		**Project** Base & Variant	**Alt. 1** Base & Variant	**Alt. 2** Base & Variant	**Alt. 3** Base & Variant
4	Replace 35 obsolete and unsustainable commercial buildings with five new state-of-the-art, highly sustainable commercial buildings with flexible floor plates that can accommodate a variety of office and/or R&D tenants.	✓	Partially meets	Partially meets	Partially meets
5	Orient new office/R&D buildings in a configuration that leverages operational efficiencies, such as the ability to share amenity spaces, parking, and ensures that the business and security needs of future commercial tenants are met.	✓	✓	Partially meets	Partially meets
6	Improve bicycle and pedestrian connectivity and safety within and between the site and adjacent neighborhoods to promote an active public realm and establish interconnected neighborhoods.	✓	✓	Partially meets	Partially meets
7	Create separation between the residential uses along Laurel Avenue and the Office/R&D District by providing independent vehicular access, circulation, and parking/loading areas.	✓	✓	✓	✓
8	Provide approximately 26 acres of accessible open space throughout the Project Site, including a large central commons area adjacent to the office/R&D buildings, to create a vibrant park-like setting that emphasizes preservation of heritage trees where feasible, encourages passive and active recreational activities and promotes health and wellness for residents, tenants, and visitors.	✓	✓	Partially meets	Partially meets
9	Use advances in architectural, landscape design, and site planning practices to create distinctive and viable residential and commercial areas within the Project site that complement the adjacent neighborhoods.	✓	✓	Partially meets	Partially meets

Project Sponsor's Objective ✓ = *Fully/substantially meets Objective.*		**Project** Base & Variant	**Alt. 1** Base & Variant	**Alt. 2** Base & Variant	**Alt. 3** Base & Variant
10	Incorporate complementary community recreational and retail uses that encourage an active and healthy lifestyle for residents, tenants, and visitors.	✓	✓	✓	✓
11	Create a thriving transit-oriented development that facilitates efforts to reduce single-occupancy vehicle miles traveled by siting commercial and residential uses near existing transit corridors and public transportation facilities, and promoting alternatives to automobile transit through implementation of TDM, new bicycle/pedestrian access, and ease of movement between buildings.	✓	✓	✓	✓
12	Support local and regional efforts to reduce greenhouse gas emissions, respond to climate change, and promote energy and water efficiency and resource conservation by incorporating sustainable design features and resource conservation measures that align with the city's goals.	✓	✓	Partially meets	Partially meets
13	Decommission the existing onsite cogeneration plant to achieve significant reductions in greenhouse gas emissions within the city and region.	✓	✓	✓	✓
14	Generate a positive fiscal impact on the local economy and revenue for the city's general fund and other public agencies through enhancing property values, increasing property tax revenue, creation of jobs, and payment of development fees.	✓	✓	✓	✓
15	Ensure the flexibility to phase construction of the Project in response to market conditions.	✓	✓	✓	✓

Project Sponsor's Objective ✓ = *Fully/substantially meets Objective.*		**Project** Base & Variant	**Alt. 1** Base & Variant	**Alt. 2** Base & Variant	**Alt. 3** Base & Variant
16	Bolster the city's reputation as a hub for technological advancement and innovation and recognize SRI International's contributions to society and the growth of Silicon Valley.	✓	✓	✓	✓
17	Facilitate the city's desire to implement an emergency water supply and storage project on the Project Site, as feasible, to increase Menlo Park's resilience in the event of an emergency.	✓	✓	✓	✓

X. CONCLUSION

The Project Site has had a long history with a wide range of uses—from its use as a residential estate from the mid-nineteenth century to mid-twentieth century to use by the military as Dibble General Hospital during World War II to use by Stanford University for student housing in the post-war era to its more recent use since 1947 as a research and development campus for SRI International (original known as Stanford Research Institute). Since the 1940s, SRI International has reused former Dibble General Hospital buildings and new purpose-built facilities constructed between the late 1950s and early 2000s.

The SRI International campus was evaluated in April 2022 by Page & Turnbull in a Historic Resource Evaluation and determined to be eligible for listing as a historic district in the California Register of Historical Resources (California Register) under Criterion 1 (Events) for association with SRI International as an innovative research and development institution that has contributed numerous advancements in a variety of fields including computing, business and economics, health and medicine, and physical sciences. The eligible historic district has 26 contributing buildings and two contributing landscape features, as well as 13 non-contributing buildings. In addition, Page & Turnbull's evaluation found three buildings to be individually eligible for listing in the California Register: Building A, under Criterion 1 (Events) and Criterion 3 (Architecture); Building E, under Criterion 1 and Criterion 2 (Persons); and Building 100, under Criterion 1. Thus, these three individually eligible buildings and the eligible historic district are historic resources for the purposes of CEQA review. Furthermore, the Chapel at 201 Ravenswood Avenue, included in the Variant site plan, was evaluated by Page & Turnbull in February 2024 and found individually eligible for listing in the California Register as a distinctive local example of Late Modernist architecture under Criterion 3 (Architecture); therefore, the Chapel is an individual historic resource for the purposes of CEQA.

The Project and Variant, as assessed in a Historic Resources Technical Report, was found to cause a significant and unavoidable impact on the SRI International Campus eligible historic district due to the level of demolition proposed to both the contributing buildings and landscape elements, as well as to four individually eligible historic resources due to their proposed demolition.

In addition to a No Project Alternative, the preparation of three preservation alternatives discussed in this report were created to explore project alternatives that may lessen the potential impact on the eligible historic district and the four individually eligible buildings. **Table 6**, following, summarizes the impact of the Project and each preservation alternative based on the number of individually eligible buildings, contributing buildings, and landscape features that would be retained under each Preservation Alternative.

TABLE 6. SUMMARY OF IMPACT TO INDIVIDUAL HISTORIC RESOURCES & ELIGIBLE SRI INTERNATIONAL CAMPUS HISTORIC DISTRICT

	Project (Base and Variant)	**Alternative 1** (Base and Variant)	**Alternative 2** (Base and Variant)	**Alternative 3** (Base and Variant)
Individually Eligible Buildings (4 total)				
Retained	0	2	4	4
Demolished	3 – Base 4 – Variant	2	0	0
Contributing Buildings (26 total)				
Retained	3	4	6	7
Demolished	23	22	20	19
Contributing Landscape Features (2 total)				
Retained	1	1	1	1
Demolished	1	1	1	1

Preservation Alternatives 1, 2, and 3 propose to retain more contributing buildings and landscape features than the Project and Variant but are each still found to pose a significant and unavoidable impact to the eligible historic district because they would cause the SRI International Campus to no longer be eligible for the California Register. Preservation Alternative 1 would lessen the impacts to the individually eligible historic resources as it would retain Building 100 and the Chapel; however, due to the demolition of Buildings A and E, Preservation Alternative 1 would still have a Significant and Unavoidable impact on individually eligible historic resources. Preservation Alternatives 2 and 3 would both retain all four individually eligible resources and, thus, have a Less Than Significant impact on individually eligible historic resources.

Preservation Alternative 1 is most comparable to the Project with regard to meeting the Project Sponsor's objectives in terms of redeveloping an existing R&D campus to a financially viable, mixed-use neighborhood. Preservation Alternative 1 would have the same number of new market rate residential units (and the same square footage), the same amount of open space and amenity space, and the same number of parking spaces. In Project Preservation Alternative 1, there would also be the same number of affordable units in the 100-percent affordable housing building (100 units); however, under the Variant, the number of units in the affordable housing building would be reduced from 154 to 64 units. Preservation Alternative 1 would still have a highly connected network of bicycle and pedestrian trails, high-quality architectural design, and meet sustainability, emergency water supply, and tax revenue goals. To achieve the project objective of no net new office square footage, some of the proposed new office square footage would be displaced by the retention of the approximately 9,000-square foot Building 100. However, the objective of new, state-of-the-art, highly sustainable commercial buildings to accommodate a range of office or R&D tenants will still be partially met, and all of the other project sponsor's objectives would be fully met. The objective related to residential development would be met in both the Project and Variant of Preservation Alternative 1.

Preservation Alternatives 2 and 3 each meet nine out of 17 of the project sponsor's objectives, but only partially meet seven objectives and do not meet one objective. The Project Sponsor's objective related to residential development (Objective #2) is not met in Preservation Alternative 2 or 3 to either the Project or the Variant. Preservation Alternative 2 would retain 743,829 square feet of existing commercial square footage, and Preservation Alternative 3 would retain 878,838 (compared to the 289,730 square feet retained in the Project), which, due to the Project sponsor's objective of no net new commercial square footage, would result in substantially less new construction of new, state-of-the-art, highly sustainable commercial to meet the needs of contemporary office, R&D, and life science tenants on the site. The existing buildings on the site lack many of the facilities and support systems that are expected or required by contemporary office, R&D, and life-science tenants, and have additional deficiencies related to size, width, and natural lighting at large basement levels. Preservation Alternatives 2 and 3 would retain the same number of commercial parking spaces, but would result in reconfiguration of the site plan that would diminish bicycle and pedestrian connectivity and create vehicle traffic flow issues.

In Project Preservation Alternatives 2 and 3, a site would be designated for the future development of 100 percent affordable housing by a separate affordable housing developer in Building R4; in Variant Preservation Alternatives 2 and 3 this future affordable housing site is at Building R3. In Project Preservation Alternatives 2 and 3 the full number of affordable units would be built, but in Variant Preservation Alternatives 2 and 3 the number of units would be reduced to 64 units because the R3 building size would be reduced in order to accommodate the retained Chapel. In both Project Preservation Alternatives 2 and 3, the number of other residential units would be reduced by 44 units to only 406 units from 450 units in the Project. In Variant Preservation Alternatives 2 and 3, the number of residential units would be reduced more significantly by 200 units to 446 units from 646 units in the Variant.[25] As such, Objective #2 related to residential development would not be met by Project Preservation Alternatives 2 and 3 or Variant Preservation Alternatives 2 or 3. Furthermore, Variant Preservation Alternatives 2 and 3 fall short of the upper thresholds of the residential capacity in the Variant.

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[25] In the Project and Variant of all the preservation alternatives, as in the Project, the units in Residential Buildings R1, R2, R3, R5, and/or the Townhomes would generally be market rate, with 15 percent of the units reserved as BMR units to meet City requirements.

In conclusion, this report finds that Project Preservation Alternative 1 would avoid a significant impact to the individually eligible Building 100, Variant Preservation Alternative 1 would avoid a significant impact to both Building 100 and the Chapel, and Preservation Alternatives 2 and 3 to the Project and Variant would avoid significant impacts to the four individually eligible historic resources (Buildings 100, A, E and the Chapel). However, Preservation Alternatives 1, 2, and 3 to the Project and Variant would each cause a significant and unavoidable impact to the eligible SRI International Campus historic district. While Project Preservation Alternative 1 would still result in a significant and unavoidable impact to the eligible historic district and to individually eligible Buildings A and E, it would retain individually eligible Building 100 and would fully meet 15 out 17 Project Objectives. Variant Preservation Alternative 1 would, likewise, still result in a significant and unavoidable impact to the eligible historic district and to individually eligible Buildings A and E, but it would retain individually eligible Building 100 and the Chapel, and would fully meet 16 out 17 Project Objectives. Preservation Alternatives 2 and 3 to the Project and Variant only fully meet nine out of 17 Project Objectives.

XI. REFERENCES

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XII. APPENDIX

Appendix A - Secretary of Interior Standards for Rehabilitation

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Appendix B - Graphics Packages

The “Lane Partners Parkline: Historic Resource Evaluation – Site Plan Alternatives: Parkline Central Commons Areas” package dated September 7, 2023, supplied by the Project Sponsor to Page & Turnbull was the source of the graphics for each preservation alternative to the Project. The Project Sponsor provided a supplemental graphics package illustrating the preservation alternatives to the Variant in a “Parkline Historic Resource Evaluation – Site Plan Alternatives – Variant (2024),” dated March 20, 2024.

These graphics packages, produced by STUDIOS Architecture are reproduced in full, as follows.

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Appendix 3.10-1

Biological Resources Report

H. T. HARVEY & ASSOCIATES
Ecological Consultants
50 years of field notes, exploration, and excellence

Parkline Project
Biological Resources Report

Project #4686-01

Prepared for:

Mark Murray
Lane Partners
644 Menlo Avenue, Second Floor
Menlo Park, CA 94025

Prepared by:

H. T. Harvey & Associates

June 16, 2023 (Updated March 12, 2024)

List of Abbreviated Terms

BMPs	best management practices
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
City	City of Menlo Park
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
EFH	Essential Fish Habitat
FESA	Federal Endangered Species Act
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
OHW	Ordinary High Water
Porter-Cologne	Porter-Cologne Water Quality Control Act
RWQCB	Regional Water Quality Control Board
SRI	SRI International
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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Section 1. Introduction

This report describes the biological resources present within and adjacent to the Parkline project site, as well as the potential impacts of the proposed project on biological resources and measures necessary to mitigate those impacts under the California Environmental Quality Act (CEQA). This report was prepared to facilitate CEQA review of the project by the City of Menlo Park (City) based on the updated project plans and other materials provided to H. T. Harvey & Associates by Lane Partners.

1.1 Project Location

The 64.2-acre project site consists of an existing research campus owned and operated by SRI International (SRI) that is located at 333 Ravenswood Avenue in Menlo Park, California (Figure 1). The site is bounded by Ravenswood Avenue to the northwest; Laurel Street, residential development, and commercial development to the southwest; residential and commercial development to the southeast; and Middlefield Road and commercial development to the northeast (Figure 2). Surrounding areas are urbanized and consist of residential neighborhoods and low-intensity commercial areas. The project site is located on the *Palo Alto, California*, and U.S. Geological Survey (USGS) quadrangle.

1.2 Project Overview

According to the project description dated December 5, 2022, Parkline would redevelop the SRI research and development campus by creating a revitalized transit-oriented, mixed-use campus adjacent to City Hall and proximate to the City's Downtown Area and Caltrain Station. The project will transform the existing SRI campus into a mixed-use neighborhood including a new sustainable research and development campus with no net increase in commercial square footage, new housing units at a range of affordability levels, new bicycle and pedestrian connections, and approximately 26 acres of open space. Parkline is designed to attract leading R&D and life science companies, while also enabling SRI to continue its operations within the existing Buildings P, S, and T that will remain on-site and operational by SRI and its tenants. The project will demolish most of the 38 existing structures – with the exception of Buildings P, S, and T – and will decommission the existing natural gas cogeneration power plant facility.

1.2.1 Residential

The project will develop 450 rental residential units distributed across three multifamily buildings and additional townhomes. The residential units are sited along Laurel Street and Ravenswood Avenue proximate to the Caltrain station and the City's Downtown to encourage public transit utilization, and provide residents with convenient access to retail, restaurants, and services along nearby El Camino Real and Santa Cruz Avenue, including existing public facilities, such as Burgess Park and the Arrillaga Family Recreation Center. In addition to providing 450 residential units, the project would also dedicate a separate site to an affordable housing developer for up to 100 units of affordable housing. Finally, the Environmental Impact Report for the project

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Figure 1. Vicinity Map
Parkline Master Plan Biological Resources Report (4686-01)
March 2024

N:\Projects4600\4686-01\Reports\BRR\Fig 2 Project Site.mxd

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Figure 2. Project Site
Parkline Master Plan Biological Resources Report (4686-01)
March 2024

will be evaluating an 800 residential unit project "variant" described below. Parkline will create much-needed housing across from City Hall and the City's Downtown area along the western edge of the site. Along Laurel Street, the multifamily buildings will extend from the Classics of Burgess neighborhood north to Ravenswood Avenue, and east along a portion of Ravenswood Avenue.

The 450 rental units will consist of a mix of unit types to meet the needs of a diverse population of future residents. The dwelling units will consist of studio, 1, 2, and 3 bedrooms, distributed throughout three residential buildings and townhouses. The three apartment buildings will be appropriately scaled in three and five-story buildings with plentiful private and public open space. Consistent with Menlo Park's Below Market Rate housing program, 15% of these new units will be deed-restricted affordable and distributed throughout each building. Approximately 19 rental townhouses will be located in between the residential buildings and the *Classics of Burgess* neighborhood to further diversify the housing mix and provide a scaled transition from the higher-intensity multi-family buildings to the single-family residences.

Building frontages along these streets will not exceed three-stories in height. Building massing will echo and complement the scale of other residential buildings in this area. Peaked, sloped roofs, windows, balconies, and other architectural features will add articulation and scale along the streets. Main building entrances will be highlighted along the street with landscaping, human-scaled plazas, lighting, and trellis structures.

The first floors will open to private patios and the above-grade units will contain private balconies that serve as extensions of indoor living space. The patios will be defined with landscaping, low walls and trellis structures. In addition, occupants of the three residential buildings will have access to a large second floor private open space which will be improved with landscaping, special paving, and trellises.

Parking will be provided in above-grade parking garages with podiums attached to each of the three residential buildings. The townhouses will have individual garages. Dwelling units will flank the sides of these garages which will be screened from view.

Increased Development Variant: The variant would include up to 250 additional residential rental dwelling units compared to the project (an increase from 550 to 800 units, inclusive of up to 154 affordable units to be developed by an affordable housing developer in the northeast corner of the project site at Ravenswood Avenue and Middlefield Road). The variant site plan would expand to include the parcel located at 201 Ravenswood Avenue to create a continuous project frontage along Ravenswood Avenue. Under the variant, the existing First Church of Christ, Scientist would be demolished to accommodate the additional residential units, recreational open space area, and emergency water reservoir in the northeastern corner of the project site. The variant would not make any changes to the office/R&D buildings.

Under the variant, the multifamily buildings would be reduced to two buildings, both of which accommodate 300 units for a total of 600 units in the northwest corner of the project site. The variant would maintain the 19 two-story townhouses included under the project along Laurel Avenue. The variant would include residential buildings in the northeastern portion of the project site, including the 6-story multifamily 100% affordable building with up to 154 units (to be developed separately by an affordable housing developer) at the corner of Ravenswood Avenue and Middlefield Road, along with 27 additional townhomes located immediately south of R3. Total gross residential floor area would increase from approximately 520,000 square feet under the project to 1.096 million square feet under the variant.

Under the variant, the total number of commercial parking spaces remains unchanged at 2,800 spaces, whereas the residential parking increases to 926 spaces. The commercial parking garages (PG 1 and PG 2) increase in square footage and one-level of height (from 4- to 5-stories) as compared to the project.

The variant would include a recreational open space area in the northeast corner of the project site, along with associated surface parking. The variant would also include space for an approximately 2-million-gallon underground water reservoir under the recreational open space area and an associated aboveground facilities room to be developed and operated by the City at a later date if the site is selected by the City for that use.

1.2.2 Office/R&D

The project will demolish approximately 1,093,602 square feet of existing commercial/R&D space and replace it with a modern commercial/R&D campus, distributed across five Office/R&D buildings, one office amenities building, and one community amenities building. The Office/R&D and Amenity buildings are sited and organized around a central major open space of approximately nine acres. This usable outdoor space will provide opportunities for outdoor meetings, as well as passive and active recreation.

The replacement office/R&D buildings will be highly sustainable and designed for established and emerging enterprises. The new buildings will provide significant indoor-outdoor space to encourage social interactions and healthy lifestyles through access to natural spaces. The program will consist of:

- 1.1 million square feet of office/R&D space in five new buildings, an office amenity building, and a new community building, which will replace 1.1 million square feet of existing office/R&D space on the site, with no net increase in commercial square footage.
- 1.38 million total square feet of existing and new buildings, which represents no net new commercial floor area relative to existing conditions.

The architectural character of the office/R&D buildings will be modern and technologically sophisticated to reflect the nature of the uses they will support. Building masses will be defined by main entrances, first floor articulations such as loggias, elevated exterior balconies, and use of natural materials. High performance building enclosures, including innovative glazing and wall systems, will align with sustainability goals.

1.2.3 Landscape Concept

In total, Parkline includes approximately 26 acres of open space areas and supporting amenities. Open space features include the following:

- **Ravenswood Avenue Parklet:** A landscaped setback of approximately 6 acres located on the northerly edge of the site along Ravenswood Avenue will protect the existing heritage trees and provide a screened frontage. A shared-use path will weave through the existing trees in the setback area to connect with and support pedestrian and bicycle circulation throughout the site. Small scale and intimate public spaces, such as picnic areas and exercise stations, directly connect to the shared-use path. The parklet also leads to a large multi-use plaza which provides a 'front door' to the Parkline campus and visual connection to the Parkline Central Commons.
- **Parkline Recreational Area:** The Parkline Recreational Area will provide a community recreational sports area of approximately 2 acres located on the northeast corner of the site at the intersection of Ravenswood Avenue and Middlefield Road, adjacent and connected to the Ravenswood shared-use path. This open space area will provide publicly accessible community functions, such as a recreational field, public parking, a children's play area, and other activity areas. In addition, a community amenities building (approximately 2,000 square feet) will contain publicly accessible restrooms, and possible small retail spaces.
- **Parkline Central Commons:** The Parkline Central Commons provides a central open space of approximately 9 acres located between the Office/R&D buildings and office amenities building and offers a variety of programmed open space, such as flexible-use lawn areas and multi-use plaza that can accommodate gatherings. The Parkline Central Commons is anticipated to include an event pavilion and landscaped areas. Smaller landscaped spaces for tenant use will be located adjacent to the buildings, which will provide outdoor seating and shaded tree groves. Primary pedestrian circulation paths connect all the edges of the site to the Parkline Central Commons.

Landscaping will not include any plants with California Invasive Plant Council (Cal-IPC) invasiveness rankings of "moderate" or "high" (https://www.cal-ipc.org/plants/inventory/).

1.2.4 Site Lighting Concept

Lighting would comply with CALGreen and City lighting guidelines. All fixtures would be energy efficient and designed to reduce glare and unnecessary light spillage. Occupancy controls for non-emergency lighting as well as safety lighting for vehicles and pedestrians would be provided in accordance with Title 24. Nighttime lighting would be provided along the perimeter of the site as well as internal circulation routes for bicyclists, and pedestrians, and vehicles. All buildings would include safety lighting along pathways and near entrances.

In addition, all exterior lighting will be fully shielded to block illumination from shining outward towards St. Patrick's Seminary & University to the northeast and the Corpus Christi Monastery to the northwest.

To the maximum extent feasible, up-lighting (i.e., lighting that projects upward above the fixture) would be avoided in project designs. All lighting would be fully shielded to block illumination from shining upward above the fixture. If up-lighting cannot be avoided in the project design, up-lights would either:

- Be shielded and/or directed such that no luminance projects above/beyond objects at which they are directed (e.g., trees and buildings) and such that the light would not shine directly into the eyes of a bird flying above the object. If the objects themselves can be used to shield the lights from the sky beyond, no substantial adverse effects on migrating birds are anticipated.

  OR

- Be switched off no later than midnight.

1.2.5 Tree Management and Retention

In total, Parkline will maintain approximately 630 existing trees and incorporate approximately 873 new trees, resulting in a total of 1,503 trees on the site, which is an overall increase compared to existing conditions. The site currently contains 1,371 existing trees. Of these, 561 are anticipated to qualify as heritage trees under the City's Heritage Tree Ordinance. A substantial number of trees are located along the property line at Ravenswood Avenue and Laurel Street, delineating the edge of the site and creating a visual buffer to passersby and adjacent properties. Due to the age of the existing campus, there are a variety of tree species in a wide range of health conditions. A complete tree survey and disposition plan were prepared to document the location, species, size, and condition of each tree.

The project's tree management and retention plan is informed by the following considerations:

- Preserve and protect healthy heritage trees that are of a desirable tree species, consistent with the City's regulations.
- Incorporate existing heritage trees into the overall design by studying options that include alternative locations for roads, parking areas, and buildings.
- Trees that need to be removed due to poor health or to accommodate the project will be replaced in compliance with the City's tree replacement ordinance, resulting in an increase in the number of trees on the site.
- Suitable removed trees will be considered for adaptive re-use such as landscape mulch on the project site, site-wide seating elements, and children's playground features.

The project design team will coordinate with City staff to review and evaluate which individual heritage trees to preserve and remove consistent with the City's regulations. This evaluation will include consideration of tree health, invasive species, fire hazards, and water use. The project design team has made a significant effort to preserve and protect the following species based on their native habitat and ecological significance: coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and coast redwood (*Sequoia sempervirens*).

Site grading will be designed to protect existing trees while balancing earthwork quantities to limit the need for import or off-haul to/from the site. The finished floor elevations have been set to minimize potential impacts to existing trees around the proposed buildings, which will limit the amount of earthwork required.

1.2.6 Off-Street Parking

The project proposes the following:

- Provide parking for all of the proposed uses that is consistent with the demand for transit-oriented projects.
- Situate the majority of parking in above-grade parking garages that are screened from public view and in areas which afford convenient access.
- Minimize surface parking areas and increase the amount of landscaped open space.
- Incorporate shared parking principles to further reduce the space dedicated to parking.

1.2.6.1 Residential

For each of the three residential buildings, resident parking will be provided in above-grade, one-story garages, creating a podium on the second floor for private open space with adjacent amenities for residents. All garages will be provided with code-required electric vehicle charging stations.

The garages will be flanked with residential units, thus hiding the majority of the garages from view. There will be some minimal surface parking along the private street adjacent to these buildings. These spaces will be used for short-term or visitor parking.

Each of the townhouses will have parking spaces within private garages located in each unit, organized around a driving court. Visitor parking will be provided in an adjacent surface parking area.

1.2.6.2 Office/R&D

Off-street parking will be provided in a combination of surface lots, aboveground structures, and two one-level underground garages below two of the new buildings. The three office/R&D parking garages will be located on the east and west portions of the office/R&D district buildings provide convenient access to the new and existing buildings. Parking garages 1 and 2 will be five stories tall with six levels of parking. Parking garage 3 will be three stories tall with four levels of parking.

The underground parking garages below buildings 1 and 5 will consist of a single-level below grade and will not be visible. All garages will be provided with code-required electric vehicle charging stations and security systems. A 20% Transportation Demand Management reduction target will reduce the parking demand, as will the site's proximity to the downtown Menlo Park Caltrain Station.

1.2.6.3 Public Parking Areas and Shared Parking

Public parking will be available in the northeast parking lot adjacent to the recreational field and community building on evenings and weekends. Some parking spaces in the surface parking lots and garages for the office buildings will be designated for the residential district's guest parking. Access to these will be via clearly marked limited access roads.

1.2.7 Off-Site Improvements

Improvements in the public right-of-way are anticipated to be included as part of the project, the scope of which will be determined based on environmental review and City requirements. At the current time, the scope of these improvements is not well defined. At a minimum, new curbs, gutters, and sidewalks will be included along the project's frontage as well as a full-street 3-inch grind and overlay of Laurel Street and Ravenswood Avenue, consistent with the City's standard requirements. Trench restoration will also be required wherever there are new utility connections. The final improvements will be determined in conjunction with the City's Public Works Department during the entitlement process.

1.2.8 Construction and Project Phasing

The project will be constructed in phases generally as follows.

Phase 1 (approximately 48 months):

- Demolition of the existing buildings except for Buildings P, S, and T
- Rough grading
- Utility installation
- Below grade parking for office/R&D buildings 1 and 5, and residential buildings 1 and 2
- Construction of office/R&D buildings 1 and 5, residential buildings 1, 2, and 3, and the townhomes
- Construction of parking garage 3 and amenities building
- Landscaping and paving
- Building pads for office/R&D buildings 2, 3, and 4
- Building pads for parking garages 1 and 2
- Construction of public amenities building and recreation field

Phase 2 (approximately 25.5 months):

- Minor demolition
- Construction of office/R&D buildings 2, 3, and 4
- Construction of parking garages 1 and 2
- Landscaping and paving

Phase 3 (approximately 22 months)

- Minor demolition
- Construction of BMR residential building
- Landscaping and paving

For the Increased Development Variant, Phase 1 would take approximately 68 months, Phase 2 would take approximately 25 months, and Phase 3 would take approximately 22 months.

Section 2. Methods

2.1 Background Review

Prior to conducting field work, H. T. Harvey & Associates ecologists reviewed the project description, plans, and maps provided by Lane Partners; aerial images (Google Inc. 2022); a USGS topographic map; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) (2022); and other relevant reports, scientific literature, and technical databases. In addition, we perused records of birds reported in nearby areas on eBird (Cornell Lab of Ornithology 2022) and on the Peninsula-Birding List Serv (2022). For the purposes of this report, the *project vicinity* is defined as the area within a 5-mile radius surrounding the project site.

In addition, for plants, we reviewed all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B lists occurring in the project vicinity by querying species known to occur on the *Palo Alto, California* USGS 7.5-minute quadrangle and surrounding eight quadrangles (*San Mateo*, *Redwood Point*, *Newark*, *Woodside*, *Mountain View*, *La Honda*, *Mindego Hill*, and *Cupertino*). In addition, we queried the CNDDB (2022) for natural communities of special concern that occur on the project site.

2.2 Site Visit

A reconnaissance-level field survey of the project site was conducted by H. T. Harvey & Associates wildlife ecologist Jane Lien, B.S., and plant ecologist Zachery Gizicki, M.S., on September 28, 2022. The purpose of this survey was to provide an impact assessment specific to the proposed redevelopment of the project site as described above. Specifically, surveys were conducted to (1) assess existing biotic habitats and plant and animal communities on the project site, (2) assess the project site for its potential to support special-status species and their habitats, and (3) identify potential jurisdictional habitats, such as waters of the U.S./state and riparian habitat. In addition, J. Lien assessed buildings and trees for their suitability to support roosting bats and conducted a focused survey for nests of the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*).

Section 3. Regulatory Setting

Biological resources on the project site are regulated by a number of federal, state, and local laws and ordinances, as described below.

3.1 Federal Regulations

3.1.1 Clean Water Act

The Clean Water Act (CWA) functions to maintain and restore the physical, chemical, and biological integrity of waters of the U.S., which include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, and adjacent wetlands. Historically, in non-tidal waters, U.S. Army Corps of Engineers (USACE) jurisdiction extends to the ordinary high water (OHW) mark, which is defined in Title 33, Code of Federal Regulations, Part 328.3. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark to the outer edges of the wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, may be subject to USACE jurisdiction. In tidal waters, USACE jurisdiction extends to the landward extent of vegetation associated with salt or brackish water or the high tide line. The high tide line is defined in 33 Code of Federal Regulations Part 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide." If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark or high tide line to the outer edges of the wetlands.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of Section 401 Water Quality Certification. The State Water Resources Control Board (SWRCB) is the state agency (together with the Regional Water Quality Control Boards [RWQCBs]) charged with implementing water quality certification in California.

Project Applicability: The project site does not support wetland or aquatic habitats. As a result, the project will avoid direct and indirect impacts to wetlands or waters subject to the CWA, and a permit from the USACE would not be required for the project.

3.1.2 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects federally listed wildlife species from harm or *take*, which is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." *Take* can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as *take* even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands.

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have jurisdiction over federally listed, threatened, and endangered species under FESA. The USFWS also maintains lists of proposed and candidate species. Species on these lists are not legally protected under FESA, but may become listed in the near future and are often included in their review of a project.

Project Applicability: The monarch butterfly (*Danaus plexippus*), a candidate for listing under FESA, may also occur on the project site as a migrant and an occasional forager, and there is some potential for the project to result in impacts on this species if it is present. No other federally listed or candidate plant or animal species occur on the project site.

3.1.3 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from NMFS, establish Essential Fish Habitat (EFH) in fishery management plans for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by NMFS.

Project Applicability: No streams, and therefore no EFH for fish, are present on or adjacent to the project site.

3.1.4 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests, and it prohibits the possession of all nests of protected bird species whether they are active or inactive. An *active* nest is defined as having eggs or young, as described by the USFWS in its June 14, 2018 memorandum "Destruction and Relocation of Migratory Bird Nest Contents". Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction.

Project Applicability: All native bird species that occur on the project site are protected under the MBTA.

3.2 State Regulations

3.2.1 Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Moreover, the San Francisco Bay Region RWQCB's Assistant Executive Director has stated that, in practice, the RWQCBs claim jurisdiction over riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

On April 2, 2019, the SWRCB adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The *Procedures* describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs to impact.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that a proposed project will uphold state water quality standards. Because California's jurisdiction to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the state require Water Quality Certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not. Under the Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Project Applicability: No waters of the state or riparian habitats regulated by the RWQCB are present on the project site. No impacts to riparian habitat or waters of the state will result from activities under the project. Therefore, a Section 401 permit or Waste Discharge Requirement from the RWQCB would not be required.

3.2.2 California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070). The CDFW regulates activities that may result in *take* of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of *take* under the California Fish and Game Code. The CDFW, however, has interpreted *take* to include the "killing of a member of a species which is the proximate result of habitat modification."

Project Applicability: No state listed, proposed, or candidate plant or animal species occur on the project site.

3.2.3 California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources, and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA known as the State CEQA Guidelines.

Section 15380(b) of the State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the FESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists". Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA Section 15380(b). The CNPS, a non-governmental conservation organization, has developed CRPRs for plant species of concern in California in the CNPS Inventory of Rare and Endangered Plants. The CRPRs include lichens, vascular, and non-vascular plants, and are defined as follows:

• CRPR 1A	Plants considered extinct.
• CRPR 1B	Plants rare, threatened, or endangered in California and elsewhere.
• CRPR 2A	Plants considered extinct in California but more common elsewhere.
• CRPR 2B	Plants rare, threatened, or endangered in California but more common elsewhere.
• CRPR 3	Plants about which more information is needed - review list.
• CRPR 4	Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

- .1—seriously endangered in California;
- .2—fairly endangered in California;
- .3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria, and adverse effects to these species may be considered significant. Impacts on plants that are listed by the CNPS on CRPR 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those of CRPR 1B or 2, impacts on them are less frequently considered significant.

Compliance with CEQA Guidelines Section 15065(a) requires consideration of natural communities of special concern, in addition to plant and wildlife species. Vegetation types of "special concern" are tracked in Rarefind (CNDDB 2022). Further, the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDB. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas S rankings are a reflection of the condition of a habitat within California. If an alliance is marked as a G1–G3, all of the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program's currently accepted list of vegetation alliances and associations (CDFW 2022).

Project Applicability: All potential impacts on biological resources will be considered during CEQA review of the project in the context of this biological resources report. Project impacts are discussed in Section 6 below.

3.2.4 California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A *stream* is defined in Title 14, California Code of Regulations Section 1.72, as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code Section 2786 defines *riparian habitat* as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

Pursuant to California Fish and Game Code Section 1603, CDFW regulates any project proposed by any person that will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds." California Fish and Game Code Section 1602 requires an entity to notify CDFW of any proposed activity that may modify a river, stream, or lake. If CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared. The LSAA sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. The applicant may then proceed with the activity in accordance with the final LSAA.

Certain sections of the California Fish and Game Code describe regulations pertaining to protection of certain wildlife species. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

The California Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered *take* by the CDFW. Raptors (e.g., eagles, hawks, and owls) and their nests are specifically protected in California under Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Bats and other non-game mammals are protected by California Fish and Game Code Section 4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the code or in accordance with regulations adopted by the commission. Activities resulting in mortality of non-game mammals (e.g., destruction of an occupied nonbreeding bat roost, resulting in the death of bats), or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), may be considered *take* by the CDFW.

Project Applicability: No riparian habitat regulated by the CDFW occurs on the project site. Therefore, a CDFW LSAA would not be required for the project.

Most native bird, mammal, and other wildlife species that occur on the project site and in the immediate vicinity are protected under the California Fish and Game Code. Project impacts on these species are discussed in Section 6.

3.2.5 State Water Resources Control Board Stormwater Regulation

Construction Phase. Construction projects in California causing land disturbances that are equal to 1 acre or greater must comply with state requirements to control the discharge of stormwater pollutants under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ, as amended and administratively extended). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of best management practices (BMPs) to protect water quality until the site is stabilized.

Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors. Additionally, the Construction General Permit does not extend coverage to projects if stormwater discharge-related activities are likely to jeopardize the continued existence, or result in take of any federally listed endangered or threatened species.

Post-Construction Phase. In many Bay Area counties, including San Mateo County, projects must also comply with the California RWQCB, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (Water Board Order No. R2-2015-0049, as amended). This permit requires that all projects implement BMPs and incorporate Low Impact Development practices into the design that prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, pervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

<u>Project Applicability</u>. The project will comply with the requirements of the NPDES Statewide Storm Water Permit and Statewide General Construction Permit. Therefore, construction-phase activities would not result in detrimental water quality effects on biological or regulated resources.

3.3 Local Regulations

3.3.1 Menlo Park General Plan

The City of Menlo Park General Plan includes goals, policies, and programs relevant to the potential environmental effects of the proposed project, including the following:

- *Goal LU-4:* Promote the development and retention of business uses that provide goods or services needed by the community that generate benefits to the City, and avoid or minimize potential environmental and traffic impacts.
    - *Policy LU-4.5: Business Uses and Environmental Impacts.* Allow modifications to business operations and structures that promote revenue-generating uses for which potential environmental impacts can be mitigated.
- *Goal LU-6:* Preserve open-space lands for recreation; protect natural resources and air and water quality; and protect and enhance scenic qualities.
    - *Policy LU-6.5: Open Space Retention.* Maximize the retention of open space on larger tracts (e.g., portions of the St. Patrick's Seminary & University site) through means such as rezoning consistent with existing

uses, clustered development, acquisition of a permanent open space easement, and/or transfer of development rights.

  - *Policy LU-6.7: Habitat Preservation.* Collaborate with neighboring jurisdictions to preserve and enhance the Bay, shoreline, San Francisquito Creek, and other wildlife habitat and ecologically fragile areas to the maximum extent possible.
  - *Policy LU-6.8: Landscaping in Development.* Encourage extensive and appropriate landscaping in public and private development to maintain the City's tree canopy and to promote sustainability and healthy living, particularly through increased trees and water-efficient landscaping in large parking areas and in the public right-of-way.
  - *Program LU-6.D: Design for Birds.* Require new buildings to employ façade, window, and lighting design features that make them visible to birds as physical barriers and eliminate conditions that create confusing reflections to birds.
- Goal OSC1: Maintain, Protect, and Enhance Open Space and Natural Resources.
  - *Policy OSC1.1: Natural Resources Integration with Other Uses.* Protect Menlo Park's natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.
  - *Policy OSC1.2: Habitat for Open Space and Conservation Purposes.* Preserve, protect, maintain, and enhance water, water-related areas, plant and wildlife habitat for open space and conservation purposes.
  - *Policy OSC1.3: Sensitive Habitats.* Require new development on or near sensitive habitats to provide baseline assessments prepared by qualified biologists, and specify requirements relative to the baseline assessments.
  - *Policy OSC1.4: Habitat Enhancement.* Require new development to minimize the disturbance of natural habitats and vegetation, and require revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.
  - *Policy OSC1.5: Invasive, Non-Native Plant Species.* Avoid the use of invasive, non-native species, as identified on the lists of invasive plants maintained at the Cal-IPC and United States Department of Agriculture invasive and noxious weeds database, or other authoritative sources, in landscaping on public property.
  - *Policy OSC1.15: Heritage Trees.* Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code).

<u>Project Applicability</u>: The project requires a General Plan Amendment and Zoning Ordinance Amendment to create a new land use designation and zoning district with land use controls that allow for residential uses. The project, with approval of the proposed amendments, will be consistent on balance with the General Plan.

3.3.2 Menlo Park Municipal Code

The City of Menlo Park Municipal Code contains all ordinances for Menlo Park. Title 16, Zoning. The project site is currently zoned "C-1(X)" (Administrative and Professional District, Restrictive), and bird-friendly design is not required for this zone. The project site will be rezoned in connection with a Zoning Amendment that creates a new zoning district. Bird-friendly design requirements may be incorporated into the Project, included as a development standard in the new district or as a condition of approval of the project.

Landscape Design Plan. Section 12.44.090(a)(1)(G) provides that the use of invasive or noxious plant species is strongly discouraged. Invasive species are defined as those plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. A noxious weed refers to any weed designated by the weed control regulations in the Weed Control Act and identified on a regional district noxious weed control list.

<u>Project Applicability</u>: No invasive and/or noxious plant species will be used in the project's landscape design plan.

Heritage Trees. Chapter 13.24, Heritage Trees, establishes regulations for the preservation of heritage trees, defined as:

- Trees of historical significance, special character or community benefit, specifically designated by resolution of the City Council;
- An oak tree (*Quercus* spp.), which is native to California and has a trunk with a circumference of 31.4 inches (diameter of 10 inches) or more, measured at 54 inches above natural grade; and
- All trees other than oaks, which have a trunk with a circumference of 47.1 inches (diameter of 15 inches) or more, measured 54 inches above natural grade, with the exception of trees that are less than 12 feet in height, which will be exempt from this section.

To protect heritage trees, Section 13.24.025 requires that a tree protection plan prepared by a certified arborist be submitted for any work performed within a tree protection zone, which is an area ten times the diameter of the tree. Furthermore, all tree protection plans should be reviewed and approved by the Public Works Director or his or her designee prior to issuance of any permit for grading or construction.

The removal of heritage trees or pruning of more than one-fourth of the branches or roots within a 12-month period requires a permit from the City's Director of Public Works or his or her designee and payment of a fee. The Director of Public Works may issue a permit when the removal or major pruning of a heritage tree is reasonable based on a number of criteria, including condition of the tree, need for removal to accommodate proposed improvements, and the ecological and long-term value of the tree.

<u>Project Applicability</u>: According to the November 22, 2022 Preliminary Arborist Report prepared for the

project (HortScience|Bartlett Consulting 2022), the project site includes 561 trees that qualify as heritage trees under the City ordinance. While many of these trees will be preserved in accordance with City regulations, it is anticipated that 212 heritage trees will need to be removed as part of the proposed project. Therefore, a permit from the City would be required.

Section 4. Environmental Setting

4.1 General Project Area Description

The 64.2-acre project site is located on the existing SRI campus at 333 Ravenswood Avenue in Menlo Park in San Mateo County, California (Figure 1). Based on 30-year climate normals from 1991 through 2020, the project area receives approximately 16.8 inches of annual precipitation and has a mean temperature range of 50.2°–67.4°F (PRISM Climate Group 2022). Elevations on the project site range from approximately 54 feet to 68 feet above sea level (Google Inc. 2022). The site is underlain by four soil units: Botella loam, 0–5% slopes; Botella-urban land complex, 0–5% slopes; urban land; and urban land-Orthents, cut and fill complex, 0–5% slopes (National Resources Conservation Service 2022). The Botella loam soil type typically consists of loam to a depth of 36 inches and clay loam from 36–60 inches, whereas the Botella-urban land complex consists of clay loam to a depth of 60 inches. Urban land-Orthents is an alluvial soil type with a variable profile to a depth of 60 inches. None of the soils that overlay the site are hydric, and all are considered well-drained (National Resource Conservation Service 2022).

4.2 Biotic Habitats

The reconnaissance-level survey identified one habitat type/land use on the project site: developed/landscaped (64.2 acres); this habitat is described in detail below. Plant species observed during the reconnaissance-level survey are listed in Appendix A.

4.2.1 Developed/Landscaped

Photo 1. Developed/landscaped habitat on the project site.

Vegetation. The project site is developed as a scientific research campus with commercial buildings and associated sidewalks, asphalt parking lots, paved roads, and associated ornamental landscape vegetation and gardens (Photo 1). The buildings are connected via sidewalks and roadways lined with a high diversity of ornamental landscaped trees, shrubs, and hedges. The dominant tree species on the site is coast live oak with concentrations of native valley oak and coast redwood, and nonnative London plane tree (*Platanus* x *acerifolia*), eucalyptus (*Eucalyptus* spp.), and ash (*Fraxinus* spp.), in localized areas. Dominant shrub species on the site include ornamental hedges and shrubs such as Victorian box (*Pittosporum undulatum*), common box (*Buxus sempervirens*), common myrtle (*Myrtus communis*), glossy privet (*Ligustrum lucidum*), and photinia (*Photinia* spp.). Much of the understory is either bare ground, mulch, ornamental lawn, or dominated by nonnative English ivy (*Hedera helix*).

A picnic area along the southeastern boundary of the site supports picnic tables and a sand volleyball court with large coast live oak trees and an understory of Bermuda grass (*Cynodon dactylon*) and other nonnative lawn grass species. Near the eastern corner of the site, there is a large, open area where soil has been stockpiled and very little vegetation has grown. An exposed parking lot area featuring several succulent (*Echeveria* spp. and *Sedum* spp.) and cactus (*Opuntia* spp. and *Euphorbia* spp.) gardens in planters is present near the southern boundary of the site.

Wildlife. Wildlife species that are associated with the developed/landscaped habitat on the project site are adapted to high levels of human disturbance. Mammals that occur on the site include introduced species such as the Virginia opossum (*Didelphis virginianus*), Norway rat (*Rattus norvegicus*), black rat (*Rattus rattus*), and house mouse (*Mus musculus*) as well as common native species such as the striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*). While California ground squirrels (*Otospermophilus beecheyi*) are common in the region, no burrows of this species were observed during the September 2022 reconnaissance-level survey. Nonnative eastern gray squirrels (*Sciurus carolinensis*) are common on the site.

A variety of native birds will nest and forage in trees and vegetation on the site, including the Nuttall's woodpecker (*Picoides nuttallii*), Anna's hummingbird (*Calypte anna*), brown creeper (*Certhia americana*), Bewick's wren (*Thryomanes bewickii*), California towhee (*Melozone crissalis*), bushtit (*Psaltriparus minimus*), chestnut-backed chickadee (*Poecile rufescens*), dark-eyed junco (*Junco hyemalis*), lesser goldfinch (*Spinus psaltria*), house finch (*Haemorhous mexicanus*), and American crow (*Corvus brachyrhynchos*). Oak trees on the project site, in combination with the nearby oak woodland habitat at St. Patrick's Seminary & University to the northeast, provide sufficient habitat to support oak-associated bird species such as the acorn woodpecker (*Melanerpes formicivorus*), white-breasted nuthatch (*Sitta carolinensis*), oak titmouse (*Baeolophus inornatus*), western bluebird (*Sialia mexicana*), and California scrub-jay (*Aphelocoma californica*). Eaves and ledges of buildings on the project site provide nesting habitat for certain bird species that nest and roost on structures, such as the black phoebe (*Sayornis nigricans*), house finch (*Haemorhous mexicanus*), and mourning dove (*Zenaida macroura*). A number of winter resident and migrant birds will also use the trees and other vegetation on the site for resting and foraging, including the cedar waxwing (*Bombycilla cedrorum*), white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Zonotrichia atricapilla*), yellow-rumped warbler (*Setophaga coronata*), Townsend's warbler (*Setophaga townsendii*), and Say's phoebe (*Sayornis saya*).

Common species of raptors such as the red-tailed hawk (*Buteo jamaicensis*) and Cooper's hawk (*Accipiter cooperi*) will forage for prey on the project site, and large trees such as eucalyptus and coast redwoods provide potential nesting sites for up to one pair of common raptors to nest on the site. However, no old raptor nests were observed on the site during the September 2022 survey, suggesting that raptors have not nested on the project site in recent years. A few species of common, urban-adapted reptiles, such as the western fence lizard (*Sceloporus occidentalis*), are also common on the site, and, in addition to small mammals and passerines, provide a prey base for raptors that may nest in the vicinity.

Buildings on the site, especially those that have not been recently occupied, as well as large oaks and eucalyptus trees with cavities and crevices, provide suitable roosting habitat for common species of bats, such as the Yuma myotis (*Myotis yumanensis*), California myotis (*Myotis californicus*), Mexican free-tailed bat (*Tadarida brasiliensis*), and big brown bat (*Eptesicus fuscus*). No evidence of active bat roosts was observed in trees or on building exteriors on the project site during the September 2022 reconnaissance-level survey (which focused on the general suitability of habitat on the site for roosting bats); however, focused surveys (e.g., examination of building interiors and acoustic surveys) to determine presence/absence of roosting bats on the site were not performed.

4.2.2 Adjacent and Nearby Habitat Areas

Two properties supporting open space are present adjacent and nearby, respectively, to the project site: the Corpus Christi Monastery and St. Patrick's Seminary & University. These areas are described because their habitat conditions could potentially influence wildlife occurrence in the project area.

Vegetation. The southeastern portion of the Corpus Christi Monastery, located opposite Ravenswood Avenue from the project site, primarily consists of open, ruderal grasslands with a sparse canopy of coast live oak and eucalyptus trees. The vegetated area surrounding St. Patrick's Seminary & University, located approximately 350 feet northeast of the project site on the opposite side of Middlefield Road, provides a fairly large, dense canopy of coast live oaks and valley oaks. This habitat is identified in the CNDDB as *valley oak woodland*, a sensitive natural community, containing 188 heritage trees (mostly oaks) scattered over the university's 69-acre grounds (CNDDB 2022). Sensitive natural communities are discussed further in Section 5.3.1 below.

Wildlife. The adjacent and nearby open habitats at the Corpus Christi Monastery and St. Patrick's Seminary & University provide more extensive areas of woodland and grassland habitat compared to the urbanized project site; however, these areas are relatively limited in extent (e.g., compared to other open space areas in the region) and are surrounded by urban development. As a result, some of the wildlife species that breed and regularly occur within extensive woodlands and grasslands on the Peninsula are absent from these habitats, or only occur as occasional foragers and migrants, and the community of wildlife species that occurs in these areas is similar to that described in Section 4.2.1 above for the project site.

In addition, the small area of open, ruderal grasslands that occurs on the Corpus Christi Monastery property provides foraging opportunities for the bird species that occur there, especially aerial foragers such as the resident black phoebe and migrant/wintering Say's phoebe. Common small mammals, such as the house mouse, are expected to be more abundant in this area compared to the project site, and additional small mammal species, such as the Botta's pocket gopher (*Thomomys bottae*), may also be present.

The valley oak woodland at St. Patrick's Seminary & University provides more extensive habitat and resource availability (e.g., prey, cover, and nesting opportunities) for oak-associated wildlife species compared to the project site. Woodlands dominated by oaks support diverse animal communities in California, as oaks provide cavities, bark crevices, and complex branching growth that create shelter for wildlife species, as well as mast crops that are an important food source for many birds and mammals. However, due to the limited extent of the oak woodland at St. Patrick's Seminary & University, as well as its isolation from more extensive oak woodlands in the region by a dense urban matrix, this woodland does not support many of the common and special-status wildlife species that are associated with more extensive oak woodlands in the region. Species expected to occur in this habitat consist of the common wildlife species discussed in Section 4.2.1 above, including oak associates such as the acorn woodpecker, white-breasted nuthatch, oak titmouse, western bluebird, and California scrub-jay. Additional small mammal species such as the Botta's pocket gopher and California deer mouse (*Peromyscus californicus*) may also be present, as well as the San Francisco dusky-footed woodrat, a California species of special concern. Bats, such as the California myotis and big brown bat, may roost in cavities in oak trees in this habitat. Common amphibians and reptiles such as the California slender salamander (*Batrachoseps attenuatus*) and gopher snake (*Pituophis catenifer*) make use of downed tree branches and leaf litter under these oak trees for cover and foraging. Similarly, a more diverse insect fauna associated with the natural woodland understory and leaf litter provides a richer prey base for the bird, mammal, and reptile species that utilize this habitat.

4.3 Wildlife Movement

Wildlife movement within and in the vicinity of the project site takes many forms, and is different for the various suites of species associated with these lands. Bird and bat species move readily over the landscape in the project vicinity, foraging over and within both natural lands and landscaped areas. Mammals of different species move within their home ranges, but also disperse between patches of habitat. Generally, reptiles and amphibians similarly settle within home ranges, sometimes moving to central breeding areas, upland refugia, or hibernacula in a predictable manner, but also dispersing to new areas. Some species, especially among the birds and bats, are migratory, moving into or through the project vicinity during specific seasons. Aside from bats, there are no other mammal species in the vicinity of the site that are truly migratory. However, the young of many mammal species disperse from their natal home ranges, sometimes moving over relatively long distances in search of new areas in which to establish.

Movement corridors are segments of habitat that provide linkage for wildlife through the mosaic of suitable and unsuitable habitat types found within a landscape while also providing cover. On a broader level, corridors also function as paths along which wide-ranging animals can travel, populations can move in response to environmental changes and natural disasters, and genetic interchange can occur. In California, environmental corridors often consist of riparian areas along streams, rivers, or other natural features.

4.3.1 Movement by Fish, Mammals, Reptiles, and Amphibians

No aquatic habitats are present on or adjacent to the project site to provide movement corridors for fish or other aquatic species.

Due to the urbanized nature of the site and presence of development surrounding the project site, there are currently no well-defined or important movement corridors for mammals, amphibians, or reptiles on or through the project site. Wildlife species may move through the area using cover and refugia as they find them available. However, most dispersal by wildlife species in the site vicinity likely occurs along higher-quality habitats such as the riparian habitat along San Francisquito Creek 0.4 mile to the southeast and along the edges of the San Francisco Bay 1.7 miles to the north/northwest. Even though some reaches of San Francisquito Creek may be dry for much of the year, the riparian habitat present along the creek supports relatively high-quality movement habitat for wildlife that allows mammals, amphibians, and reptiles to move through the surrounding urban area.

In summary, the project site and immediately adjacent areas are not a particularly important area for movement by non-flying wildlife, and they do not contain any high-quality corridors allowing dispersal of such animals through Menlo Park.

4.3.2 Pacific Flyway Stopover

Large numbers of migratory songbirds are often concentrated at the edge of the San Francisco Bay and in the Santa Cruz Mountains during spring and fall migration. The project site is located approximately 1.7 miles from the nearest baylands habitats and approximately 3.5 miles from the foothills of the Santa Cruz Mountains, and is not located in a landscape position that would result in high numbers of migratory birds moving past the project site. Migratory songbirds traveling along the bay tend to use more heavily vegetated areas such as riparian corridors or large, well-vegetated parks, which are largely absent from the urbanized surroundings of the project site. Additionally, the project site is not located between two high-quality habitat areas such that birds would be flying past the site at an altitude as low as the proposed buildings. The nearest urban parks that provide habitat for larger numbers and higher diversities of birds are open lands of Stanford University 0.9 mile to the south, Bedwell Bayfront Park 2.0 miles to the north, Ravenswood Open Space Preserve 2.4 miles to the northeast, and the Palo Alto Baylands Nature Preserve 3.4 miles to the east (Cornell Lab of Ornithology 2022). The project site is isolated from these locations by dense urban commercial and residential development. As a result, there is no expectation that large concentrations of migratory songbirds would be particularly attracted to, or would make heavy use of, the habitats in the immediate project vicinity. Nevertheless, the presence of mature trees and other landscape vegetation in and adjacent to the site would be anticipated to attract some migrant birds, in addition to the resident species and individuals.

Section 5. Special-Status Species and Sensitive Habitats

CEQA requires assessment of the effects of a project on species that are protected by state, federal, or local governments as "threatened, rare, or endangered"; such species are typically described as "special-status species". For the purpose of the environmental review of the project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described in Section 3 above.

For purposes of this analysis, "special-status" plants are considered plant species that meet one or more of the following criteria:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4.

For purposes of this analysis, "special-status" animals are considered animal species that meet one or more of the following criteria:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

Information concerning threatened, endangered, and other special-status species that potentially occur on the project site was collected from several sources and reviewed by H. T. Harvey & Associates biologists as described in Section 2.1 above. Figure 3 depicts CNDDB records of special-status plant species in the general vicinity of the project site and Figure 4 depicts CNDDB records of special-status animal species. These generalized maps show areas where special-status species are known to occur or have occurred historically.

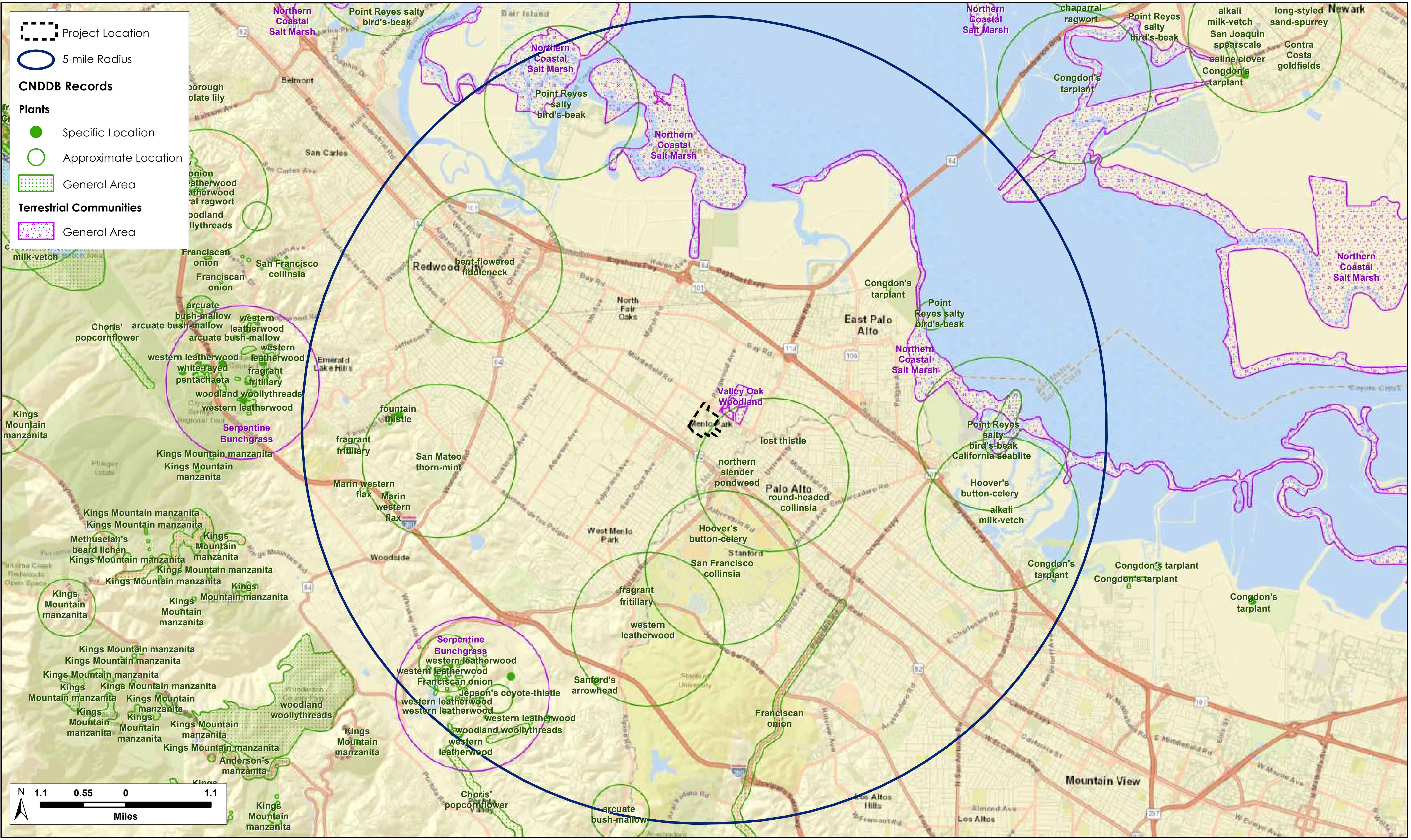

Figure 3. CNDDB-Mapped Records of Special-Status Plants

Parkline Master Plan Biological Resources Report (4686-01)
March 2024

H. T. HARVEY & ASSOCIATES
Ecological Consultants

N:\Projects4600\4686-01\Reports\BRR\Fig 3 CNDDB Plant.mxd

Figure 4. CNDDB-Mapped Records of Special-Status Animals

Parkline Master Plan Biological Resources Report (4686-01)
March 2024

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Ecological Consultants

N:\Projects4600\4686-01\Reports\BRR\Fig 4 CNDDB Animal.mxd

5.1 Special-Status Plant Species

The CNPS (2022) and CNDDB (2022) identify 68 special-status plant species as potentially occurring in at least one of the nine USGS quadrangles containing or surrounding the project site for CRPR 1, 2 3, and 4 species (for CNPS) and/or within 5 miles of the project site (for CNDDB) (Appendix B). All of these species were determined to be absent from the project site for at least one of the following reasons: (1) lack of suitable habitat types; (2) absence of specific microhabitat or edaphic requirements, such as serpentine soils; (3) the elevation range of the species is outside of the range within the project site; and/or (4) the species is considered extirpated from the site vicinity (Appendix B). Due to the current and historical land use of the project site, as well as the surrounding developed land uses, no suitable habitat for special-status plant species is present on the project site and we can rule out potential for any special-status plant species to occur.

5.2 Special-Status Animal Species

The legal status and likelihood of occurrence on the project site of special-status animal species known to occur, or potentially occurring, in the surrounding region are presented in Table 1. The majority of the special-status species listed in Table 1 are not expected to occur on the project site because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat.

A number of special-status animals that are known to occur in the project region are not expected to occur on the project site because suitable habitat is absent from the project site and its surroundings, and the project site is outside these species' ranges. They include the Bay checkerspot butterfly (*Euphydryas editha bayensis*), San Bruno elfin butterfly (*Callophrys mossii bayensis*), green sturgeon (*Acipenser medirostris*), longfin smelt (*Spirinchus thaleichthys*), foothill yellow-legged frog (*Rana boylii*), California Ridgway's rail (*Rallus obsoletus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), western snowy plover (*Charadrius nivosus nivosus*), California least tern (*Sternula antillarum browni*), Swainson's hawk (*Buteo swainsoni*), black skimmer (*Rynchops niger*), Alameda song sparrow (*Melospiza melodia pusillula*), salt marsh harvest mouse (*Reithrodontomys raviventris*), and salt marsh wandering shrew (*Sorex vagrans halicoetes*). Because these species have no potential to occur on or near the site, they are not addressed in Table 1.

Other special-status animal species are present in less urbanized settings in San Mateo and Santa Clara[1] Counties and occur in specialized habitats in the region, or occurred on or near the site historically but are no longer present. These species, which are absent from the project site due to a lack of suitable habitat, restricted ranges, and/or isolation of the site from populations by urbanization, include the Crotch's bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*), Central California Coast coho salmon (*Oncorhynchus kisutch*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), bald eagle (*Haliaeetus leucocephalus*), tricolored blackbird (*Agelaius tricolor*), mountain

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[1] Because the project site is located near the San Mateo County/Santa Clara County border, we assess wildlife species known to occur in both San Mateo and Santa Clara Counties in this section.

lion (*Puma concolor*), Pacific lamprey (*Entosphenus tridentatus*), northern harrier (*Circus hudsonius*), long-eared owl (*Asio otus*), short-eared owl (*Asio flammeus*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), grasshopper sparrow (*Ammodramus savannarum*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), American badger (*Taxidea taxus*), golden eagle (*Aquila chrysaetos*), and American peregrine falcon (*Falco peregrinus anatum*). In addition, a focused survey of the project site for nests of San Francisco dusky-footed woodrats (*Neotoma fuscipes annectens*) during our field survey determined that the species is absent from the site.

No aquatic habitats to support special-status fish species or northwestern pond turtles (*Actinemys marmorata*) are present on or in the vicnity of the project site. However, surface runoff from the project site drains to San Francisquito Creek, approximately 0.4 mile southeast of the site. These nearby reaches of San Francisquito Creek support a narrow band of riparian trees and other vegetation, and provide flow at least during the wet season. Although this reach of the creek dries during the summer, water is present annually during the winter and spring. As a result, the nearby reach of the creek provides suitable habitat for several special-status fishes that are known to occur in San Francquito Creek, including the Central California Coast steelhead (*Oncorhynchus mykiss*), Central Valley fall-run Chinook salmon (*Oncorhynchus tschawytscha*), Central California roach (*Lavinia symmetricus symmetricus*), Sacramento hitch (*Lavinia symmetricus exilicauda*), and riffle sculpin (*Cottus gulosus*). In addition, the northwestern pond turtle is known to occur along this creek.

Several special-status animal species may occur on the project site as nonbreeding transients, foragers, or migrants. These are the monarch butterfly (*Danaus plexippus*), Vaux's swift (*Chaetura vauxi*), yellow warbler (*Setophaga petechia*), olive-sided flycatcher (*Contopus cooperi*), yellow-breasted chat (*Icteria virens*), and western red bat (*Lasiurus blossevillii*). These species are not expected to breed (for all species) or roost (for bats) on or immediately adjacent to the site due to a lack of suitable habitat, and if present as occasional foragers, they will be affected very little, if at all, by the proposed project. In addition, the Vaux's swift, yellow warbler, olive-sided flycatcher, and yellow-breasted chat are bird species that are considered California species of special concern only when nesting; thus, they are not "special-status species" when they occur as nonbreeding visitors to the project site.

The white-tailed kite (*Elanus leucurus*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*) are addressed in greater detail in this report because these species could potentially breed on the project site and/or may be impacted by the proposed project (see Section 6 *Impacts and Mitigation Measures* below).

Table 1. Special-status Animal Species, Their Status, and Potential Occurrence on the Project Site

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Federal or State Endangered, Threatened, or Candidate Species			
Monarch butterfly (*Danaus plexippus*)	FC	Requires milkweeds (*Asclepias* spp.) for egg-laying and larval development, but adults obtain nectar from a wide variety of flowering plants in many habitats. Individuals congregate in winter roosts, primarily in Mexico and in widely scattered locations on the central and southern California coast.	**May be Present as Nonbreeder.** The monarch butterfly occurs throughout the region primarily as a migrant. No larval host plants were observed on the project site during the September 2022 survey; thus, no suitable breeding habitat for this species is present on the project site. Small numbers of individuals may nectar throughout the project site, especially during spring and fall migration. However, the site does not provide high-quality foraging habitat for this species. While ostensibly suitable overwintering habitat for monarchs (e.g., eucalyptus trees) is present on the site, no current or historical overwintering sites are known in the vicinity of the project site; the nearest known overwintering location is 12 miles to the north at Coyote Point Park in San Mateo (Xerces Society 2022).
Crotch's bumble bee (*Bombus crotchii*)	SC	Occurs in open grassland and scrub habitats. Like most other species of bumble bees, nests primarily underground (Williams et al. 2014). Generalist foragers that visit a variety of floral resources.	**Absent.** Although this species was historically found throughout the southern two-thirds of California, population declines and range contractions (25% relative to its historical range) have made this species very scarce in the region (CDFW 2019). There are no recent (i.e., after 1909) records of the species on the San Francisco peninsula (Bumble Bee Watch 2022, CNDDB 2022, iNaturalist 2022), and CNDDB (2022) does not include even historical records from San Mateo County. Therefore, this species is not expected to occur on the project site.
Western bumble bee (*Bombus occidentalis occidentalis*)	SC	Occurs in meadows and grasslands with abundant floral resources. Nests are primarily underground.	**Absent.** Although this species was historically found throughout much of central and northern California, including the project vicinity, it has been extirpated from much of its former range, and there are no recent records from San Mateo County or nearby areas (CDFW 2019, Bumble Bee Watch 2022, iNaturalist 2022). Therefore, this species is absent from the project site.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Central California Coast steelhead (*Oncorhynchus mykiss*)	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Present in Nearby Waters.** No suitable aquatic habitat for steelhead is present on the project site; thus, this species is absent from the project site. However, steelhead are known to occur in San Francisquito Creek approximately 0.4 mile to the southeast (Leidy 2005), and surface runoff from the project site drains to this creek. This reach of San Francisquito Creek functions as a migration corridor for individuals traveling between the San Francisco Bay and spawning and rearing habitat farther upstream.
Central California Coast coho salmon (*Oncorhynchus kisutch*)	FT, ST	Open ocean, estuaries, and rivers.	**Absent.** No suitable aquatic habitat for coho salmon is present on the project site. Central California Coast coho salmon may have occurred historically in San Francisquito Creek, approximately 0.4 mile to the southeast, but they have not been observed in San Francisco Estuary streams since the early- to mid-1980's (Leidy 2007). Thus, this species is absent from the project site and nearby waters in San Francisquito Creek.
California tiger salamander (*Ambystoma californiense*)	FT, ST	Vernal or temporary pools in annual grasslands or open woodlands. Adults live terrestrially in small mammal burrows.	**Absent.** No suitable aquatic breeding, foraging, or dispersal habitat for California tiger salamanders is present on the project site. The California tiger salamander's range on the San Francisco Peninsula historically occurred barely as far northwest as the project site. There is a 2002 record of six adults trapped in a cistern along San Francisquito Creek approximately 0.4 mile to the southeast; those individuals were moved to the nearest known breeding population at Lake Lagunita approximately 2.2 miles to the south (CNDDB 2022). That population is located beyond the known dispersal distance of the species, and is separated from the project site by extensive urbanization. No known populations of the species are present along San Francisquito Creek, or closer to the project site than Lake Lagunita, and there are no records of the species within the last 20 years closer to the site than Lake Lagunita. Therefore, this species is determined to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
California red-legged frog (*Rana draytonii*)	FT, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	**Absent.** No suitable aquatic breeding, foraging, or dispersal habitat for the California red-legged frog is present on the project site. A number of records of this species are present in the Menlo Park area west of Interstate 280 (CNDDB 2022); however, this highway represents a barrier to dispersal that prevents individuals at these locations from reaching the project site. California red-legged frogs are also known to occur in Atherton Channel east of Interstate 280, approximately 2.8 miles southwest of the project site (CNDDB 2022). Additionally, there is a set of historical records (pre-1930) in Lake Lagunita approximately 2.2 miles south of the project site, but the species has not been recorded at this well-monitored site since 1930 (CNDDB 2022). The distance between the project site and all known California red-legged frog occurrences exceeds the species' documented dispersal capabilities. Further, the site is separated from occurrences east of Interstate 280 by extensive urban development. Thus, this species is determined to be absent.
Northwestern pond turtle (*Actinemys marmorata*)	FP, CSSC	Permanent or nearly permanent water in a variety of habitats.	**May be Present in Nearby Waters.** This species is known to occur in the project vicinity approximately 0.4 mile southeast of the project site in San Francisquito Creek, west of Interstate 280, to which surface water from the project site drains (CNDDB 2022). An additional record is present approximately 3.9 miles south of the project site just downstream of Searsville Reservoir, east of Interstate 280 (CNDDB 2022). However, no suitable dispersal, foraging, or nesting habitat for this species is present on the project site. Further, all known occurrences are separated from the project site by dense urban development. Thus, individuals of this species are not expected to successfully disperse across surrounding urban areas to reach the project site.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	FE, SE, SP	Occurs in a variety of habitats, including riparian areas; requires burrows for hibernation and frogs as a prey base.	**Absent.** The San Francisco garter snake occurs on the San Francisco Peninsula from just north of the San Francisco–San Mateo County line south to approximately the San Mateo–Santa Cruz County line. An intergrade zone composed of hybrids between the San Francisco garter snake and red-sided garter snake (*Thamnophis sirtalis sirtalis*) occurs from Palo Alto north to the Pulgas region near Upper Crystal Springs Reservoir (Barry 1994). No suitable aquatic habitat to support this species is present on the project site. San Francisco garter snakes are known to occur in the project region, with an established population at Crystal Springs Reservoir approximately 9 miles to the northwest. Additional records of potential intergrades have been detected in aquatic habitats west of Interstate 280 approximately 6.7 miles and 6.3 miles northwest of the project site (CNDDB 2022). However, all known occurrences are separated from the project site by Interstate 280, and individuals are not expected to successfully disperse across this busy roadway to reach the project site Thus, this species is determined to be absent.
Bald eagle (*Haliaeetus leucocephalus*)	SE, SP	Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs, occasionally on electrical towers. Feeds mostly on fish.	**Absent.** Bald eagles are known to nest in the project vicinity at inland reservoirs and along the coast, including at Crystal Springs Reservoir approximately 9 miles north of the project site. However, no suitable nesting or foraging habitat for bald eagles is present on the project site. Determined to be absent.
Tricolored blackbird (*Agelaius tricolor*)	ST	Nests near fresh water in dense emergent vegetation.	**Absent.** In San Mateo County, the tricolored blackbird has bred in only a few scattered locations, and is absent from, or occurs only as a nonbreeder in, most of the County (Sequoia Audubon Society 2001). This species typically nests in extensive stands of tall emergent herbaceous vegetation in non-tidal freshwater marshes and ponds. No suitable nesting habitat is present on or near the project site, as no large patches of emergent vegetation, blackberry (*Rubus* sp.) stands, or other suitable vegetation are present. Further, this species (whose colonies are loud and conspicuous) has never been recorded nesting in the site vicinity (Cornell Lab of Ornithology 2022), and high levels of disturbance likely preclude nesting near the site. The site also does not provide suitable foraging habitat for this species. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Mountain lion, Southern California/Central Coast ESU (*Puma concolor*)	SC	Has a large home range size and occurs in a variety of habitats. Natal dens are typically located in remote, rugged terrain far from human activity. May occasionally occur in areas near human development, especially during dispersal.	**Absent.** In the project region, mountain lions occur primarily in the Santa Cruz Mountains west of the project site. While individuals may occasionally stray into suburban neighborhoods along the urban-wildland interface, they are not expected to occur on the project site due to high levels of human activity and the project's separation from more suitable, undeveloped habitats by extensive urbanization. Determined to be absent.
California Species of Special Concern			
Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*)	CSSC	Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	**May be Present in Nearby Waters.** No aquatic habitats are present on the project site to provide suitable habitat for Chinook salmon, and this species is absent from the project site. However, the species may be present in San Francisquito Creek, approximately 0.4 mile southeast of the project site. Reliable historical records of the species in streams of the South Bay are scarce, and the historical presence of the species in San Francisquito Creek is uncertain (Leidy 2007). However, since the mid-1980's, individuals of this species began to be more frequently detected in South Bay streams. While the Chinook salmon is a large-bodied, mainstem river spanwer, and therefore not likely to utilize San Francisquito Creek for breeding, the possibility that a small number of individuals could attempt to spawn in the creek cannot be ruled out. Thus, this species may be present during spawning migrations, as freshwater-rearing juveniles, or as outmigrating smolts, but always in low abundance.
Pacific lamprey (*Entosphenus tridentatus*)	CSSC	Medium- and large-sized, low-gradient cold rivers and streams, with a wide range of habitats (e.g., gravel, low-gradient riffles).	**Absent.** No aquatic habitats are present on the project site to provide suitable habitat for Pacific lamprey, and this species is absent from the project site. Further, this species does not currently occur, nor did it occur historically, in San Francisquito Creek (Leidy 2007). Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Central California roach (*Lavinia symmetricus symmetricus*)	CSSC	Generally found in small streams, they are well adapted to intermittent watercourses (e.g., tolerant of high temperatures and low oxygen levels).	**Present in Nearby Waters.** No aquatic habitat is present on the project site to provide suitable habitat for the Central California roach, and this species is absent from the project site. Central California roach are known to be present in San Francisquito Creek (Leidy 2007, Smith 2013), to which surface water from the project site drains. This species occurs widely, often in unshaded pools with warm temperatures, and is thus expected to occur within the reach of the creek located 0.4 mile southeast of the project site.
Sacramento hitch (*Lavinia exilicauda exilicauda*)	CSSC	Warm, lowland, waters including clear streams, turbid sloughs, lakes, and reservoirs. Has a high tolerance for varying stream conditions and water temperature.	**Present in Nearby Waters.** No aquatic habitat is present on the project site to provide suitable habitat for the Sacramento hitch, and this species is absent from the project site. Sacramento hitch are known to be present in San Francisquito Creek (Leidy 2007, Smith 2013), to which surface water from the project site drains.). This species has a high tolerance of stream conditions and water temperatures, and is thus expected to occur within the reach of the creek located 0.4 mile southeast of the project site.
Riffle sculpin (*Cottus gulosus*)	CSSC	Permanent, cool, headwater streams with an abundance of riffles and rocky substrates.	**May be Present in Nearby Waters.** Riffle sculpin are widespread and locally abundant in the region, and are native to the San Francisquito Creek watershed (Leidy 2007). This species is not currently known to be present in San Francisquito Creek, although suitable habitat is present (Smith 2013). Because the species is native to the watershed and suitable habitat occurs in San Francisquito Creek, to which surface water from the project site drains, its presence in the reach of the creek near the project site cannot be ruled out. However, warmer conditions along the reach of the creek near the site likely preclude the presence of this species; it is more likely to occur in cooler reaches farther upstream.
Northern harrier (*Circus cyaneus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas.	**Absent.** This species is known to occur regularly at Stanford University to the southeast, and along the San Francisco Bay to the north. However, no suitable nesting or foraging habitat is present on the project site or in the surrounding area, which is entirely developed. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Long-eared owl (*Asio otus*)	CSSC (nesting)	Riparian bottomlands with tall, dense willows and cottonwood stands (also dense live oak and California Bay along upland streams); forages primarily in adjacent open areas.	**Absent.** The long-eared owl occurred historically in developed areas of the Peninsula, but is currently only known to occur inland of the project site in the foothills of the Santa Cruz Mountains (Cornell Lab of Ornithology 2022). No suitable nesting and foraging habitat for long-eared owls is present on the project site or in nearby areas. Determined to be absent.
Short-eared owl (*Asio flammeus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas.	**Absent.** In San Mateo County, short-eared owls are known to nest only at Greco Island in the Don Edwards San Francisco Bay National Wildlife Refuge (Sequoia Audubon Society 2001). In Santa Clara County, the species has been recorded nesting in in the Palo Alto Flood Control Basin, though it has not been confirmed nesting there since the 1970s. Individuals are present along the San Francisco Bay shoreline in the project vicinity through the year (Cornell Lab of Ornithology 2022). However, no suitable foraging or nesting habitat is present on or adjacent to the site. Determined to be absent.
Burrowing owl (*Athene cunicularia*)	CSSC	Nests and roosts in open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels.	**Absent.** No burrows of California ground squirrels (*Otospermophilus beecheyi*) are present on the project site to provide nesting and roosting habitat for this species, and grasslands to provide suitable foraging habitat are absent from the site. Further, burrowing owls are not known to occur in the site vicinity (CNDDB 2022, Cornell Lab of Ornithology 2022). Determined to be absent.
Vaux's swift (Chaetura vauxi)	CSSC (nesting)	Nest both in small colonies and as single pairs, occupying cavities in large snags, primarily in old-growth forests. They also occasionally use artificial cavities such as chimneys (Hunter 2008). Forage aerially.	**May be Present as Nonbreeder.** Known to nest in eastern San Mateo County (Sequoia Audubon Society 2001). However, no suitable large snags or residential chimneys are present on or near the project site, and this species is not expected to nest on, or in close enough proximity to, the project site to be impacted by project activities. Individuals of the species may forage aerially over the site, especially during migration.
Olive-sided flycatcher (*Contopus cooperi*)	CSSC (nesting)	Breeds in mature, primarily coniferous, forests with open canopies, along forest edges in more densely vegetated areas, in recently burned forest habitats, and in selectively harvested landscapes.	**May be Present as Nonbreeder.** Known to nest throughout much of San Mateo County, but not in urban portions of Menlo Park where the project site is located (Sequoia Audubon 2001). No suitable coniferous forest nesting habitat is present on or adjacent to the project site. Occasional non-breeding individuals may forage on the site, especially during migration.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats.	**Absent.** Known to nest in eastern San Mateo County (Sequoia Audubon Society 2001). Suitable nesting and foraging habitat for this species is absent from the project site due to the absence of grasslands, marshes, or ruderal habitats. Further, the regional loggerhead shrike population has declined substantially in recent years, and this species is not expected to occur on the project site or in adjacent open habitats at the Corpus Christi Monastery and St. Patrick's Seminary & University, which are surrounded by development. Determined to be absent.
San Francisco common yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	Occupies wooded riparian areas, and nests in herbaceous vegetation, usually in wetlands or moist floodplains.	**Absent.** No suitable nesting or foraging habitat for this species is present on the project site or in adjacent areas. Determined to be absent.
Yellow warbler (*Setophaga petechia*)	CSSC (nesting)	Nests in riparian woodlands.	**May be Present as Nonbreeder.** No suitable riparian nesting habitat for yellow warblers is present on or adjacent to the project site. The species is an abundant migrant throughout the project region during the spring and fall, when nonbreeding individuals may forage in trees and shrubs on the site.
Yellow-breasted chat (*Icteria virens*)	CSSC (nesting)	Nests in dense stands of willow and other riparian habitat.	**May be Present as Nonbreeder.** This species is a rare breeder, and only slightly more regular transient, in willow-dominated riparian habitats in the South Bay. No nesting habitat is present on the project site. May occur on the project site only as a rare, nonbreeding transient.
Grasshopper sparrow (*Ammodramus savannarum*)	CSSC (nesting)	Nests and forages in grasslands, meadows, fallow fields, and pastures.	**Absent.** Known to nest and occur in the project region primarily in grasslands and less frequently disturbed agricultural habitats, such as at Stanford University and in the foothills of the Santa Cruz Mountains (Cornell Lab of Ornithology 2022). No suitable nesting or foraging habitat for this species is present on the project site due to the absence of grasslands. Determined to be absent.
Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*)	CSSC	Nests in pickleweed dominant salt marsh and adjacent ruderal habitat.	**Absent.** In the South San Francisco Bay, nests primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat and in adjacent ruderal habitats, as well as in extensive grasslands in the Santa Cruz Mountains (Rottenborn 2007. No suitable nesting or foraging habitat occurs on the project site. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
Western red bat (*Lasiurus blossevillii*)	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat.	**Low Potential for Occurrence.** Western red bats occur in the project vicinity in low numbers as migrants and winter residents, but this species does not breed in the region. Individual western red bats may roost in the foliage of trees virtually anywhere on the project site, but are expected to roost primarily in riparian areas elsewhere in the region. Occasional individuals may forage over the project site year-round.
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees. Sensitive to human disturbance at roost sites.	**May be Present.** Historically, pallid bats were likely present in a number of locations throughout the project region, but their populations have declined in recent decades. Although no roosts were observed during the site visit (which did not include a focused survey for roosting bats), suitable roosting habitat for this species is present on the project site in unoccupied buildings and large, mature oak trees with suitable cavities. Although regular human disturbance limits the site's suitability to support a maternity colony or day roost, and the presence of a colony of pallid bats on the site is unlikely, individuals from colonies in the region may occasionally forage on the project site. Focused surveys would be necessary to conclusively determine whether this species roosts on the site.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSSC	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats. Sensitive to human disturbance at roost sites.	**May be Present.** Townsend's big-eared bats are known to occur in the Santa Cruz Mountains to the southwest (iNaturalist 2022). Suitable roosting habitat for this species is present on the project site in unoccupied buildings. Although regular human disturbance limits the site's suitability to support a maternity colony or day roost, and the presence of a colony of Townsend's big-eared bats on the site is unlikely, individuals from colonies in the region (especially in the Santa Cruz Mountains to the southwest) could occasionally forage over the site. Focused surveys would be necessary to conclusively determine whether this species roosts on the site.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub.	**Absent.** Suitable habitat for this species is present on the site due to the large number of oak trees. However, no nests of this species were detected the site during the September 2022 focused survey. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project Site
American badger (*Taxidea taxus*)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	**Absent.** Known to occur in the project region primarily in extensive grasslands and scrub habitats to the west and southwest. No suitable open habitats to support this species are present on the project site, and the site is not located on the periphery of open space areas such that individuals would be expected to traverse the site. Determined to be absent.
State Fully Protected Species			
American peregrine falcon (*Falco peregrinus anatum*)	SP	Forages in many habitats; nests on cliffs and tall bridges and buildings.	**Absent.** Peregrine falcons are known to nest on Hoover Tower on the Stanford University campus approximately 1.9 miles south of the project site. They are also known to nest on structures around the edges of the South Bay, and have nested in recent years (e.g., in 2021) on an electrical tower at Ravenswood ponds R1 and R2 approximately 3 miles to the northeast (Cornell Lab of Ornithology 2022). However, peregrine falcons are not known or expected to nest on or adjacent to the project site due to a lack of suitable cliff-like habitat for nesting. Further, this species would not forage on the project site due to the absence of open habitats and suitable prey. Determined to be absent.
Golden eagle (*Aquila chrysaetos*)	SP	Breeds on cliffs or in large trees (rarely on electrical towers); forages in open areas.	**Absent.** No suitable nesting habitat for golden eagles is present on the project site, and individuals would not forage on the project site due to the absence of open habitats and suitable prey. Determined to be absent.
White-tailed kite (*Elanus leucurus*)	SP	Nests in tall shrubs and trees; forages in grasslands, marshes, and ruderal habitats.	**Low Potential for Occurrence.** White-tailed kites are known to occur in low numbers in surrounding urban areas, especially along San Francisquito Creek to the southeast and at Flood Park to the north (Cornell Lab of Ornithology, 2022). Suitable nesting habitat for this species is present in tall shrubs and trees on the project site, and up to one pair of white-tailed kites can potentially nest on the project site. However, due to the limited availability of open foraging habitat in the surrounding area, white-tailed kites are more likely to nest elsewhere in the vicinity where more extensive areas of open space are present to support a nesting pair (e.g., along the San Francisco Bay to the north or at Stanford University to the southeast). Individual white-tailed kites may forage on the project site year-round.

Key to Abbreviations: Status: Federally Endangered (FE); Federally Threatened (FT); Federal Candidate for Listing (FC); Federally Proposed for Listing (FP); State Endangered (SE); State Threatened (ST); State Candidate for Listing (SC); State Fully Protected (SP); California Species of Special Concern (CSSC).

5.3 Sensitive Natural Communities, Vegetation Alliances, and Habitats

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types, and tracks sensitive communities in its Rarefind database (CNDDB 2022). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings are a reflection of the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (Faber-Langendoen et al. 2012):

G1/S1:	Critically imperiled
G2/S2:	Imperiled
G3/S3:	Vulnerable.
G4/S4:	Apparently secure
G5/S4:	Secure

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 2009). If an alliance is marked G1-G3, all of the vegetation associations within it will also be of high priority (CDFW 2022). The CDFW provides the Vegetation Classification and Mapping Program's currently accepted list of vegetation alliances and associations (CDFW 2022).

Impacts on CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (Title 14, Division 6, Chapter 3, Appendix G of the California Code of Regulations). Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS.

5.3.1 Sensitive Natural Communities

A query of sensitive habitats in the CNDDB (2022) identified three sensitive natural communities as occurring within the nine 7.5-minute USGS quadrangles containing or surrounding project site: northern coastal salt marsh (Rank G3/S3), serpentine bunchgrass (Rank G2/S2), and valley oak woodland (Rank G3/S2.1). No sensitive natural communities occur on the project site.

Northern coastal salt marsh is characterized by Holland (1986) as occurring along sheltered inland margins of bays, often co-dominated by pickleweed (*Salicornia* spp.), California cordgrass (*Spartina foliosa*), and sometimes saltgrass (*Distichlis spicata*). None of these species, and no salt marsh habitats, occur on the project site.

Serpentine bunchgrass occurs only on serpentine soils, which are not present on the project site.

Valley oak woodland is characterized by a woodland canopy dominated by valley oaks. While a number of oak trees are present on the project site, valley oak is not the dominant species (rather, coast live oak is the dominant species). Thus, the valley oak woodland sensitive community does not occur on the project site. A valley oak woodland sensitive community is present at St. Patrick's Seminary & University, located approximately 350 feet to the northeast on the opposite side of Middlefield Road from the project site.

5.3.2 Sensitive Vegetation Alliances

The habitat on the site does not represent or include sensitive vegetation alliances.

5.3.3 CDFW Riparian Habitat

No riparian habitat occurs on or adjacent to the project site.

5.3.4 Sensitive Habitats (Waters of the U.S./State)

There are no aquatic habitats on or adjacent to the project site that would be considered waters of the U.S./state.

5.3.5 Nonnative and Invasive Species

Several nonnative, invasive plant species occur on the project site (Appendix A). Of these, the following have a rating of "limited" invasiveness (considered invasive but their ecological impacts are minor on a statewide level and their reproductive biology and other attributes result in low to moderate rates of invasiveness) according to the Cal-IPC: Australian blackwood (*Acacia melanoxylon*), blue gum (*Eucalyptus globulus*), glossy privet, olive (*Olea europea*), Canary Island date palm (*Phoenix canariensis*), purple leaf cherry plum (*Prunus cerasifera*), Peruvian pepper tree (*Schinus molle*), and puncturevine (*Tribulus terrestris*) (Cal-IPC 2022). The following species have a "moderate" rating according to the Cal-IPC, indicating that they have substantial and apparent–but generally not severe–ecological impacts on physical processes, plant and animal communities, and vegetation structure, and that their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment would be generally dependent upon ecological disturbance: tree-of-heaven (*Ailanthus altissima*), milkflower cotoneaster (*Cotoneaster coriaceus*), Bermuda grass, common fig (*Ficus carica*), fountaingrass (*Pennisetum setaceum*), greater periwinkle (*Vinca major*), and Mexican fan palm (*Washingtonia robusta*) (Cal-IPC 2022). Species with a "high" invasive rating by the Cal-IPC have the potential to cause severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment, and most are widely distributed ecologically (Cal-IPC 2022). On the project site, the following species with a "high" rating were observed: Highway iceplant (*Carpobrotus edulis*), English ivy, and perennial pepperweed (*Lepidium latifolium*) (Cal-IPC 2022). Due to their ubiquity in the region, and the fact that proposed project activities are expected to clear and develop all areas where populations of invasive species are located, project activities are not expected to result in the spread of nonnative and invasive plant species.

In addition to nonnative plants, nonnative animals occur in the project vicinity. Nonnative animals such as house mice, Norway rats, black rats, eastern grey squirrels, European starlings (*Sturnus vulgaris*), and feral cats (*Felis catus*) can compete with and/or prey upon sensitive/native animals. These species are common in the developed areas in and surrounding the project site.

Section 6. Impacts and Mitigation Measures

CEQA and the State CEQA Guidelines provide guidance in evaluating impacts of projects on biological resources and determining which impacts will be significant. The Act defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project."

Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G (Chapter IV) may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

A. "have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

B. "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

C. "Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means"

D. "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites"

E. "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"

F. "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan"

Potential impacts on biological resources as a result of the proposed redevelopment project were systematically evaluated based on the project description and plans provided to us by Lane Partners. Based on this information, it is our understanding that all on-site project impacts, including grading, construction, staging, and access, will occur within the limits of boundaries provided, and that all project impacts within this boundary will be permanent. For off-site improvements, it is our understanding that all work will occur along adjacent roads or within other developed areas where they would not result in different or greater biological impacts than those evaluated in this report. For the purpose of this assessment, we have assumed that the proposed project would impact up to all 64.2 acres of the project site with the exceptions of Buildings P, S and T which would be retained.

Potential impacts on existing biological resources were evaluated by comparing the quantity and quality of habitats present on the project site under baseline conditions to the anticipated conditions after implementation of the proposed project. Direct and indirect impacts on special-status species were assessed based on the potential for the species or their habitat to be disturbed or enhanced following implementation of the proposed project.

6.1 Impacts on Special-Status Species: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Less than Significant with Mitigation)

6.1.1 Impacts on Regionally Common Habitats and Associated Common Plant and Wildlife Species (Less than Significant)

An analysis of regionally common habitats and associated common plant and animal species is not required under CEQA. However, because the project will have only very limited potential to impact listed, sensitive, and special-status species, this section is included for informational purposes.

The proposed project will redevelop 64.2 acres of developed/landscaped habitat on the project site. Permanent impacts would occur as a result of building demolition; the construction of new buildings, pathways, and parking areas; and the removal of trees and other landscape vegetation. The developed/landscaped habitat on the site is abundant and widespread regionally, and is not particularly sensitive or valuable (from the perspective of providing important plant or wildlife habitat).

As discussed previously, the project site currently supports a number of common, urban-adapted wildlife species, although due to its largely developed nature, the site provides relatively low-quality habitat for most species and thus supports relatively small numbers of individuals of any one species. Terrestrial reptiles and amphibians that occur on the project site, including such common species as western fence lizards, could be injured or killed by movement of equipment, vehicle traffic, worker foot traffic, and/or vegetation removal. In addition, petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from vehicles or equipment could impair the health of any amphibians that are present, which are especially susceptible to these types of toxins. Common invertebrates, such as butterflies and moths, could be adversely impacted if host or plants are damaged or killed as a result of work site clearing, crushing by equipment, or trampling by project personnel. Project activities will also result in a temporary reduction in habitat for mammals on the site and might result in the injury or mortality of individuals by equipment, vehicle traffic, and worker foot traffic. However, the majority of the mammals that occur on the site are nonnative species (e.g., eastern gray squirrels and Virginia opossums), which prey upon or compete with the native wildlife species that may occur on the site. Larger native mammals that may occur on the site include skunks, raccoons, and coyotes. Adults of these species are highly mobile and are expected to move out of the way of construction vehicles and equipment, and to take cover in the existing trees and other vegetation that will be preserved on the site.

In general, the common wildlife species that occur on the site are regionally abundant, are present in widely available habitats in the region, and will continue to be present on the site following construction. Additionally, the project would impact only a small proportion of their regional populations, and the number of individuals likely to be displaced by habitat disturbance and loss would be quite small with respect to the amount of suitable habitat available in the area. Also, the expansion of vegetated open space with native vegetation proposed by the project would provide additional resources useful to some common wildlife species relative to baseline conditions, and it is possible that the project will enhance habitat suitability and quality for many wildlife species, following the initial, construction-phase impacts. With the proposed project, the project site may provide habitat of greater value to wildlife compared to existing conditions due to the addition of landscape trees and vegetation on the site. Based on the preliminary tree disposition plan, approximately 739 trees will be removed and approximately 873 new trees will be planted on the site. Additionally, the project proposes an overall reduction in the amount of hardscape on the site, and will add a large central landscaped green space. This substantial increase in vegetative cover and trees will increase the extent of habitat and foraging resources for the wildlife species that use the site. Thus, impacts on most common species and their habitats resulting from the implementation of the project would not meet the threshold of having a substantial adverse effect, and would not be considered significant under CEQA. The plant species observed on the project site during the reconnaissance-level survey (Appendix A) are not regulated under state or federal laws and are not listed as rare by the CNPS. All native plant species found or with any potential to occur on the site are regionally abundant and common in California. Therefore, implementation of the project would not have a substantial adverse effect on common plant species, and impacts on such species would not be considered significant under CEQA.

6.1.2 Impacts on Water Quality, Special-Status Fish, and Northwestern Pond Turtles (Less than Significant)

No suitable habitat for special-status fish species or northwestern pond turtles occurs on the project site or will be impacted directly by the project, and no direct impacts are proposed to San Francisquito Creek, which is located approximately 0.4 mile southeast of the project site. Compliance with applicable regulatory requirements, described below, and permit conditions during the construction phase to protect water quality will minimize the potential for impacts to water quality due to increases in erosion, sedimentation, and turbidity as well as releases of pollutants into the creek water. These measures will also minimize the release or pollutants to waters in San Francisquito Creek, thereby protecting water quality in the creek.

Any potential indirect impacts on water quality from construction of the project would be avoided and minimized by implementing erosion and sediment control measures, as well as BMPs for work near aquatic environments. In addition, construction projects in California causing land disturbances that are equal to 1 acre or greater must comply with state requirements to control the discharge of storm water pollutants under the NPDES *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Water Board Order No. 2009-0009-DWQ, as amended and administratively extended). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors. A Qualified SWPPP Practitioner must be retained on site to monitor the construction BMPs and conduct necessary testing to assure that consistent quality control and quality assurance is maintained to prevent unlawful dischargers into the storm drainage system.

In many Bay Area counties, including San Mateo County, projects must also comply with the California RWQCB San Francisco Bay Region, Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit (Water Board Order No. R2-2015-0049). This permit requires that all projects implement post-construction BMPs and incorporate Low Impact Development practices into the design to prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site after construction has been completed. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, infiltration trenches, bioretention and/or detention basins, among other factors.

Compliance with permit conditions to protect water quality, as described above, will minimize the potential for impacts to water quality due to increases in erosion, sedimentation, and turbidity as well as releases of pollutants into the creek water. These measures will also minimize the release or pollutants to waters in San Francisquito Creek, thereby protecting water quality in the river. Therefore, project activities are not expected to result in substantial adverse indirect effects on water quality, special-status fish species, and northwestern pond turtles in San Francisquito Creek, and such impacts would be less than significant under CEQA, in our opinion.

6.1.3 Impacts on Common and Special-Status Roosting Bats (Less than Significant with Mitigation)

Common bat species, such as the Yuma myotis and Mexican free-tailed bat, as well as the pallid bat and Townsend's big-eared bat, which are California species of special concern, can potentially roost in buildings and trees on the project site. These common and special-status species are grouped together because project impacts on these species will be similar, and because project avoidance and minimization measures for these species are also similar.

No evidence of a colony of roosting bats was detected in trees or buildings on the site during the September 2022 reconnaissance-level survey, but the presence of a moderate-size colony of a common species of roosting bats or a colony of any size of pallid bats or Townsend's big-eared bats could not be ruled out. Thus, the removal of trees and buildings on the site has the potential to result in the loss of a colony of roosting bats. When buildings or trees containing roosting colonies or individual bats are removed or modified, individual bats can be physically injured or killed, can be subjected to physiological stress from disturbance during torpor, or can face increased predation because of exposure during daylight. In addition, nursing young may be subjected to disturbance-related abandonment by their mothers. Impacts on a moderate-sized maternity colony of common species that have potential to occur on the site (i.e., at least 10 big brown bats, 20 Yuma myotis or at least 100 individuals of other non-special-status bat species), or impacts on a pallid bat or Townsend's big-eared bat day roost of any type (i.e., a maternity or non-maternity colony) or size would be considered a substantial effect on these species as this could have a substantial effect on their regional populations. These population-level thresholds were developed by H. T. Harvey & Associates senior bat biologist Dave Johnson, Ph.D., for these species based on his knowledge of their local populations.

The following measures to avoid and minimize impacts on common and special-status species of roosting bats during construction will reduce these impacts to less-than-significant levels under CEQA.

Mitigation Measure BIO-1. Initial Habitat Survey. A qualified bat biologist shall conduct an initial survey of all buildings and trees on the site that are slated for removal to determine whether suitable habitat for a moderate-sized colony of common bat species (i.e., at least 10 big brown bats or at least 20 individuals of other non-special-status species), or a pallid bat or Townsend's big-eared bat colony of any size, is present. The locations of trees with suitable cavities and crevices, as well as any buildings with accessible interiors or other crevices (e.g., roof tiles or other exterior features) that support suitable roost locations, will be identified, and potential entry and exit locations will be mapped.

The purpose of this initial survey is to determine where surveys for maternity roosts (described in Mitigation Measure Bio-2) and where pre-activity surveys (described in Mitigation Measure Bio-3), if required, should be performed. For trees and buildings that are determined, in the qualified biologist's discretion, not to provide suitable habitat for a moderate-sized colony of common bat species, or a pallid bat or Townsend's big-eared bat colony of any size, no further surveys are required. If the qualified biologist determines that any buildings or trees provide suitable habitat, then further surveys under Mitigation Measure BIO-2 and BIO-3 are required.

The site visit for this survey may be combined with the daytime component of the maternity season survey described under Mitigation Measure BIO-2 below, if it is performed during the maternity season (generally March 15 – August 31).

Mitigation Measure BIO-2. Maternity Season Survey. A qualified bat biologist shall conduct a focused survey for roosting bats within all buildings and trees on the project site for which suitable habitat was identified during the initial habitat survey described in Mitigation Measure BIO-1 above, during the maternity season (generally March 15 – August 31) and prior to the start of project construction to determine presence or absence of a maternity colony, the species present, and an estimate of the colony size, if present. If close inspection of potential roost features during the daytime is infeasible, the focused survey shall consist of a dusk emergence survey when bats can be observed flying out of the roost. The purpose of this survey is to determine whether replacement roost habitat needs to be provided, as described under Mitigation Measure BIO-5 below.

This survey may be combined with the initial habitat survey described under Mitigation Measure 1 above and/or the pre-activity survey described under Mitigation Measure BIO-3 below, if desired. However, due to the potential for the presence of a maternity colony to result in a project delay (i.e., maintaining a non-disturbance buffer around the roost), if work will be initiated during the maternity season, it is recommended that this survey be conducted in a year prior to the year in which project construction will occur.

If a maternity colony is detected, the exclusion measures described in Mitigation Measure BIO-4 below will be implemented prior to March 15 of the year in which construction occurs to ensure that bats are excluded from the roost prior to the start of construction. In addition, Mitigation Measure BIO-5 will be implemented.

Mitigation Measure BIO-3. Pre-Activity Survey. A pre-activity survey shall be conducted for roosting bats within all buildings and trees on the project site that are slated for removal, and within which suitable habitat was identified during the initial habitat survey and the maternity roosting survey described in Mitigation Measure BIO-1 and Mitigation Measure BIO-2. The survey will be conducted by a qualified bat biologist within seven days prior to the start of building demolition or tree removal for the purpose of impact avoidance. If building demolition and/or tree removal will occur in phases, a pre-activity survey will be conducted within 14 days prior to the demolition of each building and/or removal of each tree in which suitable roost habitat is present. If close inspection of potential roost features during the daytime is infeasible, the focused survey shall include a dusk emergence survey when bats can be observed flying out of the roost.

If a moderate-sized maternity colony of common bat species (i.e., at least 10 big brown bats, 20 Yuma myotis, 100 individuals of other non-special-status species), or a pallid bat or Townsend's big-eared bat colony of any size or kind (i.e., a maternity or non-maternity colony), is not detected during the survey, no additional measures are required.

If a moderate-sized maternity colony of common bat species (i.e., at least 10 big brown bats, 20 Yuma myotis, or 100 individuals of other non-special-status species), or a pallid bat or Townsend's big-eared bat colony of any size or kind (i.e., a maternity or non-maternity colony), is present, the qualified bat biologist will identify an appropriate disturbance-free buffer zone appropriate for the species identified to be maintained until either the end of the maternity season or a qualified biologist has determined that all young are volant (i.e., capable of flight) to avoid the loss of dependent young. The exclusion measures described in Mitigation Measure BIO-4 below will be implemented after dependent young are no longer present and prior to the removal of any portion of the tree or building where the roost is located. In addition, the compensatory measures described under Mitigation Measure BIO-5 will be implemented.

If a non-maternity colony of pallid bats or Townsend's big-eared bats of any size is present, the compensatory measures described under Mitigation Measure BIO-5 will be implemented.

Mitigation Measure BIO-4. Bat Exclusion. If bats are present in a building or tree to be removed or disturbed, the individuals shall be safely evicted outside the bat maternity season (approximately March 15 – August 31) and the winter torpor period (approximately October 15 – February 28, depending on weather).

Bats may be evicted through exclusion, as directed by a qualified biologist, after notifying the CDFW. The qualified biologist must be present for removal of trees or structures occupied by bats.

- For eviction from roost trees, trimming or removal of trees shall follow a two-step removal process whereby limbs and branches not containing roost habitat are removed on day 1 to disturb the roost, and then the entire tree is removed on day 2.
- Disturbance of or removal of structures containing or suspected to contain active (non-maternity or hibernation) or potentially active common bat roosts shall be done in the evening and after bats have emerged from the roost to forage. Structures shall be partially dismantled to significantly change the roost conditions, causing bats to abandon and not return to the roost. Removal will be completed the subsequent day. Alternatively, exclusion methods may include the installation of one-way doors and/or use of ultrasonic deterrence devices. One-way doors and/or deterrence devices should be left in place for a minimum of two weeks with a minimum of five fair-weather nights with no rainfall and temperatures no colder than 50°F.

Mitigation Measure BIO-5. Compensatory Mitigation. If a maternity colony of common bat species containing at least 10 big brown bats, 20 Yuma myotis, or 100 individuals of other non-special-status bat species, or a pallid bat or Townsend's big-eared bat day roost of any type (maternity or non-maternity) or size, is determined to be present on the project site, replacement roost habitat that is appropriate to the species shall be provided, as determined by a qualified bat biologist. The nature of the replacement roost habitat (e.g., the design of an artificial roost structure) will be determined by a qualified bat biologist based on the number and species of bats detected. Ideally, the roost structure should be installed on the project site. If replacement habitat cannot be placed on the site, it should be installed no more 100 feet from the site (or as close to the site as feasible). Exact placement of replacement habitat shall be determined in consultation with a qualified bat biologist.

6.1.4 Impacts on the Monarch Butterfly, Yellow Warbler, Yellow-Breasted Chat, Vaux's Swift, Olive-sided Flycatcher, and Western Red Bat (Less than Significant)

The monarch butterfly, yellow warbler, yellow-breasted chat, Vaux's swift, olive-sided flycatcher, and western red bat potentially occur on the project site as nonbreeding migrants, transients, or foragers, but they are not known or expected to breed or occur in large numbers on or near the project site.

The western red bat roosts in the foliage of trees, rather than in cavities and crevices like the bat species discussed in Section 6.1.3. The western red bat does not breed on the project site due to a lack of suitable habitat, and because the project site is outside this species' breeding range. Individual western red bats are unlikely to be directly harmed by construction activities, and because western red bats do not form large roosts as the bats discussed above do, the number of western red bats that could be disturbed by project activities would be very low. Thus, the western red bat is addressed in this section with other species that may similarly occur on the site in low numbers as occasional nonbreeding migrants, transients, or foragers, rather than in Section 6.1.3 above.

The monarch butterfly may occur as an occasional forager on the project site, but it is not expected to breed there due to the absence of larval host plants (i.e., milkweeds). The Vaux's swift, olive-sided flycatcher, yellow warbler, and yellow-breasted chat (California species of special concern) are not expected to occur on or close to the project site as breeders due to the absence of suitable habitat, but individuals may occur occasionally as foragers during the nonbreeding season. The western red bat (also a California species of special concern) may occur on the project site as an occasional forager and roost in small numbers in the foliage of trees on the site, but is not expected to breed on the project site due to a lack of suitable habitat.

Activities under the proposed project would have some potential to impact foraging habitats and/or disturb individuals of these species. Construction activities might result in a temporary direct impact through the alteration of foraging patterns (e.g., avoidance of work sites because of increased noise and activity levels during maintenance activities) but would not result in the loss of individuals, as individuals of these species would move away from any construction areas or equipment before they could be injured or killed. Further, the project site does not provide important foraging habitat used regularly or by large numbers of individuals of any of these species, and foraging habitat for these species is expected to increase following project construction due to the net increase in the number of trees on the site. As a result, impacts of the project will have little impact on these species' foraging habitat and no substantive impact on regional populations of these species. Therefore, this impact would be less than significant under CEQA.

6.1.5 Impacts due to Increased Lighting (Less than Significant)

Many animals are sensitive to light cues, which influence their physiology and shape their behaviors, particularly during the breeding season (Ringer 1972, de Molenaar et al. 2006). Artificial light has been used as a means of manipulating breeding behavior and productivity in captive birds for decades (de Molenaar et al. 2006), and has been shown to influence the territorial singing behavior of wild birds (Longcore and Rich 2004, Miller 2006, de Molenaar et al. 2006). While it is difficult to extrapolate results of experiments on captive birds to wild populations, it is known that photoperiod (the relative amount of light and dark in a 24-hour period) is an essential cue triggering physiological processes as diverse as growth, metabolism, development, breeding behavior, and molting (de Molenaar et al. 2006). This holds true for birds, mammals (Beier 2006), and other taxa as well, suggesting that increases in ambient light may interfere with these processes across a wide range of species, resulting in impacts on wildlife populations.

Artificial lighting may indirectly impact mammals and birds by increasing the nocturnal activity of predators like owls, hawks, and mammalian predators (Negro et al 2000, Longcore and Rich 2004, DeCandido and Allen 2006, Beier 2006). The presence of artificial light may also influence habitat use by rodents (Beier 2006) and by breeding birds (Rogers et al. 2006, de Molenaar et al. 2006), by causing avoidance of well-lit areas, resulting in a net loss of habitat availability and quality.

The project will result in the construction of buildings and other features (e.g., driveways, roads, and pedestrian walkways) that could increase the amount of lighting on and around the project site. Lighting from the project would be the result of light fixtures illuminating buildings, building architectural lighting, driveway/road lighting, and pedestrian lighting. Depending on the location, direction, and intensity of exterior lighting, without protective measures, this lighting can potentially spill into adjacent natural areas, thereby resulting in an increase in lighting compared to existing conditions. The areas surrounding the project site are primarily developed urban habitats that do not support sensitive species that might be significantly impacted by illuminance from the project. As discussed in Section 1.2.4 above, the project will include a lighting plan that complies with California State Title 24 and the City's lighting guidelines. All exterior fixtures will be energy-efficient and color balanced, and 23 reduce glare and unnecessary light spillage, while providing safe routes of travel for vehicles and pedestrians. Lighting in parking structures will be screened and controlled so as not to disturb surrounding properties, while ensuring adequate public security. In addition, lighting will be shielded to minimize the spill of lighting outwards into adjacent areas, and up-lighting will be avoided or minimized. With implementation of the lighting plan, potential impacts due to increased lighting would be less than significant.

6.2 **Impacts on Sensitive Communities**: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Less than Significant with Mitigation)

6.2.1 **Impacts on Riparian Habitat, or Other Sensitive Natural Communities** (No Impact)

The CDFW defines sensitive natural communities and vegetation alliances using NatureServe's standard heritage program methodology (CDFW 2022), as described above in Section 4.3. Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS. Project impacts on sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, were considered and evaluated. No riparian habitat or other sensitive natural communities are located on the project site, and thus, there will be no impacts to riparian habitat or other sensitive natural communities as a result of the project. Although sensitive valley oak woodland habitat occurs at St. Patrick's Seminary & University to the northeast, the project will have no impact on this woodland. Indirect impacts on water quality and aquatic habitat in San Francisquito Creek are discussed above in Section 6.1.2.

6.3 **Impacts on Wetlands**: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (Less than Significant)

No wetlands and other waters of the U.S./state are present on the project site, and the project avoids all direct impacts on state or federally protected wetlands and aquatic habitats. Surface water runoff from the site flows to San Francisquito Creek, approximately 0.4 miles southeast of the site, and indirect impacts on water quality in the creek could potentially occur as a result of project activities located upgradient of the creek if runoff from the project site increases in intensity or frequency. The project will comply with applicable permit conditions, to protect water quality as described in Section 6.1.2 above. Compliance with these conditions will reduce the project's indirect impacts on wetlands in San Francisquito Creek to less-than-significant levels under CEQA, in our opinion.

6.4 Impacts on Wildlife Movement: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Less than Significant with Mitigation)

6.4.1 Impacts on Wildlife Movement (Less than Significant)

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife: first, as habitat patches become smaller they are unable to support as many individuals (patch size); and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity).

The project site is entirely developed, and is situated within a dense matrix of urban development. As a result, the proposed redevelopment of the project site would not result in the fragmentation of natural habitats, and any common, urban-adapted wildlife species that currently move through the project site would continue to be able to do so following project construction. In fact, the project site may provide higher-quality habitat following project implementation due to the increase in open space and vegetation proposed. Further, the project will not impede the use of any native wildlife nursery sites, including breeding of common, urban-adapted birds. Thus, the project would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors in the site vicinity, and it would not impede the use of any native wildlife nursery sites.

6.4.2 Impacts on the White-Tailed Kite and Other Nesting Birds (Less than Significant with Mitigation)

Construction disturbance during the bird nesting season (February 1 through August 31, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests, or indirectly by causing the abandonment of nests. Due to the absence of sensitive habitats from the project site, the site supports only regionally common, urban-adapted breeding birds, and potentially the white-tailed kite (a state fully protected species).

Based on site observations, the areal extent of suitable habitats within and adjacent to the project site, and known nesting densities of this species, no more than one pair of this species could potentially nest on or immediately adjacent to the project site. However, no old raptor nests were observed on the site during the September 2022 survey, suggesting that raptors (including white-tailed kites) have not nested on the project site in recent years, and the likelihood that this species would nest on the site in the future is low.

The amount of mature vegetation on the site supports a number of common bird species (i.e., multiple pairs) and up to one pair of white-tailed kites that could be adversely affected during the construction period. While construction impacts are temporary, the disruption to nesting and foraging birds' habitat could harm their populations, resulting in a significant impact under CEQA. In addition, all native migratory birds, including raptors, are protected under the MBTA and California Fish and Game Code. Mitigation Measure BIO-6 below provides measures to reduce this impact to a less-than-significant level under CEQA and comply with these laws.

In addition to the potential for causing direct effects on nesting birds, implementing the project will temporarily reduce available nesting habitat for common species of birds that currently use the site, as well as foraging habitat and cover for migrants and wintering birds, through the removal of trees and landscape vegetation. This could result in a temporary decline in the number of species and individuals that use the site. However, many of the existing trees on the site will be preserved. Thus, birds that use the site will continue to be able to use these trees following project construction. In addition, although the habitat on the site provides nesting and foraging habitat for many native birds, this developed area represents a small proportion of the habitats that support these species regionally. Residences, yards, and parks throughout Menlo Park provide habitat for the common "backyard" species of birds that use the site (e.g., dark-eyed juncos, American robins, mourning doves, and Anna's hummingbirds), as well as foraging habitat for many migrants. Birds associated with oak woodlands (e.g., oak titmice, white-breasted nuthatches, and California scrub-jays) are also common in yards in Menlo Park, as well as at park and open space areas such as the nearby Corpus Christi Monastery and St. Patrick's Seminary & University. Thus, many habitats in the project vicinity support the species of common birds that nest on the site, and these birds are expected to nest in these nearby habitats if they are displaced from the site.

The project will plant approximately 873 trees on the project site, which will result in an increase in the total number of trees on the site following construction. Additionally, the completed project will increase the amount of vegetated open space on the site. Thus, while there may be temporary decreases in habitat quality as a result of the removal of existing trees and landscape vegetation, once the new trees and vegetation mature the project will result in an overall increase in nesting and foraging resources available to the native birds that currently use the site compared to existing conditions. Therefore, the potential operational impacts of the project on native resident and migratory birds and their habitat would be considered less than significant under CEQA.

Mitigation Measure BIO-6. Avoid and Minimize Impacts on Nesting Birds. The project will implement the following measures to avoid and minimize construction-period impacts on nesting birds:

- **Avoidance of the Nesting Season.** To the extent feasible, commencement of demolition and construction activities should be scheduled to avoid the nesting season. If demolition and construction activities are scheduled to take place outside the nesting season, all potential demolition/construction impacts on nesting birds protected under the MBTA and California Fish and Game Code will be avoided.

The nesting season for most birds in San Mateo County extends from February 1 through August 31.

- **Pre-Activity/Pre-Disturbance Surveys.** If it is not possible to schedule demolition and construction activities between September 1 and January 31, then pre-activity surveys for nesting birds shall be conducted by a qualified biologist to ensure that no nests will be disturbed during project implementation. These surveys shall be conducted no more than seven days prior to the initiation of demolition or construction activities. During this survey, the biologist will inspect all trees and other potential nesting habitats (e.g., trees, shrubs, and buildings) in and immediately adjacent to the impact areas for nests.
- **Non-Disturbance Buffers.** If an active nest is found sufficiently close to work areas to be disturbed by these activities, the biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically 300 feet for raptors and 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation.
- **Nesting Deterrence.** If construction activities will not be initiated until after the start of the nesting season, all potential nesting substrates (e.g., bushes, trees, grasses, and other vegetation) that are scheduled to be removed by the project may be removed prior to the start of the nesting season (e.g., prior to February 1). This will preclude the initiation of nests in this vegetation.

6.4.3 Impacts due to Bird Collisions (Less than Significant with Mitigation)

Under existing conditions, terrestrial land uses and habitat conditions on the project site consist entirely of developed areas such as office/research and development buildings, single-story military barracks-style housing, and other single-story buildings with associated landscaped areas, paved parking lots, sidewalks, and roads. A total of 1,371 trees are currently present on the site, including 206 native coast live oaks and 29 native valley oaks. The mature, native coast live oaks and valley oaks on the site provide relatively high-quality nesting and foraging habitat for native birds. The large number of nonnative trees, shrubs, and landscape plants also present on the site support fewer of the resources required by native birds than native vegetation, and the structural simplicity of the vegetation on the site (i.e., without well-developed ground cover, understory, and canopy layers) further limits resources available to birds (Anderson et al. 1977, Mills et al. 1989). Nevertheless, this nonnative vegetation contributes to the habitat quality on the site, providing nesting and foraging opportunities, and due to the number of mature trees present (including native and nonnative trees), native bird abundance on the site is relatively high. However, particularly rare species or species of conservation concern are not expected to occur on the project site.

Under proposed conditions, the project site would provide habitat of similar or slightly greater value to landbirds compared to existing conditions. Impervious areas on the site would be reduced from 90% to 55%, and these areas will be replaced by new landscaped and open space areas totaling more than 26 acres, increasing the overall availability of foraging habitat on the site for birds. Based on the preliminary tree disposition plan (HortScience|Bartlett Consulting 2022), approximately 739 trees will be removed, including approximately 83 native coast live oak trees and 22 native valley oak trees that provide high-quality resources for birds. This will reduce available nesting and foraging habitat for birds on the site, at least temporarily. However, approximately 202 existing native coast live oaks and 29 native valley oaks will be preserved on the site, and birds will continue to use these trees following project construction. In addition, approximately 873 new trees will be planted on the site, and this increase in vegetative cover and trees will increase the extent of habitat and foraging resources for the native resident birds that use the site, especially as the replacement trees mature. However, according to the preliminary tree planting plan these trees consist entirely of nonnatives, which limits the value of this new habitat for birds. Based on these combined factors, the number of birds that use the site is expected to be similar to, or slightly greater than, existing conditions following project construction.

Land uses and habitat conditions in areas immediately surrounding the project site consist of residential buildings with associated pedestrian walkways, roads, and landscape vegetation, as well as open space areas at St. Patrick's Seminary & University to the northeast and the Corpus Christi Monastery to the northwest. Native vegetation in the adjacent and nearby open space areas (i.e., at St. Patrick's Seminary & University and the Corpus Christi Monestary) includes mature native trees, especially native oaks, and this vegetation supports relatively high densities and diversity of native bird species due to its extent, the number of mature trees, and the presence of understory vegetation (e.g., grasses and shrubs). Thus, relatively high densities and diversity of native bird species are present within these adjacent areas due to the presence of native vegetation, and some of these birds will use the vegetation on the project site opportunistically due to the site's close proximity to these areas. Certain surrounding areas of Menlo Park support mature trees, including native oaks, while other surrounding areas are landscaped with nonnative trees and shrubs. Areas with nonnative vegetation support fewer of the resources required by native birds compared native vegetation, and the structural simplicity of the vegetation both on the site and in surrounding developed areas (without well-developed ground cover, understory, and canopy layers) further limits resources available to birds (Anderson et al. 1977, Mills et al. 1989) compared to park and open space areas such as St. Patrick's Seminary & University and the Corpus Christi Monestary.

As discussed in Section 4.3.2, the site and its surroundings do not support high concentrations of migratory landbirds the way more natural/less developed ridgelines, woodlands, creeks with high-quality riparian habitat, or shorelines do (e.g., the site is 1.7 miles inland from the San Francisco Bay). Nevertheless, a moderate number of migrants are expected to utilize vegetation on the site for foraging and resting opportunities during spring and fall migration due to the site's close proximity to nearby and adjacent habitats at St. Patrick's Seminary & University and the Corpus Christi Monastery, as well as the presence of large numbers of trees on the project site.

It has been well documented that glass windows and building façades can result in injury or mortality of birds due to birds' collisions with these surfaces (Klem 2009, Sheppard and Phillips 2015). Because birds do not perceive glass as an obstruction the way humans do, they may collide with glass when the sky or vegetation is reflected in glass (e.g., they see the glass as sky or vegetated areas); when transparent windows allow birds to perceive an unobstructed flight route through the glass (such as at corners); and when the combination of transparent glass and interior vegetation (such as in planted atria) results in attempts by birds to fly through glass to reach that vegetation. The greatest risk of avian collisions with buildings occurs in the area within 60 feet of the ground because this is the area in which most bird activity occurs (San Francisco Planning Department 2011, Sheppard and Phillips 2015).

The potential for bird collisions at certain locations on the project site depends on certain factors. For instance, moderate numbers of resident and migrant landbirds are expected to use nearby and adjacent habitat areas at St. Patrick's Seminary & University to the northeast and the Corpus Christi Monastery to the northwest, and these birds will travel in between these areas and the project site when foraging in these habitats. As a result, there is a relatively higher potential for birds to collide with glazing that faces these off-site open space areas compared to other locations on the project site. In addition, the extent of glazing on a building and the presence of vegetation opposite the glazing are known to be two of the strongest predictors of avian collision rates (Gelb and Delacretaz 2009, Borden et al. 2010, San Francisco Planning Department 2011, Cusa et al. 2015, Sheppard and Phillips 2015, Riding et al. 2020). Thus, the risk of collisions increases where buildings with extensive glazing face extensive landscape vegetation on the site. Night lighting associated with new buildings also has some potential to disorient birds, especially during inclement weather when night migrating birds descend to lower altitudes, potentially increasing the risk of collisions. Based on the project's preliminary site plan, the orientation of the buildings in combination with the proposed landscape vegetation would not result in a heightened risk of collisions due to the funneling of flight paths towards building facades.

Building collisions are a leading cause of anthropogenic-related avian mortality in the United States, second only to predation by free-ranging domestic cats (Loss et al. 2014). Buildings are estimated to result in the mortality of an estimated 365 to 988 million birds per year, or 2–9% of all North American birds, with low-rise buildings such as those in the proposed project accounting for the mortality of an estimated 62–664 million birds (median 246 million) each year (Loss et al. 2014). Most birds that are vulnerable to collisions with low-rise buildings are migrants that move through during the spring and fall (Loss et al. 2014). However, certain groups of birds are also more vulnerable to collisions, including hummingbirds, swifts, waxwings, warblers, nuthatches, tits, and creepers (Loss et al. 2014), all of which occur on or near the project site as migrants, wintering individuals, or year-round residents.

Considering the large size of the project site, the retention of many mature native trees, and the site's proximity to nearby and adjacent open space areas at St. Patrick's Seminary & University to the northeast and the Corpus Christi Monastery to the northwest, moderately high numbers of birds are expected to continue to use the site over the long term. Consequently, construction of new buildings with glazed facades under the project could result in an increase in collisions over existing conditions. Because the details of the facades (e.g., with respect to locations of glass and bird-safe glazing features) and lighting are still being defined, there is some potential for avian collisions to occur frequently enough to result in a significant impact under CEQA, in the absence of mitigation measures..

Implementation of Mitigation Measure BIO-7, which is based on the City Code's bird-friendly design measures applicable to projects in the City's Bayfront zoning districts, goes above and beyond those requirements by incorporating additional specificity in some respects, and the project's lighting plan, which includes measures to minimize the disorientation of migrant birds due to exterior lighting, would ensure that impacts due to bird collisions with glazing are less than significant.

Mitigation Measure BIO-7. Implement Bird-Friendly Building Design. Due to the potential for bird collisions with the project buildings, the project shall implement the following bird-friendly building design considerations:

- No more than 10% of the surface area of the combined façades for any new building shall have untreated glazing between the ground and 60 feet above ground.
- Bird-friendly glazing treatments may include fritting, netting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing or ultraviolet patterns visible to birds. All bird-friendly glazing on the building shall have a reflectivity of 15% or lower. Bird-friendly glazing used on all project buildings shall meet the following specifications:
  - Vertical elements of the window patterns should be at least 0.25 inches wide at a maximum spacing of 4 inches and/or have horizontal elements at least 0.125 inches wide at a maximum spacing of 2 inches;

    OR
  - Bird-friendly glazing shall have a Threat Factor[2] less than or equal to 30.
- Avoid or minimize free-standing clear glass walls, skywalks, transparent building corners, glass enclosures (e.g., greenhouses) on rooftops, and free-standing clear glass railings where feasible. If any such features are included in the project design, all glazing used in any such features shall be 100% treated with a bird-friendly glazing treatment as specified in the bullet above. These features shall be treated to a height of 60 feet above grade. Features located more than 60 feet above grade are not required to be treated. For transparent glass corners, the required treatment area extends horizontally from a building corner as far the corner as it is possible to see through the corner to the other side of the building.
- Transparent glass shall not be allowed at the rooflines of buildings, including in conjunction with green roofs.
- Use of rodenticides shall not be allowed.
- The City may waive or reduce any of the above-listed bird-friendly design requirements in Mitigation Measure BIO-6 for specific facades or buildings based on analysis by a qualified biologist indicating that such specific facades or buildings will not pose a collision hazard to birds. Such a waiver will generally not

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[2] A material's Threat Factor is assigned by the American Bird Conservancy, and refers to the level of danger posed to birds based on birds' ability to perceive the material as an obstruction, as tested using a "tunnel" protocol (a standardized test that uses wild birds to determine the relative effectiveness of various products at deterring bird collisions). The higher the Threat Factor, the greater the risk that collisions will occur. An opaque material will have a Threat Factor of 0, and a completely transparent material will have a Threat Factor of 100. Threat Factors for many commercially available façade materials can be found by clicking on the "Threat Factor Table" link at https://abcbirds.org/glass-collisions/nyc-threat-factor.

be appropriate for façades facing well-vegetated areas, such as St. Patrick's Seminary & University to the northeast, the Corpus Christi Monastery to the northwest, and the future on-site open space areas. A waiver may be appropriate, for example, for façades that face developed areas lacking vegetation, water features, or other features that would be particularly attractive to birds.

6.5 Impacts due to Conflicts with Local Policies: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant with Mitigation)

6.5.1 Impacts Due to the Removal of Heritage Trees (Less than Significant)

The project will remove approximately 739 existing trees on the site, including approximately 212 heritage trees. In accordance with City of Menlo Park Municipal Code Chapter 13.24, *Heritage Trees*, permits from the City's Director of Public Works or his or her designee and payment of a fee are required for the removal of any heritage trees, as defined in Section 3.3.1 above.

The removal or pruning of heritage trees protected by the City of Menlo Park municipal code is considered potentially significant under CEQA. However, the project would comply with the City's heritage tree ordinance Sections 13.24.030 and 13.24.050, including obtaining a permit from the City to remove protected trees, submittal and implementation of a tree protection plan to protect remaining heritage trees that are near work areas, and paying any applicable fees. The project proposes to provide replacement trees for all heritage trees removed by the project (in accordance with heritage tree ordinance Section 13.24.090), and a greater number of trees will be planted than removed (approximately 873 new trees will be planted).

With the incorporation of the above measures to ensure compliance with the City's Municipal Code, any potential impacts related to conflicts with local policies or ordinances protecting trees would be less than significant under CEQA.

6.6 Impact due to Conflicts with an Adopted Habitat Conservation Plan: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (Less Than Significant)

The project site is not located within an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the project would not conflict with any such plans.

6.7 Cumulative Impacts

Cumulative impacts arise due to the linking of impacts from past, current, and reasonably foreseeable future projects in the region. Future development activities in the City will result in impacts on the same habitat types and species that will be affected by the proposed project. The proposed project, in combination with other projects in the area and other activities that impact the species that are affected by this project, could contribute to cumulative effects on special-status species. Other projects in the area include office/retail/commercial development, mixed use, and residential projects that could adversely affect these species.

The cumulative impact on biological resources resulting from the project in combination with other projects in the larger region would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; and compensatory mitigation and proactive conservation measures associated with each project. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts on biological resources could occur.

However, many projects in the region that impact resources similar to those impacted by the project will be subject to CEQA requirements. It is expected that such projects will mitigate their impacts on sensitive habitats and special-status species through the incorporation of mitigation measures and compliance with permit conditions.

Regardless of the magnitude and significance of cumulative impacts that result from other projects, the Parkline project is not expected to have a substantial effect on biological resources. Under proposed conditions, the project site may provide habitat of greater value to wildlife compared to existing conditions due to the addition of landscape trees and vegetation on the site. Based on the preliminary tree disposition plan, approximately 739 trees will be removed, and approximately 873 new trees will be planted on the site (representing an increase of 132 trees). While the species composition of these replacement trees is unknown, the project will comply with the City's Heritage Tree Ordinance, which identifies the use of native replacement trees as a priority. Additionally, the project proposes an overall reduction in the amount of hardscape on the site, and will add a large central landscaped green space. This increase in vegetative cover and trees will increase the extent of habitat and foraging resources for the wildlife species that use the site. Also, the project would implement the mitigation measures described above to reduce the project's impacts under CEQA to less than significant levels. Thus, provided that this project implements the mitigation measures described in this biological resources report, the project will not have a cumulatively considerable contribution to cumulative effects on biological resources.

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Appendix A. Plant Species Observed

Family	Scientific Name	Common Name	Cal-IPC Status[1]
Acanthaceae	*Acanthus mollis*	Bear's breeches	
Aizoaceae	*Carpobrotus edulis*	Highway iceplant	High
Amaranthaceae	*Chenopodiastrum murale*	Nettle-leaved goosefoot	
Amaryllidaceae	*Agapanthus praecox*	Blue lily	
Anacardiaceae	*Cotinus coggygria*	European smoketree	
	Pistacia chinensis	Chinese pistache	
	Schinus molle	Peruvian pepper tree	Limited
Apiaceae	*Cyclospermum leptophyllum*	Marsh parsley	
Apocynaceae	*Nerium oleander*	Oleander	
	Trachelospermum jasminoides	Confederate jasmine	
	Vinca major	Greater periwinkle	Medium
Aquifoliaceae	*Ilex cornuta*	Chinese holly	
Araceae	*Philodendron bipinnatifidum*	Tree philodendron	
Araliaceae	*Hedera helix*	English ivy	High
	Hydrocotyle moschata	Musk hydrocotyle	
Arecaceae	*Phoenix canariensis*	Canary Island date palm	Limited
	Trachycarpus fortune	Chinese windmill palm	
	Washingtonia robusta	Mexican fan palm	Medium
Asparagaceae	*Agave attenuate*	Foxtail agave	
	Asparagus aethiopicus	Asparagus fern	
	Dracaena marginata	Dragon tree	
	Dracaena sp.	Dracaena	
Asphodelaceae	*Phormium tenax*	New Zealand flax	
Asteraceae	*Baccharis pilularis**	Coyote brush	
	*Erigeron canadensis**	Canada horseweed	
	*Erigeron philadelphicus**	Philadelphia fleabane	
	Jacobaea maritima	Silver ragwort	
	Lactuca serriola	Prickly lettuce	
	*Pseudognaphalium californicum**	Ladies' tobacco	
	Sonchus asper	Spiny sowthistle	
Athyriaceae	*Athyrium filix-femina**	Common ladyfern	
Balsaminaceae	*Impatiens* sp.	Impatiens	
Begoniaceae	*Begonia cucullata*	Wax begonia	

Family	Scientific Name	Common Name	Cal-IPC Status[1]
Berberidaceae	*Berberis thunbergii*	Japanese barberry	
	Mahonia oiwakensis	Chinese Holly	
	Nandina domestica	Sacred bamboo	
Betulaceae	*Alnus cordata*	Italian alder	
	Betula pendula	European white birch	
Bignoniaceae	*Catalpa speciose*	Northern catalpa	
	Handroanthus chrysanthus	Araguaney	
	Tecoma capensis	Cape honeysuckle	
Blechnaceae	*Woodwardia fimbriata**	Western chain fern	
Brassicaceae	*Diplotaxis tenuifolia*	Perennial wall rocket	
	Lepidium latifolium	Perennial pepperweed	High
Buxaceae	*Buxus sempervirens*	Common box	
Cactaceae	*Opuntia engelmannii**	Prickly pear	
	Opuntia monacantha	drooping prickly pear	
Caprifoliaceae	*Lonicera hispidula**	Pink honeysuckle	
Caryophyllaceae	*Dianthus* sp.	Pink	
Casuarinaceae	*Casuarina equisetifolia*	Beach sheoak	
Celastraceae	*Euonymus japonicus*	Japanese spindle tree	
	Maytenus boaria	Mayten	
Convolvulaceae	*Convolvulus arvensis*	Field bindweed	
	Dichondra argentea	Silver ponysfoot	
Crassulaceae	*Dudleya virens**	Bright green dudleya	
	Echeveria affinis	Black echeveria	
	Echeveria elegans	Mexican snowball	
	Echeveria gibbiflora	Echeveria	
	Sedum dendroideum	Tree stonecrop	
	Sedum sp.	Sedum	
Cupressaceae	*Calocedrus decurrens**	Incense cedar	
	Cupressus sempervirens	Italian cypress	
	Juniperus chinensis	Chinese juniper	
	Juniperus horizontalis	Creeping juniper	
	*Sequoia sempervirens**	Coast redwood	
Cyperaceae	*Cyperus eragrostis**	Tall flatsedge	
Dryopteridaceae	*Nephrolepis cordifolia*	Narrow swordfern	
	*Polystichum munitum**	Western swordfern	
Ebenaceae	*Diospyros kaki*	Persimmon	

Family	Scientific Name	Common Name	Cal-IPC Status[1]
Elaeagnaceae	*Eleagnus pungens*	Thorny olive	
Ericaceae	*Arbutus unedo*	Strawberry tree	
	*Arctostaphylos manzanita**	Common manzanita	
	*Empetrum nigrum**	Black crowberry	
	Erica scoparia	Green heather	
	Pieris japonica	Japanese andromeda	
	Rhododendron sp.	Azalea	
Escalloniaceae	*Escallonia* sp.	Escallonia	
Euphorbiaceae	*Euphorbia maculata*	Spotted spurge	
	Euphorbia tirucalli	Pencil cactus	
Fabaceae	*Acacia melanoxylon*	Australian blackwood	Limited
	Acacia pycnantha	Golden wattle	
	Albizia julibrissin	Persian silk tree	
	Ceratonia siliqua	Carob	
	*Cercis occidentalis**	Western redbud	
	Medicago lupulina	Black medic	
	Trifolium sp.	Clover	
	Wisteria floribunda	Japanese wisteria	
Fagaceae	*Quercus agrifolia**	Coast live oak	
	*Quercus douglasii**	Blue oak	
	Quercus ilex	Holly oak	
	*Quercus lobate**	Valley oak	
	Quercus rubra	Red oak	
	Quercus suber	Cork oak	
Flacourtiaceae	*Xylosma congestum*	Xylosma	
Geraniaceae	*Geranium* sp.	Geranium	
	Pelargonium sp.	Pelargonium	
Ginkgoaceae	*Ginkgo biloba*	Ginkgo	
Griseliniaceae	*Griselinia littoralis*	New Zealand broadleaf	
Hamamelidaceae	*Liquidambar styraciflua*	Sweetgum	
	Loropetalum chinensis	Chinese fringe flower	
Hydrangeaceae	*Hydrangea macrophylla*	Bigleaf hydrangea	
Hypericaceae	*Hypericum calycinum*	Aaron's beard	
Iridaceae	*Dietes iridioides*	African iris	
Juglandaceae	*Carya illinoinensis*	Pecan	
	*Juglans californica**	Southern black walnut	

Family	Scientific Name	Common Name	Cal-IPC Status[1]
	Juglans regia	English walnut	
Lamiaceae	*Lavendula dentata*	French lavender	
	Phlomis fruticosa	Shrubby Jerusalem sage	
	Rosmarinus officinalis	Rosemary	
	Salvia leucantha	Mexican bush sage	
Lauraceae	*Cinnamomum camphora*	Camphortree	
	*Umbellularia californica**	California bay	
Lythraceae	*Lagerstroemia indica*	Crapemyrtle	
Magnoliaceae	*Liriodendron tulipifera*	Tuliptree	
	Magnolia grandiflora	Southern magnolia	
	Magnolia x *soulangeana*	Saucer magnolia	
Malvaceae	*Grewia occidentalis*	Crossberry	
	Malva parviflora	Cheeseweed	
Melastomataceae	*Tibouchina urvilleana*	Princess flower	
Moraceae	*Ficus carica*	Common fig	Moderate
	Ficus pumila	Climbing fig	
	Morus alba	White mulberry	
Myrsinaceae	*Lysimachia arvensis*	Scarlet pimpernel	
Myrtaceae	*Callistemon citrinus*	Crimson bottlebrush	
	Eucalyptus cinerea	Silver dollar eucalyptus	
	Eucalyptus globulus	Blue gum	Limited
	Eucalyptus nicholii	Narrow-leaved peppermint	
	Eucalyptus sideroxylon	Red ironbark	
	Melaleuca linariifolia	Flaxleaf paperbark	
	Myrtus communis	Myrtle	
	Tristaniopsis laurina	Water gum	
Oleaceae	*Fraxinus oxycarpa*	Raywood ash	
	Fraxinus uhdei	Shamel ash	
	*Fraxinus velutina**	Arizona ash	
	Ligustrum japonicum	Japanese privet	
	Ligustrum lucidum	Glossy privet	Limited
	Ligustrum vulgare	European privet	
	Olea europaea	Olive	Limited
Onagraceae	*Epilobium brachycarpum**	Panicled willowherb	
	*Epilobium canum**	California fuchsia	
	Fuchsia fulgens	Brilliant fuchsia	

Family	**Scientific Name**	**Common Name**	**Cal-IPC Status^1**
Oxalidaceae	*Oxalis corniculata*	Creeping wood sorrel	
Papaveraceae	*Eschscholzia californica**	California poppy	
Pinaceae	*Cedrus atlantica*	Atlas cedar	
	Cedrus deodara	Deodar cedar	
	Pinus canariensis	Canary Island pine	
	Pinus halepensis	Aleppo pine	
	Pinus pinea	Italian stone pine	
	*Pinus radiate**	Monterey pine	
Pittosporaceae	*Hymenosporum flavum*	Frangipani	
	Pittosporum crassifolium	Karo	
	Pittosporum tenuifolium	Short leaf box	
	Pittosporum tobira	Mock orange	
	Pittosporum undulatum	Victorian box	
Plantaginaceae	*Penstemon gentianoides*	Gentian beardtongue	
Platanaceae	*Platanus racemose**	California sycamore	
	Platanus x *acerifolia*	London plane tree	
Plumbaginaceae	*Plumbago auriculata*	Cape leadwort	
Poaceae	*Cynodon dactylon*	Bermuda grass	Moderate
	Miscanthus sinensis	Chinese silvergrass	
	Pennisetum setaceum	Fountaingrass	Moderate
	Phyllostachys aurea	Golden bamboo	
Podocarpaceae	*Afrocarpus gracilior*	African fern tree	
Polygonaceae	*Polygonum aviculare*	Prostrate knotweed	
Portulacaceae	*Portulacaria afra*	Elephant bush	
Proteaceae	*Grevillea lanigera*	Wooly grevillea	
Rhamnaceae	*Rhamnus alaternus*	Italian buckthorn	
Rosaceae	*Rosa* sp.	Rose	
	Chaenomeles speciosa	Flowering quince	
	Cotoneaster coriaceus	Milkflower cotoneaster	Moderate
	Cotoneaster horizontalis	Wall cotoneaster	
	Eriobotrya japonica	Loquat	
	Fragaria californica	Wild strawberry	
	*Heteromeles arbutifolia**	Toyon	
	Malus sp.	Crabapple	
	Photinia serratifolia	Chinese photinia	
	Photinia x *fraseri*	Red tip photinia	

Family	Scientific Name	Common Name	Cal-IPC Status[1]
	Prunus cerasifera	Purple leaf cherry plum	Limited
	*Prunus ilicifolia**	Holly leaf cherry	
	Prunus laurocerasus	Cherry laurel	
	Prunus lusitanica	Portugal laurel	
	Pyrus calleryana	Callery pear	
	Pyrus kawakamii	Evergreen pear	
	Rhaphiolepis indica	Indian hawthorn	
	Spiraea alba	White meadowsweet	
Salicaceae	*Populus fremontii**	Fremont cottonwood	Native
Sapindaceae	*Acer buergerianum*	Trident maple	
	Acer palmatum	Japanese maple	
	Acer rubra	Red maple	
	Dodonaea viscosa	Florida hopbush	
	Koelreuteria elegans	Flamegold	
Saxifragaceae	*Bergenia crassifolia*	Leather bergenia	
Scrophulariaceae	*Buddleja davidii*	Butterfly bush	
Simaroubaceae	*Ailanthus altissima*	Tree-of-heaven	Moderate
Solanaceae	*Lycianthes rantonnetii*	Blue potatobush	
	*Solanum americanum**	American black nightshade	
Taxaceae	*Taxus baccata*	English yew	
Theaceae	*Camellia japonica*	Japanese camellia	
	Camellia sasanqua	Sasanqua camellia	
Ulmaceae	*Ulmus americana*	American elm	
	Ulmus parvifolia	Chinese elm	
Valerianaceae	*Centranthus ruber*	Red valerian	
Verbenaceae	*Lantana montevidensis*	Trailing lantana	
	Lantana camara	Lantana	
	*Phyla nodiflora**	Common lippia	
Viburnaceae	*Sambucus nigra**	Elderberry	
	Viburnum opulus	European cranberrybush	
Violaceae	*Viola* x *wittrockiana*	Pansy	
Zygophyllaceae	*Tribulus terrestris*	Puncturevine	Limited

[1] Cal-IPC status (Cal-IPC 2022):

Limited - These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score.

Moderate - These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure.

High - These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

*Native species

Appendix B. Special-Status Plants Considered but Rejected for Occurrence on the Project Site

Scientific Name	**Common Name**	**No Suitable Habitat**	**Edaphic Conditions Absent**	**Outside the Elevation Range**	**Extirpated from Project Vicinity**
Acanthomintha duttonii	San Mateo thorn-mint	x		x	
Allium peninsulare var. *franciscanum*	Franciscan onion	x		x	
Amsinckia lunaris	bent-flowered fiddleneck	x			
Androsace elongata ssp. *acuta*	California androsace	x		x	
Arctostaphylos andersonii	Anderson’s manzanita	x	x	x	X
Arctostaphylos regismontana	King’s Mountain manzanita	x	x	x	x
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	x	x		x
Astragalus tener var. *tener*	alkali milk-vetch	x	x		x
Calandrinia breweri	Brewer's calandrinia	x	x		
Calochortus umbellatus	Oakland star-tulip	x		x	x
Calochortus uniflorus	pink star-tulip	x			x
Castilleja ambigua var. *ambigua*	johnny-nip	x	x		x
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	x			
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	x	x	x	x
Cirsium fontinale var. *fontinale*	fountain thistle	x		x	
Cirsium praeteriens	lost thistle	x			
Clarkia concinna ssp. *automixa*	Santa Clara red ribbons	x		x	x
Collinsia corymbosa	round-headed Chinese-houses	x	x		
Collinsia multicolor	San Francisco collinsia	x	x	x	
Cypripedium fasciculatum	clustered lady’s-slipper	x	x	x	x
Cypripedium montanum	mountain lady’s slipper	x	x	x	x
Dirca occidentalis	western leatherwood	x		x	
Elymus californicus	California bottle-brush grass	x			x
Eriophyllum latilobum	San Mateo wooly sunflower	x	x	x	x
Eryngium aristulatum var. *hooveri*	Hoover's button-celery	x			
Eryngium jepsonii	Jepson’s coyote-thistle	x	x		

Scientific Name	**Common Name**	**No Suitable Habitat**	**Edaphic Conditions Absent**	**Outside the Elevation Range**	**Extirpated from Project Vicinity**
Erysimum franciscanum	San Francisco wallflower	x			x
Extriplex joaquinana	San Joaquin spearscale	x	x		x
Fissidens pauperculus	minute pocket moss	x	x		x
Fritillaria biflora var. ineziana	Hillsborough chocolate lily	x	x	x	x
Fritillaria liliacea	fragrant fritillary	x			
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	x	x		x
Hesperolinon congestum	Marin western flax	x	x		
Hoita strobilina	Loma Prieta hoita	x		x	x
Hosackia gracilis	harlequin lotus	x			x
Iris longipetala	coast iris	x	x		
Lasthenia conjugens	Contra Costa goldfields	x	x		x
Legenere limosa	legenere	x	x		x
Leptosiphon ambiguus	serpentine leptosiphon	x	x	x	
Leptosiphon aureus	bristly leptosiphon	x		x	x
Leptosiphon grandiflorus	large-flowered leptosiphon	x	x		x
Leptosiphon latisectus	Broad-lobed leptosiphon	x		x	
Lessingia arachnoidea	Crystal Springs lessingia	x	x	x	x
Lessingia hololeuca	woolly-headed lessingia	x	x		x
Lessingia tenuis	spring lessingia	x	x	x	
Malacothamnus arcuatus	arcuate bush-mallow	x			
Monolopia gracilens	woodland woolythreads	x	x	x	
Pedicularis dudleyi	Dudley’s lousewort	x		x	x
Pentachaeta bellidiflora	white-rayed pentachaeta	x		x	x
Perideridia gairdneri ssp. *gairdneri*	Gairdner’s yampah	x	x		x
Piperia candida	white-flowered rein orchid	x	x	x	x
Piperia michaelii	Michael's rein orchid	x			
Plagiobothrys chorisianus var. chorisianus	Choris’ popcornflower	x	x		
Plagiobothrys chorisianus var. *hickmanii*	Hickman's popcornflower	x	x		
Plagiobothrys glaber	hairless popcornflower	x	x		x
Ranunculus lobbii	Lobb’s aquatic buttercup	x	x		x

Scientific Name	**Common Name**	**No Suitable Habitat**	**Edaphic Conditions Absent**	**Outside the Elevation Range**	**Extirpated from Project Vicinity**
Sagittaria sanfordii	Sanford’s arrowhead	x	x		
Sanicula hoffmannii	Hoffman’s sanicle	x	x	x	x
Senecio aphanactis	chaparral ragwort	x	x		x
Silene verecunda ssp. *verecunda*	San Francisco campion	x	x	x	x
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	x	x		x
Stuckenia filiformis ssp. *alpina*	northern slender pondweed	x	x	x	
Suaeda californica	California seablite	x	x	x	x
Trifolium amoenum	two-fork clover	x			
Trifolium buckwestiorum	Santa Cruz clover	x		x	x
Trifolium hydrophilum	saline clover	x	x		x
Triphysaria floribunda	San Francisco owl’s-clover	x	x		x
Usnea longissima	Methuselah’s beard lichen	x	x	x	x

Appendix 3.11-1

Preliminary Geotechnical Report

CORNERSTONE
EARTH GROUP

TYPE OF SERVICES Preliminary Geotechnical Investigation

PROJECT NAME Parkline Mixed-Use Development

LOCATION 333 Ravenswood Avenue
Menlo Park, California

CLIENT Lane Partners

PROJECT NUMBER 129-7-1

DATE February 16, 2021 (revised April 27, 2023)

CORNERSTONE
EARTH GROUP

Type of Services	**Preliminary Geotechnical Investigation**
Project Name	**Parkline Mixed-Use Development**
Location	**333 Ravenswood Avenue** **Menlo Park, California**
Client	**Lane Partners**
Client Address	**644 Menlo Avenue, Suite 204** **Menlo Park, California**
Project Number	**129-7-1**
Date	**February 16, 2021 (revised April 27, 2023)**

Diana Lin

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TABLE OF CONTENTS

Type of Services	**Preliminary Geotechnical Investigation**
Project Name	**Parkline Mixed-Use Development**
Location	**333 Ravenswood Avenue** **Menlo Park, California**

SECTION 1: INTRODUCTION

This preliminary geotechnical investigation was prepared for the sole use of Lane Partners for the Parkline Mixed-Use Development in Menlo Park, California. The purpose of this study was to evaluate the existing subsurface conditions and develop an opinion regarding potential geotechnical concerns that could impact the proposed development. The preliminary geotechnical recommendations contained in this report are for your forward planning, cost estimating, and preliminary project design. For our use, we were provided with the following documents:

- A set of conceptual plans untitled prepared by Studios Architecture dated April 17, 2023.
- A set of architectural control package titled “Parkline, Menlo Park, CA, Architectural Control Package Vol. 1_Non-Residential” prepared by Studios Architecture dated October 31, 2022.
- A set of architectural control package titled “Parkline, Menlo Park, CA, Architectural Control Package Vol. 2_Residential” prepared by Studios Architecture dated October 31, 2022.
- A set of development plans titled “Parkline Master Plan, Menlo Park, CA, Master Plan Conditional Development Permit Package” prepared by Studios Architecture dated October 31, 2022.
- A conceptual site plan titled “SRI Site Plan – Option 1 – Phase 1” prepared by DES Architects engineers, dated August 26, 2020.
- A conceptual site plan titled “SRI Site Plan – Option 2” prepared by DES Architects engineers, dated August 26, 2020.
- A set of boundary survey maps titled “Boundary Survey with Topographic Information, SRI International” prepared by BKF, dated December 22, 2014.

- A utility plan titled “SRI International, Site Utility Plan”, prepared by Kier & Wright, dated December 1998.

- A geotechnical report titled “Results of limited geotechnical investigation, Substation Switchgear Replacement Project SRI Campus” prepared by Cleary Consultants, Inc. dated October 14, 2014.

- A geotechnical report titled “Additional Borings (5) for Cooling Tower Foundations, New Cooling Tower, SRI International” prepared by Cleary Consultants, Inc. dated June 13, 2012.

- A geotechnical report titled “Results of Limited Geotechnical Investigation, New Chiller Plant Upgrade Project, SRI International” prepared by Cleary Consultants, Inc. dated May 31, 2012.

- A geotechnical report titled “Geotechnical Report, SRI Building “T” Expansion” prepared by Donald E. Banta & Associates, Inc. dated December 8, 2004.

As you know, we recently performed a geotechnical investigation for SRI’s separately proposed utility plant near the existing Building U, the results of which were presented in our report to SRI dated April 10, 2023. Exploration logs from this investigation are also included in this report as the boring logs may be relevant to the Parkline project given the shared characteristics within the project site.

1.1 PROJECT DESCRIPTION

The project site is located at 333 Ravenswood Avenue in Menlo Park, California. The site is currently occupied by the existing SRI facility, which includes various one- and two-story buildings surrounded by at-grade parking, streets, and landscaping. We understand that a mixed-use redevelopment is currently planned for the site.

Based on the updated conceptual plans prepared by STUDIO Architecture dated April 17th, 2023, the new planned development will consist of five office/R&D buildings ranging from four to five stories. Office/R&D Buildings 1 and 5 will also include one-level of below grade parking while office/R&D Buildings 2 to 4 will be at-grade. The office buildings will likely be of steel-frame construction. The development will also include an at-grade two-story amenity building likely of wood- or steel-frame construction, and three three-story, at grade parking garages likely of concrete construction. In addition to new office and parking structures, the western portion of the site will also consist of several new residential buildings.

The residential developments will consist of three, four- to six-story above-grade apartment buildings with one-level of below-grade parking with concrete podium-type construction. In addition, an additional 100 residential units that would be developed in the future by an affordable housing developer on an approximately 1-acre area within the Residential District. The residential area may also include two-story, at-grade townhome buildings likely of wood-frame construction. The new developments will also include various at-grade passive and active recreational amenities, such as a children's playground, event pavilion, and turf sports fields. Appurtenant surface parking, utilities, landscaping and other improvements necessary for site development are also planned.

Structural loads are not currently known for the proposed structures; however, structural loads are expected to be typical of similar type structures.

1.1.1 Project Variants

The environmental analysis for the project will include evaluation of two project variants: (1) Increased Residential Variant and (2) Emergency Reservoir Variant. Variants are variations of a project that would be located at the same project site, with the same project objectives, background, and development controls, but with additions and changes to the project, the inclusion of which may or may not change environmental impacts. The project variants are described below. This report is intended to address the project and both variants.

1.1.2 Increased Residential Variant

This variant would increase the number of on-site residential units from 550 units (inclusive of up to 100 units that would be developed by the affordable housing developer) up to 800 units.

Under the Increased Residential Variant, the residential developments would include five multi-family buildings, with the at-grade townhome buildings replaced with a new multifamily building in that same location. Under the Increased Residential Variant, the proposed building heights along Laurel Street and Ravenswood Avenue would increase to four, all six-story above-grade multifamily buildings, including a new six story above-grade apartment building (Residential Building 5) that would replace the two-story townhome residential units included in the proposed project. As with the proposed project, this Increased Residential Variant will include one-level of below-grade parking under three of the four multifamily residential buildings with concrete podium-type construction. The underground parking locations would remain the same as the base project except that the underground parking under Residential Buildings 1, 2 and 3 would increase to accommodate the increased footprint of those buildings. The Office/R&D buildings and parking improvements would remain the same as the base project.

1.1.3 Emergency Reservoir Variant

This variant would add an approximately 2-million-gallon underground water reservoir and associated aboveground facilities to the Project to be implemented by the City at a later date based on its 2018 Water System Master Plan. The anticipated dimension of the underground reservoir is 40-feet deep by 110-feet in diameter. The emergency reservoir would be located in the northeastern corner of the Project site below the proposed recreational field and would be leased to the City for construction and operation. A generator may be required, as to be determined by the City, at the pump station for the Emergency Reservoir Variant. All other site plan details remain the same as the Increased Residential Variant.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated December 7, 2020 and consisted of reviewing prior geotechnical reports prepared for the facility, a field investigation program to evaluate physical and engineering properties of the subsurface soils, engineering analysis to prepare preliminary recommendations for site work and grading, building foundations, and preparation of this report. Brief descriptions of our exploration and laboratory programs are presented below.

1.3 EXPLORATION PROGRAM

Field exploration consisted of six Cone Penetration Tests (CPTs) advanced on January 14, 2021. The CPTs were advanced to depths of 50 to 100 feet. Seismic shear wave velocity measurements were collected from CPT-1 and CPT-3. The CPTs were backfilled with cement grout in accordance with local requirements; exploration permits were obtained as required by local jurisdictions. Four additional borings were performed on March 21, 2023, for the planned Building U utility plan improvements. The borings were drilled with truck-mounted hollow stem auger equipment to depths of approximately 10 to 25 feet.

The approximate locations of our explorations, as well as the locations of prior explorations, are shown on the Site Plan, Figure 2. Details regarding our field program are included in Appendix A.

1.4 PRIOR SITE EXPLORATION

As part of our study, we also reviewed subsurface data from explorations performed between 2004 and 2014. The approximate locations of these prior exploratory borings are also shown on the Site Plan, Figure 2.

1.5 ENVIRONMENTAL SERVICES

Environmental services were not requested for this project. If environmental concerns are determined to be present during future evaluations, the project environmental consultant should review our geotechnical recommendations for compatibility with the environmental concerns.

SECTION 2: REGIONAL SETTING

2.1 GEOLOGICAL SETTING

The relatively flat-lying plain along the western edge of the San Francisco Bay is bounded by the Santa Cruz Mountains on the west and the San Francisco Bay to the east. The Coast Ranges geomorphic province of California that stretches from the Oregon border nearly to Point Conception. In the San Francisco Bay area, most of the Coast Ranges have developed on a basement of tectonically mixed Cretaceous- and Jurassic-age (70- to 200-million years old) rocks of the Franciscan Complex. Younger sedimentary and volcanic units locally cap these basement rocks. Still younger surficial deposits that reflect geologic conditions of the last million years or so cover most of the Coast Ranges.

Movement on the many splays of the San Andreas Fault system has produced the dominant northwest-oriented structural and topographic trend seen throughout the Coast Ranges today. This trend reflects the boundary between two of the Earth's major tectonic plates: the North American plate to the east and the Pacific plate to the west. The San Andreas Fault system is about 40 miles wide in the Bay area and extends from the San Gregorio Fault near the coastline to the Coast Ranges-Central Valley blind thrust at the western edge of the Great Central Valley. The San Andreas Fault is the dominant structure in the system, nearly spanning the length of California, and capable of producing the highest magnitude earthquakes. Many other subparallel or branch faults within the San Andreas system are equally active and nearly as capable of generating large earthquakes. Right-lateral movement dominates on these faults but an increasingly large amount of thrust faulting resulting from compression across the system is now being identified also.

The site is located on the flatlands surrounding San Francisco Bay about 1.5 miles south of the present tidal flats and 2.7 miles northeast of the base of the peninsula portion of the Santa Cruz Mountains. Several types of alluvium blanket this land between the Bay and the foothills. The regional geologic units mapped at the site generally consist of Pleistocene-age alluvial sediments (Pampeyan, 1993).

2.2 REGIONAL SEISMICITY

The San Francisco Bay area is one of the most seismically active areas in the country. While seismologists cannot predict earthquake events, geologists from the U.S. Geological Survey have recently updated earlier estimates from their 2014 Uniform California Earthquake Rupture Forecast (Version 3) publication. The estimated probability of one or more magnitude 6.7 earthquakes (the size of the destructive 1994 Northridge earthquake) expected to occur somewhere in the San Francisco Bay Area has been revised (increased) to 72 percent for the period 2014 to 2043 (Aagaard et al., 2016). The faults in the region with the highest estimated probability of generating damaging earthquakes between 2014 and 2043 are the Hayward (33%), Calaveras (26%), and San Andreas Faults (22%). In this 30-year period, the probability of an earthquake of magnitude 6.7 or larger occurring is 22 percent along the San Andreas Fault and 33 percent for the Hayward Fault.

Faults considered capable of generating significant earthquakes are generally associated with the well-defined areas of crustal movement, which trend northwesterly. Table 1 presents the State-considered active faults within a 25-kilometer (about 15 mile) radius of the project.

Table 1: Approximate Fault Distances

Fault Name	Distance	
	(miles)	(kilometers)
Monte Vista-Shannon	3.5	5.6
San Andreas (1906)	5.2	8.3
Hayward (Total Length)	13.5	21.7
Hayward (Southeast Extension)	15.0	24.1
San Gregorio	15.3	24.7

A regional fault map is presented as Figure 3, illustrating the relative distances of the site to significant fault zones.

SECTION 3: SITE CONDITIONS

3.1 SURFACE DESCRIPTION

The approximately 63.2-acre site is located at 333 Ravenswood Avenue in Menlo Park. The site is bounded by existing residential and commercial development to the east, Laurel Street to the south, Ravenswood Avenue to the west, and existing commercial development and Middlefield Road to the north. The facility has over 30 existing buildings ranging from one to two stories in height and consisting of wood, concrete and steel-frame buildings. The buildings are supported by a cogeneration plant, various chiller equipment, electrical substations and other mechanical equipment yards. In general, the buildings are surrounded by existing mature trees and landscaping, as well as asphalt concrete-paved parking lots, streets, and concrete walkways and courtyards.

Detailed topographic information was not available at this time; however, the relatively flat site ranges from approximately Elevation 66 to 68 feet along the south edge of the site to approximately Elevation 55 to 58 feet along the northern end of the site (Google Earth datum). The surface pavement thicknesses were not measured at our exploration locations; however, based on our review of prior borings by others, we estimate that it generally consists of 3 to 6 inches of asphalt concrete over 0 to 8 inches of aggregate base. Based on visual observations, the existing pavements near our explorations are in fair to poor condition with various amounts of asphalt cracking or prior patch overlays.

3.2 SUBSURFACE CONDITIONS

Based on our review of prior subsurface data collected at the site and interpretation of our Cone Penetration Test (CPT) soundings, the site is generally underlain by deep alluvial soils consisting of stiff to very stiff clays and silts interbedded with occasional layers of medium dense to dense sands to the maximum depth explored of 100 feet. The thickness of interbedded sand layers varied significantly in our CPTs. In CPT-1 through CPT-5, an upper layer of sand or gravelly sand was encountered at a depth of approximately 10 to 13 feet and was roughly 10 to

20 feet thick. Below a depth of 30 feet, the interbedded sand layers appeared discontinuous and ranged from approximately 1 to 3 feet thick. The upper sand layer was not encountered at CPT-6, which is consistent with shallow borings drilled between 2004 and 2012 near Buildings T and Building W, respectively.

As stated above, we recently performed supplemental exploratory borings near Building U. Below the surface pavement sections, our explorations EB-1 and EB-2 generally encountered undocumented fill consisting of sandy lean clay down to a depth of 1½ feet below existing grades. Below the undocumented fills, Boring EB-1 encountered sandy lean clay down to 18 feet, underlain by medium dense clayey sand down to the terminal boring depth of 20 feet. Boring EB-2 encountered very stiff to stiff lean clays to the maximum depth explored of 25 feet. Exploratory Borings EB-3 and EB-4, performed near Building P, encountered approximately 2 to 2½ feet of undocumented fill consisting of disturbed clayey and clayey sand. Below the undocumented fill, Boring EB-3 encountered very stiff lean clay to the terminal boring depth of 10 feet. Below the fill, Boring EB-4 encountered very stiff lean clay to a depth of 7 feet, underlain by medium dense clayey sand with variable amounts of silt and clay fines to the terminal boring depth of 10 feet.

Additionally, our review of limited prior borings by others drilled between 2004 and 2014 also indicated occasional thin undocumented fills were encountered below the ground surface. Where encountered, the fills were recorded to be roughly 1- to 4-feet-thick and consist of loose to medium dense sands or gravels and some stiff clays with varying descriptions of organics at the surface (likely landscaping topsoil or mulch). A localized interbedded layer of brick debris was encountered in prior boring CC-B-1 drilled at a chiller pad/cooling tower near Building W (Cleary Consultants, 2012) at a depth of about 2 to 4 feet. Considering the prior site history and usage ranging from the 1940s to present, as well as various generations of older and recent buildings, and our experience with similar sites, we anticipate that localized undocumented fills may be present at the site in both developed and undeveloped areas that may range from a few to several feet thick.

Prior and recent borings also indicated the surficial clayey soils exhibit moderate plasticity and expansion potential, with a Plasticity Index (PI) ranging from approximately 16 to 26.

3.3 GROUNDWATER

Groundwater was not encountered in our recent explorations, but groundwater was inferred from our CPTs during pore pressure dissipation tests at depths of approximately 29 and 49 feet below current grades. All measurements were taken at the time of exploration and may not represent the stabilized levels that can be higher than the initial levels encountered. Our review of prior borings drilled by others between 2004 and 2014 indicates most borings were only drilled to depths of 10 to 20 feet and groundwater was not encountered. One prior boring drilled in 2004 encountered groundwater at a depth of approximately 31½ feet (Donald A. Banta Associates, 2004). Based on our review of CGS maps, the historic high groundwater is mapped at a depth of approximately 25 feet below current site grades (CGS, Palo Alto 7.5-Minute Quadrangle, 2006).

On a preliminary basis, we used a design groundwater depth of 25 feet for our liquefaction analysis. Fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT RUPTURE

As discussed above several significant faults are located within 25 kilometers of the site. The site is not located within a State-designated Alquist Priolo Earthquake Fault Zone. As shown in Figure 3, no known surface expression of fault traces is thought to cross the site; therefore, fault rupture hazard is not a significant geologic hazard at the site.

4.2 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. A site modified peak ground acceleration (PGA_M) was determined in accordance with Section 21.5 of ASCE 7-16. Therefore, we recommend a site-specific MCE_G peak ground acceleration, $PGA_{M,}$ of 0.76g for this project.

4.3 LIQUEFACTION POTENTIAL

The site lies just outside a County- and State-designated Liquefaction Hazard Zone (CGS, Palo Alto Quadrangle, 2006); however, the site is mapped by the USGS as being within a zone considered to have a moderate potential for liquefaction. Our field and laboratory programs addressed this issue by sampling potentially liquefiable layers to depths of at least 50 feet and evaluating CPT correlations.

4.3.1 Background

During strong seismic shaking, cyclically induced stresses can cause increased pore pressures within the soil matrix that can result in liquefaction triggering, soil softening due to shear stress loss, potentially significant ground deformation due to settlement within sandy liquefiable layers as pore pressures dissipate, and/or flow failures in sloping ground or where open faces are present (lateral spreading) (NCEER 1998). Limited field and laboratory data is available regarding ground deformation due to settlement; however, in clean sand layers settlement on the order of 2 to 3 percent of the liquefied layer thickness can occur. Soils most susceptible to liquefaction are loose, non-cohesive soils that are saturated and are bedded with poor drainage, such as sand and silt layers bedded with a cohesive cap.

4.3.2 Analysis

As discussed in the “Subsurface” section above, several sand layers were encountered below the design groundwater depth of 25 feet. Following the procedures in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008) and in accordance with CDMG Special Publication 117A guidelines (CDMG, 2008) for quantitative analysis, these layers were analyzed for liquefaction triggering and potential post-liquefaction settlement. These methods compare the ratio of the estimated cyclic shaking (Cyclic Stress Ratio - CSR) to the soil's estimated resistance to cyclic shaking (Cyclic Resistance Ratio - CRR), providing a factor of safety against liquefaction triggering. Factors of safety less than or equal to 1.3 are considered to be potentially liquefiable and capable of post-liquefaction re-consolidation.

The CSR for each layer quantifies the stresses anticipated to be generated due to a design-level seismic event, is based on the peak horizontal acceleration generated at the ground surface discussed in the "Estimated Ground Shaking" section above and is corrected for overburden and stress reduction factors as discussed in the procedure developed by Seed and Idriss (1971) and updated in the 2008 Idriss and Boulanger monograph.

The soil's CRR is estimated from the in-situ measurements from CPTs and laboratory testing on samples retrieved from our borings. SPT "N" values obtained from hollow-stem auger borings were not used in our analyses, as the "N" values obtained are unreliable in sands below groundwater. The tip pressures are corrected for effective overburden stresses, taking into consideration both the groundwater level at the time of exploration and the design groundwater level, and stress reduction versus depth factors. The CPT method utilizes the soil behavior type index (I_C) to estimate the plasticity of the layers.

4.3.3 Summary

Our analyses indicate that several layers could potentially experience liquefaction triggering that could result in soil softening and post-liquefaction total settlement ranging from ¼ to ½ inch based on the Yoshimine (1990) method. As discussed in SP 117A, differential movement for level ground sites over deep soil sites will be up to about two-thirds of the total settlement between independent foundation elements. In our opinion, differential settlements are anticipated to be on the order of ¼ inch or less over a horizontal distance of 50 feet.

4.3.4 Ground Deformation and Surficial Cracking Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground deformation or sand boils. For ground deformation to occur, the pore water pressure within the liquefiable soil layer will need to be great enough to break through the overlying non-liquefiable layer, which could cause significant ground deformation and settlement. The work of Youd and Garris (1995) indicates that the 25-foot-thick layer of non-liquefiable cap is sufficient to prevent ground deformation and significant surficial cracking; therefore, the above total settlement estimates are reasonable.

4.4 LATERAL SPREADING

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. As failure tends to propagate as block failures, it is difficult to analyze and estimate where the first tension crack will form.

There are no open faces within 200 feet of the site where lateral spreading could occur; therefore, in our opinion, the potential for lateral spreading to affect the site is low.

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

Loose unsaturated sandy soils can settle during strong seismic shaking. We evaluated the potential for seismic compaction of dry sand above the groundwater level based on the work by Pradell (1998). Our analyses indicate that the seismic settlement of unsaturated sands above the groundwater table could potentially range from approximately ¼ to ½ inch.

4.6 TSUNAMI/SEICHE

The terms tsunami or seiche are described as ocean waves or similar waves usually created by undersea fault movement or by a coastal or submerged landslide. Tsunamis may be generated at great distance from shore (far field events) or nearby (near field events). Waves are formed, as the displaced water moves to regain equilibrium, and radiates across the open water, similar to ripples from a rock being thrown into a pond. When the waveform reaches the coastline, it quickly raises the water level, with water velocities as high as 15 to 20 knots. The water mass, as well as vessels, vehicles, or other objects in its path create tremendous forces as they impact coastal structures.

Tsunamis have affected the coastline along the Pacific Northwest during historic times. The Fort Point tide gauge in San Francisco recorded approximately 21 tsunamis between 1854 and 1964. The 1964 Alaska earthquake generated a recorded wave height of 7.4 feet and drowned eleven people in Crescent City, California. More recently the Santa Cruz harbor was damaged by the Tsunami that followed the 8.9 magnitude Japanese earthquake of March 11, 2011. For the case of a far-field event, the Bay area would have hours of warning; for a near field event, there may be only a few minutes of warning, if any.

A tsunami or seiche originating in the Pacific Ocean would lose much of its energy passing through San Francisco Bay. Based on the study of tsunami inundation potential for the San Francisco Bay Area (Ritter and Dupre, 1972), areas most likely to be inundated are marshlands, tidal flats, and former bay margin lands that are now artificially filled, but are still at or below sea level, and are generally within 3 miles of the shoreline. The site is approximately 1 mile inland from the San Francisco Bay shoreline and is approximately 61 to 67 feet above mean sea level. Therefore, the potential for inundation due to tsunami or seiche is considered low.

4.7 FLOODING

Based on our internet search of the Federal Emergency Management Agency (FEMA) flood map public database, the site is located within Zone X, an area determined to be outside the 0.2% annual chance floodplain. We recommend the project civil engineer be retained to confirm this information and verify the base flood elevation, if appropriate.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

From a geotechnical viewpoint, the project, including both project variants, is feasible provided the concerns listed below are addressed in the project design. The preliminary recommendations that follow are intended for conceptual planning and preliminary design. A design-level geotechnical investigation should be performed once site development plans are prepared indicating where proposed structures are planned. The design-level investigation findings will be used to confirm the preliminary recommendations and develop detailed recommendations for design and construction. Descriptions of each geotechnical concern with brief outlines of our preliminary recommendations follow the listed concerns.

- Potential for seismically-induced settlement
- Potential for localized undocumented fills
- Presence of moderately expansive soils
- Redevelopment considerations
- Basement and water tank excavation considerations
- Shallow groundwater

5.1.1 Potential for Seismically-Induced Settlements

As discussed, our analysis indicates that there is a potential for liquefaction of localized saturated sand layers during a significant seismic event. Although the potential for liquefied sands to vent to the ground surface through cracks in the surficial soils is low, our analysis indicates that liquefaction-induced settlement on the order of ¼ to ½ inch could occur, resulting in differential settlement up to ¼ inch. In addition, discontinuous layers of loose sand encountered above the design groundwater level could also contribute to seismic settlement during seismic activity. Our analysis indicates up to ½ inch of dry sand settlement could occur locally at the site.

On a preliminary basis, multi-family residential structures can likely be supported on shallow foundations consisting of either conventional footings or a mat foundation. Office/R&D facilities, including those that will have underground parking, can also be supported on shallow foundations provided static and seismic settlement can be tolerated. For the planned emergency water reservoir variant, the planned excavation will remove existing soils to a depth of approximately 40 feet; therefore, we estimate that seismically induced settlement beneath the emergency water reservoir variant will likely be negligible. Supplemental exploration and analysis further evaluating potential seismic settlement will be performed during the design-level investigation. Supplemental exploration would likely include additional borings or Cone Penetration Test (CPT) soundings within future building and water reservoir footprints.

5.1.2 Presence of Localized Undocumented Fills

Prior exploration at the facility encountered localized undocumented fills up to 4 feet thick. Although these prior explorations were limited to relatively small areas, our experience with similar previously developed sites indicates that undocumented fills will likely be encountered in future building areas that may be associated with existing or abandoned utility trench backfill, old building pad fill, or other buried improvements that have since been demolished. Buildings with future underground parking would likely mitigate the presence of undocumented fills during the underground parking excavation. However, at-grade buildings would likely require existing fills to be over-excavated and re-compacted prior to new construction. The presence of undocumented fills should be further investigated during the design-level investigation.

5.1.3 Expansive Soils

Based on our review of laboratory data from prior explorations, moderately expansive surficial soils likely blanket the site. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wetted. To reduce the potential for damage to the planned structures, slabs-on-grade should have sufficient reinforcement and be supported on a layer of non-expansive fill; footings should extend below the zone of seasonal moisture fluctuation. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering.

5.1.4 Redevelopment Considerations

Based on our site observations, review of previous studies and review of historical aerial photography of the site, it is likely that remnants of prior building foundations or abandoned utilities will be encountered at the site in addition to the existing buildings, parking lots and sidewalks that currently occupy portions of the site. Potential issues that are often associated with redeveloping sites include demolition of existing improvements and foundations, discovery of unanticipated buried objects or debris, backfilling former depressed slab or sump areas, and abandonment of existing utilities. Careful coordination is usually required between the demolition and grading contractors to reduce the potential for deep excavations that are not properly backfilled or conflicts with future below-grade construction. Existing asphalt concrete, concrete slabs or foundations can usually be recycled by grinding or pulverizing on-site and re-using as aggregate base for parking lots or exterior flatwork.

5.1.5 Below-Grade Excavation and Shoring Considerations

For one level of underground parking, an approximately 12- to 15-foot-deep excavation will likely be required for a typical shallow foundation. As part of the emergency water reservoir variant, a 40-foot-deep reservoir may be planned near the northeast corner of the site. Any adjacent buildings, sidewalks, streets and utilities along the sides of future underground parking should be supported by temporary shoring until the permanent retaining walls have been constructed. The water reservoir excavation can either be supported by temporary shoring or temporary slopes excavated in accordance with OSHA guidelines. The primary considerations in selecting a suitable shoring system typically include 1) control of vertical and lateral ground surface or wall movements, 2) constructability, 3) dewatering and 4) cost. There are several possible methods of providing lateral support for the excavation, including a soldier pile and lagging retaining system, soldier pile tremie concrete (SPTC) walls or mixed-in-place soil/cement walls.

Shoring systems greater than 10-feet-deep would likely require tiebacks or internal bracing for lateral support. A soldier pile and lagging retaining system is more flexible and pervious than either an SPTC or mixed-in-place soil/cement wall; therefore, underground parking or reservoir excavations that extend near the groundwater level may require dewatering. The latter two types of walls would be relatively rigid and could significantly limit lateral deflections and ground movement related to the shoring. In addition, SPTC or mixed-in-place soil/cement walls are relatively impervious and would reduce the volume of water pumped to dewater an excavation deeper than 20 feet. The disadvantages of these systems are cost and space requirements, as they may require 2 to 3 feet around the perimeter of the site. A combination of these systems could be used depending on the performance desired along the various excavation faces. Where movements could be detrimental to adjacent existing buildings/improvements or it is not practical to install underpinning, the stiffer shoring systems could be used. The shoring system selected should be designed by a shoring designer or structural engineer experienced in the specific type of construction.

If the excavation extends below the level of an adjacent building foundation, lateral support should be provided to prevent loss of ground beneath existing slab-on-grade floors. Where adjacent foundations are above an imaginary 1:1 (horizontal to vertical) line extending up from the base of the excavation, they should be underpinned unless the shoring can be designed to provide lateral and/or vertical support for the structure. Additional considerations for potential future shoring systems include the following items:

- ✓ Soldier pile and lagging wall below the groundwater may experience difficulties with seepage and possible increased wall movement.
- ✓ Adjacent structures may need to be underpinned to protect from ground movement associated with the proposed shoring system. Slant piles will likely be an acceptable method to underpin adjacent structures, although other methods are available. Underpinning will likely need to extend into competent soil below the excavation level.
- ✓ The shoring will need to extend deep enough to reduce the potential for base heave, groundwater piping, and/or bearing failure.
- ✓ Internal bracing may be required in areas where tie-back encroachment is not feasible.
- ✓ The contractor should establish survey points on the shoring and on adjacent improvements within 25 feet of the excavation perimeter prior to the start of excavation. These survey points should be used to monitor the vertical and horizontal movements of the shoring and surrounding improvements during construction. In addition, a thorough crack survey of the adjacent buildings should be performed by the project surveyor prior to the start of construction and immediately after its completion.

5.1.6 Shallow Groundwater

Shallow groundwater was measured at depths ranging from approximately 29 to 49 feet below the existing ground surface. We anticipate that seasonal high groundwater exists at depths of approximately 25 feet below the existing ground surface. As discussed in Section 3, we recommend a design groundwater depth of 25 feet. Our experience with similar sites in the vicinity indicates that groundwater could affect grading and underground construction that extend below a depth of 25 feet. This could include potentially wet and unstable excavation subgrade and difficulty achieving compaction. The emergency water reservoir variant will need to be designed to resist hydrostatic pressures, especially when the tank is emptied for maintenance. Temporary dewatering will be required for the emergency water reservoir excavation, which would likely extend 10 to 15 feet below the design groundwater level. If the water reservoir variant is implemented, we recommend an observation well be installed prior to construction to measure seasonal changes in groundwater levels.

5.2 DESIGN-LEVEL GEOTECHNICAL INVESTIGATION

The preliminary recommendations contained in this report are based on limited site development information and limited exploration. As site conditions may vary significantly between the small-diameter explorations performed during this investigation, we also recommend that we be retained to 1) perform a design-level geotechnical investigation, once detailed site development plans are available; 2) to review the geotechnical aspects of the project structural, civil, and landscape plans and specifications, allowing sufficient time to provide the design team with any comments prior to issuing the plans for construction; and 3) be present to provide geotechnical observation and testing during earthwork and foundation construction.

SECTION 6: EARTHWORK

6.1 SITE DEMOLITION AND SITE PREPARATION

On a preliminary basis, we recommend all existing improvements not to be reused for the current development, including all foundations, flatwork, pavements, utilities, and other improvements should be demolished and removed from the site. If desired, asphalt and concrete demolition debris can likely be crushed and re-used as aggregate base or subbase material beneath new parking, street or flatwork areas.

Existing foundations are typically mat-slabs, shallow footings, or piers/piles. If slab or shallow footings are encountered, they should be completely removed. If drilled piers are encountered, they should be cut off at an elevation at least 60-inches below proposed footings or the final subgrade elevation, whichever is deeper. The remainder of the drilled pier could remain in place. Foundation elements to remain in place should be surveyed and superimposed on the proposed development plans to determine the potential for conflicts or detrimental impacts to the planned construction.

The site should be stripped of all surface vegetation, and surface and subsurface improvements to be removed within the proposed development area. Demolition of existing improvements is discussed in the prior paragraphs. Surface vegetation and topsoil should be stripped to a sufficient depth to remove all material greater than 3 percent organic content by weight.

6.2 UNDOCUMENTED FILL OVER-EXCAVATION

On a preliminary basis, any undocumented fills should be completely removed from within any future at-grade building areas and to a lateral distance of at least 5 feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater. Existing fills can likely be re-used as engineered fill provided the material is free of debris and organics. The presence of debris or organics will be further investigated during the design-level geotechnical investigation and through observation and testing during site grading.

6.3 BELOW-GRADE EXCAVATIONS

Below-grade excavations for underground parking or the emergency water reservoir variant may be constructed with temporary slopes in accordance with OSHA requirements where space allows. Otherwise, temporary shoring can be used to support the planned one-level underground parking and the below-grade emergency water reservoir variant, as discussed in the “Conclusions” section. The choice of shoring method should be left to the contractor’s judgment based on experience, economic considerations and adjacent improvements such as utilities, pavements, and foundation loads. Temporary shoring should support adjacent improvements without distress and should be the contractor’s responsibility. A pre-condition survey including photographs and installation of monitoring points for existing site improvements should be included in the contractor’s scope.

6.4 OTHER ANTICIPATED EARTHWORK MEASURES

Based on our preliminary investigation, on-site soils below the stripped layer appear to be suitable for use as general fill and should be placed in lifts and compacted in accordance with the “Compaction” notes below. Imported fill material for use as general fill should have a Plasticity Index of 15 or less and have at least 10 percent silt or clay fines to prevent sloughing or caving during construction. Existing asphalt and concrete materials can likely be pulverized and re-used as granular base material at the site; however, asphalt grindings should not be re-used beneath office/R&D or residential foundations. All fill as well as scarified surface soils in areas to receive fill or slabs-on-grade, and subgrade, and trench backfill, should be compacted to at least 90 percent relative compaction as determined by ASTM Test Designation D-1557, latest edition; and be at least 2 percent above optimum moisture. Aggregate materials should be compacted to at least 95 percent in pavement areas, and 90 percent in flatwork areas.

SECTION 7: FOUNDATIONS

7.1 SUMMARY OF RECOMMENDATIONS

On a preliminary basis, the proposed residential and office/R&D structures, as well as the emergency water reservoir variant, can likely be supported on a shallow foundation, such as conventional shallow footings or a mat foundation, designed to tolerate differential movement associated with potential seismic differential settlement, where applicable, and for new structural loads.

7.2 SEISMIC DESIGN CRITERIA

We assume that the project structural design will be based on the 2022 California Building Code (CBC), which provides criteria for the seismic design of buildings in Chapter 16. The "Seismic Coefficients" used to design buildings are established based on a series of tables and figures addressing different site factors, including the soil profile in the upper 100 feet below grade and mapped spectral acceleration parameters based on distance to the controlling seismic source/fault system. Based on our explorations and review of local geology, the site is underlain by deep alluvial soils with typical SPT "N" values between 15 and 50 blows per foot and an average shear wave velocity profile of approximately 944 feet per second. Therefore, we have classified the site as Soil Classification D (determined). The mapped spectral acceleration parameters S_S and S_1 were calculated using the web-based program *ATC Hazards by Locations,* located at http://hazards.atcouncil.org, based on the site coordinates presented below and the site classification. **The values below may be used for design if the Structural Engineer will be taking Exception 2 per Section 11.4.8 of ASCE 7-16**. If the structural engineer will not be taking this exception and a ground motion hazard analysis is desired or required to be performed per Chapter 20 and 21 of ASCE 7-16, this additional analysis can be performed during the design-level geotechnical investigation. The table below lists the various factors used to determine the seismic coefficients and other parameters.

Table 2: CBC Site Categorization and Site Coefficients

Classification/Coefficient	Design Value
Site Class	D
Site Latitude	37.456379°
Site Longitude	-122.177327°
0.2-second Period Mapped Spectral Acceleration, S_S	1.647g
1-second Period Mapped Spectral Acceleration, S_1	0.641g
Short-Period Site Coefficient – Fa	1.0
Long-Period Site Coefficient – Fv	Null*
0.2-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects - S_{MS}	1.647g
1-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects – S_{M1}	Null*
0.2-second Period, Design Earthquake Spectral Response Acceleration – S_{DS}	1.098g
1-second Period, Design Earthquake Spectral Response Acceleration – S_{D1}	Null*
Site Modified Peak Ground Acceleration – PGA_M	0.757g

*Values may be used for design only if the Structural Engineer is taking Exception 2 per Section 11.4.8 of ASCE 7-16.

7.3 SHALLOW FOUNDATIONS

7.3.1 Concrete Mat Foundations

The planned office/R&D and residential buildings under both the project and project variants can likely be supported on a mat foundation bearing on natural soil or engineered fill. In addition, the below-grade emergency water reservoir variant can also likely be supported on a mat foundation. Reinforced concrete mat foundations should be designed in accordance with the 2022 California Building Code. The proposed townhome structures can likely be supported on post-tensioned (PT) concrete mat foundations provided the mats can be also designed to be sufficiently rigid and be capable of tolerating static differential settlement. PT mats should be designed in accordance with the procedures developed by the Post-Tensioning Institute (latest edition).

On a preliminary basis, mats for office/R&D and residential podium structures, and emergency water reservoir variant under both the project and project variants can likely be designed for a maximum average allowable bearing pressure on the order of 750 to 1,500 psf for dead plus live loads; at column or wall loading, the maximum localized bearing pressure should be limited to 3,000 to 4,000 psf. The average allowable bearing pressure for smaller PT mats will likely be limited to 500 to 750 psf. When evaluating wind and seismic conditions, allowable bearing pressures may be increased by one-third. These pressures are net values; the weight of the mat may be neglected for the portion of the mat extending below grade. Top and bottom mats of reinforcing steel should be included as required to help span irregularities and differential settlement. If a below-grade mat foundation is used to support the emergency water reservoir variant below the design groundwater table, the mat would need to be designed to withstand the associated hydrostatic uplift pressures based on a preliminary design groundwater depth of approximately 25 feet below current site grades.

7.3.2 Mat Foundation Settlement

Mat foundation settlement estimates should be determined during the design-level geotechnical investigation. On preliminary basis, and provided undocumented fills are mitigated during site grading, we estimate that differential static settlements will be on the order of ½ to 1 inch or less across a typical mat foundation.

7.3.3 Conventional Footings

As an alternative to mat foundations, the planned residential and office/R&D structures under both the project and project variants can likely be supported on conventional shallow footings. We recommend that shallow footings not be used for the emergency water reservoir variant that is constructed below the design groundwater level. On a preliminary basis, footings should bear on natural, undisturbed soil or engineered fill, be at least 18 to 24 inches wide, and extend at least 18 to 30 inches below the lowest adjacent grade. Lowest adjacent grade is defined as the deeper of the following: 1) bottom of the adjacent interior slab-on-grade, or 2) finished exterior grade, excluding landscaping topsoil.

On a preliminary basis, footings can likely be designed based on an allowable bearing pressure on the order of 3,000 to 4,500 psf for combined dead plus live loads. Footing settlement estimates should also be determined during the design-level geotechnical investigation.

7.4 INTERIOR SLABS-ON-GRADE

Moderately expansive clay soils generally blanket the site; therefore, new interior slabs-on-grade used in conjunction with conventional footings will likely need to be underlain by at least 9 to 12 inches of non-expansive fill (NEF) to reduce the potential for slab damage due to soil heave.

SECTION 8: ASPHALT CONCRETE

The following preliminary asphalt concrete pavement recommendations tabulated below are based on the Procedure 608 of the Caltrans Highway Design Manual, estimated traffic indices for various pavement-loading conditions, and on an assumed design R-value of 5. The design R-value was chosen based on engineering judgment considering the variable surface conditions and moderately expansive clay soils.

Table 3: Asphalt Concrete Pavement Recommendations

Design Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base* (inches)	Total Pavement Section Thickness (inches)
4.5	2.5	9.5	12.0
5.0	3.0	10.0	13.0
5.5	3.0	12.0	15.0
6.0	3.5	12.5	16.0
6.5	4.0	14.0	18.0

*Caltrans Class 2 aggregate base; minimum R-value of 78

SECTION 9: LIMITATIONS

This report, an instrument of professional service, has been prepared for the sole use of Lane Partners specifically to support the design of the Parkline Mixed-Use Development project in Menlo Park, California. The opinions, conclusions, and preliminary recommendations presented in this report have been formulated in accordance with accepted geotechnical engineering practices that exist in Northern California at the time this report was prepared. No warranty, expressed or implied, is made or should be inferred.

Preliminary recommendations in this report are based upon the soil and groundwater conditions encountered during our limited subsurface exploration. Preparation of a design-level investigation is anticipated to provide additional information and refine the preliminary recommendations presented herein. If variations or unsuitable conditions are encountered during the construction phase, Cornerstone must be contacted to provide supplemental recommendations, as needed.

Lane Partners may have provided Cornerstone with plans, reports and other documents prepared by others. Lane Partners understands that Cornerstone reviewed and relied on the information presented in these documents and cannot be responsible for their accuracy.

Cornerstone prepared this report with the understanding that it is the responsibility of the owner or his representatives to see that the recommendations contained in this report are presented to other members of the design team and incorporated into the project plans and specifications, and that appropriate actions are taken to implement the geotechnical recommendations during construction.

Conclusions and recommendations presented in this report are valid as of the present time for the development as currently planned. Changes in the condition of the property or adjacent properties may occur with the passage of time, whether by natural processes or the acts of other persons. In addition, changes in applicable or appropriate standards may occur through legislation or the broadening of knowledge. Therefore, the conclusions and recommendations presented in this report may be invalidated, wholly or in part, by changes beyond Cornerstone's control. This report should be reviewed by Cornerstone after a period of three (3) years has elapsed from the date of this report. In addition, if the current project design is changed, then Cornerstone must review the proposed changes and provide supplemental recommendations, as needed.

An electronic transmission of this report may also have been issued. While Cornerstone has taken precautions to produce a complete and secure electronic transmission, please check the electronic transmission against the hard copy version for conformity.

Recommendations provided in this report are based on the assumption that Cornerstone will be retained to provide observation and testing services during construction to confirm that conditions are similar to that assumed for design, and to form an opinion as to whether the work has been performed in accordance with the project plans and specifications. If we are not retained for these services, Cornerstone cannot assume any responsibility for any potential claims that may arise during or after construction as a result of misuse or misinterpretation of Cornerstone's report by others. Furthermore, Cornerstone will cease to be the Geotechnical-Engineer-of-Record if we are not retained for these services.

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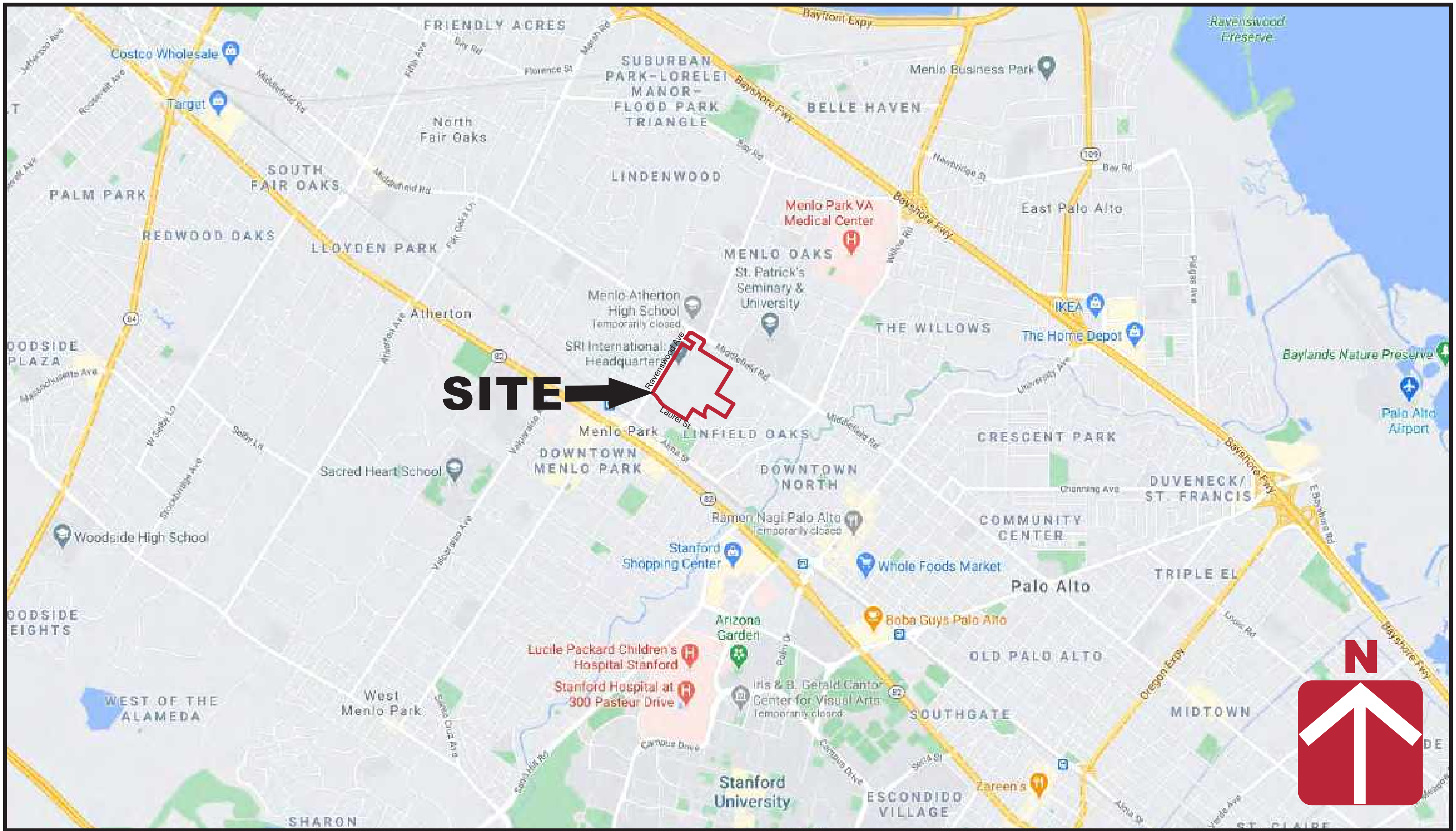


CORNERSTONE EARTH GROUP

Vicinity Map

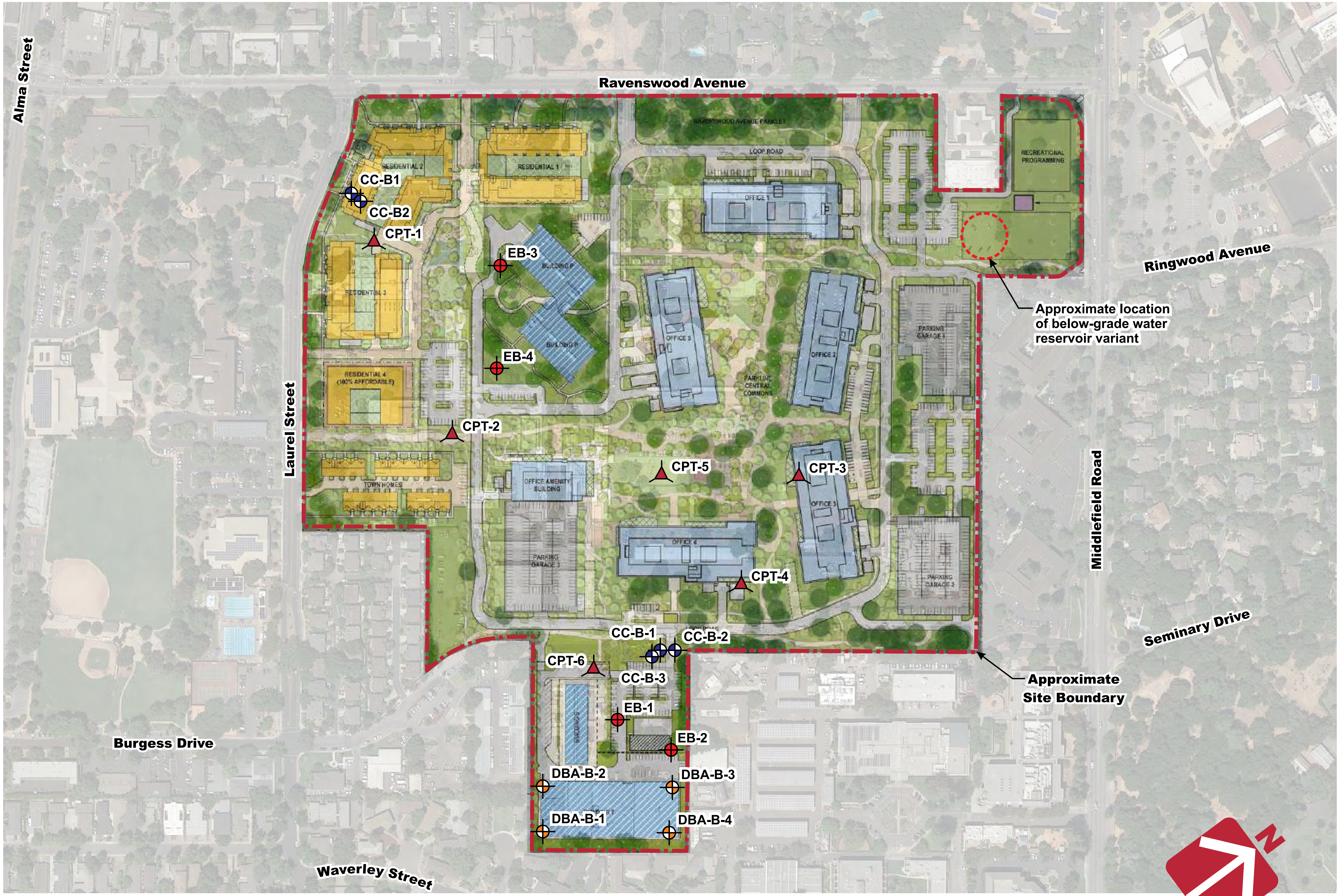
Parkline Mixed-Use Development
Menlo Park, CA

Project Number
129-7-1

Figure Number
Figure 1

Date January 2021

Drawn By RRN



Legend

Approximate location of exploratory boring (EB) (Cornerstone, 2023)	Approximate location of prior boring (CC-B) (Others)
Approximate location of cone penetration test (CPT) (Cornerstone, 2021)	Approximate location of prior boring (DBA-B) (Others)

Base by Google Earth, dated 08/09/2018
Overlay by Studios Architecture, Conceptual
Master Plan - G2.03, dated 04/19/2023

Project Number
129-7-1

Figure Number
Figure 2

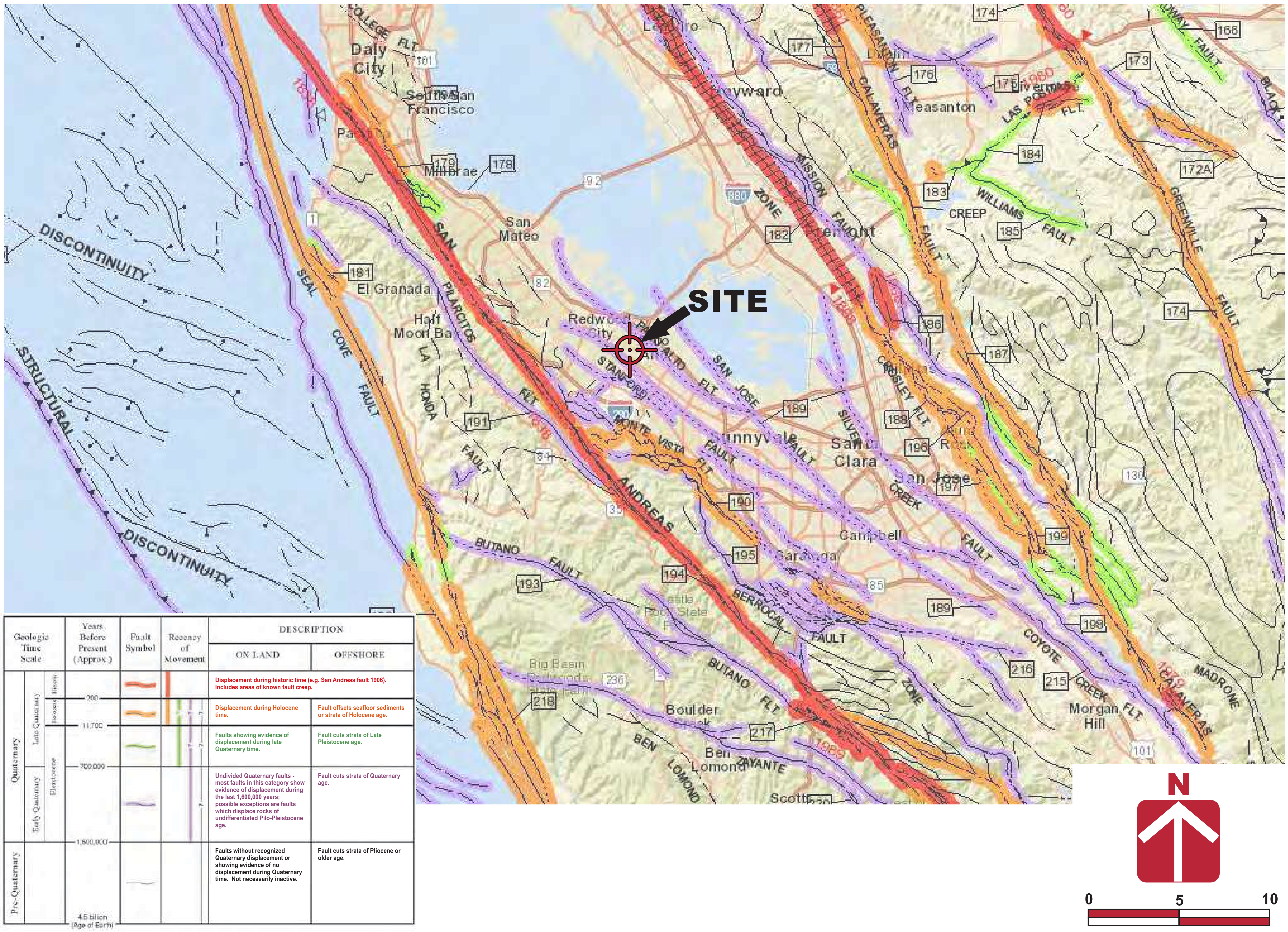
Drawn By
RRN

Date
April 2023

Site Plan

Parkline Mixed-Use Development
Menlo Park, CA

CORNERSTONE
EARTH GROUP



Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION	
						ON LAND	OFFSHORE
Quaternary	Late Quaternary	Historic	200	🟥		Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene	11,700	🟧		Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
		Pleistocene	700,000	🟩		Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
	Early Quaternary		1,600,000	🟪		Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Pilo-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary			4.5 billion (Age of Earth)	—		Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.

Base by California Geological Survey - 2010 Fault Activity Map of California (Jennings and Bryant, 2010)

Project Number
129-7-1

Figure Number
Figure 3

Date
January 2021

Drawn By
RRN

Regional Fault Map

Parkline Mixed-Use Development
Menlo Park, CA

CORNERSTONE
EARTH GROUP

APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a subsurface exploration program using a 20-ton truck-mounted Cone Penetration Test equipment. Six CPT soundings were also performed in accordance with ASTM D 5778-95 (revised, 2002) on January 15, 20201, to depths ranging from 50 to 100 feet. The approximate locations of the CPTs are shown on the Site Plan, Figure 2. Additionally, four supplemental 8-inch-diameter exploratory borings were drilled on March 21, 2023 to depths of 10 to 25 feet. The approximate locations of exploratory borings are shown on the Site Plan, Figure 2. The soils encountered were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D2488). Boring logs, as well as a key to the classification of the soil and bedrock, are included as part of this appendix.

CPT and boring locations were approximated using existing site boundaries, a hand held GPS unit, and other site features as references. The locations of the CPTs should be considered accurate only to the degree implied by the method used.

The CPT involved advancing an instrumented cone-tipped probe into the ground while simultaneously recording the resistance at the cone tip (q_c) and along the friction sleeve (f_s) at approximately 5-centimeter intervals. Based on the tip resistance and tip to sleeve ratio (R_f), the CPT classified the soil behavior type and estimated engineering properties of the soil, such as equivalent Standard Penetration Test (SPT) blow count, internal friction angle within sand layers, and undrained shear strength in silts and clays. A pressure transducer behind the tip of the CPT cone measured pore water pressure (u_2). Graphical logs of the CPT data is included as part of this appendix.

Representative soil samples were obtained from the borings at selected depths. All samples were returned to our laboratory for evaluation and appropriate testing. The standard penetration resistance blow counts were obtained by dropping a 140-pound hammer through a 30-inch free fall. The 2-inch O.D. split-spoon sampler was driven 18 inches and the number of blows was recorded for each 6 inches of penetration (ASTM D1586). 2.5-inch I.D. samples were obtained using a Modified California Sampler driven into the soil with the 140-pound hammer previously described. Unless otherwise indicated, the blows per foot recorded on the boring log represent the accumulated number of blows required to drive the last 12 inches. The various samplers are denoted at the appropriate depth on the boring logs.

Field tests included an evaluation of the unconfined compressive strength of the soil samples using a pocket penetrometer device. The results of these tests are presented on the individual boring logs at the appropriate sample depths.

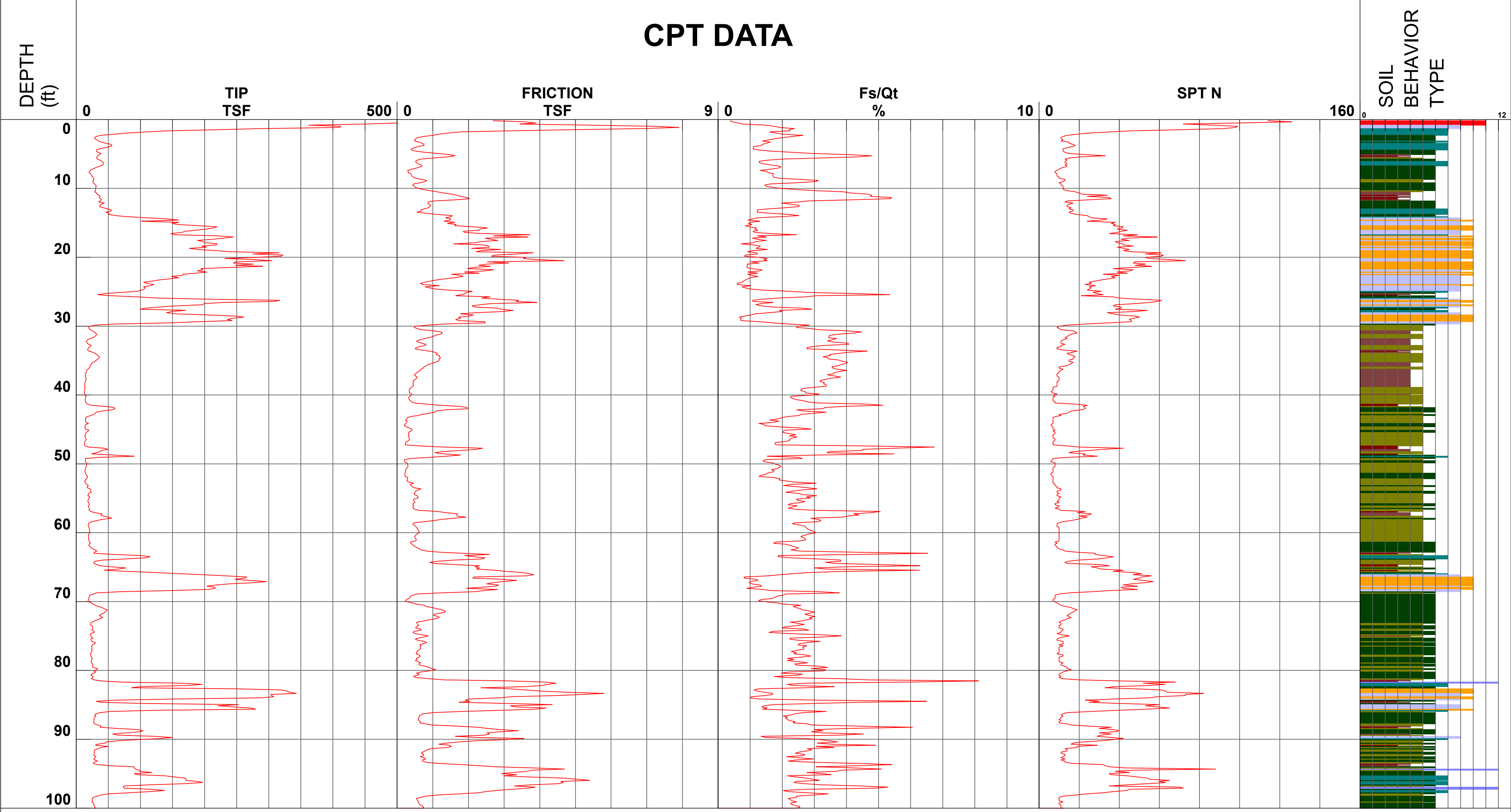
Attached CPT and boring logs and related information depict subsurface conditions at the locations indicated and on the date designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these boring locations. The passage of time may result in altered subsurface conditions due to environmental changes. In addition, any stratification lines on the logs represent the approximate boundary between soil types and the transition may be gradual.

Cornerstone Earth Group

Project	333 Ravenswood Ave	**Operator**	JM-ZG	**Filename**	SDF(492).cpt
Job Number	129-7-1	**Cone Number**	DPG1556	**GPS**	
Hole Number	CPT-01	**Date and Time**	1/15/2021 8:41:39 AM	**Maximum Depth**	100.72 ft
EST GW Depth During Test		41.00 ft			

Net Area Ratio .8

CPT DATA



■ 1 - sensitive fine grained
■ 2 - organic material
■ 3 - clay
■ 4 - silty clay to clay
■ 5 - clayey silt to silty clay
■ 6 - sandy silt to clayey silt
■ 7 - silty sand to sandy silt
■ 8 - sand to silty sand
■ 9 - sand
■ 10 - gravelly sand to sand
■ 11 - very stiff fine grained (*)
■ 12 - sand to clayey sand (*)

Cone Size 15cm squared

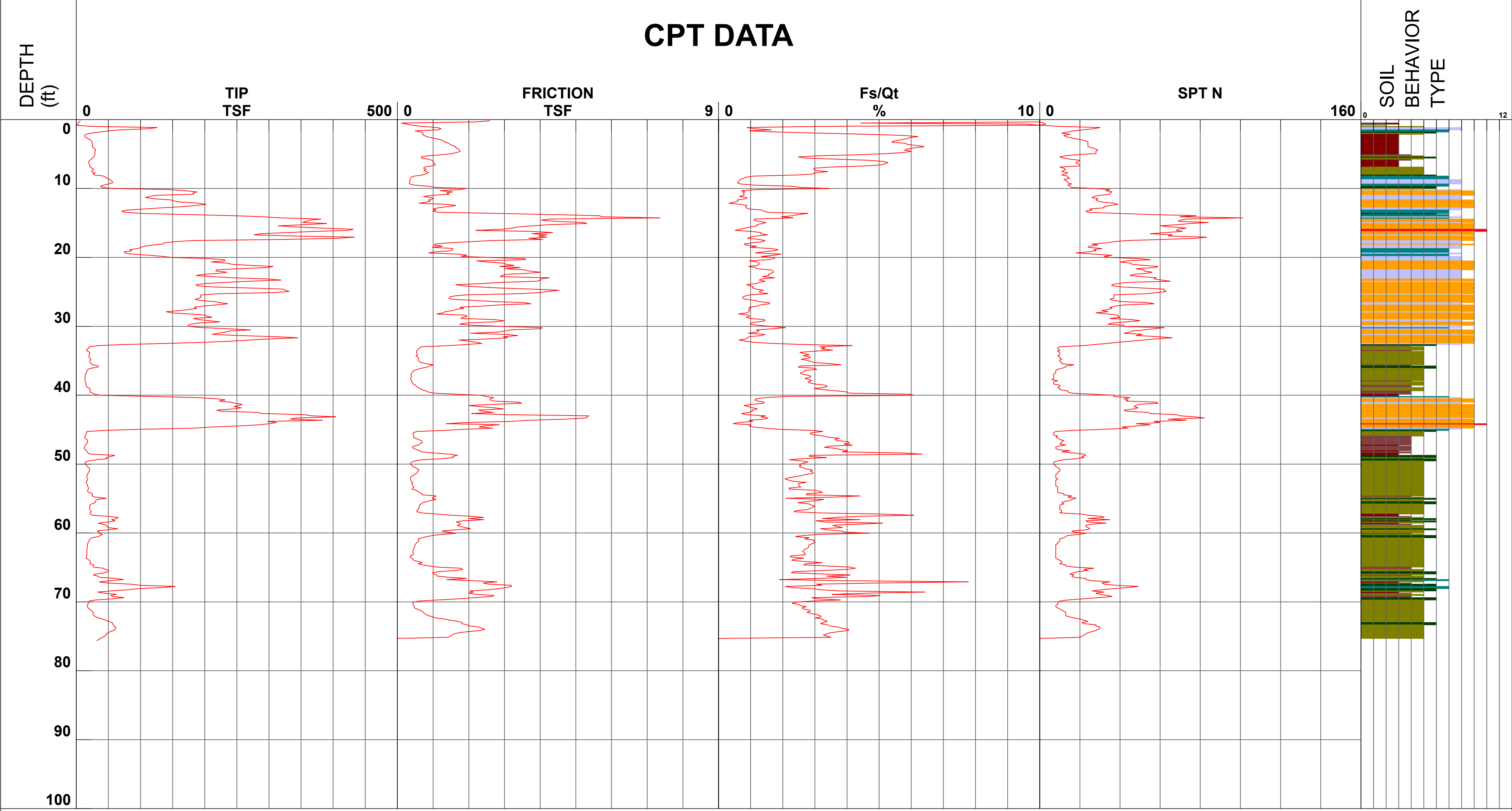
S*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

Project 333 Ravenswood Ave
Job Number 129-7-1
Hole Number CPT-02
EST GW Depth During Test 42.00 ft
Operator JM-ZG
Cone Number DPG1556
Date and Time 1/15/2021 3:08:17 PM
Filename SDF(498).cpt
GPS
Maximum Depth 75.62 ft

Net Area Ratio .8

CPT DATA



🟫 1 - sensitive fine grained
🟫 2 - organic material
🟥 3 - clay
🟫 4 - silty clay to clay
🟩 5 - clayey silt to silty clay
🟩 6 - sandy silt to clayey silt
🟦 7 - silty sand to sandy silt
🟪 8 - sand to silty sand
🟧 9 - sand
🟥 10 - gravelly sand to sand
🟦 11 - very stiff fine grained (*)
🟦 12 - sand to clayey sand (*)

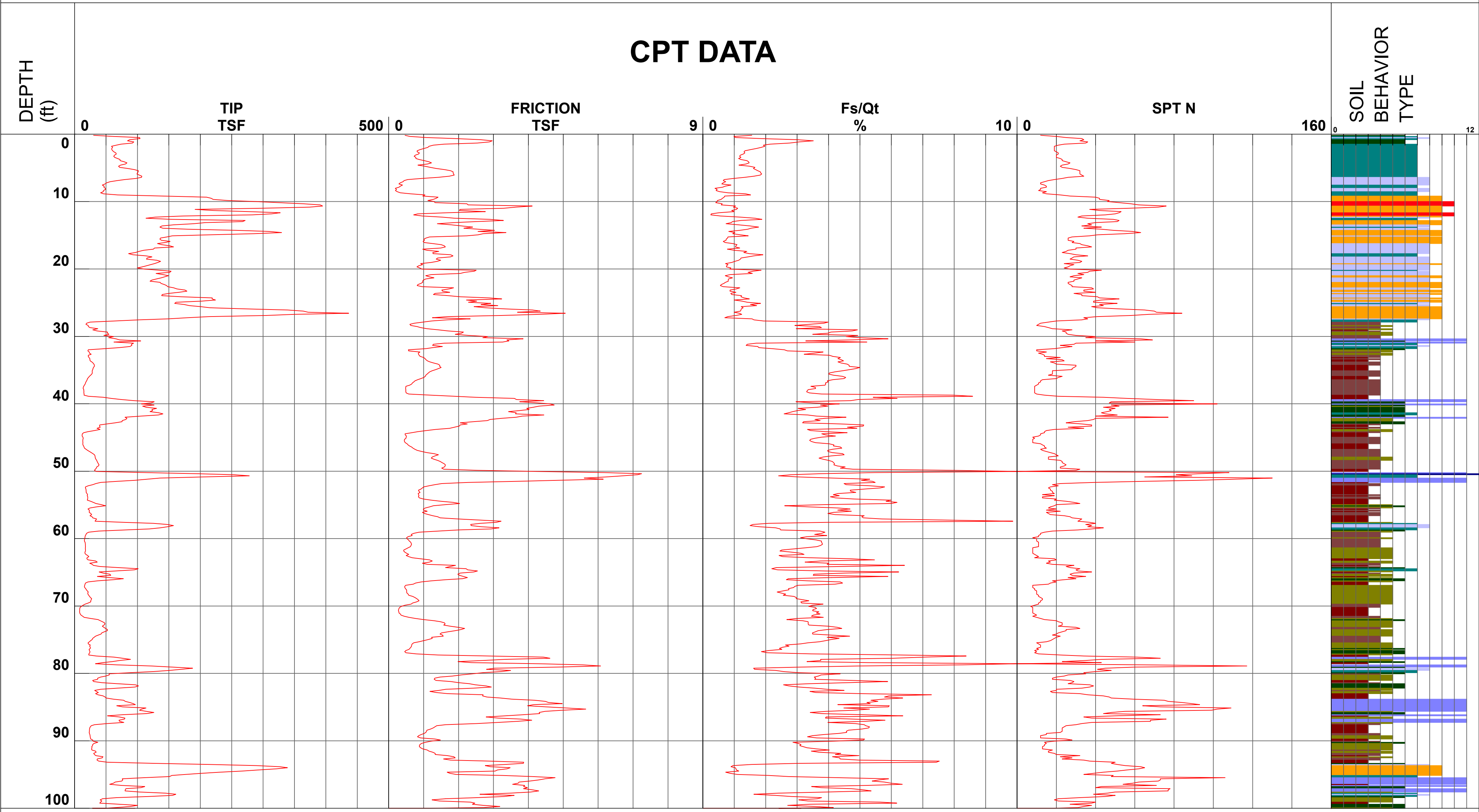
Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

Project	333 Ravenswood Ave	Operator	JM-ZG	Filename	SDF(493).cpt
Job Number	129-7-1	Cone Number	DPG1556	GPS	
Hole Number	CPT-03	Date and Time	1/15/2021 10:31:49 AM	Maximum Depth	100.72 ft
EST GW Depth During Test		40.00 ft			

Net Area Ratio .8



▨ 1 - sensitive fine grained
▨ 2 - organic material
▨ 3 - clay
▨ 4 - silty clay to clay
▨ 5 - clayey silt to silty clay
▨ 6 - sandy silt to clayey silt
▨ 7 - silty sand to sandy silt
▨ 8 - sand to silty sand
▨ 9 - sand
▨ 10 - gravelly sand to sand
▨ 11 - very stiff fine grained (*)
▨ 12 - sand to clayey sand (*)

Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

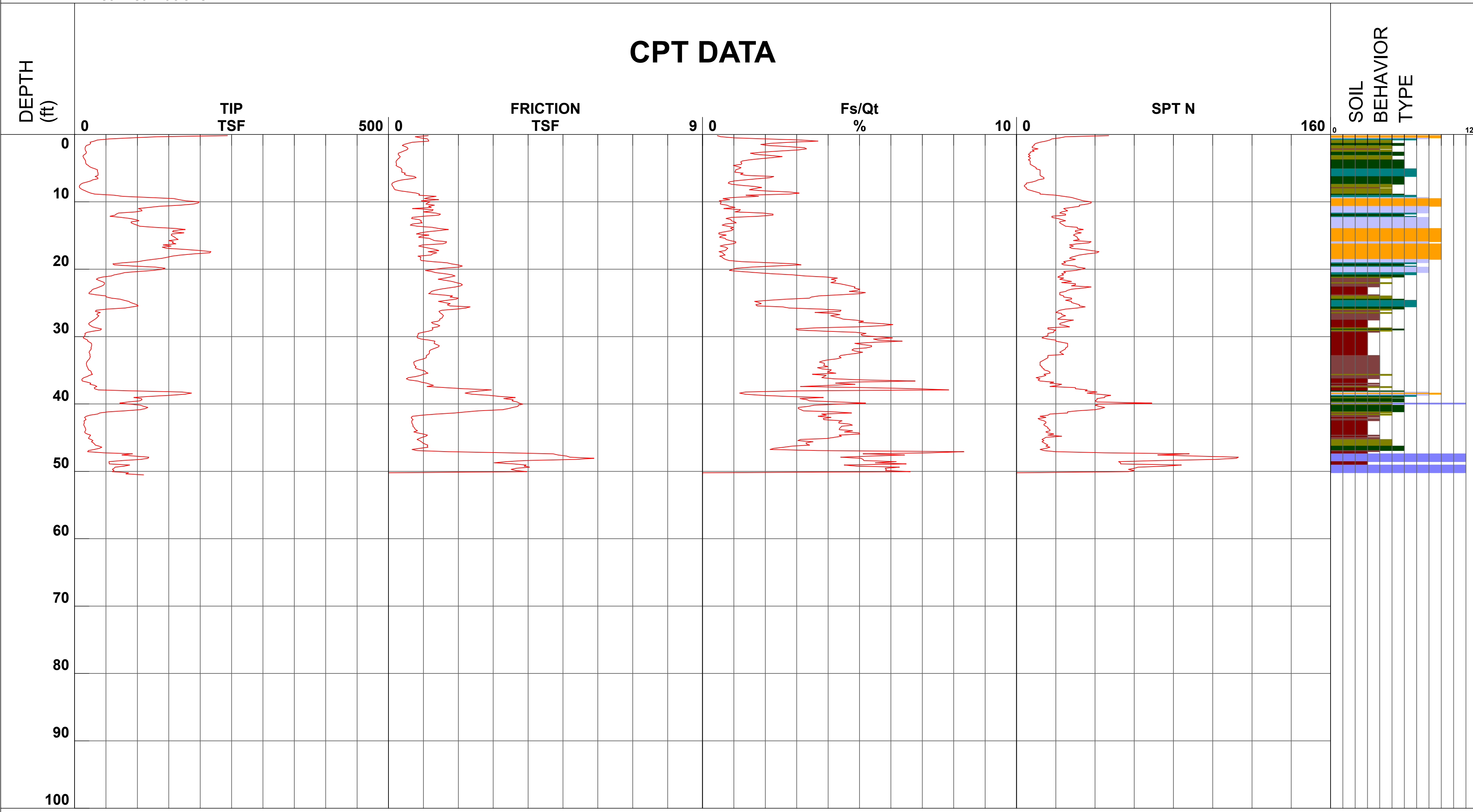
Middle Earth
GEO TESTING INC.

Cornerstone Earth Group

Project	333 Ravenswood Ave	Operator	JM-ZG	Filename	SDF(494).cpt
Job Number	129-7-1	Cone Number	DPG1556	GPS	
Hole Number	CPT-04	Date and Time	1/15/2021 12:29:35 PM	Maximum Depth	50.52 ft
EST GW Depth During Test		40.00 ft			

Net Area Ratio .8

CPT DATA



■ 1 - sensitive fine grained
■ 2 - organic material
■ 3 - clay
■ 4 - silty clay to clay
■ 5 - clayey silt to silty clay
■ 6 - sandy silt to clayey silt
■ 7 - silty sand to sandy silt
■ 8 - sand to silty sand
■ 9 - sand
■ 10 - gravelly sand to sand
■ 11 - very stiff fine grained (*)
■ 12 - sand to clayey sand (*)

Cone Size 15cm squared

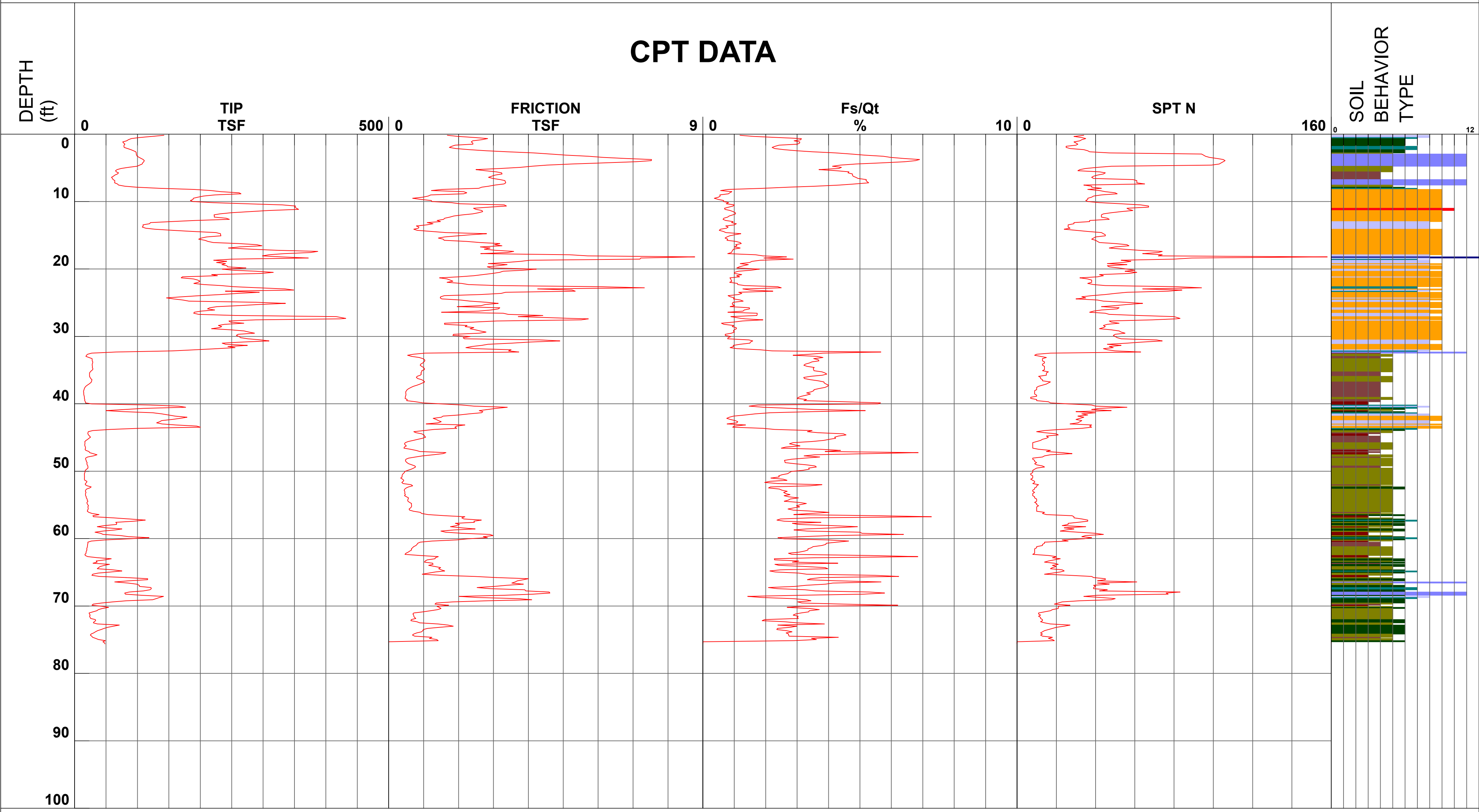
S*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

Project	333 Ravenswood Ave	**Operator**	JM-ZG	**Filename**	SDF(496).cpt
Job Number	129-7-1	**Cone Number**	DPG1556	**GPS**	
Hole Number	CPT-05	**Date and Time**	1/15/2021 1:56:27 PM	**Maximum Depth**	75.62 ft
EST GW Depth During Test		39.60 ft			

Net Area Ratio .8

CPT DATA



■ 1 - sensitive fine grained
■ 2 - organic material
■ 3 - clay
■ 4 - silty clay to clay
■ 5 - clayey silt to silty clay
■ 6 - sandy silt to clayey silt
■ 7 - silty sand to sandy silt
■ 8 - sand to silty sand
■ 9 - sand
■ 10 - gravelly sand to sand
■ 11 - very stiff fine grained (*)
■ 12 - sand to clayey sand (*)

Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

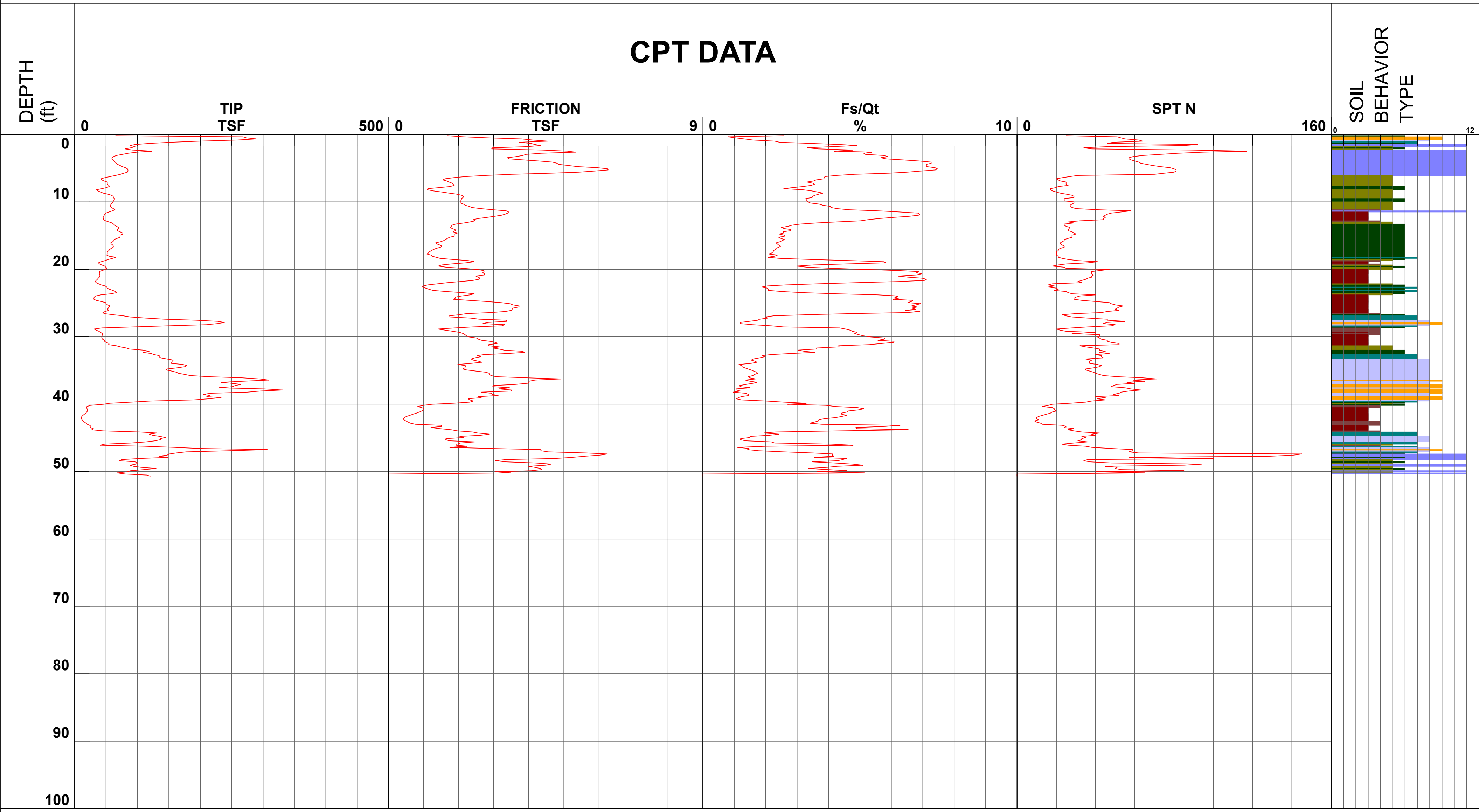
Middle Earth
Geo Testing Inc.

Cornerstone Earth Group

Project	333 Ravenswood Ave	Operator	JM-ZG	Filename	SDF(495).cpt
Job Number	129-7-1	Cone Number	DPG1556	GPS	
Hole Number	CPT-06	Date and Time	1/15/2021 1:09:37 PM	Maximum Depth	50.69 ft
EST GW Depth During Test			40.90 ft		

Net Area Ratio .8

CPT DATA



■ 1 - sensitive fine grained
■ 2 - organic material
■ 3 - clay
■ 4 - silty clay to clay
■ 5 - clayey silt to silty clay
■ 6 - sandy silt to clayey silt
■ 7 - silty sand to sandy silt
■ 8 - sand to silty sand
■ 9 - sand
■ 10 - gravelly sand to sand
■ 11 - very stiff fine grained (*)
■ 12 - sand to clayey sand (*)

Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

UNIFIED SOIL CLASSIFICATION (ASTM D-2487-10)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GROUP SYMBOL	SOIL GROUP NAMES & LEGEND	
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO 4. SIEVE	CLEAN GRAVELS <5% FINES	Cu>4 AND 1<Cc<3	GW	WELL-GRADED GRAVEL	▨
			Cu>4 AND 1>Cc>3	GP	POORLY-GRADED GRAVEL	▨
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR CL	GM	SILTY GRAVEL	▨
			FINES CLASSIFY AS CL OR CH	GC	CLAYEY GRAVEL	▨
	SANDS >50% OF COARSE FRACTION PASSES ON NO 4. SIEVE	CLEAN SANDS <5% FINES	Cu>6 AND 1<Cc<3	SW	WELL-GRADED SAND	▨
			Cu>6 AND 1>Cc>3	SP	POORLY-GRADED SAND	▨
		SANDS AND FINES >12% FINES	FINES CLASSIFY AS ML OR CL	SM	SILTY SAND	▨
			FINES CLASSIFY AS CL OR CH	SC	CLAYEY SAND	▨
FINE-GRAINED SOILS >50% PASSES NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT<50	INORGANIC	PI>7 AND PLOTS>"A" LINE	CL	LEAN CLAY	▨
			PI>4 AND PLOTS<"A" LINE	ML	SILT	▨
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OL	ORGANIC CLAY OR SILT	▨
	SILTS AND CLAYS LIQUID LIMIT>50	INORGANIC	PI PLOTS >"A" LINE	CH	FAT CLAY	▨
			PI PLOTS <"A" LINE	MH	ELASTIC SILT	▨
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OH	ORGANIC CLAY OR SILT	▨
HIGHLY ORGANIC SOILS		PRIMARILY ORGANIC MATTER, DARK IN COLOR, AND ORGANIC ODOR		PT	PEAT	▨

OTHER MATERIAL SYMBOLS

▨	Poorly-Graded Sand with Clay	▨	Sand
▨	Clayey Sand	▨	Silt
▨	Sandy Silt	▨	Well Graded Gravelly Sand
▨	Artificial/Undocumented Fill	▨	Gravelly Silt
▨	Poorly-Graded Gravelly Sand	■	Asphalt
▨	Topsoil	▨	Boulders and Cobble
▨	Well-Graded Gravel with Clay		
▨	Well-Graded Gravel with Silt		

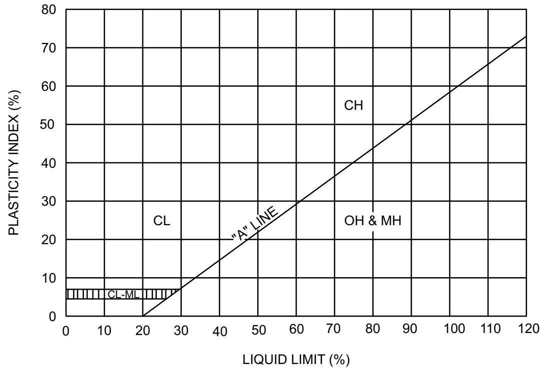
SAMPLER TYPES

☒	SPT	■	Shelby Tube
⧗	Modified California (2.5" I.D.)	○	No Recovery
▯	Rock Core	✋	Grab Sample

ADDITIONAL TESTS

CA	-	CHEMICAL ANALYSIS (CORROSIVITY)	PI	-	PLASTICITY INDEX
CD	-	CONSOLIDATED DRAINED TRIAXIAL	SW		SWELL TEST
CN	-	CONSOLIDATION	TC	-	CYCLIC TRIAXIAL
CU	-	CONSOLIDATED UNDRAINED TRIAXIAL	TV	-	TORVANE SHEAR
DS	-	DIRECT SHEAR	UC	-	UNCONFINED COMPRESSION
PP	-	POCKET PENETROMETER (TSF)	(1.5)	-	(WITH SHEAR STRENGTH IN KSF)
(3.0)	-	(WITH SHEAR STRENGTH IN KSF)		-	
RV	-	R-VALUE	UU		UNCONSOLIDATED UNDRAINED TRIAXIAL
SA	-	SIEVE ANALYSIS: % PASSING #200 SIEVE		-	
▼	-	WATER LEVEL			

PLASTICITY CHART



PENETRATION RESISTANCE (RECORDED AS BLOWS / FOOT)				
SAND & GRAVEL		SILT & CLAY		
RELATIVE DENSITY	BLOWS/FOOT*	CONSISTENCY	BLOWS/FOOT*	STRENGTH** (KSF)
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	0 - 0.25
LOOSE	4 - 10	SOFT	2 - 4	0.25 - 0.5
MEDIUM DENSE	10 - 30	MEDIUM STIFF	4 - 8	0.5-1.0
DENSE	30 - 50	STIFF	8 - 15	1.0 - 2.0
VERY DENSE	OVER 50	VERY STIFF	15 - 30	2.0 - 4.0
		HARD	OVER 30	OVER 4.0

* NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1-3/8 INCH I.D.) SPLIT-BARREL SAMPLER THE LAST 12 INCHES OF AN 18-INCH DRIVE (ASTM-1586 STANDARD PENETRATION TEST).

** UNDRAINED SHEAR STRENGTH IN KIPS/SQ. FT. AS DETERMINED BY LABORATORY TESTING OR APPROXIMATED BY THE STANDARD PENETRATION TEST, POCKET PENETROMETER, TORVANE, OR VISUAL OBSERVATION.

CORNERSTONE
EARTH GROUP

LEGEND TO SOIL DESCRIPTIONS

Figure Number
A-1

BORING NUMBER EB-1

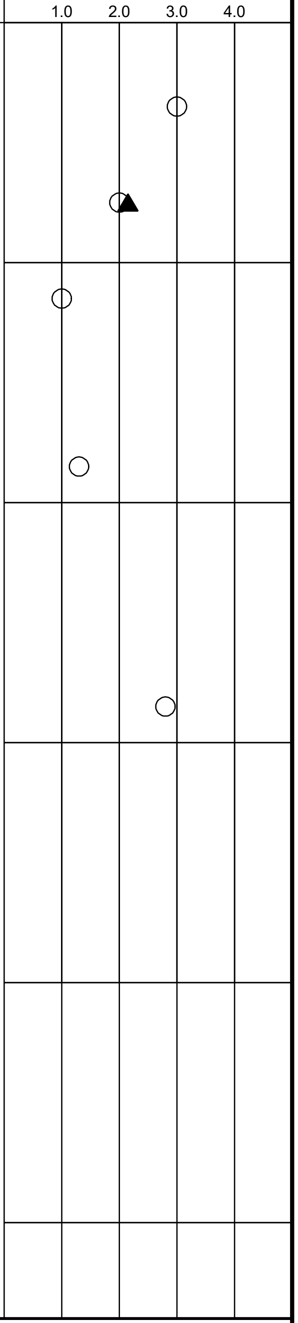
CORNERSTONE EARTH GROUP

PROJECT NAME SRI Utility Plant
PROJECT NUMBER 129-7-2
PROJECT LOCATION 333 Ravenswood Avenue, Menlo Park, CA
DATE STARTED 3/21/23 **DATE COMPLETED** 3/21/23
GROUND ELEVATION 59 FT +/- **BORING DEPTH** 20 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc.
LATITUDE 37.454910° **LONGITUDE** -122.172862°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY JDS
∇ **AT TIME OF DRILLING** Not Encountered
NOTES
▼ **AT END OF DRILLING** Not Encountered

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION
59.0 58.8	0	3 inches asphalt concrete over 6 inches aggregate base
58.3		**Sandy Lean Clay (CL) [Fill]** very stiff, moist, brown, fine to coarse sand, low plasticity
57.5		**Lean Clay (CL)** very stiff, moist, dark brown to brown, some fine sand, moderate plasticity
	5	becomes stiff
	10	
46.0		**Sandy Lean Clay (CL)** very stiff, moist, brown, fine to medium sand, low plasticity
	15	
41.0		**Clayey Sand (SC)** medium dense, moist, brown, fine to medium sand, some fine subangular to subrounded gravel
39.0	20	Bottom of Boring at 20.0 feet.
	25	

N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
37	MC-1B	100	19		
19	MC-2B	108	20		
15	MC-3B	94	23		
19	MC-4B	98	25		
46	MC-5B	109	16		
42	MC				

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL



BORING NUMBER EB-2

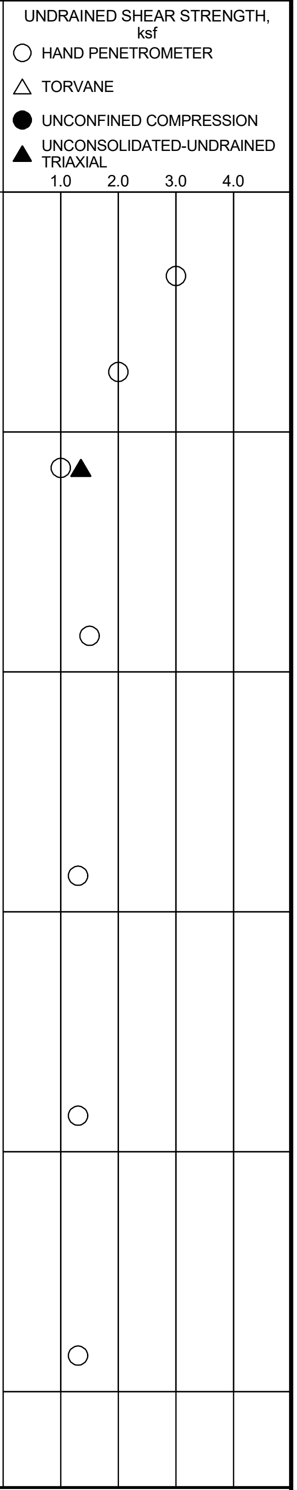
PAGE 1 OF 1

CORNERSTONE
EARTH GROUP

PROJECT NAME SRI Utility Plant
PROJECT NUMBER 129-7-2
PROJECT LOCATION 333 Ravenswood Avenue, Menlo Park, CA
DATE STARTED 3/21/23 **DATE COMPLETED** 3/21/23
GROUND ELEVATION 57 FT +/- **BORING DEPTH** 25 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc.
LATITUDE 37.455116° **LONGITUDE** -122.172368°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY JDS
▽ **AT TIME OF DRILLING** Not Encountered
NOTES
▼ **AT END OF DRILLING** Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
57.0	0	4 inches asphalt concrete over 6 inches aggregate base						
56.7								
56.2		**Sandy Lean Clay (CL) [Fill]** very stiff, moist, brown, fine to coarse sand, low to moderate plasticity						
55.5			40	MC-1B	103	20	26	
		Lean Clay (CL) very stiff, moist, dark brown to brown, some fine sand, moderate plasticity Liquid Limit = 44, Plastic Limit = 18	28	MC-2B	98	21		
	5	becomes stiff	17	MC-3B	102	23		
49.0		**Lean Clay with Sand (CL)** stiff, moist, brown, fine sand, low plasticity	18	MC-4B	109	17		
	10							
			28	MC				
	15							
40.0		**Lean Clay (CL)** stiff, moist, brown with gray mottles, some fine sand, moderate plasticity	46	MC-6B	103	20		
	20							
			30	MC-7B	104	20		
32.0	25	Bottom of Boring at 25.0 feet.						



BORING NUMBER EB-3

PAGE 1 OF 1

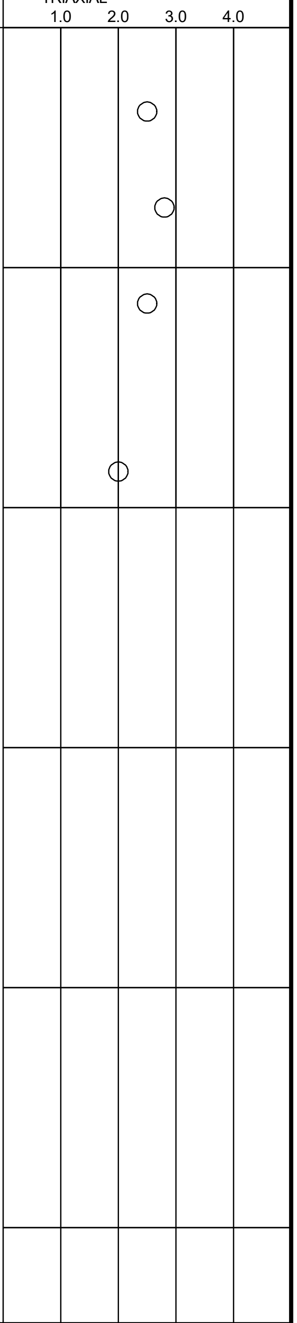
CORNERSTONE EARTH GROUP

PROJECT NAME SRI Utility Plant
PROJECT NUMBER 129-7-2
PROJECT LOCATION 333 Ravenswood Avenue, Menlo Park, CA
DATE STARTED 3/21/23 **DATE COMPLETED** 3/21/23
GROUND ELEVATION 66 FT +/- **BORING DEPTH** 10 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc.
LATITUDE 37.455931° **LONGITUDE** -122.176923°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY JDS
▽ **AT TIME OF DRILLING** Not Encountered
NOTES
▼ **AT END OF DRILLING** Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
66.0	0	▩	**Sandy Lean Clay (CL) [Fill]** very stiff, moist, brown, fine to coarse sand, low plasticity Liquid Limit = 30, Plastic Limit = 14	19	MC-1B	104	20	16	
64.0		▨	**Lean Clay (CL)** very stiff, moist, brown, some fine sand, moderate plasticity	31	MC-2B	107	17		
	5			38	MC-3B	106	19		
58.0		▒	**Sandy Lean Clay (CL)** very stiff, moist, brown, fine to medium sand, low plasticity	18	MC-4B	105	17		53
56.0	10		Bottom of Boring at 10.0 feet.						
	15								
	20								
	25								

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL



BORING NUMBER EB-4

PAGE 1 OF 1

CORNERSTONE EARTH GROUP

PROJECT NAME SRI Utility Plant
PROJECT NUMBER 129-7-2
PROJECT LOCATION 333 Ravenswood Avenue, Menlo Park, CA
DATE STARTED 3/21/23 **DATE COMPLETED** 3/21/23
GROUND ELEVATION 68 FT +/- **BORING DEPTH** 10 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc.
LATITUDE 37.455511° **LONGITUDE** -122.176148°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY JDS
∇ **AT TIME OF DRILLING** Not Encountered
NOTES
▼ **AT END OF DRILLING** Not Encountered

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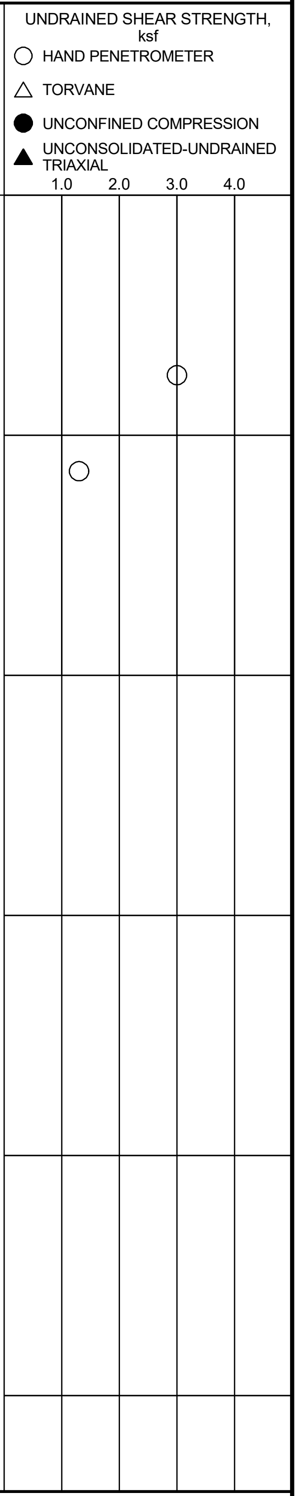
ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
68.0	0	**Clayey Sand with Gravel (SC) [Fill]** medium dense, moist, gray and brown mottled, fine to coarse sand, fine to coarse subangular to ubrounded gravel	30	MC-1B	105	13		31
65.3		**Lean Clay (CL)** very stiff, moist, brown, some fine sand, moderate plasticity	34	MC-2B	108	18		
	5	becomes stiff	28	MC-3B	104	19		
61.0		**Clayey Sand (SC)** medium dense, moist, brown, fine to medium sand	30	MC-4B	106	9		
58.5		**Poorly Graded Sand with Silt (SP-SM)** medium dense, moist, brown, fine to medium sand						
58.0	10	Bottom of Boring at 10.0 feet.						
	15							
	20							
	25							



APPENDIX B: PRIOR SUBSURFACE DATA BY OTHERS

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISION
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines
			SC	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

U.S. STANDARD SERIES SIEVE — CLEAR SQUARE SIEVE OPENINGS

	200	40	10	4	3/4"	3"	12"
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

SANDS AND GRAVELS	BLOWS/FOOT†
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

SILTS AND CLAYS	STRENGTH ☆	BLOWS/FOOT †
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

CONSISTENCY

† Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split barrel (ASTM D-1586).

☆ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

KEY TO EXPLORATORY BORING LOGS

NEW CHILLER PAD AND COOLING TOWER
SRI International
Menlo Park, California

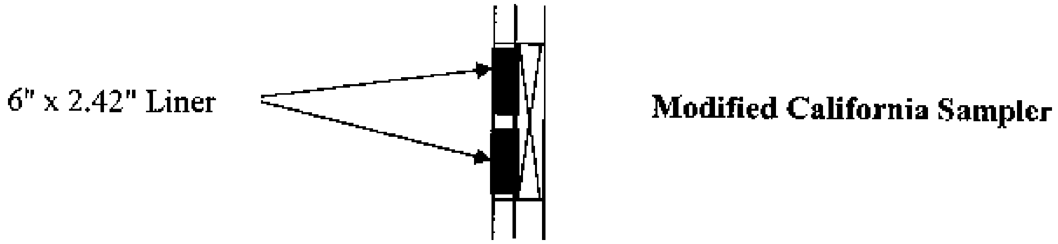
PROJECT NO.	DATE	DRAWING NO.
1328.1	May 2012	3

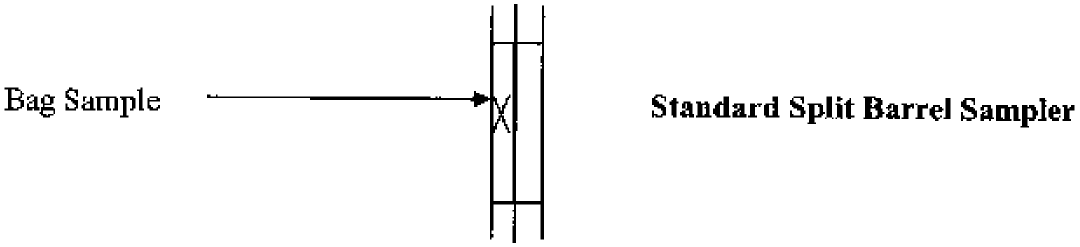
FIELD SAMPLING PROCEDURES

The soils encountered in the borings were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D-2487).

Representative soil samples were obtained from the borings at selected depths appropriate to the soil investigation. All samples were returned to our laboratory for classification and testing.

In accordance with the ASTM D1586 procedure, the standard penetration resistance was obtained by dropping a 140 pound hammer through a 30-inch free fall. The 2-inch O.D. Standard split barrel sampler was driven 18 inches or to practical refusal and the number of blows were recorded for each 6-inch penetration interval. The blows per foot recorded on the boring logs represent the accumulated number of blows, or N-value, required to drive the penetration sampler the final 12 inches. In addition, 3.0 inch O.D. x 2.42 inch I.D. drive samples were obtained using a Modified California Sampler and 140 pound hammer. Blow counts for the Modified California Sampler were converted to standard penetration resistance by multiplying by 0.6. The sample type is shown on the boring logs in accordance with the designation below.





Where obtained, the shear strength of the soil samples using either Torvane (TV) or Pocket Penetrometer (PP) devices is shown on the boring logs in the far right hand column.

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SUMMARY OF FIELD SAMPLING PROCEDURES
NEW CHILLER PAD AND COOLING TOWER
SRI International
Menlo Park, California

PROJECT NO.	DATE	DRAWING NO.
1328.1	May 2012	4

LABORATORY TESTING PROCEDURES

The laboratory testing program was directed toward a quantitative and qualitative evaluation of the physical and mechanical properties of the soils underlying the site.

The natural water content was determined on 24 samples of the materials recovered from the borings in accordance with the ASTM D2216 Test Procedure. These water contents are recorded on the boring logs at the appropriate sample depths.

Dry density determinations were performed on 17 samples to measure the unit weight of the subsurface soils in accordance with the ASTM D2937 Test Procedure. The results of these tests are shown on the boring logs at the appropriate sample depths.

Atterberg Limit determinations were performed on three samples of the subsurface soils in accordance with the ASTM D4318 Test Procedure to determine the range of water contents over which the materials exhibited plasticity. The Atterberg Limits are used to classify the soils in accordance with the Unified Soil Classification System and to evaluate the soil's expansion potential. The results of these tests are presented on Drawing 9 and on the boring logs at the appropriate sample depths.

The percent soil fraction passing the #200 sieve was determined on six samples of the subsurface soils in accordance with the ASTM D1140 Test Procedure to aid in the classification of the soils. The results of these tests are shown on the boring logs at the appropriate sample depths.

Free swell tests were performed on three samples of the soil materials to evaluate the swelling potential of the soil. The free swell tests were performed by slowly pouring 10 ml of air dried soil passing the No. 40 sieve into a 100 ml graduated cylinder filled with approximately 90 ml of distilled water. The suspension was stirred repeatedly to ensure thorough wetting of the soil specimen. The graduated cylinder was then filled with distilled water to the 100 ml mark and allowed to settle until equilibrium was reached (approximately 24 hours). The free swell volume of the soil was then noted. The percent free swell was calculated by subtracting the initial soil volume from the free swell volume, dividing the difference by the initial volume, and multiplying the result by 100 percent. The results of these tests are presented on the boring logs.

DRAWING NO. 5

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	MAA
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	5/3/2012

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
AC Pavement: 5" AC Over 8" AB SILTY CLAY, moist, fine grained sand	Dark Brown	Very Stiff	CL	1					
↑ Fill				2	☒	43/5"	11	102	
BRICK DEBRIS	Red			3					
↑ Fill					X	43			
SANDY CLAY, moist, fine grained sand	Brown	Very Stiff	CL	4					
@4.5': Liquid Limit = 45% Plasticity Index = 28% Finer than #200 = 87% Free Swell = 40%				5	☒	28	15 14	106 99	
		Stiff		6					
				7	X	16	12		
	Yellowish Brown			8					
@9.5': Finer than #200 = 82%				9 10	☒	12	15 15	80 95	
				11 12 13					
				14 15	X	20	12		
				16 17 18					
* Drilled with a B53 Truck Mounted Rig Bottom of Boring = 20.0'				19 20	☒	20	12 18	98 108	

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 1
NEW CHILLER PAD AND COOLING TOWER
SRI International
Menlo Park, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	----	1327.1	May 2012	6

EQUIPMENT 8" Diameter Hollow Stem Auger*	ELEVATION ---	LOGGED BY MAA
DEPTH TO GROUNDWATER Not Enc.	DEPTH TO BEDROCK Not Enc.	DATE DRILLED 5/3/2012

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Landscape: 6" Wood Grindings Over 8 to 10" Top Soil	Dark Brown	Hard	CL						
SANDY CLAY, moist, some fine grained sand, fine subangular gravels up to 1/4" diameter, rootlets up to 1/4" diameter				1					
@1.5': Liquid Limit = 35% Plasticity Index = 19% Finer than #200 = 72% Free Swell = 30%				2		41	16	110	
				3					
				4		44	13		
@4.5': fine subangular gravel up to 1/8" diameter				5		30	14	107	
	Brown			6					
				7		46	14		
SILTY CLAY, moist, fine grained sand, occasional fine subangular gravel up to 1/16" diameter	Yellowish Brown	Stiff	CL	8					
@9.0': Liquid Limit = 36% Plasticity Index = 15% Finer than #200 = 57% Free Swell = 20%				9		12	11 14	86 81	
				10					
				11					
	Dark Yellowish Brown	Very Stiff		12					
				13					
				14					
@14.5': Finer than #200 = 69%				15		24	11		
Bottom of Boring = 15.0'									
				16					
				17					
				18					
				19					
* Drilled with a B53 Truck Mounted Rig				20					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 2

NEW CHILLER PAD AND COOLING TOWER
SRI International
Menlo Park, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	----	1327.1	May 2012	7

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	MAA
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	5/3/2012

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
AC Pavement: 4" AC Over 7" AB SANDY CLAY, moist, some fine grained sand, subrounded gravels up to 1/4" diameter	Dark Brown	Hard	CL	1					
				2		44	11 9	104 109	
				3		30	13		
				4					
				5		54	13 14	99 98	
@6.0': increased sand content, fine grained sand		Stiff		6					
				7		13	12		
	Yellowish Brown			8					
@9.5': Finer than #200 = 84%				9		11	14 18	100 98	
Bottom of Boring = 10.0'				10					
				11					
				12					
				13					
				14					
				15					
				16					
				17					
				18					
* Drilled with a B53 Truck Mounted Rig				19					
				20					

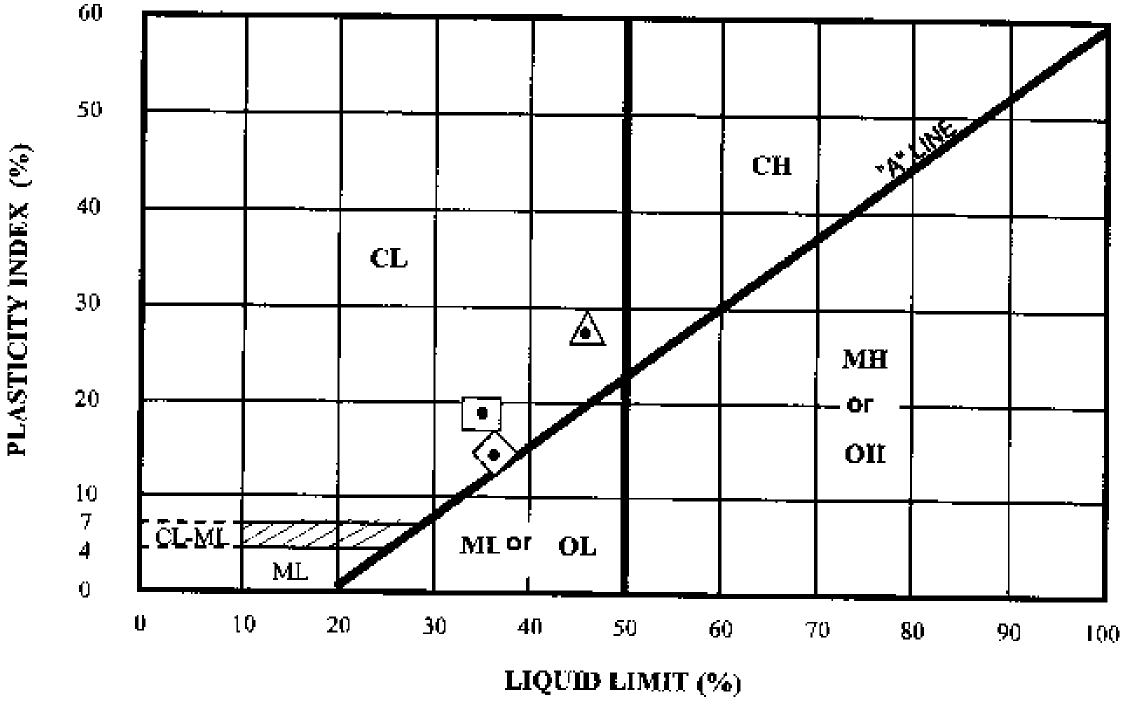
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 3

NEW CHILLER PAD AND COOLING TOWER
SRI International
Menlo Park, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	----	1327.1	May 2012	8



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
◬	1	4.5	15	45	28	87	-0.1	CL
⊡	2	1.5	16	35	19	72	0.0	CL
⟐	2	9.0	11	36	15	57	-0.7	CL

*Classified as coarse-grained soil since less than 50% passes #200 sieve

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PLASTICITY CHART

NEW CHILLER PAD AND COOLING TOWER
SRI International
Menlo Park, California

PROJECT NO.	DATE	DRAWING NO.
1328.1	May 2012	9

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	JH
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	9/16/2014

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
SILTY CLAY, moist, fine grained sand, occasional subangular to subrounded gravel up to 1/4 inch diameter	Brown to Very Dark Grayish Brown	Very Stiff	CL	1					
@1.5': Liquid Limit = 29% Plasticity Index = 13% Finer than #4 = 99% Finer than #200 = 63% Free Swell = 50%				2		20	11 11	105 97	PP > 4.5
		Stiff							
				3		13	11		
	Brown	Very Stiff		4					
				5		20	9 10	99 94	PP > 4.5
@6.0': occasional iron staining Finer than #4 = 94% Finer than #200 = 45%			CL-SC	6		15	8		
				7					
	Yellowish Brown	Stiff		8					
@9.5': Finer than #4 = 100% Finer than #200 = 76%			CL	9		11	10 16	100 111	
Bottom of Boring = 10.0'				10 11 12 13 14 15 16 17 18 19 20					

* Drilled with a HPD Truck Mounted Rig
PP = Pocket Penetrometer

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 1

SUBSTATION SWITCHGEAR REPLACEMENT
SRI Campus
Menlo Park, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	---	1328.2	October 2014	6

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	JH
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	9/16/2014

DESCRIPTION AND CLASSIFICATION									
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
SILTY CLAY, moist, fine grained sand, occasional subangular to subrounded gravel up to 1/4 inch diameter	Brown to Very Dark Grayish Brown	Very Stiff	CL	1					
@1.5': Finer than #4 = 100% Finer than #200 = 64%						24	11 10	92 103	PP>4.5
				2					
				3		19	11		
				4		26	11 12	108 106	PP>4.5
		Stiff		5					
@6.0': occasional iron staining				6		15	12		
Bottom of Boring = 6.5'				7					
				8					
				9					
				10					
				11					
				12					
				13					
				14					
				15					
				16					
				17					
				18					
* Drilled with a JHPD Truck Mounted Rig PP = Pocket Penetrometer				19					
				20					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
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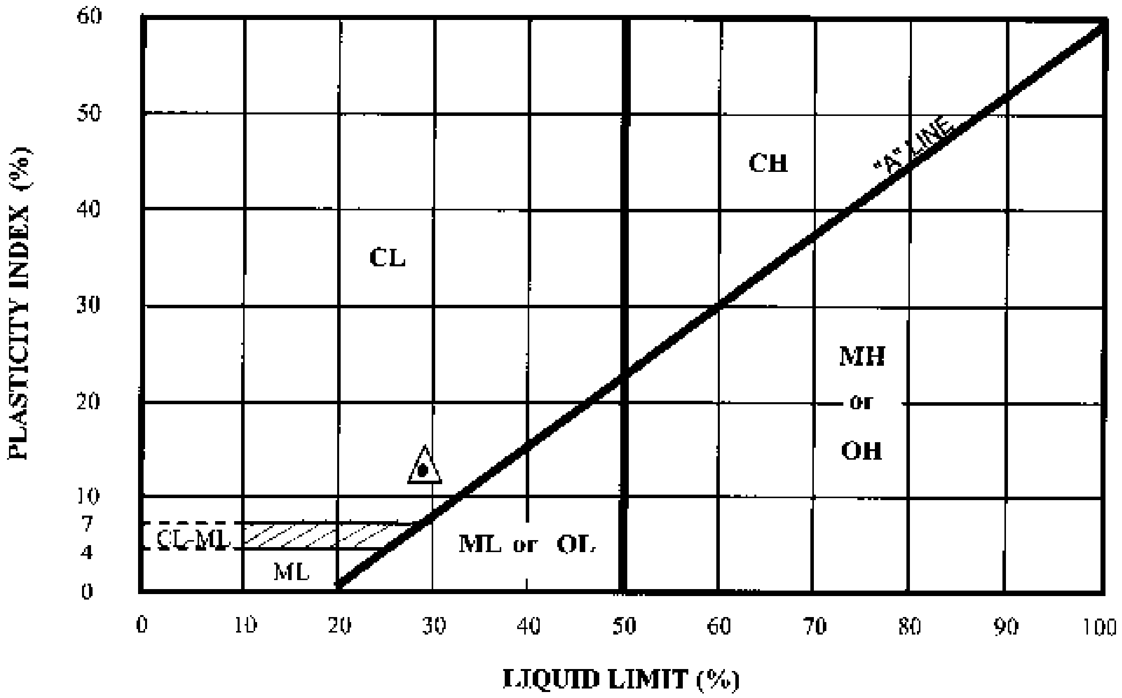
LOG OF EXPLORATORY BORING NO. 2

SUBSTATION SWITCHGEAR REPLACEMENT
SRI Campus
Menlo Park, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	---	1328.2	October 2014	7



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
◬	1	1.5	11	29	13	63	-0.4	CL

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PLASTICITY CHART

SUBSTATION SWITCHGEAR REPLACEMENT
SRI Campus
Menlo Park, California

PROJECT NO.	DATE	DRAWING NO.
1328.2	October 2014	8

Unified Soil Classification System

PRIMARY DIVISIONS				GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS	MORE THAN HALF OF MATERIAL IS LARGER THAN # 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN # 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
			GRAVELS WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
				GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
		SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN # 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines
				SP	Poorly graded sands or gravelly sands, little or no fines
			SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines
				SC	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS	MORE THAN HALF OF MATERIAL IS SMALLER THAN # 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
		SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
				CH	Inorganic clays and silty clays of high plasticity, fat clays
				OH	Organic clays and silts of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS				Pt	Peat and other highly organic soils

DEFINITION OF TERMS

CLEAR SQUARE SIEVE OPENINGS

75 µm — 425 µm — 2 mm — 4.75 mm — 3/4" — 3" — 12"

SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

#200 — #40 — #10 — #4 ←—— American Standard Sieve Sizes

GRAIN SIZES

SANDS	BLOWS / FOOT†
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

CLAYS	STRENGTH*	BLOWS / FOOT†
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

CONSISTENCY

†Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8" I.D.) split spoon sampler.

*Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by pocket penetrometer, torvane, or visual observation.

DONALD E. BANTA &
ASSOCIATES, INC.
Consulting Geotechnical
Engineers

KEY TO EXPLORATORY BORING LOGS

SRI BUILDING "T" EXPANSION
333 RAVENSWOOD AVENUE

Menlo Park, California

700-4 December 2004 **Figure A-1**

Drill Rig Hollow Flight Auger	Surface Elevation -----	Logged By GC
Groundwater Not Encountered	Boring Diameter 8 inches	Date Drilled 11/19/04

DESCRIPTION AND CLASSIFICATION						SAMPLE DATA					
DESCRIPTION AND REMARKS	COLOR	CONSIS-TENCY	SOIL TYPE	Depth (Feet)	SAMPLER	Blows Per Foot	Percent Moisture	Dry Density (Pcf)	Plasticity Index / Liquid Limit (%)	Percent Passing #200 Sieve	Shear* Strength (Ksf)
SANDY CLAY (silty)	brown	loose	CL-ML	1			21			65	
SILTY CLAY (grading with increasing sand)	reddish-brown	stiff to very stiff	CL	2		19	21	102	23/37	80	2.2(p)
				3							
SANDY CLAY	light brown	very stiff	CL	4		31	19	96		74	3.0(p)
				5							
				6							
				7							
				8							
(many root holes)				9		36	19	85		89	3.1(p)
				10							
				11							
				12							
				13							
				14		66	17	108		85	4.5+(p)
				15							
(increasing sand)				16							
				17							
				18							
(with scattered gravel)				19		52	15	112		66	
				20							
Bottom of Boring = 20.0 feet				21							
Note: "(p)" indicates shear strength by pocket penetrometer.				22							
				23							
				24							
				25							
				26							
				27							
				28							
				29							
				30							

DONALD E. BANTA & ASSOCIATES, INC.
Consulting Geotechnical Engineers

EXPLORATORY BORING LOG 1

SRI BUILDING "T" EXPANSION
333 RAVENSWOOD AVENUE
Menlo Park, California

700-4 December 2004 Sheet 1 of 1

Drill Rig Hollow Flight Auger	Surface Elevation -----	Logged By GC
Groundwater Not Encountered	Boring Diameter 8 inches	Date Drilled 11/19/04

DESCRIPTION AND CLASSIFICATION						SAMPLE DATA					
DESCRIPTION AND REMARKS	COLOR	CONSIS-TENCY	SOIL TYPE	Depth (Feet)	SAMPLER	Blows Per Foot	Percent Moisture	Dry Density (Pcf)	Plasticity Index / Liquid Limit (%)	Percent Passing #200/#4 Sieve	Shear Strength (Ksf)
4.5 Inches of Asphaltic Concrete over native soil											
SANDY CLAY, blocky with roots	brown	stiff	CL	1 2 3		36	13	94		88/--	
SANDY CLAY	light brown	very stiff	CL	4 5 6 7 8		32	13	98		87/--	4.5+(p)
SANDY CLAY - SANDY SILT (root holes)	yellow-brown	stiff	CL-ML	9 10 11 12 13		27	14	91		76/--	2.5(p)
— — — ?— — — — — — —?— — —											
CLAYEY SAND, gravelly	brown	medium-dense	SC	14 15 16 17		59	10	120		46/86	
— — — ?— — — — — — —?— — —											
GRAVELLY SAND - SANDY GRAVEL	brown	medium-dense	SW-GW	18 19	x		6			8/51	
SILTY CLAY	brown	very stiff	CL	20	x	28	15			78/--	4.5+(p)
Bottom of Boring = 20.0 feet Note: "(p)" indicates shear strength by pocket penetrometer.				21 22 23 24 25 26 27 28 29 30							

DONALD E. BANTA & ASSOCIATES, INC.
Consulting Geotechnical Engineers

EXPLORATORY BORING LOG 2

SRI BUILDING "T" EXPANSION
333 RAVENSWOOD AVENUE
Menlo Park, California

700-4 December 2004 Sheet 1 of 1

Drill Rig Hollow Flight Auger	Surface Elevation -----	Logged By GC
Groundwater Not Encountered	Boring Diameter 8 inches	Date Drilled 11/19/04

DESCRIPTION AND CLASSIFICATION

SAMPLE DATA

DESCRIPTION AND REMARKS	COLOR	CONSISTENCY	SOIL TYPE	Depth (Feet)	SAMPLER	Blows Per Foot	Percent Moisture	Dry Density (Pcf)	Plasticity Index / Liquid Limit (%)	Percent Passing #200 Sieve	Shear Strength (Ksf)
Gravel surfacing mixed with clay Possible Fill ↑				1							
SANDY CLAY, silty	dark brown to brown	very stiff	CL	2		62	13	91	21/37	88	4.5+(p)
				3							
				4		48	13	96		88	
				5							
	light brown			6							
				7							
				8							
				9		29	15	106		87	
				10							
				11							
— — ?— — — — — —? — — SANDY SILT, fine	yellow-brown	stiff	ML	12							
				13							
				14		21	18	98		79	2.3(p)
				15							
				16							
— — ?— — — — — —? — — CLAYEY SILT, sandy	reddish-brown	stiff to very stiff	CL-ML	17							
				18							
				19		49	17	102		59	4.5+(p)
				20							
Bottom of Boring = 20.0 feet Note: "(p)" indicates shear strength by pocket penetrometer.				21							
				22							
				23							
				24							
				25							
				26							
				27							
				28							
				29							
				30							

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ASSOCIATES, INC.
Consulting Geotechnical
Engineers

EXPLORATORY BORING LOG 3

SRI BUILDING "T" EXPANSION
333 RAVENSWOOD AVENUE
Menlo Park, California

700-4 December 2004 Sheet 1 of 1

Drill Rig Hollow Flight Auger	Surface Elevation -----	Logged By GC
Groundwater Depth ~ 31.5 feet	Boring Diameter 6 inches	Date Drilled 11/19/04

DESCRIPTION AND CLASSIFICATION				Depth (Feet)	SAMPLER	SAMPLE DATA					
DESCRIPTION AND REMARKS	COLOR	CONSISTENCY	SOIL TYPE			Blows Per Foot	Percent Moisture	Dry Density (Pcf)	Plasticity Index / Liquid Limit (%)	Percent Passing #200 Sieve	Shear Strength (Ksf)
SANDY CLAY (blocky with root holes)	dark brown	loose	CL								
				1							
Possible Fill				2		27	13	91	23/40	88	
SANDY CLAY	brown	stiff	CL	3							
				4		37	13	96		88	4.5+(p)
				5							
				6							
				7							
SANDY CLAY	light brown	very stiff	CL	8							
				9		34	15	106		87	
				10							
				11							
				12							
				13							
				14		57	14	112		74	4.5+(p)
				15							
				16							
(increasing clay)				17							
				18							
				19	x	46	16			80	4.5+(p)
	light brown and gray			20							
				21							
				22							
				23							
(3-inch silty sand seam at 24 feet)				24	x	30	17			61	3.5(p)
				25							
				26							
				27							
		stiff		28							
				29	x	15	24			75	1.8(p)
				30							

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EXPLORATORY BORING LOG 4

SRI BUILDING "T" EXPANSION
333 RAVENSWOOD AVENUE
Menlo Park, California

700-4 December 2004 Sheet 1 of 2

Drill Rig Hollow Flight Auger	Surface Elevation -----	Logged By GC
Groundwater Depth - 31.5 feet	Boring Diameter 8 inches	Date Drilled 11/19/04

DESCRIPTION AND CLASSIFICATION						SAMPLE DATA					
DESCRIPTION AND REMARK	COLOR	CONSISTENCY	SOIL TYPE	Depth (Feet)	SAMPLER	Blows Per Foot	Percent Moisture	Dry Density (Pcf)	Plasticity Index / Liquid Limit (%)	Percent Passing #200 Sieve	Shear* Strength (Ksf)
SANDY CLAY, silty (contd.)	light brown and gray	stiff	CL	31							
							⊻ GWT 15 min AD				
				32							
				33							
				34							
					X	26	21			77	3.2(p)
				35							
				36			⊻ ATD				
				37							
				38							
				39							
					X	13	28			74	
				40							
— — ?— — — — — — ? — —				41							
SANDY CLAY - CLAYEY SAND	light brown and gray	stiff to medium-dense	CL-SC	42							
				43							
				44							
					X	25	26			55	1.0(p)
				45							
Bottom of Boring = 45.0 feet				46							
Note: "(p)" indicates shear strength by pocket penetrometer.				47							
				48							
				49							
				50							
				51							
				52							
				53							
				54							
				55							
				56							
				57							
				58							
				59							
				60							

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EXPLORATORY BORING LOG 4

SRI BUILDING "T" EXPANSION
333 RAVENSWOOD AVENUE
Menlo Park, California

700-4 December 2004 Sheet 2 of 2

Appendix 3.13-1

Vehicle Miles Traveled Analysis Memorandum

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Memorandum

Date: June 12, 2024

To: Ms. Jessica Viramontes, ICF

From: Kai-Ling Kuo, Gary Black

Subject: Vehicle-Miles Traveled Analysis for Parkline in Menlo Park, CA

Hexagon Transportation Consultants, Inc. has completed a Vehicle-Miles Traveled (VMT) analysis for Parkline (Proposed Project) in Menlo Park, California. Lane Partners is proposing to redevelop SRI International's existing 63.2-acre research campus, which is near city hall and Menlo Park's downtown and Caltrain station. The Proposed Project would include a new office/research and development (R&D) campus; up to 550 new rental dwelling units at a range of affordability levels (comprised of 450 multi-family units and townhomes, and a proposed land dedication to an affordable housing developer that could accommodate up to 100 affordable units); new bicycle and pedestrian connections; and approximately 26.4 acres of open space.

The purpose of the VMT analysis is to evaluate the CEQA transportation impact of the Proposed Project on VMT. Because future commercial tenants in the office/R&D area are not yet known, proposed commercial buildings in the office/R&D area are designed to accommodate either office uses, R&D or life science uses, or a combination of both. For the VMT analysis, office/R&D land use is evaluated based on a daily VMT per employee metric, which would be the same whether the land use is office or R&D. Therefore, the VMT analysis addresses the VMT impacts for either office uses, R&D or life science uses.

In addition, VMT was evaluated for the Increased Development Variant (Project Variant). The Project Variant would include up to 250 additional residential rental dwelling units compared to the Proposed Project (an increase from 550 to 800 units). There would be no change to the proposed office/R&D uses.

Project Trip Estimates

Trip generation estimates for the mixed-use development are based on standard trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition. Below is a general discussion of the trip generation estimation methodology. Because future commercial tenants in the office/R&D area are not yet known, proposed commercial buildings in the office/R&D area are designed to accommodate either office uses, R&D or life science uses, or a combination of both. Therefore, this memo evaluates two buildout scenarios within the office/R&D area: a 100% office scenario and a 100% R&D scenario. Table 1 shows the trip generation estimates for the 100% office scenario and Table 2 shows the trip generation estimates for the 100% R&D scenario. These estimates show that the 100% office scenario would generate more peak hour trips than a 100% R&D or a mix of office and R&D scenarios.

Gross Project Trip Generation

A description of the source of trip generation rates for each land-use is provided below:

- ***Office.*** Initial trip estimates for office and amenity uses are based on “ITE Land Use code 710: General Office Building”.
- ***R&D.*** Initial trip estimates for R&D and amenity uses are based on “ITE Land Use code 760: Research and Development Center”.
- ***Market-Rate Multifamily Residential.*** Initial trip estimates are based on the “ITE Land Use code 221: Multifamily Housing (Mid-Rise)”, which includes apartments and condominiums located within the same building that has between four to ten levels.
- ***Market-Rate Townhouse.*** The Proposed Project would include three-bedroom townhouses. Initial trip estimates for the townhouses are based on the “ITE Land Use code 215: Single-Family Attached Housing”, which includes townhouses/rowhouses.
- ***Affordable BMR Housing***. Initial trip estimates are based on the “ITE Land Use code 223: Affordable Housing”.
- ***Publicly Accessible Park.*** The Proposed Project would include active recreational areas in the Ravenswood Avenue Parklet on the northern edge of the Project Site. Trip estimates are based on “ITE Land Use code 488: Soccer Complex”. The programmatic design of the park has not been determined. In order to provide a conservative estimate of potential traffic generation and allow for flexible programming for the Proposed Project through the project review process, it is assumed that the park will have play structures and open field areas for warm-ups or casual play.

Trip Reductions from Internal Capture

Since this Proposed Project is mixed-use in nature, a portion of the trips generated by the Proposed Project would both begin and end within the development, referred to as internal capture. Internal capture trip estimates were made for each of the Proposed Project’s land uses based on the specific mix of uses, sizes, and location within the Project Site utilizing a combination of two internal capture methodologies: the Transportation Research Board (TRB) *National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments,* and US EPA *Mixed Use Trip Generation Model v.4 (MXD),* 2010.

NCHRP Report 684 includes an assessment of on-site land-use categories including office, residential, retail, restaurants, theaters, and hotels within the site land use mix when generating internal capture. The EPA MXD method does not explicitly differentiate subcategories such as restaurants, theaters, and hotels but it does account for location factors influencing the Proposed Project, including regional location, transit availability, density of development, walkability factors, and the sociodemographic profile of site residents and businesses. Given the strengths and weaknesses of both methodologies, an integrated approach for internal capture was developed as described in *Getting Trip Generation Right: Eliminating the Bias Against Mixed-Use Development, PAS Memo, American Planning Association, May 2013.* In accordance with the PAS memo, the full EPA MXD methodology and NCHRP 684 methodology were applied to estimate internal capture from each method. The results of the two methods were then combined using proportioning factors provided in the PAS Memo. The resulting internalization rate for the Proposed Project is approximately 4.7%.

Transportation Demand Management (TDM)

The Proposed Project would include a project-specific TDM plan for both the residential and commercial uses to reduce the total number of single-occupancy vehicle trips associated with the Proposed Project by 28% for the office/R&D land use, and 25% for the residential land use, consistent with City/County Association of Governments (C/CAG) TDM policy requirements. For mixed-use projects such as the Proposed Project, this trip reduction would be applied to the net trip generation after accounting for internalization. The TDM plan estimates that vehicle trips could be reduced by between 30 and 45 percent, depending on whether transit passes or subsidies are provided.

Net Project Trip Generation

As shown in Table 1 for the 100% office scenario, the Proposed Project trips generated by the proposed land uses after accounting for the internal trip capture and proposed TDM plans would amount to 10,026 daily trips, 1,319 AM peak-hour trips, and 1,270 PM peak-hour trips.

As shown in Table 2 for the 100% R&D scenario, the Proposed Project trips generated by the proposed land uses after accounting for the internal trip capture and proposed TDM plans would amount to 10,206 daily trips, 945 AM peak-hour trips, and 919 P.M. peak-hour trips.

Net project trip generation represents the number of new project trips added to the surrounding roadway network. The trips generated by the existing uses are credited from the site generated trips to derive the net project trip generation.

Existing Uses

Net trip generation associated with the Proposed Project represents the number of new trips added to the surrounding roadway network. The trips generated by the existing uses are credited from Project-generated trips to derive net trip generation for the Proposed Project. Trips associated with existing uses on the Project Site were credited against the new trip generation. The estimate of trips generated by existing buildings on the SRI International Campus was based on driveway counts conducted over 3 days in October 2021 by Fehr & Peers. Of the 1,100 employees on the SRI International Campus, 700 employees were in Buildings P, S, and T. The trip credit for the Proposed Project (excluding Buildings P, S, and T) is proportioned and based on the number of employees. Therefore, it was assumed that existing buildings on the Project Site generated an average of 518 daily trips, including 46 trips in the AM peak hour and 43 trips in the PM peak hour.

As shown in Table 1, under the 100 percent office scenario, net new trips on the roadway network generated by Proposed Project would amount to 9,508 daily trips, including 1,273 AM peak-hour trips and 1,227 PM. peak-hour trips.

As shown in Table 2, under the 100 percent R&D scenario, net new trips on the roadway network generated by Proposed Project would amount to 9,688 daily trips, including 899 AM peak-hour trips and 876 PM peak-hour trips.

Table 1
Trip Generation Estimates – 100 Percent Office Scenario

				Daily		AM Peak Hour				PM Peak Hour			
Land Use		**Size**		**Rate**	**Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
Proposed Use	**ITE Code** [1]												
General Office	710	1,094	ksf	10.84	11,855	1.52	1,462	200	1,662	1.44	268	1,307	1,575
Multifamily Housing (Mid-Rise)	221	431	du	4.54	1,957	0.37	37	122	159	0.39	102	66	168
Single-Family Attached Housing [2]	215	19	du	7.20	137	0.48	2	7	9	0.57	6	5	11
Affordable Housing	223	100	du	4.81	481	0.50	15	35	50	0.46	27	19	46
Soccer Complex[3]	488	1	field	71.33	71	0.99	1	0	1	16.43	11	5	16
Gross Project Trips (before any reductions)					**14,501**		**1,517**	**364**	**1,881**		**414**	**1,402**	**1,816**
Gross Project Trips After Internal Capture Reduction					**13,822**		**1,471**	**353**	**1,824**		**396**	**1,358**	**1,754**
Project Trips After TDM Reduction (25% Residential / 28% Office) [4]					**10,026**		**1,061**	**258**	**1,319**		**289**	**981**	**1,270**
Other Trip Adjustments													
Existing Uses (non P, S, T Buildings) [5]					(518)		(38)	(8)	(46)		(11)	(32)	(43)
Net Project Trips on Project Network					**9,508**		**1,023**	**250**	**1,273**		**278**	**949**	**1,227**

Notes:

ksf = 1,000 square feet; du = dwelling unit

[1] Daily, AM, and PM peak hour average rates published in *ITE Trip Generation Manual, 11th Edition, 2021* were used for each land use.

[2] Trip estimates for the townhouses are based on the ITE land use “Single-Family Attached Housing,” which includes townhouses/rowhouses

[3] The Proposed Project would include active recreational areas in the Ravenswood Avenue parklet. The programmatic design of the park has not been determined. The ITE land use "Soccer Complex" is analyzed as a proxy. In order to provide a conservative estimate of potential traffic generation, it is assumed that the park would have play structures and open field areas for warm-ups or casual play. The number of soccer fields at the park was estimated, based on the size of a standard soccer field.

[4] The Proposed Project would include a project-specific TDM plan for both the residential and commercial uses to reduce the total number of vehicle trips associated with the Proposed Project. The Proposed Project is considered a transit-oriented development (TOD) because of the Project Site’s proximity to the Menlo Park Caltrain station. Specifically, the TDM plan would reduce the total number of vehicle trips associated with the Proposed Project by at least 25 percent for the proposed residential uses and at least 28 percent for the proposed office/R&D uses, consistent with City/County Association of Governments (C/CAG) TDM policy requirements. For mixed-use projects such as the Proposed Project, this trip reduction would be applied to the net trip generation after accounting for internalization.

[5] Existing-use trip estimates are based on driveway counts conducted by Fehr & Peers in 2021. Of the 1,100 employees onsite, 700 employees were in Buildings P, S, and T. The trip credit for the Proposed Project (excluding Buildings P, S, and T) is proportioned, based on employees.

Table 2
Trip Generation Estimates – 100 Percent R&D Scenario

				Daily		AM Peak Hour				PM Peak Hour			
Land Use		**Size**		**Rate**	**Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
Proposed Use	**ITE Code** [1]												
Research and Development Center (R&D)	760	1,094	ksf	11.08	12,117	1.03	923	203	1,126	0.98	172	900	1,072
Multifamily Housing (Mid-Rise)	221	431	du	4.54	1,957	0.37	37	122	159	0.39	102	66	168
Single-Family Attached Housing [2]	215	19	du	7.20	137	0.48	2	7	9	0.57	6	5	11
Affordable Housing	223	100	du	4.81	481	0.50	15	35	50	0.46	27	19	46
Soccer Complex[3]	488	1	field	71.33	71	0.99	1	0	1	16.43	11	5	16
Gross Project Trips (before any reductions)					**14,763**		**978**	**367**	**1,345**		**318**	**995**	**1,313**
Gross Project Trips After Internal Capture Reduction					**14,072**		**948**	**356**	**1,304**		**304**	**963**	**1,267**
Project Trips After TDM Reduction (25% Residential / 28% Office) [4]					**10,206**		**684**	**261**	**945**		**223**	**696**	**919**
Other Trip Adjustments													
Existing Uses (non P, S, T Buildings) [4]					(518)		(38)	(8)	(46)		(11)	(32)	(43)
Net Project Trips on Project Network					**9,688**		**646**	**253**	**899**		**212**	**664**	**876**

Notes:

ksf = 1,000 square feet; du = dwelling unit

[1] Daily, AM, and PM peak hour average rates published in *ITE Trip Generation Manual, 11th Edition, 2021* were used for each land use.

[2] Trip estimates for the townhouses are based on the ITE land use “Single-Family Attached Housing,” which includes townhouses/rowhouses

[3] The Proposed Project would include active recreational areas in the Ravenswood Avenue parklet. The programmatic design of the park has not been determined. The ITE land use "Soccer Complex" is analyzed as a proxy. In order to provide a conservative estimate of potential traffic generation, it is assumed that the park would have play structures and open field areas for warm-ups or casual play. The number of soccer fields at the park was estimated, based on the size of a standard soccer field.

[4] The Proposed Project would include a project-specific TDM plan for both the residential and commercial uses to reduce the total number of vehicle trips associated with the Proposed Project. The Proposed Project is considered a transit-oriented development (TOD) because of the Project Site’s proximity to the Menlo Park Caltrain station. Specifically, the TDM plan would reduce the total number of vehicle trips associated with the Project Variant by at least 25 percent for the proposed residential uses and at least 28 percent for the proposed office/R&D uses, consistent with City/County Association of Governments (C/CAG) TDM policy requirements. For mixed-use projects such as the Proposed Project, this trip reduction would be applied to the net trip generation after accounting for internalization.

[5] Existing-use trip estimates are based on driveway counts conducted by Fehr & Peers in 2021. Of the 1,100 employees onsite, 700 employees were in Buildings P, S, and T. The trip credit for the Proposed Project (excluding Buildings P, S, and T) is proportioned, based on employees.

VMT Estimation Tool

Project VMT is defined as the total distance traveled by vehicles traveling to and from the Proposed Project over a typical day. In order to estimate VMT for the various land use components, the citywide travel demand forecast model was used. The citywide model is the best available model to represent travel within the City of Menlo Park and serves as the primary forecasting tool for the City. The model is a mathematical representation of travel within the nine Bay Area counties, as well as Santa Cruz, San Benito, Monterey, and San Joaquin counties. The base model structure was developed by the Metropolitan Transportation Commission (MTC) and further refined by the City/County Association of Governments and Santa Clara Valley Transportation Authority for use within San Mateo County and Santa Clara County. The City further refined this model for application within Menlo Park to add more detail to the zone structure and transportation network. The model has a base year of 2019.

There are four main components of the model: 1) trip generation, 2) trip distribution, 3) mode choice, and 4) trip assignment. The model uses socioeconomic inputs (i.e., population, income, employment) aggregated into geographic areas, called transportation analysis zones (TAZ) to estimate travel within the model area. There are 81 TAZs within the model to represent the City of Menlo Park. The model was used to estimate the Proposed Project's effect on VMT in accordance with the City's TIA guidelines.

VMT Threshold of Significance

Per the City of Menlo Park TIA guidelines adopted in July 2020 and updated in January 2022, mixed-use projects have each component analyzed independently against the appropriate thresholds.

The Menlo Park VMT thresholds of significance are as follows:

- An office/R&D project is considered to have a significant impact on VMT if the project's VMT exceeds a threshold of 15 percent below the regional average VMT per employee.
- A residential project is considered to have a significant impact on VMT if the project's VMT exceeds a threshold of 15 percent below the regional average VMT per resident.

According to the City's TIA guidelines, office/R&D land use is evaluated based on a daily VMT per employee metric, which would be the same whether the land use is office or R&D. Using the model, this metric is calculated only for home-based work trips, per OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA. Based on the latest citywide travel demand model, the regional average office/R&D daily VMT is 15.9 per employee. Therefore, City's office/R&D VMT impact threshold, at 15% below regional average, is 13.6 daily VMT per employee.

According to City's TIA guidelines, the evaluation of residential land use is based on a daily VMT per resident metric. Using the model, this metric is calculated only for home-based trips, per OPR's technical advisory. Based on the latest citywide travel demand model, the regional average daily residential VMT is 13.1 per resident. Therefore, the City's residential VMT impact threshold, at 15% below regional average, is 11.2 daily VMT per resident.

VMT Evaluation for the Proposed Project

The travel demand model calculated the daily VMT per employee to be 17.9 for the office/R&D component of the project, which is above the threshold of 13.6. However, the model does not account for the project's internalization. The Proposed Project would include office/R&D and residential land uses. OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA* recommends that VMT analysis for a mixed-use project should account for internal capture. Internal capture is defined as walking and bicycling trips between the various types of land use within the Project Site. As discussed in the Parkline Transportation Impact analysis (TIA)[1], the Proposed Project's daily internalization is estimated at 4.7 percent.

The model also does not fully account for the project's Transportation Demand Management (TDM) plan (see Appendix A). Menlo Park will require a TDM plan for the office/R&D component of the project that achieves a 28% trip reduction from standard ITE trip generation rates. Therefore, the model VMT estimate of 17.9 daily VMT per employee needs to be adjusted downward to accurately represent the Proposed Project.

Per the Institute of Transportation Engineers (ITE) *Trip Generation Handbook, 3rd Edition (p38)*, ITE's trip generation rates reflect a drive-alone mode share of 95 percent. For the proposed office/R&D uses, the required 28% TDM reduction plus internalization will reduce the drive alone mode share to 65.2% [(1-5% of inherent non-driving mode) * (1-4.7% of internalization) * (1-28% of TDM reduction) = 65.2%]. The model estimated the drive-alone mode share for the office/R&D component of the project to be 86.4%. Thus, the model-calculated VMT per employee of 17.9 can be reduced by 24.5% (1 – 65.2%/86.4% = 24.5%) to arrive at an estimate of 13.5 daily home-based VMT per employee (13.5 = 17.9 * [1-24.5%]) after accounting for the internalization and the required TDM plan (see Table 3).

Table 3
Project VMT Evaluation

Land Use	Regional Average	VMT Threshold	Project VMT [3]	VMT Impact
Office/R&D [1]	15.9	13.6	13.5	No
Residential [2]	13.1	11.2	9.7	No

Notes:
** All data referenced the latest Menlo Park citywide travel demand forecast model.*
1. VMT for office/R&D land use is reported in VMT per employee.
2. VMT for residential land use is reported in VMT per capita.
3. Project VMT accounted for implementation of a TDM Plan with 28% trip reduction target for the office/R&D land use, and 25% trip reduction target for the residential land use.

---

[1] The Parkline TIA will be appended to the Final EIR prepared for the Proposed Project.

For the residential component, the travel demand model calculated the residential VMT at 11.1 home-based VMT per resident. However, as with the office/R&D component, this doesn't account for internalization or the TDM plan. Menlo Park will require a TDM plan to achieve a 25% reduction from ITE rates for the residential component. For the proposed residential uses, the 25% TDM reduction from gross ITE trip generation (after crediting internalization) is equivalent to a drive alone mode share of 67.9% [(1-5% of inherent non-driving mode) * (1-4.7% of internalization) * (1-25% of TDM reduction) = 67.9%] The model estimated the residential component's drive alone mode share at 77.3%. Since the residential component with the TDM plan reductions would have a drive alone mode share of 67.9%, the model-estimated drive alone mode share was reduced by 12.2% (1 – 67.9%/77.3% = 12.2%). As a result, the proposed residential component of the project would have 9.7 home-based VMT per resident (9.7 = 11.1 * [1-12.2%]).

As shown in Table 3, the Proposed Project's residential and office/R&D land uses would generate VMT below the City's respective VMT impact thresholds and would thus not have a VMT impact.

Trip Generation Estimates for the Project Variant

Trip generation estimates for the Project Variant are evaluated using the same methodology and assumptions described above for the Proposed Project. The only difference is in the increased number of residential units and the mix. Table 4 and Table 5 show the trip generation estimates for the 100 percent office and 100 percent R&D scenarios, respectively.

Table 4
Trip Generation Estimates – 100 Percent Office Scenario Variant

				Daily		AM Peak Hour				PM Peak Hour			
Land Use		**Size**		**Rate**	**Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
Proposed Use	**ITE Code** [1]												
General Office	710	1,094	ksf	10.84	11,855	1.52	1,462	200	1,662	1.44	268	1,307	1,575
Multifamily Housing (Mid-Rise)	221	600	du	4.54	2,724	0.37	51	171	222	0.39	143	91	234
Single-Family Attached Housing [2]	215	46	du	7.20	331	0.48	6	16	22	0.57	15	11	26
Affordable Housing	223	154	du	4.81	741	0.50	22	55	77	0.46	42	29	71
Soccer Complex[3]	488	1	field	71.33	71	0.99	1	0	1	16.43	11	5	16
Gross Project Trips (before any reductions)					**15,722**		**1,542**	**442**	**1,984**		**479**	**1,443**	**1,922**
Gross Project Trips After Internal Capture Reduction					**14,987**		**1,495**	**427**	**1,922**		**459**	**1,398**	**1,857**
Project Trips After TDM Reduction (25% Residential / 28% Office) [4]					**11,032**		**1,079**	**314**	**1,393**		**336**	**1,011**	**1,347**
Other Trip Adjustments													
Existing Uses (non P, S, T Buildings) [5]					(518)		(38)	(8)	(46)		(11)	(32)	(43)
Net Project Trips on Project Network					**10,514**		**1,041**	**306**	**1,347**		**325**	**979**	**1,304**

Notes:

ksf = 1,000 square feet; du = dwelling unit

[1] Daily, AM, and PM peak hour average rates published in *ITE Trip Generation Manual, 11th Edition, 2021* were used for each land use.

[2] Trip estimates for the townhouses are based on the ITE land use “Single-Family Attached Housing,” which includes townhouses/rowhouses

[3] The Project Variant would include active recreational areas in the Ravenswood Avenue parklet. The programmatic design of the park has not been determined. The ITE land use "Soccer Complex" is analyzed as a proxy. In order to provide a conservative estimate of potential traffic generation, it is assumed that the park would have play structures and open field areas for warm-ups or casual play. The number of soccer fields at the park was estimated, based on the size of a standard soccer field. The

[4] Project Variant would include a project-specific TDM plan for both the residential and commercial uses to reduce the total number of vehicle trips associated with the Project Variant. The Project Variant is considered a transit-oriented development (TOD) because of the Project Site’s proximity to the Menlo Park Caltrain station. Specifically, the TDM plan would reduce the total number of vehicle trips associated with the Project Variant by at least 25 percent for the proposed residential uses and at least 28 percent for the proposed office/R&D uses, consistent with City/County Association of Governments (C/CAG) TDM policy requirements. For mixed-use projects such as the Project Variant, this trip reduction would be applied to the net trip generation after accounting for internalization.

[5] Existing-use trip estimates are based on driveway counts conducted by Fehr & Peers in 2021. Of the 1,100 employees onsite, 700 employees were in Buildings P, S, and T. The trip credit for the Proposed Project (excluding Buildings P, S, and T) is proportioned, based on employees.

Table 5
Trip Generation Estimates – 100 Percent R&D Scenario Variant

				Daily		AM Peak Hour				PM Peak Hour			
Land Use		**Size**		**Rate**	**Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
Proposed Use	**ITE Code** [1]												
Research and Development Center (R&D)	760	1,094	ksf	11.08	12,117	1.03	923	203	1,126	0.98	172	900	1,072
Multifamily Housing (Mid-Rise)	221	600	du	4.54	2,724	0.37	51	171	222	0.39	143	91	234
Single-Family Attached Housing [2]	215	46	du	7.20	331	0.48	6	16	22	0.57	15	11	26
Affordable Housing	223	154	du	4.81	741	0.50	22	55	77	0.46	42	29	71
Soccer Complex[3]	488	1	field	71.33	71	0.99	1	0	1	16.43	11	5	16
Gross Project Trips (before any reductions)					**15,984**		**1,003**	**445**	**1,448**		**383**	**1,036**	**1,419**
Gross Project Trips After Internal Capture Reduction					**15,237**		**972**	**430**	**1,402**		**367**	**1,003**	**1,370**
Project Trips After TDM Reduction (25% Residential / 28% Office) [4]					**11,212**		**702**	**317**	**1,019**		**270**	**726**	**996**
Other Trip Adjustments													
Existing Uses (non P, S, T Buildings) [5]					(518)		(38)	(8)	(46)		(11)	(32)	(43)
Net Project Trips on Project Network					**10,694**		**664**	**309**	**973**		**259**	**694**	**953**

Notes:

ksf = 1,000 square feet; du = dwelling unit

[1] Daily, AM, and PM peak hour average rates published in *ITE Trip Generation Manual, 11th Edition, 2021* were used for each land use.

[2] Trip estimates for the townhouses are based on the ITE land use “Single-Family Attached Housing,” which includes townhouses/rowhouses

[3] The Project Variant would include active recreational areas in the Ravenswood Avenue parklet. The programmatic design of the park has not been determined. The ITE land use "Soccer Complex" is analyzed as a proxy. In order to provide a conservative estimate of potential traffic generation, it is assumed that the park would have play structures and open field areas for warm-ups or casual play. The number of soccer fields at the park was estimated, based on the size of a standard soccer field.

[4] Project Variant would include a project-specific TDM plan for both the residential and commercial uses to reduce the total number of vehicle trips associated with the Project Variant. The Project Variant is considered a transit-oriented development (TOD) because of the Project Site’s proximity to the Menlo Park Caltrain station. Specifically, the TDM plan would reduce the total number of vehicle trips associated with the Project Variant by at least 25 percent for the proposed residential uses and at least 28 percent for the proposed office/R&D uses, consistent with City/County Association of Governments (C/CAG) TDM policy requirements. For mixed-use projects such as the Project Variant, this trip reduction would be applied to the net trip generation after accounting for internalization.

[5] Existing-use trip estimates are based on driveway counts conducted by Fehr & Peers in 2021. Of the 1,100 employees onsite, 700 employees were in Buildings P, S, and T. The trip credit for the Proposed Project (excluding Buildings P, S, and T) is proportioned, based on employees.

VMT Evaluation for Project Variant

It is assumed that the Project Variant would implement a TDM plan that achieves the same trip reduction as the Proposed Project.

The Project Variant, which includes an additional 250 units, was estimated to have 10.7 home-based VMT per capita without the TDM plan measures and a driving mode split of 75.6%. The model-estimated driving trips were downward adjusted by 10.2% (1 – 67.9%/75.6% = 10.2%). As a result, the proposed residential land uses implementing a TDM plan would result in 9.6 home-based VMT per capita (9.6 = 10.7 * [1-10.2%]).

Since the Project Variant does not propose any changes to the office/R&D land use, the office/R&D's VMT analysis is assumed to be the same as under the Proposed Project.

As shown in Table 6, the Project Variant's residential and office/R&D land uses would generate VMT below the City's respective VMT impact thresholds and would thus not have a VMT impact.

Table 6
Project Variant VMT Evaluation

Land Use	Regional Average	VMT Threshold	Project Variant VMT	VMT Impact
Office/R&D [1]	15.9	13.6	13.5	No
Residential [2]	13.1	11.2	9.6	No

Notes:

** All data referenced the latest Menlo Park citywide travel demand forecast model.*

1. VMT for office/R&D land use is reported in VMT per employee.
2. VMT for residential land use is reported in VMT per capita.
3. Project VMT accounted for implementation of a TDM Plan with 28% trip reduction target for the office/R&D land use, and 25% trip reduction target for the residential land use.

Appendix A
Parkline TDM Plan

Draft Parkline Transportation Demand Management (TDM) Plan

Prepared for:
Lane Partners LLC / SRI International

June 10, 2024

SJ21-2095

FEHR PEERS

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1. Introduction

Parkline is located within the City of Menlo Park, near the City's downtown and close to City Hall and Burgess Park. The site is within one half-mile of Menlo Park Caltrain Station. Parkline will transform the existing Stanford Research Institute (SRI) International campus into an open and inviting transit-oriented mixed-use neighborhood including a new sustainable office/research and development (R&D) campus with no net increase in commercial square footage, new housing units at a range of affordability levels, new bicycle, and pedestrian connections, and approximately 26 acres of open space. **Figure 1** shows the site location and the transportation network surrounding Parkline.

This Transportation Demand Management (TDM) Plan documents the TDM measures proposed for the residential and office/R&D components of Parkline. The primary purpose of any TDM plan is to lower the amount of development-generated vehicle traffic by creating measures, strategies, incentives, and policies to shift workers and residents from driving alone to using other travel modes including transit, carpooling, ridesharing, cycling, and walking. TDM strategies can include informational resources, physical site enhancements, monetary incentives, and more. In addition to reducing vehicles trips, the TDM Plan can reduce the parking demand of residents and office workers. This report presents the comprehensive TDM Plan for Parkline.

The existing and proposed transit, bicycle, and pedestrian facilities near the Parkline site are illustrated in this document to provide transportation context. The TDM Plan describes how Parkline's attributes such as the site's location (adjacent roadways and transit access), land uses (residential and office/R&D), physical design, and proposed improvements support alternative modes of transportation that supplement the proposed TDM measures provided to the Parkline employees and residents.

1.1 Project & Project Variant Descriptions

Figure 2a shows the proposed Parkline site plan. Parkline will include a new office/research and development (R&D) campus with no increase in office/R&D square footage compared to existing

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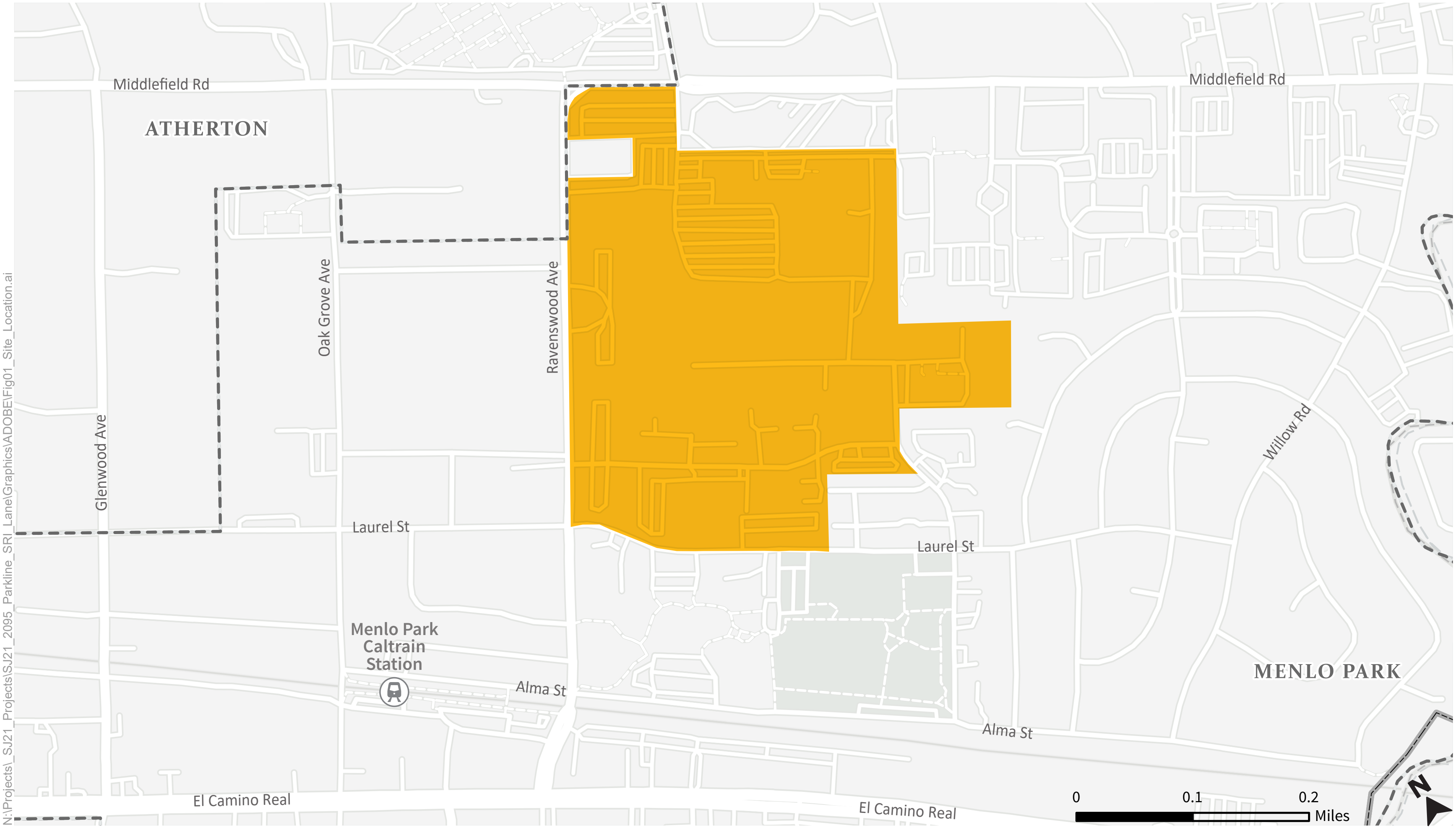


🟧 Project Area

Figure 1

Site Location

Data Source: Parkline Master Plan, 2022, LANE PARTNERS

Figure 2a

Parkline - Proposed Project Site Plan

conditions; up to 550 new rental dwelling units at a range of affordability levels (comprised of 450 multi-family units and townhomes, and a proposed land dedication to an affordable housing developer that could accommodate up to 100 affordable units); new bicycle and pedestrian connections; approximately 26 acres of Parkline to be available as open space; removal and replacement of trees; and decommissioning of a 6 megawatt natural gas cogeneration plant.

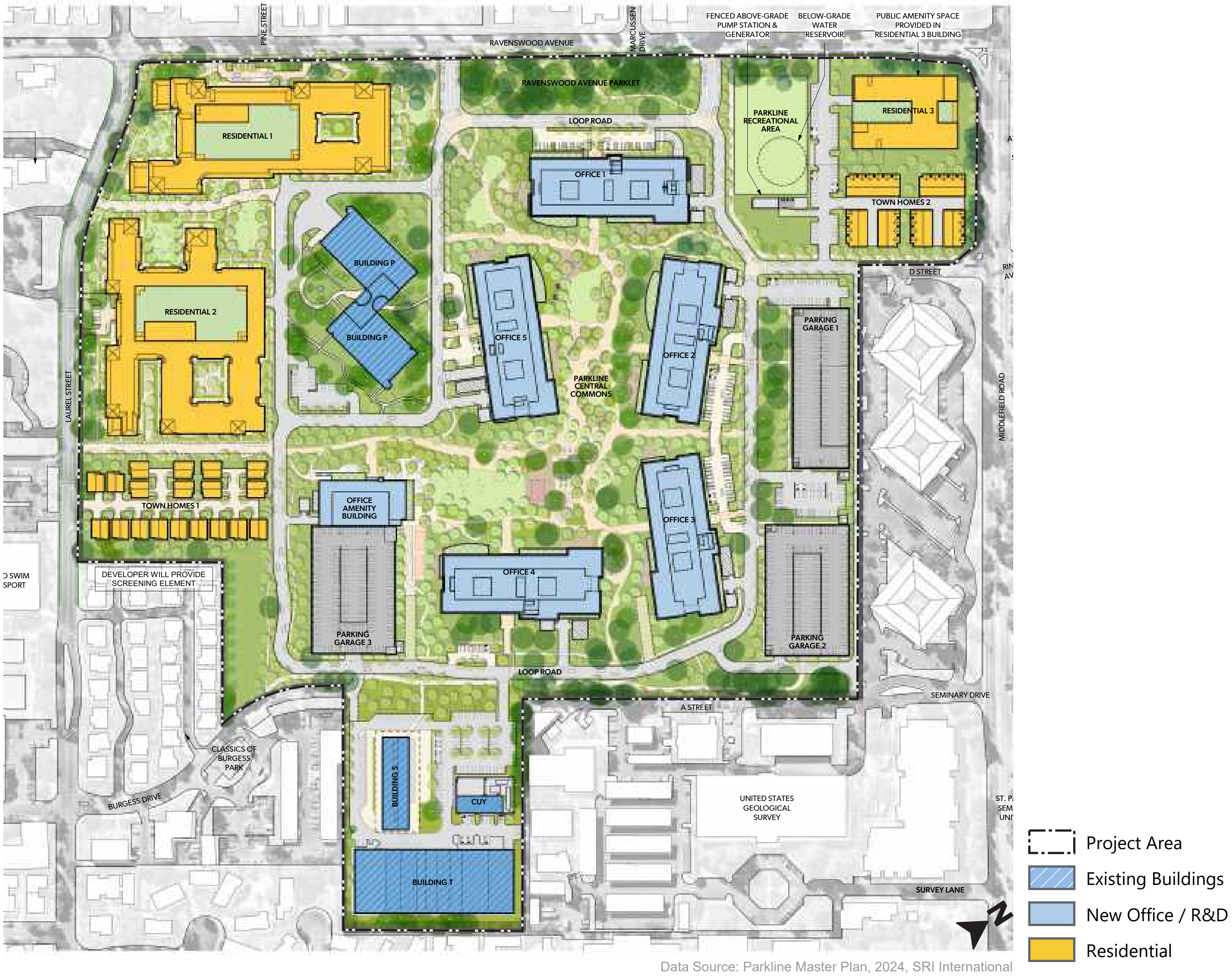
In total, Parkline will include approximately 1,768,802 square feet (sf) of mixed-use development, with approximately 1,093,602 sf of office/R&D uses and approximately 675,200 sf of residential uses. Parkline will demolish all buildings on SRI International's Campus, excluding Buildings P, S, and T, which would remain onsite and be operated by SRI International and its tenants.

The City is also evaluating a variant, called the Increased Development Variant, as part of the Environmental Impact Report being prepared for Parkline pursuant to the California Environmental Quality Act. The Increased Development Variant, **Figure 2b**, is a variation of the Parkline proposal located at the same site (although the site would be slightly expanded), generally with the same objectives, background, and development controls, but with the following differences:

1) The variant site would include the parcel at 201 Ravenswood Avenue to create a continuous frontage area along Ravenswood Avenue and increase the overall site by approximately 43,762 square feet (sf) (approximately 1.0 acre), for a total of approximately 64.2 acres;
2) The variant would include up to 250 additional residential rental dwelling units compared to the original Parkline proposal (an increase from 550 to 800 units, inclusive of up to 154 units to be developed by an affordable housing developer);
3) The variant would reduce the underground parking footprint within the site, both by removing underground parking from the multifamily residential buildings in the residential area and removing the underground parking connection between office/research-and-development (R&D) Building O1 and Building O5. As a result, Parking Garage (PG) 1 and PG2 increase in square footage and height compared to the original Parkline proposal and the number of structured spaces increases by 400 (with no change in the total number of parking spaces proposed for the office/R&D buildings); and
4) The variant would include an approximately 2- to 3-million-gallon emergency water reservoir that would be buried below grade in the northeast area of the site, in addition to a small pump station and related improvements that would be built at grade. It would be built and operated by the City.

The variant would not differ from many of the basic characteristics of the Parkline proposal, particularly with respect to the commercial component. For example, total office/R&D development would remain the same. Certain residential uses, including the affordable housing site and a limited number of townhome units, would shift to the corner of the site nearest to the intersection of Middlefield Avenue and Ravenswood Avenue. In addition, the existing buildings associated with First Church of Christ, Scientist and Alpha Kids Academy (Chapel buildings) located at 201 Ravenswood would be demolished.

The TDM Plan will apply to the Parkline land uses as ultimately approved by the City.



Data Source: Parkline Master Plan, 2024, SRI International

Figure 2b

Parkline - Project Variant Site Plan

2. Site Context – Transportation Services

The Parkline site is well served by the existing transportation system, which includes roadways, pedestrian and bicycle facilities, and transit services (i.e., Caltrain, SamTrans and Menlo Park community shuttles). The existing transit, bicycle, and pedestrian facilities, and planned Parkline improvements that will support travel to the site by modes of transportation other than driving alone, are described below. The data presented represents transit operating conditions based on the current published schedules.

2.1 Transit Service

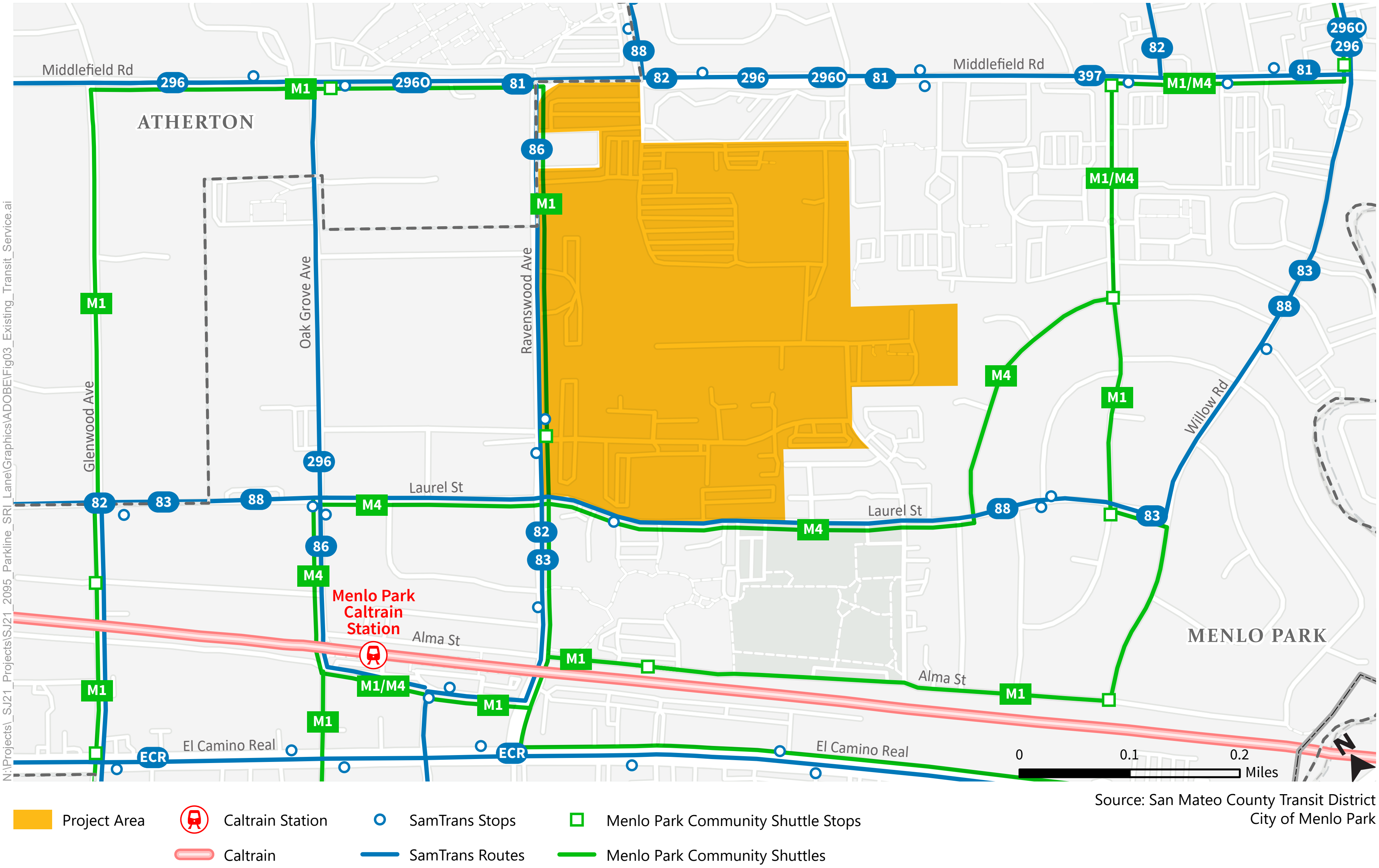
Parkline is near several transit service options, including Caltrain, SamTrans and Menlo Park community shuttles. The City of Menlo Park encourages the use of transit as an alternative mode of transportation and is served by two major transit providers: San Mateo County Transit District (SamTrans) and Caltrain. SamTrans provides bus service throughout San Mateo County and into parts of San Francisco and Palo Alto. Caltrain provides commuter rail service between San Francisco and San José. In addition, Menlo Park operates community shuttles to Belle Haven / Bohannon Drive area, Sharon Heights, and in between Caltrain and Ivy Drive. The community shuttles offer connections with other regional transit agencies like Caltrain, SamTrans, and VTA. Additionally, the Menlo Park community shuttle includes the Shopper's Shuttle program, which is a door-to-door service for people who require extra assistance. The Shopper's Shuttle service operates three days a week for travel within Menlo Park, Palo Alto, and Redwood City. Paratransit services are also available for seniors and people with disabilities. The transit district also offers Redi-Wheels paratransit service for persons with disabilities who are unable to ride SamTrans' regular buses.

Figure 3 shows the existing transit bus routes and bus stops serving Parkline. **Table 1** summarizes hours of operation and service frequencies for the bus routes nearest the site.

2.1.1 Caltrain

Caltrain provides weekday commuter rail service between San José and San Francisco. There are currently 52 trains traveling northbound from San José to San Francisco and 52 trains traveling southbound from San Francisco to San José each weekday. A total of 75 trains serve the Menlo Park station each weekday.

The Caltrain weekday service in Menlo Park includes limited and local service. Limited service is an express service that stops at limited number of stations between San Francisco and San José, improving travel times for patrons. Local service stops at all stations, providing greater geographic coverage, but travel times are slower. There are 31 limited trains and 44 local trains serving Menlo Park on a weekday. The



Source: San Mateo County Transit District
City of Menlo Park

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Figure 3

Existing Transit Service

Table 1: Nearby Transit Services

Route	From	To	Weekdays		Weekends		Notes
			Operating Hours	Peak Headway (minutes)	Operating Hours	Headway (min)	
Caltrain Service							
Northbound	San José	San Francisco	4:28 am- 11:12 pm	24	7:15 am- 10:28 pm	60	
Southbound	San Francisco	San José	4:51 am – 12:05 am	24	7:47 am- 11:13 pm	60	
SamTrans							
ECR NB	Palo Alto	Daly City	4:05 am – 11:50 pm	15	4:50 am- 11:50 pm	20	
ECR SB	Daly City	Palo Alto	4:40 am – 12:15 am	15- 20	5:40 am- 12:40 am	20	
Route 397	Drumm/Clay	Palo Alto Transit Center	3:30am- 6:15 am	60	3:30am- 6:15 am	60	N/A during mid-day or evenings
Route 296	Bayshore/ Donohoe	Redwood City Transit Center	5:15 am- 9:56 pm	15	8:31am – 7:35 pm	30	
Route 82	Bay/Marsh	Hillview Middle School	7:40 am & 3:17 pm	N/A	No Service		School days only
Route 83	Bay/Menlo Oaks	Hillview Middle School	7:28 am & 3:18 pm	N/A	No Service		School days only
Route 88	Bay/Marsh	Encinal School	2:05 pm & 3:15 pm	N/A	No Service		School days only
Community Shuttles			***Morning***	***Afternoon***			
M1- Crosstown to/from Sharon Heights	Terminal and Del Norte	Menlo Commons	8:15 am- 10:49 am	12:07 pm – 3:27 pm	No Service		Free of Cost
M1- Crosstown to/from Belle Haven	Sharon Hts. Shopping Center	Terminal and Del Norte	9:00 am- 10:01 am	12:55 pm – 4:23 pm	No Service		Free of Cost
M4- Willow Road Shuttle	Menlo Park Caltrain Station	Menlo Park Caltrain Station	6:41 am- 9:47 am	3:58 pm- 5:21 pm	No Service		Free of Cost
Shoppers' Shuttle	Home	Multiple facilities and back to home	Tue & Wed 9:30 am- 1:30 pm	N/A	Only on Saturdays 9:30 am- 1:30 pm		Free of Cost

Source: Fehr & Peers, August 2023.

Menlo Park Downtown station is located less than one half-mile (~2,500 feet) west of Parkline and can be accessed by a ten-minute walk or five-minute bicycle ride.

2.1.2 SamTrans Bus Service

SamTrans is a public transportation agency that provides bus service throughout San Mateo County including service in Menlo Park. SamTrans also operates commuter shuttles to Caltrain and BART stations as well as community shuttles in several local jurisdictions. SamTrams operates six regularly scheduled routes that either directly connect to or are within a short walking distance (less than one half-mile) of Parkline. Five of the routes provide service to Parkline along Middlefield Road, Ravenswood Avenue, or Laurel Street. The fifth route operates on El Camino Real.

Routes 82, 83, and 88 provide local service within the City of Menlo Park and Atherton, and only operate on days school is in session. The other three routes provide regional or subregional service. Routes 296 and 397 operate on Middlefield Road and serve East Palo Alto, west Menlo Park, and extends into Redwood City connecting to the downtown Caltrain Station. Route ECR provides service along El Camino Real from the Palo Alto Transit Center in the south to Daly City BART Station in the north.

2.1.3 Menlo Park Community Shuttles

The Menlo Park community shuttle service has been in operation since 1989 and is funded through grants from San Mateo City/County Association of Governments, Bay Area Air Quality Management District, and the City of Menlo Park. There are a total of five community shuttles routes: M1 Crosstown Shuttle, M3 Marsh Road Shuttle, M4 Willow Road Shuttle, Menlo Gateway Shuttle, and Shoppers' Shuttle. Three of the shuttles could be utilized by future Parkline residents and workers. With route modifications, M1 Crosstown Shuttle and M4 Willow Road Shuttle could serve Parkline. Residents of Parkline would also have access to the Shopper's Shuttle.

The M1 Crosstown Shuttle route runs between the Belle Haven neighborhood in east Menlo Park to the Menlo Commons/Sharon Height Shopping Center in west Menlo Park. The shuttle circulates through downtown Menlo Park and connects with both the Menlo Park and Palo Alto Caltrain stations. The current route does not directly connect to Parkline. The closest stops are located south and west of Parkline along Linfield Drive and Alma Street.

The M4 Willow Road Shuttle route runs between the Menlo Park Caltrain station and the business parks located along O'Brien Drive. While this shuttle travels on Laurel Street, there are no existing shuttle stops on Parkline frontages. The M4 shuttle schedule operates Monday through Friday to coincide with the peak period Caltrain schedule.

Shoppers' Shuttle is an on-demand, door-to-door service that provides trips to multiple destinations in Menlo Park, Palo Alto, and Redwood City. Reservation-only service is only available on limited number of days for a limited number of hours.

2.1.4 Paratransit

SamTrans paratransit service is provided to eligible individuals with disabilities who are prevented from using regular transit services. SamTrans provides paratransit service using Redi-Wheels on the bayside of the county and RediCoast on the coast side. Parkline residents and employees that live within San Mateo County would be eligible to use this ADA paratransit service to reach nearby destinations within the county.

SamTrans' Peninsula Rides provides seniors and those with accessibility needs in San Mateo County with the resources to stay mobile and get around the community. There are other services specifically for seniors besides public transit or shuttles: Senior Center Services transport seniors to and from their homes to designated senior centers; and there are many other community services at a reasonable cost for people who require extra assistance.

2.2 Existing Pedestrian and Bicycle Facilities

2.2.1 Existing Pedestrian Facilities

Parkline's perimeter is served by a range of pedestrian facilities near including sidewalks, crosswalks, curb ramps, and pedestrian signals. There are continuous sidewalks on both sides of the roadways on Laurel Street and Middlefield Road along Parkline frontages. On Ravenswood Avenue there is a continuous sidewalk on the south side of the roadway. On the north side of Ravenswood Avenue, a sidewalk extends between Laurel Street and Marcussen Drive; however, there is no sidewalk between Marcussen Drive and Middlefield Road. This section of roadway is within the Town of Atherton, which does not provide sidewalks on most of its streets.

Table 2 summarizes locations of existing pedestrian crosswalks at the intersections adjacent to Parkline. Crosswalks are located at the signalized intersections adjoining the site. The intersection of Middlefield Road/Ravenswood Avenue does not have a crosswalk on the north approach due to the signal phasing. In addition, there are no existing sidewalks on Ravenswood Avenue and Middlefield Road on the northwest corner of the intersection (within the Town of Atherton). The intersections of Pine Street/Ravenswood Avenue and Ringwood Avenue/Ravenswood Avenue have crosswalks on all approaches.

There are no crosswalks at the two of the stop-sign controlled intersections: Pine Street/Ravenswood Avenue and Marcussen Drive/Ravenswood Avenue. At the stop-sign controlled intersection of Seminary Drive/Middlefield Road there is only one crosswalk, on the east approach on Seminary Drive.

The intersection of Alma Street/Ravenswood Avenue provides access to the Menlo Park Caltrain Station.

There are crosswalks on three of the approaches. On the east approach on Ravenswood there is a high-visibility crosswalk with a pedestrian activated flashing beacon.

Table 2: Existing Pedestrian Crosswalk Locations

Intersection	Intersection Control	North Approach	East Approach	South Approach	West Approach
Laurel Street & Ravenswood Avenue	Signal	**Yes**	**Yes**	**Yes**	**Yes**
Pine Street & Ravenswood Avenue	Side Street Stop Sign	No	No	No	No
Marcussen Drive & Ravenswood Avenue	Side Street Stop Sign	No	No	No	No
Middlefield Road & Ravenswood Avenue[1]	Signal	No	NA	**Yes**	**Yes**
Middlefield Road & Ringwood Avenue[1]	Signal	**Yes**	**Yes**	**Yes**	**Yes**
Middlefield Road & Seminary Drive	Side Street Stop Sign	No	**Yes**	No	No
Alma Street & Ravenswood Avenue[2]	Side Street Stop Sign	**Yes**	**Yes**	**Yes**	No

1 – Designated school crosswalks with yellow striping.
2 – The Alma Street & Ravenswood Avenue crosswalks provide access to the Meno Park Caltrain Station.
NA – Not applicable.
Source: Fehr & Peers, August 2023.

There are no existing mid-block crosswalks on the perimeter or the site. On Ravenswood there are no mid-block crosswalks between Laurel Street and Middlefield Road. On Middlefield Road there are no mid-block crosswalks between Ringwood Avenue and Linfield Avenue. On Laurel Street there are no mid-block crosswalks between Ravenswood Avenue and Burgess Drive.

Planned Pedestrian Improvements

The City of Menlo Park Transportation Master Plan, adopted by the Menlo Park City Council on November 17, 2020, establishes a detailed vision, sets goals and performance metrics for network performance, and outlines an implementation strategy for improvements to be implemented locally and for local contributions towards regional improvements. Many of the improvements identified in the Transportation Master Plan are focused on enhancing access to Menlo-Atherton High School.

The Transportation Master Plan identifies a range of planned pedestrian and bicycle improvements within the City, including several Tier 1 pedestrian and bicycle improvements near Parkline, most of which are planned along Middlefield Road. The key pedestrian projects surrounding Parkline include the following:

> *TMP #63 – Middlefield Road & Ravenswood Avenue* – Remove eastbound Ravenswood Avenue channelized right-turn lane, install right-turn overlap phase, modify signal timing, install crosswalk and cross-bike markings on north Middlefield Road leg, install bike signal. Construct "jughandle" bicycle left-turn on east side of Middlefield Road to allow bicycle left-turns onto Ravenswood

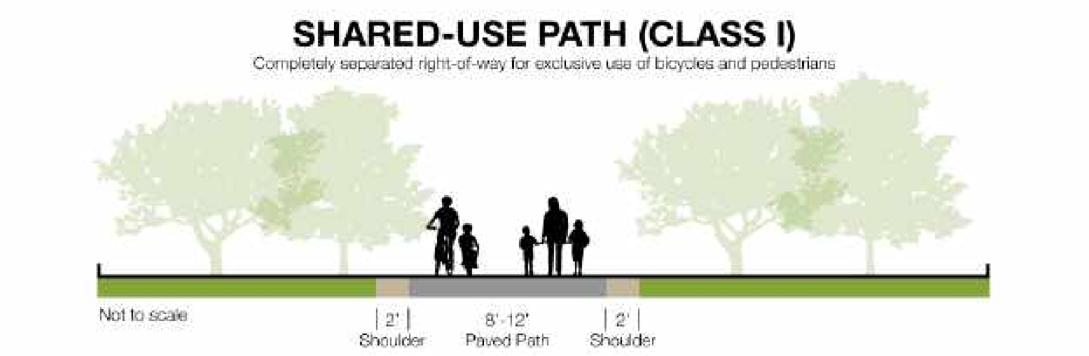
Avenue. Install “bicycle leaning rail” with push button for bicycles to initiate crossing phase on “jughandle” left-turn.

- *TMP #64 – Middlefield Road & Ringwood Avenue* – Remove southbound Middlefield Road channelized right turn. Reconstruct curb ramp and reduce curb radius on northwest corner. Replace crosswalks on north and west legs. Install two-stage left-turn queue boxes for cyclists traveling from Middlefield Road to Ringwood Avenue.
- *TMP #65 – Middlefield Road & Linfield Drive-Santa Monica Avenue* – Install High Intensity Activated Crosswalk (HAWK) or traffic signal with emergency pre-emption on Middlefield Road at Linfield Drive/Santa Monica Avenue. Install “Keep Clear” striping at Menlo Fire Protection District Station No. 1. Close sidewalk/pathway gap on eastern side of Middlefield Road between Linfield Drive and Santa Monica Avenue. Coordinate with Menlo Fire Protection District.

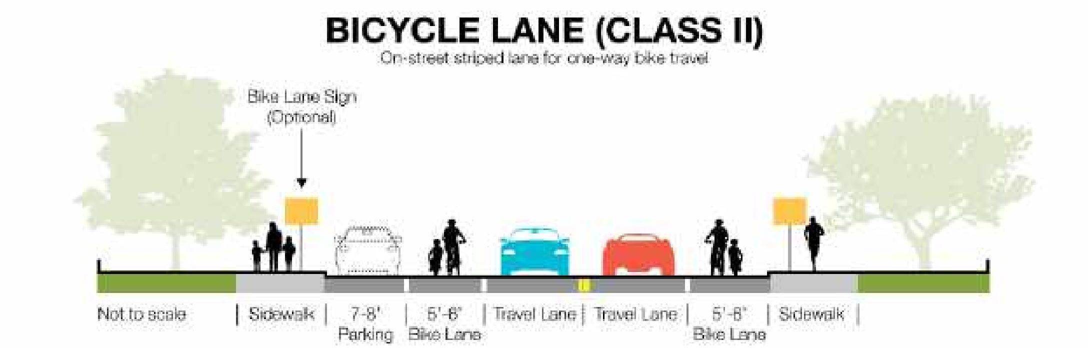
2.2.2 Existing and Proposed Bicycle Facilities

The California Department of Transportation (Caltrans) recognizes four classifications of bicycle facilities:

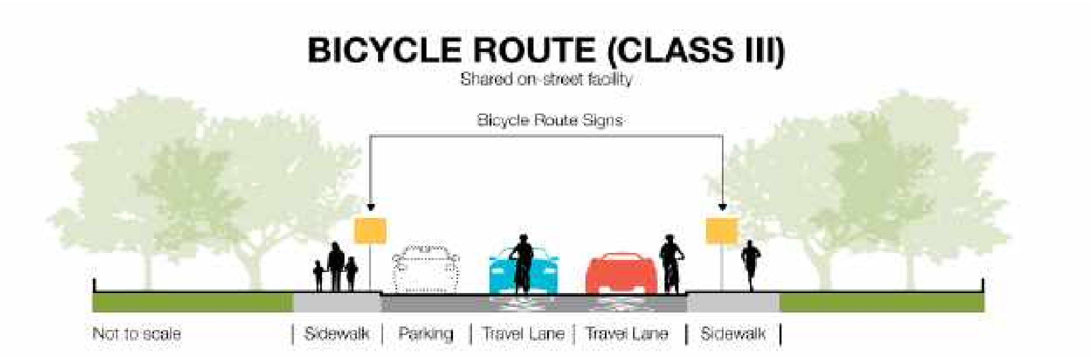
- **Class I Shared-Use Path**, commonly referred to as a Bikeway or Bike Path, is a facility separated from automobile traffic for the exclusive use of bicyclists. Class I facilities can be designed to accommodate other modes of transportation, including pedestrians and equestrians, in which case they are referred to as shared use paths.



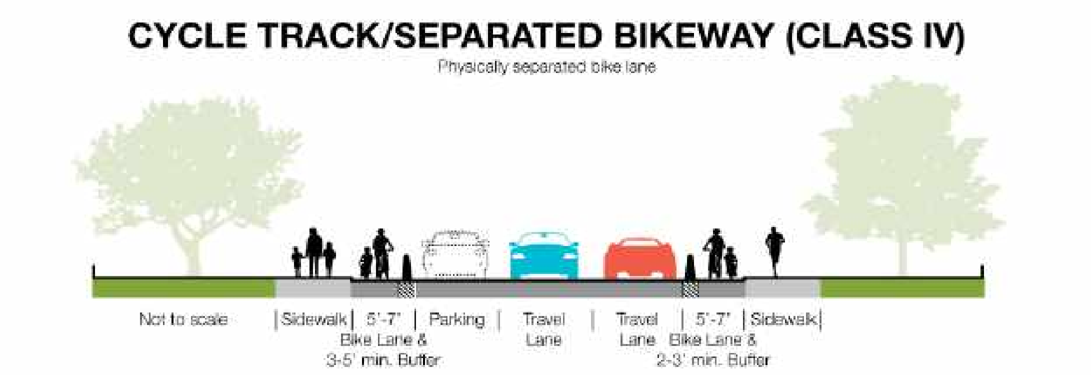
- **Class II Bicycle Lane** is a dedicated facility for bicyclists immediately adjacent to automobile traffic. Class II facilities are identified with striping, pavement markings, and signage, and can be modified with a painted buffer to become a buffered bicycle lane (Class II)



Class III Bicycle Route is an on-street route where bicyclists and automobiles share the road. They are identified with pavement markings and signage and are typically assigned to low-volume and/or low-speed streets.



- **Class IV Cycle Track or Separated Bikeway**, commonly referred to as a protected bicycle lane, is a facility that combines elements of Class I and Class II facilities. They offer an exclusive bicycle route immediately adjacent to a roadway like a Class II facility but provide physical separation from traffic with plastic delineators, raised curb, parked automobiles, or other treatments.



As shown in **Figure 4**, there are existing Class II and Class IV bicycle facilities on the roadways bounding Parkline. Ravenswood Avenue has Class IV separated bicycle lanes between Laurel Street and Middlefield Road. Laurel Street and Middlefield Road both have Class II bicycle lanes. The bicycle lanes on Laurel extend from Burgess Drive in the south to Encinal Avenue in the north. The bicycle lanes on Middlefield Road extend from the Menlo Park city limits in the south into the City of Redwood City in the north (passing through the Town of Atherton).

Planned Bicycle Improvements

As also shown in **Figure 4**, there are four Transportation Master Plan Tier 1 bicycle improvements planned near Parkline. (Note that **Figure 4** shows only planned bicycle improvements as included in the Transportation Master Plan; Parkline proposes additional bicycle improvements, which are further shown in **Figure 5**.) One of the planned improvements was recently implemented by the City of Menlo Park:

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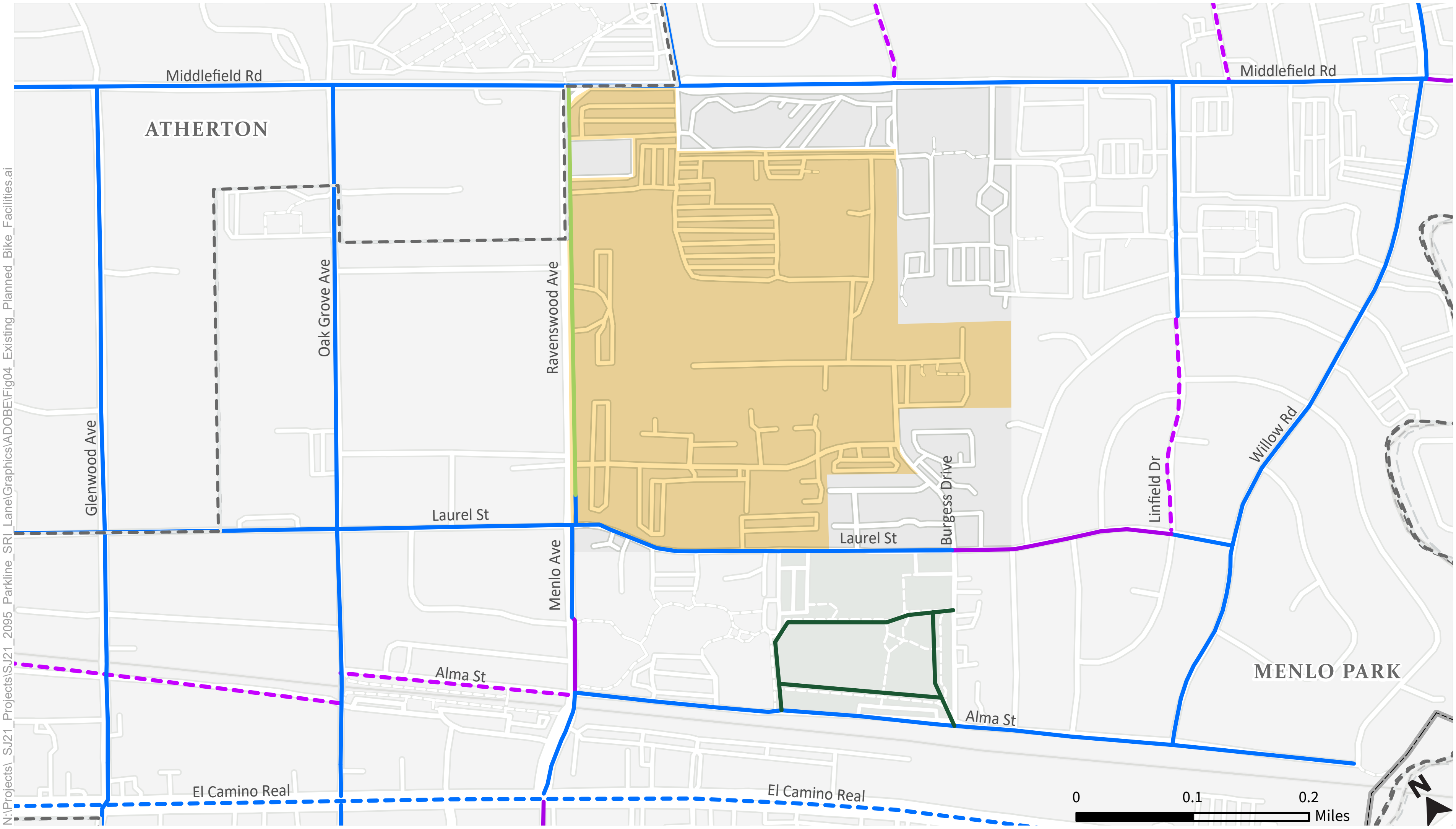


Source: City of Menlo Park Transportation Master Plan (2020)

🟨 Project Area

Existing Bike Facilities

- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Class IV Separated Bikeway

Planned Bike Facilities

- Class II Bike Lane
- Class III Bike Route

♦ *Bicycle & pedestrian facilities proposed by Parkline project are shown on Figure 5*

Figure 4

Existing and Planned Regional Bicycle Facilities

- *TMP #74 – Ravenswood Avenue & Laurel Street* – Remove parking south of Ravenswood Avenue on west side of Laurel Street for approximately 150 feet and shift northbound lanes to establish a Class II bicycle lane. Widen and modify eastbound Ravenswood Avenue to shared thru-left lane and a right turn lane. Upgrade existing crosswalks to high-visibility. Modify southbound Laurel Street to a left-turn lane and a shared thru-right lane. Maintain existing Class II bicycle lanes. Remove parking on west side of Laurel Street north of Ravenswood Avenue for approximately 100 feet.

The other planned improvements that have not been implemented by the City of Menlo Park are:

- *TMP #75 – Laurel Street from Burgess Drive to Willow Road – Establish Class II bicycle lanes (requires removal of parking on both sides of the street).*

- *TMP #79 – Alma Street from Ravenswood Avenue to Burgess Drive – Install sidewalk on the east side of Alma Street to connect to Burgess Park path. Upgrade crosswalks to high-visibility.*

- *TMP #81 – Middle Avenue Caltrain Crossing – Construct pedestrian and bicycle crossing at El Camino Real/Middle Avenue intersection. Connect to future plaza, to be funded and constructed via private development (Middle Plaza). Install pedestrian crossing improvements across Alma Street from Caltrain Crossing to Burgess Park.*

2.2.3 Existing Roadway Network

The roadway network near Parkline consists of local and state facilities. As shown in **Figure 1**, direct access to the site is via seven existing driveways located on Ravenswood Avenue, Middlefield Avenue, and Laurel Street. There are four driveways located on Ravenswood Avenue, one driveway on Middlefield Road, and two driveways on Laurel Street. The following sections describe roadway connections between the site and local and regional networks.

US 101 is a north-south freeway located north of Parkline with four to five travel lanes in each direction. One travel lane in each direction is designated as an express (toll) lane that high occupancy (HOV) vehicles can use for free or a reduced toll. Solo drivers can pay a toll to use the lane. US 101 extends from San Francisco to Gilroy in the Bay Area. Access to Parkline from US 101 is via Willow Road or Marsh Road.

Willow Road is an east-west roadway that extends from the Bayfront Expressway in the east to Alma Street in the west. Willow Road has a four-lane cross-section between Bayfront Expressway and US 101, and a two-lane cross-section from US 101 to Alma Street. Access to Parkline from Willow Road is via Middlefield Road.

Marsh Road is an east-west roadway that extends from Bayfront Expressway in the east to Middlefield Road in the west. Marsh Road is four- to six-lanes between Bayfront Expressway and Bay Road. Marsh Road becomes a two-lane road west of Bay Road, extending to Middlefield Road.

Middlefield Avenue is a north-south roadway that runs from Palo Alto to Redwood City. Middlefield Road is a two- to four-lane road that extends from the Menlo Park city limits in the south into the City of Redwood City in the north (traversing the Town of Atheron). Most of Middlefield Road is a two-lane roadway; however, the roadway widens to four lanes at key intersections including Ringwood Avenue, Linfield Drive, and Willow Road.

Ravenswood Avenue is an east-west roadway on the north side of Parkline extending from Middlefield Road into downtown Menlo Park. It is a two-lane road from Middlefield Road to the Caltrain crossing widening to four-lanes at El Camino Real.

Laurel Street is a north-south two-lane roadway that extends from Willow Road in the south to Encinal Avenue in the north. Laurel Street is the western frontage of Parkline. The section of Laurel between Willow Road and Ravenswood Road has traffic calming devices installed to reduce traffic volumes in the residential areas.

Ringwood Avenue is an east-west two-lane road that extends from Bay Road to Middlefield Road. The western approach of the Ringwood Avenue and Middlefield Road intersection is an existing site entrance.

El Camino Real (State Highway 82) is a north-south arterial that extends from San José in the south to San Francisco in the north. El Camino Real is four- to six-lanes and passes through Menlo Park. El Camino Real is part of the state highway system; therefore, El Camino Real is maintained and managed by the California Department of Transportation (Caltrans).

Planned Roadway Improvements

Most of the Menlo Park Transportation Master Plan Tier 1 improvements are focused on pedestrian, bicycle, and local roadway safety improvements. However, there is one major roadway improvement planned near Parkline: the Caltrain Grade Separation project. The City of Menlo Park is working with the San Mateo County Transportation Authority on funding for the design and environmental phase. The Menlo Park grade separation project is a pipeline project identified within the Measure A grade separation program. The City is working with Caltrain on an agreement to pursue these design and environmental review phases of work, which will be led by Caltrain in coordination with the City.

3. TDM Measures and Strategies

3.1 Overview of TDM Strategies

There are numerous TDM strategies that can encourage residents and workers to use modes of transportation other than driving alone and, therefore, reduce the vehicle miles traveled (VMT) and parking demand generated by a development. TDM strategies fall into two categories: physical design features and operational TDM programs.

Physical design features encourage users to reduce the amount of driving they do by making alternatives more attractive. These strategies can include combining residential, retail and office uses, building design features such as showers and changing areas for bicycle and pedestrian commuters, and providing pedestrian and bicycle facilities.

Operational TDM programs are offered by the landowner, employers (tenants), and residential building managers on an ongoing basis to reduce vehicle trips. Cities often require land owners to pass down TDM requirements to property managers and office tenants through lease agreements.

TDM programs promote the use of transit, carpooling, vanpooling, biking, and walking to reduce vehicle trips, complementing physical design features.

Each TDM strategy has an associated range of effectiveness in reducing vehicle trips; combined, they provide an overall range of effectiveness. The overall effectiveness is not simply additive when strategies are combined since some programs target the same users and/or use similar approaches to affect user behavior.

3.2 Parkline TDM Requirements

There is no specific Citywide or other TDM ordinance that is directly applicable to Parkline; however, as a transit-oriented development, Parkline proposes to incorporate a robust TDM Plan to reduce vehicle trips and, thereby, reduce vehicle miles traveled (VMT). As further detailed below, Parkline will incorporate TDM measures yielding a 25% reduction from the ITE standard rates for Project-related residential trips and 28% reduction from the ITE standard rates for Project-related general office and research and development (R&D) trips, which exceeds C/CAG's requirements and is required in order to ensure a less than significant VMT impact.

3.2.1 Trip Reduction Targets

The trip reduction targets/caps for future TDM Plan monitoring will be calculated based on the land uses approved for the Parkline development. The City of Menlo Park has a practice of applying TDM trip reductions after considering any internal trip reductions for mixed use developments (i.e., Menlo Park does not allow for TDM reductions based on land use decisions such as proposing mixed use developments which reduce trips due to internal capture). Therefore, Parkline will be required to have an effective 28% trip reduction for residential trips and 31% for office/R&D trips after accounting for trip internalization, due to the mixed-use nature of the Project (office and residential uses). The estimated trip reduction due to internal capture is approximately 3%.

3.2.2 Regulatory Framework for Parkline TDM Strategy

There is no specific City of Menlo Park TDM ordinance applicable to Parkline; as such, this TDM Plan has been developed consistent with the *Transportation Demand Management (TDM) Policy* as set forth by the County and City Association of Governments (C/CAG). C/CAG is the regional transportation planning agency for San Mateo County. C/CAG is responsible for overseeing the San Mateo Congestion Management Program (CMP), which includes the Land Use Impact Analysis Program Policy, also known as the "TDM Policy." As of January 1, 2022, *C/CAG's Transportation Demand Management (TDM) Policy* requires that local jurisdictions in San Mateo County, including the City of Menlo Park, notify C/CAG of any new development project that is estimated to generate at least 100 Average Daily Trips (ADT). Jurisdictions may apply for exemption if their local TDM policy equals or exceeds that of C/CAG's.

The City of Menlo Park has not updated its local TDM guidelines since C/CAG updated its countywide policy. However, our understanding is that the City of Menlo Park intends to follow the recommended process in the updated C/CAG Countywide TDM Policy (January 2022) when evaluating Parkline's TDM Plan. As such, the TDM Plan for Parkline utilizes C/CAG's TDM Policy guidelines.

3.2.3 Commute.org Certification

C/CAG has teamed with Commute.org to establish a *Certified Development Program* to certify TDM plans. The *Certified Development Program* is designed to provide developers with projects in San Mateo County with a formal certification of their active participation in Commute.org programs and services. Generally, active participation may be a requirement for developments that are subject to the C/CAG Countywide TDM Policy and may also be a TDM requirement imposed on developers by jurisdictions that are not subject to the C/CAG policy. The goal of the *Certified Development Program* is to provide developers access to a set of TDM programs and services that can be integrated into other tools they will use to reduce VMT, and trip counts to new commercial, residential, or mixed-use developments in San Mateo County.

Parkline intends to participate in the Commute.org programs and seek certification through the *Certified Development Program*. The Commute.org TDM certification process includes the following steps:

- Register with Commute.org and provide the required information.
- Consult with Commute.org staff to verify the certification process and requirements for active participation.
- Submit a signed Letter of Commitment confirming that the developer and/or their successor(s) will be active participants with Commute.org.
- Provide a copy of the C/CAG TDM Policy Checklist or equivalent documentation from local jurisdiction (if applicable).
- Receive a Pre-Certification Letter from Commute.org that confirms registration and commitment to active participation. Commute.org will send a letter to the developer and appropriate jurisdiction contact. This letter must be submitted to C/CAG along with the TDM Checklist (if applicable).

- Achieve certification status within six months of receiving Certificate of Occupancy. Requires completion of Commute.org program training and submittal of initial TDM Survey.
- Maintain annual certification status with Commute.org by complying with the requirements for active participation.

3.3 Proposed TDM Measures for Parkline

Table 3 provides a comprehensive list of TDM strategies that could be used by Parkline to reduce vehicle trips and, thereby, reduce vehicle miles traveled (VMT). Because Parkline includes both residential and commercial components, the list of TDM strategies includes certain measures that would apply to just the residential or commercial (office / R&D) component, and certain strategies that would apply to both.

Table 3 includes a strategy name and description followed by five columns. The columns indicate the following:

- **C/CAG** – Whether the strategy is included in the County and City Association of Governments (C/CAG) check list used by Commute.org to certify development projects in San Mateo. The City of Menlo Park requires new development projects to obtain Commute.org certification.
- **VMT Reduction Potential** – The range of VMT reduction that a given TDM strategy may achieve based on data from the *Handbook for Analysis Greenhouse Gas Emission Reductions* (California Air Pollution Control Officers Association, 2021) and other published sources.
- **Residential TDM** – Whether the physical design feature or TDM strategy is applicable to Parkline's residential component.
- **Office/R&D TDM** – Whether the physical design feature or TDM strategy is applicable to Parkline's office/R&D component.
- **Owner/Property Management** – Whether the office TDM feature, or strategy is implemented by the property owner or property management. Ongoing residential and commercial TDM programs are typically enforced through lease agreements and managed by property management, often through an assigned TDM Coordinator.
- **Office/R&D Tenant** – Whether the office TDM feature, or strategy is implemented by the office/R&D tenant. These are typically strategies that require direct coordination with the employee such as payroll deductions.

The proposed TDM measures in **Table 3** represent a toolbox of options that can be used by Parkline to meet the required trip reductions for residential and office/R&D uses. As a general matter, TDM plans need to be flexible to meet the changing needs and travel behavior of the end users. Programs that start out reducing trips may grow ineffective and should be replaced with other programs. In addition, new TDM programs may arise due to changes in technologies, innovations in travel modes, or public policies that support alternative modes of travel. Therefore, the Parkline TDM plan should be considered a living document that can be updated as needed.

Table 3: Proposed TDM Measures for Parkline

TDM Measure	Description	C/CAG	VMT Reduction Potential[1]	Residential TDM	Office/R&D TDM	
					Owner/Property Management[2]	Tenants
Bicycle and Pedestrian						
Provide bicycle parking (short-term, on-sidewalk or similar)	Provide traditional bike racks designed for short-term parking, in a visible publicly accessible space.	✓	0.1% – 1.6%		✓	
Provide on-site bicycle maintenance services	Include dedicated space for a bicycle repair shop or agree to provide concierge service for individuals to drop off bicycles for repairs and pick them up later.	✓	Unknown		✓	
Fund bicycle lanes / expansion of bicycle network	Construct or improve a bicycle lane facility (Class I, II, III, or IV) that connects to a larger existing bikeway network. This encourages mode shift from parallel roadways to bicycles, displacing VMT. • Class I – Bicycle & pedestrian path parallel to Ravenswood Av extending from Laurel St to Middlefield Rd (at Ringwood) • Class IV – Cycle Track along project frontage on Laurel St from Ravenswood to property line • Class I – Bicycle & pedestrian path connecting Burgess Dr and Middlefield Rd on east side of the property • Class I – Bicycle & pedestrian path connecting between Laurel St and internal circulation roadway • Class II or III – Internal circulation (loop) will included either Class II (bike lanes) or III (sharrows) to accommodate bicycles	✓	0.2% – 0.8%	✓	✓	
Provide bicycle parking (long-term, secure)	Provide secure bicycle parking in either a dedicated room, via bicycle lockers, or a bike station incorporated into the project.	✓	0.1% – 1.6%	✓	✓	
Provide on-site bicycle repair station	Provide a bicycle repair station that includes basic tools and space for common repair tasks. This may include a stand, air pump, tire lever, wrenches, and other common bicycle maintenance tools.	✓	0.1% – 1.6%	✓	✓	
Provide showers and lockers	Provide space for active transportation users to shower, change, and store any equipment they use during their commute.	✓	0.1% – 2.8%		✓	

TDM Measure	Description	C/CAG	VMT Reduction Potential[1]	Residential TDM	Office/R&D TDM Owner/Property Management[2]	Office/R&D TDM Tenants
Provide pedestrian network improvements	Improve pedestrian spaces both within the project and on roadways approaching the project. Improvements may include providing sidewalks on both sides of the street, incorporating ADA-compliant improvements, and providing sidewalk amenities such as trees, plants, and benches, and otherwise improving the pedestrian experience.	✓	0.5% to 6.4%	✓	✓	
Provide traffic calming measures	Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.		0.25 – 1.0%	✓	✓	
Enhanced Program: Maintain fleet of bicycles	Maintain a fleet of bicycles for use by project residents or employees only. While like bike share, this system is not open to the public, and may be more informal; for instance, a residential development with a shared bike room that includes a few building-owned bicycles.		0.02%	✓	✓	
Land Use and Design						
Integrate affordable and below-market-rate housing	Incorporate affordable housing into the development program. Affordable housing can be defined as housing affordable to households earning less than 80% of the area median income. Affordable or below-market-rate housing can comprise anywhere from a small percentage to 100% of total residential units in a project. Because lower income households tend to generate less VMT per person, this may reduce vehicle trips.		Up to 28.6% (relative to market rate single family housing)	✓		
Locate project near bike path/bike lane or another non-auto corridor	Locate project on a roadway that has existing high-quality bicycle and pedestrian infrastructure, such as bike lanes (class I, II, or IV). Project may also be oriented toward a dedicated bus facility (such as BRT), light rail line or commuter rail; in this instance, orientation means that the site's primary and easiest form of access should be from the transit corridor, and that the transit corridor should not have competing automotive traffic.		0.25 – 0.5%	✓	✓	

TDM Measure	Description	C/CAG	VMT Reduction Potential[1]	Residential TDM	Office/R&D TDM	
					Owner/Property Management[2]	Tenants
Provide delivery-supportive amenities	Designate a central package room or package area where deliveries can be safely kept until picked up by a resident or employee. This helps to reduce excessive driving by delivery vehicles and may help residents to be zero car households.	✓	Unknown	✓		
Provide multimodal wayfinding signage	Indicate via prominent and well-designed signage the best walking and bicycling routes to major destinations, distances and walk/bike times to those destinations, locations of transit stops (including all relevant bus, rail, or shuttle services) and high-level information on those transit services.		Unknown	✓	✓	
Improve design of development	The project will include improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile.	✓	3.0 – 21.3%	✓	✓	
Shared Mobility						
Implement a car-sharing program	Deploy car-share vehicles in the project area / community. Carshare vehicles are automobiles that can be rented on a short-term basis and may be either point-to-point or roundtrip. Access to carshare vehicles can help reduce the need for a private car and can result in decreased vehicle ownership.	✓	0.15% – 0.7%	✓	✓	
Enhanced: Provide bicycle and/or scooter sharing program subsidy	Fully or partially pay for tenants'/employees'/students' yearly membership fee and insurance associated with bike-sharing.	✓	Unknown	✓	✓	✓
Ridesharing						
Provide carpool subsidies	Provide subsidies in the form of cash or gas cards to individuals carpooling to/from work.	✓	0.0 – 8.0%		✓	✓
Preferential Carpool Parking Spaces	Provide carpool parking spaces near building entrances to incentivize carpool use.		0.0 – 8.0%		✓	✓

TDM Measure	**Description**	**C/CAG**	**VMT Reduction Potential[1]**	**Residential TDM**	**Office/R&D TDM**	
					Owner/Property Management[2]	**Tenants**
Parking						
Unbundle parking costs.	For residential developments, require that parking spaces be paid for separately from the primary mortgage/HOA dues/rent. This effectively reduces housing costs for households with no cars / fewer cars		2.6 – 15.7%	✓		
Transit and Shuttle						
Pre-Tax Commuter Benefits *(tenant or employer action)*	Provide employees the opportunity to enroll in WageWorks or other services to help with pre-tax commuter savings. This strategy allows employees to deduct monthly transit passes or other amounts using pre-tax dollars. This can help to lower payroll taxes and allows employees to save on transit costs.	✓	0% – 1.5%			✓
Promote real-time transportation apps	Provide information on transportation apps that residents and workers can use to find out information on schedules and departure times to facilitate trip planning		Unknown	✓	✓	✓
Provide subsidies for transit riders	Provide subsidies in the form of cash, transit passes, or contributions to a regional fare card to transit riders. An employer typically implements this program.	✓	Up to 20%	✓	✓	
Provide shuttle services *(last mile service to Caltrain or midday services to downtown Menlo Park)*	Provide a publicly available shuttle service between a regional transit facility and employment, residential, or shopping centers located 1-5 miles away.	✓	0.1% to 8.2%	✓	✓	
Marketing						
Provide TDM coordinator *(owner, property management, and/or tenants)*	Designate a staff person as the site wide TDM coordinator to develop, monitor, and publicize TDM activities. The site TDM coordinator will work with the designated TDM coordinators identified by building property managers and individual tenants (employers).	✓	Unknown	✓	✓	
Actively Participate in Commute.org or a local Transportation Management Association (TMA)	Participation in a TMA allows all members to benefit from the economies of scale when it comes to mutually funded TDM programs or marketing activities. Programs could include Caltrain shuttles, guaranteed rides home (see below) and transit agency coordination.	✓	Unknown	✓	✓	

TDM Measure	**Description**	**C/CAG**	**VMT Reduction Potential[1]**	**Residential TDM**	**Office/R&D TDM**	
					Owner/Property Management[2]	**Tenants**
Provide guaranteed ride home *(Commute.org provides this service in San Mateo County for a fee)*	Provide free (or reimbursed) taxi, Lyft, or Uber rides home for employees that used transit or carpooling to reach work and must travel home either mid-day due to an emergency, at a time other than their carpool, or after transit service has concluded. This helps address uncertainty for individuals considering using alternative modes.	✓	Unknown		✓	
Provide move-in / new hire packets on transportation options	Provide standardized materials including information on transit routes and schedules, bicycle pathways, available commuter facilities, subsidies, parking cash-out, and any other commuter programs available.		Unknown	✓	✓	
Provide one-on-one trip planning	Offer one-on-one sessions to employees/residents to discuss commute options specific to their commute and provide them with a plan. This may also include information on relevant subsidies or bicycle facilities. Like "intensive targeted marketing program" but typically relies on voluntary sign-up for information sessions.		Unknown		✓	
Provide on-demand ridesharing *(tenant action)*	Provide access to and/or promote an app that allows drivers and potential carpoolers to identify each other on a short term or occasional basis (as compared to traditional carpooling/ridesharing where carpools tend to adhere to a regular schedule)		0.0 – 8.0%			✓
Provide TNC vouchers or discounts for pooled trips only *(tenant action)*	Provide subsidies or credits in popular ride-hailing apps (such as Uber or Lyft) for pooled trips only, encouraging employees or residents to select the pooled option for such trips.	✓	Unknown	✓		✓
Encourage telecommuting and alternative work schedules *(tenant action)*	Allow and encourage employees to telecommute or adopt alternative work schedules. Examples may include working from home a certain share of the time or working a 9/80 or 4/40 work week.	✓	Up to 5.5%			✓

1 – Range of VMT reduction for the individual program or activity based on the *Handbook for Analysis Greenhouse Gas Emission Reductions* (California Air Pollution Control Officers Association, 2021) and other published reach search. Unknown indicates that no value is assigned to the individual strategy; however, these strategies are components that complement other programs and make them more effective.

2 – Owners / Property Managers refers to actions that would be implemented by the property owner and/or property managers. For example, the property owner is responsible for the design features built into the property. Property managers are responsible for implementing programs for their development and collaborating with tenants to implement TDM programs.

Source: Fehr & Peers, August 2023

This TDM Plan will be updated later to include a monitoring plan that demonstrates how Parkline proposes to monitor ongoing compliance and to measure the effectiveness of the office/R&D and residential TDM components.

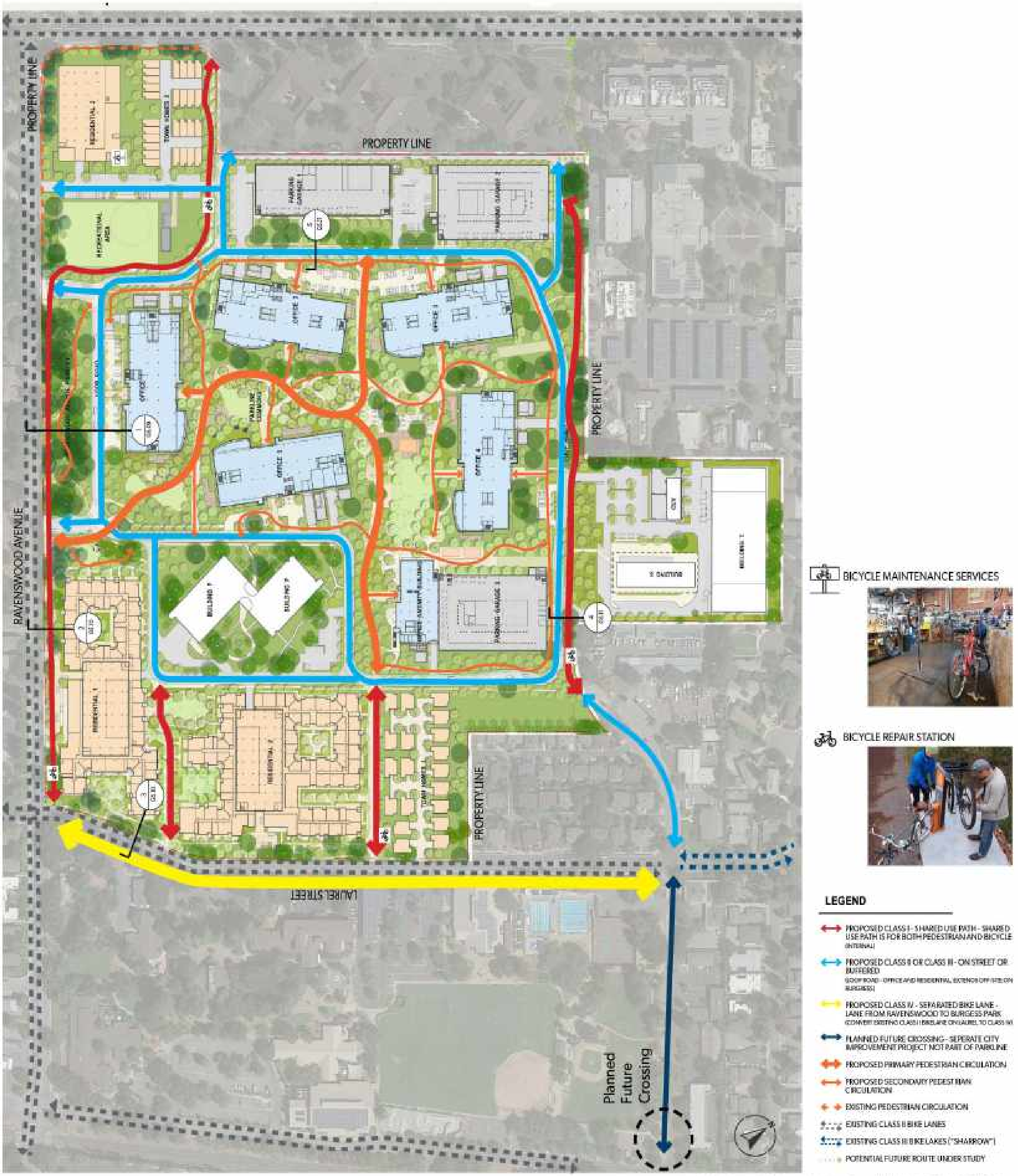
3.3.1 Proposed Parkline Pedestrian and Bicycle Facilities, and Reduced Parking Ratios

Under existing conditions, the Parkline site is currently closed to the public and surrounded by a secured perimeter, thereby limiting bicycle and pedestrian connectivity. The existing bicycle and pedestrian facilities are limited to on-street bicycle lanes and narrow sidewalks along the perimeter of the site's roadway frontages within the public right-of-way. Parkline would eliminate the existing security perimeter and would open the site to the surrounding community by creating accessible and safe multi-modal pathways, allowing bicyclists and pedestrians to circulate throughout the site. These bicycle and pedestrian pathways would be located along the perimeter of Parkline and throughout the interior of the site to create east–west bicycle and pedestrian linkages that would connect through Parkline to Burgess Park, the future Caltrain undercrossing, and the Menlo Park downtown area.

Figure 5 shows the planned pedestrian and bicycle facilities that will be included in Parkline. With the consolidation of the office/R&D space into fewer buildings, the open space created will allow pedestrians and bicyclists to travel throughout the site on a new network of paths and sidewalks. **Figure 5** also shows the location and amount of short-term and long-term bicycle parking, which is designed to meet the City of Menlo Park's bicycle parking requirements, and to meet or exceed the bicycle parking requirement under the Cal Green standards.

In addition to creating a new internal bicycle network and providing bicycle parking, Parkline proposes to provide five do-it-yourself (DIY) bicycle repair stations and provide staffed bicycle maintenance services on-site. **Figure 5** shows the conceptual locations of these bicycle repair facilities; the final location and design will be determined through the review and approval process. Three of the DIY repair stations are anticipated to be located on the western perimeter of the site where bicyclists enter and exit the internal bicycle network. Another DIY repair station would be located on the eastern side of the site near parking structures. The last DIY repair station would be located adjacent to the bicycle maintenance service center.

With respect to parking, under existing conditions, onsite parking for the SRI International Campus is provided primarily in large surface parking areas, resulting in extensive impervious areas and limited opportunities for landscaping and accessible open space. Parkline would demolish existing surface parking areas, and instead would provide three above-ground parking garages, two one-level below-ground parking garages, podium parking, and limited surface parking to provide parking for all uses. Parkline proposes low parking ratios that are consistent with other transit-oriented projects within the City and reflect Parkline's proximity to the Menlo Park Caltrain station and implementation of this TDM Plan. Reduced parking ratios are well regarded as a key strategy in reducing vehicle trips and resulting VMT.



Data Source: Parkline Master Plan, 2024, LANE PARTNERS

Figure 5

Project Bicycle Facilities

Parkline's parking ratio is one space per multifamily unit; 0.5 space per BMR unit within the dedicated area for the 100% affordable units; and 2 spaces per 1,000 SF for commercial office/R&D uses.[1]

3.3.2 Parkline C/CAG TDM Policy Checklist Compliance

Fehr & Peers evaluated the residential and office/R&D components of Parkline using the appropriate C/CAG TDM Policy Checklist. Based on the size of the residential and office/R&D components, Parkline falls into the following land use categories for purposes of the C/CAG TDM Policy:

- **Residential (Multi-Family) Land Use: Large Project** with average daily trips (ADT) of >500 trips and more than 50 dwelling units.
- **Non-Residential (Office, Industrial, Institutional) Land Use: Large Project** with ADT of >500 trips and more than 50,000 square feet.

Parkline qualifies as a transit oriented development (TOD) since it is located less than one half-mile from high quality transit service (Caltrain). The C/CAG TDM Checklist trip reduction target for TOD projects is 25%.

The estimated trip reduction for Parkline's residential component from the C/CAG TDM Checklist Required and Additional Recommended Measures yielded 30.0%. The estimated trip reduction for Parkline's office/R&D component from the Required and Additional Recommended measures yielded 35.5%. These levels of trip reductions were achieved without the provision of transit passes/subsidies for employees and residents. However, Parkline proposes to provide transit passes or subsidies, therefore, the total reductions would be anticipated to result in further trip reductions of 40.0% and 45.5%, respectively. **Table 4** shows the C/CAG checklist scoring for each of the Parkline components with and without transit passes or subsidies. The completed C/CAG TDM checklists are included in **Appendix A**.

Table 4: C/CAG TDM Checklist Scores

Land Use	Provide Transit Passes	Required Measures	Additional Recommended Measures	Total Reduction	C/CAG Target Reduction
Residential (Multi-Family): Large Project	Yes	18.5%	21.5%	40.0%	25%
Non-Residential (Office): Large Project	Yes	25.0%	20.5%	45.5%	25%

Source: Fehr & Peers, January 2024.

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[1] For reference, the default parking requirement for the C-1 zoning district is 1 space per 200 SF

4. TDM Monitoring Plan

This section will be added later.

Appendix A.
C/CAG TDM Checklists

Parkline C/CAG Large Residential TDM Checklist

FEHR PEERS

C/CAG TDM Checklist

ccagtdm.org

Residential (Multi-Family) Land Use: Large Project

500+ ADT; ~50+ Units

About this Form

Any new development project anticipated to generate at least 100 average daily trips is subject to the C/CAG TDM Policy and must complete a TDM Checklist and implement associated measures to mitigate traffic impacts. Read more at ccagtdm.org

Questions?
support@ccagtdm.org

A Applicant Information

Project Address: Parkline Residential Component

Contact First and Last Name:

Parcel Number:

Application Date: D D M M Y Y Y Y

Contact Phone Address:

Project Jurisdiction: City of Menlo Park

Contact Email Address:

B Trip Reduction Target

Select one option based on your project's distance to high quality transit

Read more about high quality transit at ccagtdm.org/high-quality-transit

Identify your project type

● **TOD** Less than 1/2-mile from high quality transit service **25% Trip Reduction Required**	☐ **Transit Proximate** 1/2 to 3 miles from high quality transit service **35% Trip Reduction Required**	☐ **Non-Transit Proximate** More than 3 miles from high quality transit service **35% Trip Reduction Required**

C Required Measures

You must select all measures that apply for your project type

Click on each measure's title for more information

	Measure	Project Types	Percentage	Yes
1	**M2 - Orientation, Education, Promotional Programs and/or Materials** Offer new residents an orientation or education program or materials.	ALL	1%	☑
2	**M3 - TDM Coordinator/Contact Person** Provide TDM coordinator/liaison for tenants. May be contracted through 3rd party provider, such as Commute.org.	ALL	0.5%	☑
3	**M4 - Actively Participate in Commute.org or Transportation Management Association (TMA) Equivalent** Obtain certification of registration from Commute.org or equivalent TMA incorporation documents. Select only one based on Project Type	TOD & Non-transit Proximate	5%	☑
		Transit Proximate	15%	☐
4	**M6 - Transit or Ridesharing Passes/Subsidies** Offer tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or $50 - whichever is lower.	ALL	10%	☑
5	**M8 - Secure Bicycle Storage** Comply with CalGREEN minimum bicycle parking requirements.	ALL	1%	☑
6	**M9 - Design Streets to Encourage Bike/Ped Access** Design adjacent streets or roadways to facilitate multimodal travel.	ALL	1%	☑
7	**Total from Required Measures** Sum percentages from each selected measure from rows 1-6		18.5 %	

Form Continues on Page 2 →

C/CAG **TDM Checklist**
ccagtdm.org

Residential (Multi-Family) Land Use: Large Project
500+ ADT; ~50+ Units

D Additional Recommended

Select enough to meet the trip reduction target from section B

Click on each measure's title for more information

	Measure	Project Types	Percentage	Yes
8	**M5 - Carpool or Vanpool Program** Establish carpool/vanpool program for tenants and register program with Commute.org.	ALL	2%	☐
9	**M10 - Delivery Amenities** Offer delivery amenities, including dedicated receipt and storage areas, to reduce need for multiple trips to conduct similar business.	ALL	1%	☐
10	**M11 - Family-supportive Amenities** On-site secure storage of personal car seats, strollers, cargo bicycles, or other large bicycles. Property owners can also provide shared building equipment, such as shopping carts or cargo bicycles for check out by residents.	ALL	3%	☑
11	**M14 - Paid Parking at Market Rate** Offer hourly/daily parking rates proportional to monthly rate or equivalent to cost of transit fare.	ALL	25%	☐
12	**M15 - Reduced Parking** Provide off-street parking at least 10% below locally-required minimums, or else below the locally-permitted parking maximums. Consideration may be required of potential spillover parking into surrounding areas.	ALL	10%	☐
13	**M17 - Developer TDM Fee/TDM Fund** Voluntary impact fee payment on a per unit or square footage basis, to fund the implementation of TDM programs.	ALL	4%	☐
14	**M18 - Car Share On-Site** Provide on-site car share or vehicle fleets.	ALL	1%	☑
15	**M19 - Land Dedication or Capital Improvements for Transit** Contribute space on, or adjacent to, the project site for transit improvements. Select one or more Bus Pullout Space 1% ☑ Bus Shelter 1% ☑ Visual/Electrical Improvements (i.e., Lighting, Signage) 1% ☑ Other (i.e., Micromobility Parking Zone, TNC Loading Zone) 1% ☑	ALL	→ 4 % Total percentages selected	☑
16	**M20 - Shuttle Program/Shuttle Consortium/Fund Transit Service** Establish a shuttle service to regional transit hubs or commercial centers. Shuttle service should be provided free of charge to employees and guests.	Non-transit Proximate	10%	☐
17	**M21 - Bike/Scooter Share On-Site** Allocate space for bike/scooter share parking.	All	1%	☑
18	**M22 - Active Transportation Subsidies** Offer biking/walking incentives to tenants, such as gift card/product raffles.	All	2%	☑
19	**M23 - Gap Closure** Construct or enhance quality of biking and walking facilities to/from site to existing trails, bikeways, and/or adjacent streets.	All	7%	☑
20	**M24 - Bike Repair Station** Offer on-site bike repair space/tools in visible, secure area.	All	0.5%	☑
21	**M26 - Pedestrian Oriented Uses & Amenities on Ground Floor** Provide on-site, visible amenities to tenants and guests, such as cafes, gyms, childcare, retail.	All	3%	☑
22	**Total from Additional Measures** Sum percentages from each selected measure from rows 8 - 21		21.5 %	

E Project Totals

Percentage from Required Measures (Section C Row 7): 18.5 %

\+ Percentage from Additional Measures (Section D Row 22): 21.5 %

Total Percentage from all Selected Measures (Sum of required and additional measures): 40 %

Trip Reduction Target (Copy from Section B): 25 %

Total Percentage from all selected measures must be greater than or equal to Trip Reduction Target

F Submit Checklist

See ccagtdm.org/submission for how to submit this form.

Questions?

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Parkline C/CAG Large Non-Residential TDM Checklist

C/CAG TDM Checklist

ccagtdm.org

Non-Residential (Office, Industrial, Institutional) Land Use: Large Project

500+ ADT; ~50,000+ sq ft

About this Form

Any new development project anticipated to generate at least 100 average daily trips is subject to the C/CAG TDM Policy and must complete a TDM Checklist and implement associated measures to mitigate traffic impacts. Read more at ccagtdm.org

Questions?
support@ccagtdm.org

A Applicant Information

Project Address: Parkline Office Component

Contact First and Last Name:

Parcel Number:

Application Date: D D M M Y Y Y Y

Contact Phone Address:

Project Jurisdiction: City of Menlo Park

Contact Email Address:

B Trip Reduction Target

Select one option based on your project's distance to high quality transit

Read more about high quality transit at ccagtdm.org/high-quality-transit

Identify your project type

● **TOD**
Less than 1/2-mile from high quality transit service
25% Trip Reduction Required

☐ **Transit Proximate**
1/2 to 3 miles from high quality transit service
35% Trip Reduction Required

☐ **Non-Transit Proximate**
More than 3 miles from high quality transit service
35% Trip Reduction Required

C Required Measures

You must select all measures that apply for your project type

Click on each measure's title for more information

	Measure	Project Types	Percentage	Yes
1	**M1 - Free/Preferential Parking for Carpools** Provide free or preferential parking, including reserved spaces or spaces near an entrance or other desirable location, to incentivize ridesharing.	ALL	1%	☑
2	**M3 - TDM Coordinator/Contact Person** Provide TDM coordinator/liaison for tenants. May be contracted through 3rd party provider, such as Commute.org.	ALL	0.5%	☑
3	**M4 - Actively Participate in Commute.org or Transportation Management Association (TMA) Equivalent** Obtain certification of registration from Commute.org or equivalent TMA incorporation documents. Select only one based on Project Type	TOD & Non-transit Proximate Transit Proximate	6.5% 16.5%	☑ ☐
4	**M5 - Carpool or Vanpool Program** Establish carpool/vanpool program for tenants and register program with Commute.org.	ALL	2%	☑
5	**M6 - Transit or Ridesharing Passes/Subsidies** Offer tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or $50 - whichever is lower.	ALL	10%	☑
6	**M7 - Pre-Tax Transportation Benefits** Offer option for tenants to participate in a pre-tax transit program to encourage the use of sustainable transportation modes and leverage pre-tax income to pay for commute trip costs.	ALL	1%	☑
7	**M8 - Secure Bicycle Storage** Comply with CalGREEN minimum bicycle parking requirements.	ALL	1%	☑
8	**M9 - Design Streets to Encourage Bike/Ped Access** Design adjacent streets or roadways to facilitate multimodal travel.	ALL	1%	☑
9	**M25 - Showers, Lockers, and Changing Rooms for Cyclists** These amenities serve as end of trip facilities for employees arriving by bike or other active transportation forms.	ALL	2%	☑
10	**Total from Required Measures** Sum percentages from each selected measure from rows 1-9		25 %	

Form Continues on Page 2 →

D Additional Recommended

Select enough to meet the trip reduction target from section B

Click on each measure's title for more information

	Measure	Project Types	Percentage	Yes
11	**M12 - Flex Time, Compressed Work Week, Telecommute** Flex time allows employees some flexibility in their daily work schedules. Compressed work week allows employees to work fewer but longer days. Telecommuting functions similarly, allowing employees to work from home rather than the office, reducing vehicle travel on the days they work remotely.	ALL	5%	☑
12	**M14 - Paid Parking at Market Rate** Offer hourly/daily parking rates proportional to monthly rate or equivalent to cost of transit fare.	ALL	25%	☐
13	**M15 - Reduced Parking** Provide off-street parking at least 10% below locally-required minimums, or else below the locally-permitted parking maximums. Consideration may be required of potential spillover parking into surrounding areas.	ALL	10%	☐
14	**M16 - Short-Term Daily Parking** Offer daily or hourly parking rates that are proportional to the monthly rate or approximately the cost of a transit fare.	ALL	2%	☐
15	**M17 - Developer TDM Fee/TDM Fund** Voluntary impact fee payment on a per unit or square footage basis, to fund the implementation of TDM programs.	ALL	4%	☐
16	**M18 - Car Share On-Site** Provide on-site car share or vehicle fleets.	ALL	1%	☑
17	**M19 - Land Dedication or Capital Improvements for Transit** Contribute space on, or adjacent to, the project site for transit improvements. Select one or more Bus Pullout Space 1% ☑ Bus Shelter 1% ☑ Visual/Electrical Improvements (i.e., Lighting, Signage) 1% ☑ Other (i.e., Micromobility Parking Zone, TNC Loading Zone) 1% ☑	ALL	→ 4 % Total percentages selected	☑
18	**M20 - Shuttle Program/Shuttle Consortium/Fund Transit Service** Establish a shuttle service to regional transit hubs or commercial centers. Shuttle service should be provided free of charge to employees and guests.	Non-transit Proximate	10%	☐
19	**M21 - Bike/Scooter Share On-Site** Allocate space for bike/scooter share parking.	All	1%	☐
20	**M22 - Active Transportation Subsidies** Offer biking/walking incentives to tenants, such as gift card/product raffles.	All	2%	☐
21	**M23 - Gap Closure** Construct or enhance quality of biking and walking facilities to/from site to existing trails, bikeways, and/or adjacent streets.	All	7%	☑
22	**M24 - Bike Repair Station** Offer on-site bike repair space/tools in visible, secure area.	All	0.5%	☑
23	**M26 - Pedestrian Oriented Uses & Amenities on Ground Floor** Provide on-site, visible amenities to tenants and guests, such as cafes, gyms, childcare, retail.	All	3%	☑
24	**Total from Additional Measures** Sum percentages from each selected measure from rows 11 - 23		20.5 %	

E Project Totals

Percentage from Required Measures (Section C Row 10): 25 %

+ Percentage from Additional Measures (Section D Row 24): 20.5 %

Total Percentage from all Selected Measures (Sum of required and additional measures): 45.5 %

Trip Reduction Target (Copy from Section B): 25 %

Total Percentage from all selected measures must be greater than or equal to Trip Reduction Target

F Submit Checklist

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Appendix 3.14-1

Housing Needs Assessment

KEYSER MARSTON ASSOCIATES

HOUSING NEEDS ASSESSMENT

PARKLINE

Prepared for:
City of Menlo Park

Prepared by:
Keyser Marston Associates, Inc.

April 2024

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1.0 EXECUTIVE SUMMARY

This Housing Needs Assessment (HNA) provides an analysis of housing supply and housing demand impacts of the Parkline (Proposed Project) in the City of Menlo Park (City) and evaluates whether the Proposed Project has the potential to contribute to displacement of existing residents. The HNA is part of a range of analyses provided to decision makers and the community to inform and assist in the decision-making and entitlement process for the Proposed Project. Preparation of this HNA is not required by the California Environmental Quality Act (CEQA) nor is it a requirement of the 2017 City of East Palo Alto v. City of Menlo Park Settlement Agreement (Settlement Agreement) because the Proposed Project is not located in the Bayfront Area.

Two buildout scenarios for the Proposed Project are evaluated, an "Office Use Scenario" in which proposed new office / R&D space is built out with 100% office uses and an "R&D Use Scenario" with 100% R&D uses, consistent with the Draft Environmental Impact Report (DEIR). The R&D Use Scenario has fewer on-site employees than the Office Use Scenario. This is because employees within R&D and life science uses often utilize both laboratory facilities and office workstations, which results in fewer employees within a given amount of building area compared with office uses.

Following is a summary of the key findings of the HNA.

- **Regional Housing Availability Impact** – The Proposed Project results in a 1,656-unit net decrease in housing availability within the region in the Office Use Scenario and a 1,014-unit net decrease with the R&D Use Scenario. The findings reflect the net effect of added regional employee housing demand from new employees and 550 new housing units added to the housing supply by the Proposed Project.

- **Housing Availability Increase in Menlo Park** – The net impact on housing availability in Menlo Park is based on an estimated Menlo Park share of the total regional employee housing demand and the 550 new housing units added by the Proposed Project. The Menlo Park share of regional employee housing demand is estimated using two commute share scenarios, based on current commute patterns (5.3% of employees living in Menlo Park), and based on an increased commute share of 20% that reflects a goal to house a greater share of Menlo Park's workforce in the future.
    - *Current Commute Share Estimate* – Assuming existing commute patterns hold, there is an estimated net increase in available housing in Menlo Park of:
        - 433 units in the Office Use Scenario, based on 550 added housing units, less a 117-unit (5.3%) share of regional employee housing demand; and
        - 467 units in the R&D Use Scenario, based on 550 added housing units, less a 83-unit (5.3%) share of regional employee housing demand.

- *Increased Commute Share Estimate* – Assuming an increased 20% share of workers are housed in the city, there is an estimated net increase in available housing in Menlo Park of:
    - 110 units in the Office Use Scenario, based on 550 added housing units, less a 440-unit (20%) share of regional employee housing demand; and
    - 238 units in the R&D Use Scenario, based on 550 added housing units, less a 312-unit (20%) share of regional employee housing demand.

See Table 1-1 for a summary and Section 1.5 for additional information, including a breakout by affordability level.

Table 1-1. Summary of Housing Availability Impacts

			Menlo Park Share			
	Regional Total		**Current Commute Share Estimate**		**Increased Commute Share Estimate at 20%**	
	Office Use Scenario	**R&D Use Scenario**	**Office Use Scenario**	**R&D Use Scenario**	**Office Use Scenario**	**R&D Use Scenario**
A. Added Housing Supply (New Units)	550 Units	550 Units	550 Units	550 Units	550 Units	550 Units
B. Added Employee Housing Demand	2,206 Units	1,564 Units	117 Units	83 Units	440 Units	312 Units
C. Housing Availability, Net Impact	**(1,656 Units)**	**(1,014 Units)**	**433 Units**	**467 Units**	**110 Units**	**238 Units**
[A. - B.]	Net Decrease in Available Housing in Region		Net Increase in Available Housing in Menlo Park			

- **Potential to Contribute to Displacement** – The Proposed Project is not expected to displace existing residents or materially increase displacement pressures in nearby communities vulnerable to displacement because it adds to the supply of market rate and affordable housing, results in a net increase in available housing in Menlo Park, is in a neighborhood with low risk of displacement, and does not remove any existing housing.

1.1 Project Overview

Lane Partners (Project Sponsor) is proposing to redevelop SRI International's existing 63.2-acre research campus adjacent to city hall and near Menlo Park's downtown and Caltrain station. The Parkline Project (Proposed Project) would include a new office / research and development (R&D) campus with no net increase in the existing office/R&D square footage; up to 550 new rental dwelling units; and approximately 26 acres of publicly accessible open space. All buildings on SRI International's Campus would be demolished, except Buildings P, S, and T, encompassing a total of 286,000 square feet, which would remain onsite and be operated by SRI International and its tenants. Up to approximately 1.05 million square feet of new office/research space, 40,000 square feet of campus-serving commercial amenity space, 2,002 square feet of community-oriented facilities, 550 multi-family residential units, parking, and open space improvements would be constructed. Of the up to 550 added housing units, up to 168 units (31%) are proposed to be Below Market Rate affordable units, which exceeds the City's 15% inclusionary requirement. Upon completion, the non-residential building square footage would remain unchanged from the existing approximately 1,380,332 square feet, and 550 residential units would be added to the Project Site.

The mix of office and R&D or life science uses will be determined in response to tenant needs as the project is built out. In recognition of differences in employment levels depending on the ultimate mix of office and R&D uses, consistent with the DEIR, the HNA evaluates both a:

- Office Use Scenario that assumes 100% of the office/R&D buildings are built out as office space; and an
- R&D Use Scenario that assumes 100% of the office/R&D buildings are built out for R&D or life science uses.

A summary of the Proposed Project is provided in Table 1-2, below.

Table 1-2. Proposed Project Summary

	Residential Units	Building Area
Office/R&D District		
New Buildings		
Office/R&D Buildings		1,051,600 SF
Commercial Amenity		40,000 SF
Community Amenity		2,002 SF
Total New Buildings (replaces an equal amount of demolished existing space)		1,093,602 SF
Existing SRI Buildings to be Retained		286,730 SF
Total Office/R&D District (no change from existing non-residential SF)		1,380,332 SF
Residential District	550 Units	675,200 SF
Total Building Area upon completion, excluding parking		2,055,532 SF

Note: Building area excludes parking structures.

1.2 Housing Availability

The term “housing availability” is used to refer to the combined net housing supply and housing demand impacts of the Proposed Project taking into consideration:

a) Construction of new housing units, which adds to housing availability through additions to the housing supply; and

b) Addition of jobs, which reduces housing availability by increasing demand for housing by employees.

HNAs prepared for projects that are exclusively non-residential have not used the term “housing availability” because these projects impact only the demand, or need, for housing.

1.3 Estimated Impacts on Housing Supply and Regional Housing Demand

The Proposed Project will have impacts on both the supply and demand for housing. New residential units increase the supply of housing while non-residential project components increase employment and result in demand for additional housing for workers. The terms "housing need" and "housing demand" are used interchangeably in this report.

- **Added Housing Supply** – The Proposed Project would increase housing supply through construction of 550 new housing units at full buildout, of which approximately 31 percent (168 units) would be Below Market Rate (BMR) units[1] and 382 would be market rate. Of the proposed BMR units, 68 units would be part of a mixed income residential component with a total of 450 units, and up to 100 additional BMR units would be constructed in a 100% affordable building on a portion of the Project Site to be dedicated for development of affordable housing. The proposed BMR units would represent up to 31% of the total units in the Proposed Project, which exceeds the City's 15% inclusionary requirement.

- **Regional Housing Demand** – New jobs added by the Proposed Project would result in new worker households who need housing somewhere within commuting distance of Menlo Park. Employment in the Office Use Scenario is greater than in the R&D Use Scenario because employees within R&D / life science uses may utilize both laboratory facilities and office workstations, resulting in fewer employees within the same amount of building area compared to office. This difference in employment drives a difference in employee housing demand between the two scenarios. The number of jobs is translated into an estimate of employee housing demand based on an average of 1.87 workers per housing unit.

  - *Office Use Scenario* – In the Office Use Scenario, the Proposed Project would create a demand for an estimated 2,206 additional housing units regionally, including 2,066 housing units based on the 3,868 jobs added on-site, plus an estimated demand for 140 housing units for workers in off-site services to new residents such as restaurants, retail, education, medical care, and others.

  - *R&D Use Scenario* – In the R&D Use Scenario, the Proposed Project would create a demand for an estimated 1,564 additional housing units regionally, including 1,424 housing units based on the 2,667 jobs added on-site, plus an estimated demand for 140 housing units for workers in off-site services to new residents such as restaurants, retail, education, medical care, and others.

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[1] The BMR proposal is subject to review and action by the City Council as part of the project entitlements and is subject to change.

The net effect of the added housing supply and added housing demand is a net decrease in housing availability regionally (within commuting distance of Menlo Park) from the Proposed Project of 1,656 units in the Office Use Scenario and 1,014 units in the R&D Use Scenario, as summarized in Table 1-3.

Table 1-3. Summary of Housing Availability Impacts Regionally (Within Commuting Distance)

	Office Use Scenario	R&D Use Scenario
A. Added Housing Supply (New Units)	550 Units	550 Units
B. Added Employee Housing Demand Within Commute Distance	2,206 Units	1,564 Units
C. Net Decrease in Housing Availability [A. - B.]	(1,656 Units)	(1,014 Units)

1.4 Housing Demand and Housing Supply by Income Category

Housing demand and housing supply added by the Proposed Project are identified by income category using the following six affordability categories, each expressed in relation to local Area Median Income (AMI):

- Extremely Low Income – households up to 30% of AMI;
- Very Low Income – households from 31% to 50% of AMI;
- Low Income – households from 51% to 80% of AMI;
- Moderate Income – households from 81% to 120% of AMI;
- Above Moderate Income – households from 121% to 150% of AMI; and
- Over 150% of AMI – households over 150% of AMI.

According to the California Department of Housing and Community Development (HCD), the AMI for a family of four in San Mateo County, is $175,000 as of 2023. Section 2 provides income limits applicable to each of the identified income categories. The affordability categories from 0% through 120% AMI reflect those addressed by statewide housing programs such as the Regional Housing Needs Allocation (RHNA) process. In addition, the Above Moderate Income tier is included in the analysis for consistency with HNAs prepared for prior projects in Menlo Park and to provide decision makers with information regarding a broad spectrum of housing affordability levels. Above Moderate Income households also face affordable housing challenges in Menlo Park as well as in the broader Bay Area. In fact, due to the high cost of housing, housing affordability challenges also extend to households earning over 150% of AMI[2], particularly in the for-sale housing market. The Over 150% of AMI category captures households with incomes that exceed 150% AMI and includes all households not included within one of the other income categories.

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[2] An income of approximately 295% of AMI, is estimated to be needed to afford the median priced home in Menlo Park. The median priced home in Menlo Park is $2.65 million based on home sales from September 2022 through September 2023 from real estate data service provider CoreLogic. Estimates assume a down payment of 30% based on the median down payment for home purchases with a mortgage in Menlo Park, estimated from CoreLogic data during this period, 35% of income spent on housing, and a mortgage interest rate of 7% based on 30-year fixed mortgage rates from Freddie Mac Primary Mortgage Market Survey as of September 2023.

The income categories applicable to added employee housing demand are estimated by combining several data sources to estimate the household incomes of employees. Household incomes are then compared to income criteria published by HCD to identify housing demand by income category. Sources include the U.S. Bureau of Labor Statistics Occupational Employment Survey, California Employment Development Department, and the U.S. Census. Section 4 provides the supporting analysis for on-site workers and Section 5 provides the analysis for workers within off-site services to new residents such as retail, education, and medical care.

The affordability category of new market rate residential units added by the Proposed Project is based on estimated market rate rents and the household income necessary to afford market rate rents. BMR units are assumed to be provided at the Low Income level based on the requirements of the City's BMR Program guidelines, which require all BMR units be affordable to Low Income households unless an alternative affordability mix is approved. Alternative affordability levels are permitted if determined to be roughly equivalent to providing all BMR units at Low Income. The Project Sponsor had not yet identified a proposed income mix for the BMR units as of the time of HNA preparation; therefore, Low Income BMR units are assumed. The 68 BMR units within the mixed income component of the Proposed Project are assumed to be affordable to Low Income households with incomes at the maximum qualifying limit for Low Income, consistent with the City's BMR Housing Program Guidelines. The up to 100 units to be developed on a site dedicated to an affordable developer are assumed to be affordable to households earning 60% of AMI based on requirements for projects financed with Low Income Housing Tax Credits. Supporting analysis regarding the affordability levels of residential units is presented in Section 3.

Table 1-4 present the results of the analysis identifying added housing supply, added employee housing demand regionally (within commuting distance of Menlo Park), and the net decrease in regional housing availability by income category.

Table 1-4. Housing Availability Impacts Regionally (Within Commuting Distance)

	Office Use Scenario			R&D Use Scenario		
	A. Added Housing Supply (New Units)	B. Added Employee Housing Demand Regionally	C. Net Decrease in Regional Housing Availability [=A.- B.]	A. Added Housing Supply (New Units)	B. Added Employee Housing Demand Regionally	C. Net Decrease in Regional Housing Availability [=A.- B.]
Extremely Low Income	0	45	(45)	0	30	(30)
Very Low Income	0	127	(127)	0	77	(77)
Low Income	168	252	(84)	168	199	(31)
Moderate Income	0	498	(498)	0	362	(362)
Subtotal: 0% to 120% AMI	168	922	(754)	168	668	(500)
Above Moderate Income	354	309	45	354	216	138
Subtotal: 0% to 150% AMI	522	1,231	(709)	522	884	(362)
Over 150% AMI Income	28	975	(947)	28	680	(652)
Total Employee Households	550	2,206	(1,656)	550	1,564	(1,014)

In the Office Use Scenario, the 1,656-unit net decrease in housing availability in the region is comprised of 45 Extremely Low, 127 Very Low, 84 Low, 498 Moderate, and 947 Over 150% AMI units, partially offset by a net increase in available housing within the Above Moderate Income category of 45 units. The net increase in available housing in the Above Moderate category results from the number of new housing units exceeding the added employee housing demand within this income category.

In the R&D Use Scenario, the 1,014-unit net decrease in housing availability in the region is comprised of 30 Extremely Low, 77 Very Low, 31 Low, 362 Moderate, and 652 Over 150% AMI units, partially offset by a net increase in available housing within the Above Moderate Income category of 138 units.

Added housing supply within the Low Income category identified in Table 1-4 reflects deed-restricted BMR units. Added housing supply within the Above Moderate and Over 150% of AMI Income categories reflects market rate units. Market rents are free to adjust in response to rental market conditions and therefore affordability of the market rate units may adjust as well.

1.5 Menlo Park Share of Housing Supply and Housing Demand Impacts

This section provides an estimate of the share of the Proposed Project's impacts on regional housing supply and demand that occur in the City of Menlo Park. All new residential units added by the Proposed Project are in the City of Menlo Park; therefore, all 550 units are identified as additional housing supply in Menlo Park. The share of the added employee housing demand within Menlo Park is estimated based on commute data identifying the share of those working in Menlo Park who also live in Menlo Park.

Commute Data

According to the U.S. Census 2017-2021 American Community Survey (ACS), 5.3% of those who currently work in the City of Menlo Park also live in the City of Menlo Park. This has declined since the 2000 Census which showed that 7.2% of those who work in Menlo Park live in the city. This share is low compared to most other cities in the Bay Area,[3] attributable to a range of factors such as affordability constraints that already limit workers' ability to find housing within the city and the large number of jobs in Menlo Park relative to the size of the housing stock. Another contributing factor is the location and boundary configuration of the city making many other jurisdictions within a short commute distance. The share of existing SRI International employees who live in Menlo Park is approximately 4.9%[4], similar to the citywide average of 5.3%.

---

[3] See Appendix A Table 13 for comparable information for other cities.

[4] Based on data provided by the Project Sponsor indicating that 54 of the approximately 1,100 existing employees live in Menlo Park, which equates to 4.9%.

Commute Share Scenarios for Added Employee Housing Demand

To estimate Menlo Park's share of the total regional housing need from the Proposed Project, the analysis considers two scenarios, a Current Commute Share Estimate, and an Increased Commute Share Estimate regarding the percentage share of workers who are likely to seek and find housing within Menlo Park:

1. ***Current Commute Share Estimate* at 5.3%** *(based on Census data)* – The current commute share estimate uses data on existing commute patterns to estimate the number of workers who will live in Menlo Park. The 5.3% city-wide average share of workers who live in Menlo Park is used, which is calculated from U.S. Census data.
2. ***Increased Commute Share Estimate at 20%*** *(based on 2000 Nexus Study)* – The City Council has expressed an interest in improving the jobs housing balance and obtaining data to inform the goal of increasing the number of workers who live and work in Menlo Park. Therefore, for informational purposes, the report provides an additional goal-based estimate of housing units in Menlo Park based on a 20% commute share, which was a goal identified in the City's 2000 Commercial Linkage Fee Nexus Study. The possibility that availability and affordability of housing have contributed to a downward trend in Menlo Park's commute share is a primary reason for including this additional goal-based commute share estimate. The goal-based estimate also illustrates a scenario in which the residential units added by the Proposed Project encourages a larger share of workers to live in Menlo Park.

Menlo Park Share of Regional Housing Supply and Housing Demand Impacts

The percent of workers residing locally with the current and increased commute share estimates are applied to the total regional housing need to calculate the number of workers in the Proposed Project that are estimated to seek and find housing in Menlo Park. The two scenarios regarding the Menlo Park share of regional housing demand are then combined with the number of new residential units in Menlo Park to estimate the net impacts on housing availability in Menlo Park.

Current Commute Share Estimate (5.3%) – Results under the Current Commute Share Estimate are presented in Table 1-5, indicating the Menlo Park share of added housing supply, added housing demand, and net impacts on housing availability by income category.

- *Office Use Scenario* – With the Office Use Scenario, the Menlo Park share of added regional worker housing demand is estimated to total 117 units. The 550 new residential units added in Menlo Park by the Proposed Project exceed the estimated 117 units of added employee housing demand in Menlo Park by 433 units, resulting in a net increase in housing availability in Menlo Park of 433 units. The 433-unit estimated net increase in housing availability in Menlo Park consists of 154 Low and 338 Above Moderate units, partially offset by net decreases in housing availability of 2, 7, 26, and 24 units within the

Extremely Low, Very Low, Moderate, and Over 150% of AMI categories, respectively, due to added housing demand exceeding added housing supply within these income categories.

- *R&D Use Scenario* – With the R&D Use Scenario, the Menlo Park share of added regional worker housing demand is estimated to total 83 units. The 550 new residential units added in Menlo Park by the Proposed Project exceed the estimated 83 units of added employee housing demand in Menlo Park by 467 units, resulting in a net increase in housing availability in Menlo Park of 467 units. The 467-unit estimated net increase in housing availability in Menlo Park consists of 157 Low and 343 Above Moderate units, partially offset by net decreases in housing availability of 2, 4, 19, and 8 units within the Extremely Low, Very Low, Moderate, and Over 150% of AMI categories, respectively, due to added housing demand exceeding added housing supply within these income categories.

Table 1-5. Estimated Menlo Park Share of Regional Housing Availability Impacts - Current Commute Share Estimate

	Office Use Scenario			**R&D Use Scenario**		
	A. Housing Supply Added (New Units)	B. Menlo Park Share of Added Regional Worker Housing Demand with Current Commute Share (1)	C. Net Increase in Housing Availability in Menlo Park (2) [= A. - B.]	A. Housing Supply Added (New Units)	B. Menlo Park Share of Added Regional Worker Housing Demand with Current Commute Share (1)	C. Net Increase in Housing Availability in Menlo Park (2) [= A. - B.]
Extremely Low	0	2	(2)	0	2	(2)
Very Low	0	7	(7)	0	4	(4)
Low	168	14	154	168	11	157
Moderate	0	26	(26)	0	19	(19)
Subtotal: 0% to 120% AMI	168	49	119	168	36	132
Above Moderate	354	16	338	354	11	343
Subtotal: 0% to 150% AMI	522	65	457	522	47	475
Over 150% AMI	28	52	(24)	28	36	(8)
Total	550	117	433	550	83	467

(1) Current Commute Share is estimated at 5.3% based on Census data. Assumes distribution by income consistent with total housing need per Table 1-4.
(2) Negative figures represent a net decrease in housing availability (added housing demand exceeds added housing supply).

Increased Commute Share Estimate (20%) – Results under the Increased Commute Share Estimate are presented in Table 1-6.

- *Office Use Scenario* – In the Office Use Scenario, applying an increased commute share of 20% to the total added regional employee housing demand results in an estimated Menlo Park share of regional housing need of 440 units. The 550 new residential units added in Menlo Park by the Proposed Project exceed the estimated 440 units of added employee housing demand in Menlo Park by 110 units, resulting in a net increase in housing availability in Menlo Park of 110 units. The 110-unit estimated net increase in housing availability in Menlo Park consists of 118 Low and 292 Above Moderate units, partially offset by net decreases in housing availability of 9, 25, 99, and 167 units within the Extremely Low, Very Low, Moderate, and Over 150% of AMI categories, respectively, due to added housing demand exceeding added housing supply within these income categories.

- *R&D Use Scenario* – With the R&D Use Scenario, applying an increased commute share of 20% to the total added regional employee housing demand results in an estimated Menlo Park share of regional housing need of 312 units. The 550 new residential units added in Menlo Park by the Proposed Project exceed the estimated 312 units of added employee housing demand in Menlo Park by 238 units, resulting in a net increase in housing availability in Menlo Park of 238 units. The 238-unit estimated net increase in housing availability in Menlo Park consists of 129 Low and 310 Above Moderate units, partially offset by net decreases in housing availability of 6, 15, 72, and 108 units within the Extremely Low, Very Low, Moderate, and Over 150% of AMI categories, respectively, due to added housing demand exceeding added housing supply within these income categories.

Table 1-6. Estimated Menlo Park Share of Regional Housing Availability Impacts – Increased Commute Share Estimate at 20%

	Office Use Scenario			**R&D Use Scenario**		
	A. Housing Supply Added (New Units)	B. Menlo Park Share of Added Regional Worker Housing Demand with Increased Commute Share (1)	C. Net Increase in Housing Availability in Menlo Park (2) [= A. - B.]	A. Housing Supply Added (New Units)	B. Menlo Park Share of Added Regional Worker Housing Demand with Increased Commute Share (1)	C. Net Increase in Housing Availability in Menlo Park (2) [= A. - B.]
Extremely Low	0	9	(9)	0	6	(6)
Very Low	0	25	(25)	0	15	(15)
Low	168	50	118	168	39	129
Moderate	0	99	(99)	0	72	(72)
Subtotal: 0% to 120% AMI	168	183	(15)	168	132	36
Above Moderate	354	62	292	354	44	310
Subtotal: 0% to 150% AMI	522	245	277	522	176	346
Over 150% AMI	28	195	(167)	28	136	(108)
Total	550	440	110	550	312	238

(1) Uses 20% Increased commute share as described above. Assumes distribution by income consistent with total housing need per Table 1-4.

(2) Negative figures represent a net decrease in housing availability (added housing demand exceeds added housing supply).

The percentage factors used to estimate the Menlo Park share of housing need are applied uniformly across each of the income tiers. The actual distribution by income tier in Menlo Park would likely vary from these estimates based on factors such as the existing housing stock, limited availability of affordable units, and the production of market rate and affordable units in Menlo Park.

1.6 Displacement Analysis

The displacement analysis addresses the potential for the proposed Project to contribute to displacement of existing residents in nearby communities. While displacement is not an impact for the purposes of the California Environmental Quality Act (CEQA), displacement has become an increasing regional concern in the Bay Area. Displacement occurs when housing or neighborhood conditions force existing residents to move, or households feel like their move is involuntary. Displacement can be caused by a range of physical, economic and social factors including but not limited to foreclosure, condominium conversion, building deterioration or condemnation, increased taxes, natural disasters, eminent domain and increases in housing costs[5, 6, 7].

A map produced by the Urban Displacement Project, a research and action initiative of UC Berkeley that aims to understand and describe the nature of gentrification and displacement, identifies numerous communities at risk of displacement that extend from San Francisco down the Peninsula to many neighborhoods in San Jose and the East Bay[8]. The communities nearest to the Proposed Project with an elevated or high risk of displacement are the City of East Palo Alto (East Palo Alto), Menlo Park's Belle Haven neighborhood (Belle Haven), portions of North Fair Oaks and Redwood City, and the Stanford campus[9].

The Proposed Project adds to regional housing demand, which could contribute to upward pressure on housing costs to the extent expansion in the regional housing supply does not keep pace. However, several other factors will tend to offset or minimize the potential that the Proposed Project would influence pre-existing displacement pressures, including that it:

- Adds to the supply of market rate and affordable housing;
- Increases housing availability in Menlo Park;
- Is located in an area with low risk of displacement;
- Does not remove any existing housing; and
- Does not physically alter any community vulnerable to displacement.

In consideration of the above factors, the Proposed Project is not likely to materially increase pre-existing displacement pressures affecting nearby communities vulnerable to displacement.

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[5] Zuk, M. et. al. 2017. Gentrification, Displacement, and the Role of Public Investment. Journal of Planning Literature. Journal of Planning Literature 1-14.

[6] Center for Community Innovation (2020). Investment and Disinvestment as Neighbors, A Study of Baseline Housing Conditions in the Bay Area Peninsula.

[7] Bradshaw, K. (2019). Uneven Ground: How unequal land use harms communities in southern San Mateo County. Palo Alto Online. https://paloaltoonline.atavist.com/uneven-ground.

[8] Chapple, K., & Thomas, T., and Zuk, M. (2021). Urban Displacement Project website. Berkeley, CA: Urban Displacement Project. Accessed at https://www.urbandisplacement.org/maps/california-estimated-displacement-risk-model/

[9] Ibid.

2.0 INTRODUCTION

This Housing Needs Assessment (HNA) provides an analysis of the Proposed Project's impact on housing supply and housing demand and evaluates its potential to contribute to displacement of existing residents. The report has been prepared by Keyser Marston Associates (KMA) for the City of Menlo Park under a subcontract agreement with ICF International, prime consultant responsible for preparation of the Environmental Impact Report (EIR).

The following housing-related topics are addressed in this HNA:

1) Net impact on housing availability by income level, considering the combined effects of added housing supply and added employee housing demand;
2) Share of housing availability impacts estimated to occur within the City of Menlo Park; and
3) Potential for the Proposed Project to contribute to rising housing costs and displacement of existing residents in nearby communities vulnerable to displacement.

These housing-related impacts are not required to be analyzed under the California Environmental Quality Act (CEQA) since economic or social changes are not considered significant effects on the environment. Nevertheless, this information may be of interest to decision-makers and/or the public in evaluating the merits of the Proposed Project.

HNAs for previous development projects in Menlo Park were prepared pursuant to a requirement of a 2017 City of East Palo Alto v. City of Menlo Park Settlement Agreement (Settlement Agreement). The Settlement Agreement requirement applies to projects in the City's Bayfront Area that meet certain criteria; however, since the Proposed Project is not in the Bayfront Area, this HNA is not required by the Settlement Agreement.

2.1 Project Description

Lane Partners (Project Sponsor) is proposing to redevelop SRI International's existing 63.2-acre research campus adjacent to city hall and near Menlo Park's downtown and Caltrain station. The Parkline (Proposed Project) would include a new office/R&D campus with no net increase in the existing office/R&D square footage; up to 550 new rental dwelling units; and approximately 26 acres of publicly accessible open space. All buildings on SRI International's Campus would be demolished, except Buildings P, S, and T, encompassing a total of 286,000 square feet, which would remain onsite and be operated by SRI International and its tenants. Up to approximately 1.05 million square feet of new office/research space, 40,000 square feet of campus-serving commercial amenity space, 2,002 square feet of community-oriented facilities, 550 multi-family residential units, parking, and open space improvements would be constructed. Upon completion, non-residential building square footage would remain unchanged from the existing approximately 1,380,332 square feet, and 550 new residential units would be added to the Project Site.

The Proposed Project will be comprised of two districts:

- Residential District within approximately 10-acres on the southwestern portion of the Project Site; and
- Office/R&D District encompassing the 53.2-acre remainder of the Project Site.

Open space would be included as part of both districts.

The mix of office and R&D or life science uses will be determined in response to tenant needs as the project is built out. In recognition of differences in employment levels depending on the ultimate mix of office and R&D uses, consistent with the DEIR, the HNA evaluates both a:

- Office Use Scenario that assumes 100% of the office/R&D buildings are occupied by office tenants; and an
- R&D Use Scenario that assumes 100% of the office/R&D buildings are occupied by R&D or life science uses.

A summary of the Proposed Project is provided in Table 2-1, below.

Table 2-1. Proposed Project Summary

	Residential Units	Building Area
Office/R&D District		
New Buildings		
Office/R&D Buildings		1,051,600 SF
Commercial Amenity		40,000 SF
Community Amenity		2,002 SF
Total New Buildings (replaces an equal amount of demolished existing space)		1,093,602 SF
Existing SRI Buildings to be Retained		286,730 SF
Total Office/R&D District (no net change from existing non-residential area)		1,380,332 SF
Residential District	550 Units	675,200 SF
Total Building Area upon completion, excluding parking		2,055,532 SF

Note: Building area excludes parking structure.

The 550 new residential units will be comprised of:

- Mixed income component with 450 rental units, of which 15% are BMR, including:
    - 431 units in three multifamily buildings, including 65 BMR and 366 market rate; and
    - 19 rental townhomes, including three BMR and 16 market rate units.
- Affordable site to be dedicated to an affordable developer for construction of up to 100 BMR affordable units in one multifamily building.

Table 2-2 provides a summary of the residential units in the Proposed Project.

Table 2-2. Proposed Residential Units

	Market Rate	BMR	Total
Mixed Income Component			
Multifamily Buildings	366	65	431
Townhome	16	3	19
Subtotal	382	68	450
Affordable Site	0	100	100
Total	382	168	550

See the Project Description section of the Draft Environmental Impact Report for more information regarding the Proposed Project.

2.2 Estimated On-Site Employment

The net increase in on-site employment with the Proposed Project is 3,868 employees in the Office Use Scenario and 2,667 employees in the R&D Use Scenario, as shown in Table 2-3. This net change in employment reflects total employment with the Proposed Project of 4,268 in the Office Use Scenario and 3,067 in the R&D Use Scenario, as offset by a 400-employee net decrease in SRI International employment on the Project Site. On-site employment totals are drawn from the DEIR. Employment in the Office Use Scenario is greater than in the R&D Use Scenario because employees within R&D and life science uses often utilize both laboratory space and office workstations, which results in fewer employees within the same amount of building area compared to office uses.

Table 2-3. Estimated Net Change in On-Site Employment

	Residential Units	Building Square Feet	Office Scenario	R&D Scenario	
Existing					
Existing SRI International Campus		1,380,332 SF	1,100	1,100	employees
Proposed Project					
Rental Units / Property Management	550 Units	675,200 SF	14	14	employees
New Office / R&D Use		1,051,600 SF	4,206	3,005	employees
Commercial Amenity		40,000 SF	46	46	employees
Community Amenity		2,002 SF	2	2	employees
Subtotal New Non-Residential		1,093,602 SF	4,254	3,053	employees
Subtotal Proposed Project			4,268	3,067	employees
Retained SRI Buildings, net change in SRI employment (1)		286,730 SF	(400)	(400)	employees
Net Change	550 Units	675,200 SF	**3,868**	**2,667**	employees

Source: Draft EIR Project Description.

(1) The Proposed Project would demolish 35 of the 38 existing buildings on the Project Site; existing Buildings P, S, and T, would remain onsite and be operated by SRI International and its tenants. Of the 1,100 existing employees at SRI International Campus, 400 employees would no longer work at the Project Site with implementation of the Proposed Project and 700 employees would remain.

The net change in on-site employment, considering added jobs with the Proposed Project and the 400-employee net decrease in SRI International employment, is assumed to represent a net change in regional employment arising from the Proposed Project. This is consistent with the approach used in prior HNAs prepared for other projects in Menlo Park.

2.3 Income Definitions

The income levels or tiers used in the analysis are expressed in relation to local Area Median Income (AMI). For example, Extremely Low Income is defined as households earning up to 30% of AMI. The AMI for each county or group of counties is issued annually by the U.S. Department of Housing and Urban Development (HUD) and released by the California Department of Housing and Community Development. Most housing programs and policies in California and its jurisdictions utilize these income definitions. The City of Menlo Park is covered by and utilizes the AMI information provided for San Mateo County.

Per HCD and statewide programs, the analysis includes households earning less than 120% AMI. In addition, an Above Moderate Income tier covering 120% to 150% AMI is presented in this analysis because this income tier also faces affordable housing challenges in Menlo Park and the greater Bay Area. In fact, due to the high cost of housing in Menlo Park, housing affordability challenges even extend to households earning more than 150% of AMI[10], especially in the for-sale housing market. As with HNAs prepared for prior projects in Menlo Park, the Above Moderate Income tier was included to provide decision makers more information on the housing needs of a broad spectrum of housing affordability levels.

In summary, the income tiers used in the analysis are:

- Extremely Low Income – households up to 30% of AMI;
- Very Low Income – households from 31% to 50% of AMI;
- Low Income – households from 51% to 80% of AMI;
- Moderate Income – households from 81% to 120% of AMI;
- Above Moderate Income – households from 121% to 150% of AMI; and
- Over 150% of AMI – households over 150% of AMI.

The 2023 income limits by household size are presented below in Table 2-4.

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[10] An income of approximately 295% of AMI, is estimated to be needed to afford the median priced home in Menlo Park. The median priced home in Menlo Park is $2.65 million based on home sales from September 2022 through September 2023 from real estate data service provider CoreLogic. Estimates assume a down payment of 30% based on the median down payment for home purchases with a mortgage in Menlo Park estimated from CoreLogic data during this period, 35% of income spent on housing, and a mortgage interest rate of 7% based on 30-year fixed mortgage rates from Freddie Mac Primary Mortgage Market Survey as of September 2023.

Table 2-4. 2023 Household Income Limits

		Income Limit by Household Size					
Income Category	**Percent of AMI**	1-person	2-person	3-person	4-person	5-person	6-person
Extremely Low	30% of AMI	$39,150	$44,750	$50,350	$55,900	$60,400	$64,850
Very Low Income	50% of AMI	$65,250	$74,600	$83,900	$93,200	$100,700	$108,150
Low Income	80% of AMI	$104,400	$119,300	$134,200	$149,100	$161,050	$173,000
Moderate Income	120% of AMI	$147,000	$168,000	$189,000	$210,000	$226,800	$243,600
Above Moderate	150% of AMI	$174,300	$199,200	$224,100	$249,000	$268,950	$288,825
Median Income	100% of AMI	$122,500	$140,000	$157,500	$175,000	$189,000	$203,000

AMI = Area Median Income, San Mateo County 2023
Source: California Department of Housing and Community Development

2.4 Report Organization

This report is organized into eight sections and an appendix:

- Section 1.0 provides an Executive Summary;
- Section 2.0 provides an Introduction;
- Section 3.0 identifies the income categories applicable to the new residential units;
- Section 4.0 provides an analysis of worker housing needs for added on-site jobs;
- Section 5.0 estimates housing demand by income for off-site workers in services to new residents such as restaurants, retail and health care;
- Section 6.0 combines the findings of Sections 3, 4 and 5 to estimate the net impact on housing availability and the share of net impacts occurring within the City of Menlo Park;
- Section 7.0 provides a discussion of the potential for the Proposed Project to contribute to displacement of existing residents;
- Section 8.0 provides an analysis of the Project Variant addressed in the DEIR; and
- Appendix A provides supporting tables on worker occupation and incomes.

2.5 Data Sources and Qualifications

The analysis in this report has been prepared using the best and most recent data available from sources including the American Community Survey (ACS) of the U.S. Census, the U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages and Occupational Employment Survey, commercial data providers CoStar, CoreLogic, and data from SRI International on the share of workers who live in Menlo Park. Local data was used wherever possible. Other sources are noted in the text and footnotes. While KMA believes all sources utilized are sufficiently accurate for the purposes of the analysis, KMA cannot guarantee their accuracy. KMA assumes no liability for information from these or other sources.

3.0 HOUSING UNITS ADDED BY THE PROJECT BY INCOME CATEGORY

This section estimates how the 550 new residential units added by the Proposed Project will be distributed by income or affordability category.

3.1 Below Market Rate Housing Units

The City's Below Market Rate (BMR) Housing Program codified in Chapter 16.96 of the City's Zoning Code requires residential development projects with twenty or more units to provide no less than 15% BMR affordable units. The Project Sponsor has proposed to comply with the City's BMR requirements by including 68 BMR affordable units within the mixed income residential component, representing 15% of the 450 units. In addition, the Project Sponsor has proposed dedication of site for an affordable housing development with up to 100 affordable units. This results in a total of up to 168 BMR units. The 168 BMR units represent approximately 30.5% of the 550 total residential units in the Proposed Project.

BMR rental units are required by the City's BMR ordinance and guidelines to be affordable to Low Income households. Alternative affordability levels are permitted under the City's BMR Housing Program Guidelines if determined to be roughly equivalent to providing all BMR units at Low Income. The Project Sponsor had not yet identified a proposed income mix for the BMR units as of the time of HNA preparation; therefore, Low Income BMR units are assumed. The 68 BMR units within the mixed income component of the Proposed Project are assumed to be affordable to Low Income households with incomes at the maximum qualifying limit for Low Income, consistent with the City's BMR Housing Program Guidelines. The up to 100 units to be developed on a site dedicated to an affordable developer are assumed to be affordable to households earning 60% of AMI based on requirements for projects financed with Low Income Housing Tax Credits. Table 3-1 provides a summary.

Table 3-1. Market Rate and BMR Units

	Market Rate	BMR	Total	AMI Level Assumed for BMR Units (1)
Mixed Income Component				
Multifamily Buildings	366	65	431	80% of AMI
Townhome	16	3	19	80% of AMI
Subtotal	382	68	450	
Affordable Site	0	100	100	Average of 60% of AMI
Total	382	168	550	

(1) Assumed income mix as a specific BMR proposal from the Project Sponsor was not yet available.

AMI = Area Median Income

Source: DEIR Project Description and Project Sponsor.

3.2 Affordability Level of Market Rate Units

The Proposed Project will include 382 market rate rental units including a mix of multi-family studios, one-, two- and three-bedroom units and three bedroom townhome units. The proposed number of units by square footage and bedroom size is summarized in Table 3-2. Market rate studio, one-, and two-bedroom units are estimated to be affordable for households with Above Moderate Income and market rate three-bedroom units are estimated to be affordable to households with incomes over 150% of AMI. Estimated affordability levels are based on estimated market rate rents for the units. Market rate units will not be deed restricted; therefore, the affordability level could change over time as market conditions and the income criteria used to determine affordability level change.

Table 3-2. Proposed Residential Units

Unit Type	Unit Size Range (square feet)	Mixed Income Component			Site Dedicated to Affordable Builder	Total Residential Units
		Market Rate	*15% BMR Units*	*Subtotal*	*100% BMR Units*	
Multifamily Buildings						
Studio	500 to 600	64	11	75	20	95
1-Bedroom	650 to 800	168	30	198	20	218
2-Bedroom	1,000 to 1,200	122	22	144	30	174
3-Bedroom	1,300 to 1,550	12	2	14	30	44
Subtotal		366	65	431	100	531
Townhome (3-BR)	2,150 to 2,400	16	3	19	-	19
Total		382	68	450	100	550

Source: DEIR Project Description.

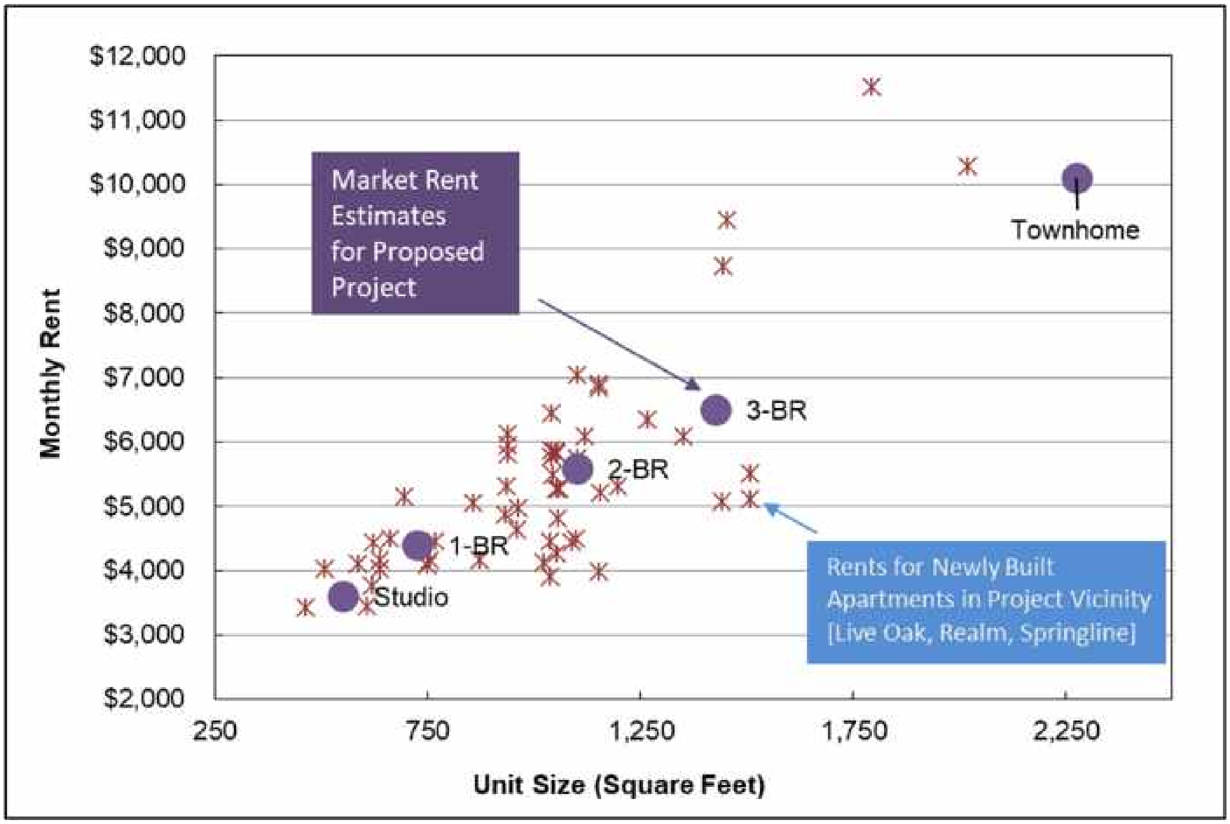
Market rents were estimated by KMA based on rents for three newer rental properties in Menlo Park in the vicinity of the Proposed Project including:

- Live Oak Apartments at 650 Live Oak Avenue (built 2021),
- Realm at 1545 San Antonio Avenue (built 2022),
- Springline Apartments at 550 Oak Grove (built 2022).

Market rent data for newer apartment properties in the vicinity of the Proposed Project was supplemented with data for newly built apartments in the Bayfront Area of Menlo Park, Downtown Redwood City, and Palo Alto.

Chart 1 presents rental rates for the three Menlo Park comparables in the vicinity of the Proposed Project, listed above. Each data point represents the average effective market rate rent for units of a specific square footage size as of September 2023. Estimated rents for the Proposed Project are identified by purple circles. Square footage sizes for units within the Proposed Project represent the midpoint of the ranges reflected in the DEIR Project Description and summarized in Table 3-2. Based on the market data and the unit sizes for the Proposed Project, market rate studios are estimated to rent for approximately $3,600 per month, one bedrooms for $4,400 per month, two bedrooms for $5,600, three bedrooms for $6,500 per month, and townhomes for $10,100 per month.

Chart 1 – Market Rate Rents for New Units in Vicinity and Estimates for Proposed Project



Source: CoStar

Table 3-3 summarizes the estimated rental rates for the Proposed Project and average rental rates for the comparison properties by bedroom size.

Table 3-3. Rents for Comparable Apartments and Estimate for Proposed Project

	Studios			**1 Bedrooms**			**2 Bedrooms**			**3 Bedrooms**		
	Avg Size	Avg Rent	Avg Rent PSF	Avg Size	Avg Rent	Avg Rent PSF	Avg Size	Avg Rent	Avg Rent PSF	Avg Size	Avg Rent	Avg Rent PSF
Estimate for Project	550	$3,600	$6.55	725	$4,400	$6.07	1,100	$5,600	$5.09	1,425	$6,500	$4.56
										2,275	$10,100	$4.44
Comparable Apartments												
Project Vicinity												
Live Oak	-	-	-	669	$4,183	$6.25	-	-	-	1,906	$10,898	$5.72
Realm	-	-	-	605	$3,452	$5.71	1,112	$4,986	$4.48	1,349	$6,090	$4.51
Springline	-	-	-	631	$4,293	$6.80	1,003	$5,534	$5.52	1,463	$6,770	$4.63
Menlo Park, North of 101												
Elan Menlo Park	-	-	-	763	$3,330	$4.36	1,017	$4,110	$4.04	1,249	$5,162	$4.13
777 Hamilton	-	-	-	728	$3,256	$4.48	1,029	$4,179	$4.06	1,391	$4,877	$3.51
Anton Menlo	563	$2,877	$5.11	746	$2,982	$3.99	1,144	$4,124	$3.61	1,546	$4,961	$3.21
Palo Alto												
Arbora	500	$4,101	$8.20	721	$5,454	$7.56	970	$7,093	$7.31	-	-	-
Redwood City												
Encore	674	$3,538	$5.25	823	$3,823	$4.65	1,137	$4,748	$4.18	1,374	$5,942	$4.32
Huxley	620	$2,783	$4.49	785	$3,278	$4.18	1,170	$4,377	$3.74	-	-	-
Indigo	597	$2,892	$4.84	780	$3,275	$4.20	1,174	$4,446	$3.79	1,481	$5,899	$3.98
Blu Harbor	588	$3,039	$5.17	842	$3,395	$4.03	1,265	$4,789	$3.79	1,560	$6,083	$3.90

Source: CoStar

Market rate rent estimates for the Proposed Project were used to estimate the affordability level of the units. As shown in Table 3-4, the market rate studio, one, and two-bedroom units are estimated to be affordable to Above Moderate Income households and three-bedroom and townhome units are estimated to be affordable to households in the Over 150% of AMI category.

Table 3-4. Estimated Affordability Level Applicable to Market Rate Units

	Studio	1-BR	2-BR	3-BR	Townhomes
Estimated Monthly Rent (1)	\$3,600	\$4,400	\$5,600	\$6,500	\$10,100
Utilities (2)	\$144	\$159	\$213	\$273	\$273
Total Monthly Rent + Utilities	\$3,744	\$4,559	\$5,813	\$6,773	\$10,373
Annual Housing Cost	\$44,928	\$54,708	\$69,756	\$81,276	\$124,476
Percent of Income Spent on Housing (3)	30%	30%	30%	30%	30%
Annual Household Income Required	\$149,760	\$182,360	\$232,520	\$270,920	\$414,920
2023 Median Income (4)	\$122,500	\$140,000	\$157,500	\$175,000	\$175,000
Percent of AMI Needed to Afford Market Units	122%	130%	148%	155%	237%
Affordability Level of Market Units	**Above Moderate**	**Above Moderate**	**Above Moderate**	**Over 150% AMI**	**Over 150% AMI**

(1) KMA estimate based on market rents for comparable new apartment properties.
(2) Tenant paid utilities estimated based on County Housing Authority utility allowance schedule.
(3) Per California Health and Safety Code Section 50053.
(4) HCD Income Limits for applicable household size for 2023.

3.3 New Residential Units by Income Level

Table 3-5 provides a summary of the income level applicable to the new residential units, combining the findings of Section 3.1 and 3.2. As shown, the Proposed Project is estimated to include 100 Low Income BMR Units with rents averaging 60% of AMI, 68 Low Income BMR units with rents at 80% of AMI, 354 market rate studio, one- and two-bedroom units affordable to Above Moderate Income, and 28 market rate three-bedroom units affordable to households with Incomes over 150% of AMI.

Table 3-5. Estimated Affordability Level of New Residential Units

	Low Income 60% AMI	Low Income 80% AMI	Above Moderate	Over 150% AMI	Total
	100% affordable building	*BMR units, mixed income component*	*Market Rate Units*	*Market Rate Units*	
Studio	20	11	64	-	95
1-Bedroom	20	30	168	-	218
2-Bedroom	30	22	122	-	174
3-Bedroom	30	2	-	12	44
Townhome (3-BR)	-	3	-	16	19
Total	100	68	354	28	550

4.0 ADDED WORKER HOUSING NEEDS FROM INCREASE IN ON-SITE EMPLOYMENT

This section summarizes the analysis of housing needs associated with on-site employment attributable to the Proposed Project. The analysis begins with the change in on-site employment by project component. Then, the analysis proceeds through a series of steps to estimate how the changes in on-site jobs translate into a change in worker housing need by income level.

4.1 Methodology

To estimate the linkages between added employment, worker households, and housing needs by affordability levels, KMA employed the same methodology that is used for nexus studies in support of jobs housing linkage programs. This methodology has been refined and modified for use in quantifying the housing impacts of specific projects, such as the Proposed Project. The analysis inputs are all local data, to the extent possible, and are fully documented.

The estimated changes in on-site employment from development of the Proposed Project are translated into an estimated impact on worker housing demand based on relationships between jobs and housing demand derived from the U.S. Census. The income level associated with the housing demand is estimated using a combination of data sources including the U.S. Bureau of Labor Statistics occupation data, wage data published by the California Employment Development Department (EDD) and U.S. Census data.

4.2 Analysis Steps

Following is a description of each step in the analysis.

Analysis Step 1 – Net Change in On-Site Employment

The Office Use Scenario is estimated to result in a net increase of 3,868 on-site jobs upon completion, while the R&D Use Scenario is estimated to result in a net increase of 2,667 on-site jobs, as summarized in Table 4-1. Employment estimates are from the DEIR Project Description and are based on representative employment densities and data on SRI International employment provided by the Project Sponsor.

The 3,868 net increase in employment in the Office Use Scenario is comprised of 4,206 employees within the office space, 46 employees in the commercial amenity, two community amenity employees, 14 employees in property management and maintenance of the residential units, offset by a 400-employee net decrease in SRI International employment. The 2,667 net increase in employment in the R&D Use Scenario is comprised of 3,005 employees within the R&D space, with employment in all other project components consistent with the Office Use Scenario.

Table 4-1. Estimated Net Change in On-Site Employment

	Office Scenario	R&D Scenario	
New Office / R&D Use	4,206	3,005	employees
Net Decrease in SRI Employment (1)	(400)	(400)	employees
Commercial Amenity	46	46	employees
Community Amenity	2	2	employees
Rental Units / Property Management	14	14	employees
Net Change	3,868	2,667	employees

Source: DEIR Project Description.

(1) Of the 1,100 existing employees at SRI International Campus, 400 employees would no longer work at the Project Site with implementation of the Proposed Project and 700 employees would remain in Buildings P, S, and T.

Step 2 – Adjustment from Employees to Employee Households

Step 2 converts the number of employees to the number of employee households, an adjustment that accounts for multiple-earner households. This step recognizes that there is, on average, more than one worker per household, and thus the number of housing units in demand is reduced. The workers per worker household ratio eliminates from the equation all non-working households, such as households comprised of retired persons or students.

KMA derived the worker per worker household figure from ACS data for 2017 to 2021. The ACS data provide estimates of the total number of workers in San Mateo County (399,594[11]), and the total number of households with at least one working household member (213,491). The ratio of the two figures for San Mateo County is 1.87 workers per worker household. The San Mateo County figure is used in the analysis because workers will be more similar to the County as a whole than the smaller City of Menlo Park profile, which has an average of 1.72 workers per worker household. The workers per worker household ratio is used to translate the on-site employment added by the Proposed Project to a change in employee households as shown in Table 4-2.

The 3,868 jobs added by the Proposed Project in the Office Use Scenario and 2,667 jobs added in the R&D Use Scenario are divided by the 1.87 workers per worker household ratio to estimate the net increase of 2,066 and 1,424 employee households, respectively. Table 4-2 shows the estimated number of employee households by project component.

Table 4-2. Estimated Net Change in On-Site Employee Households

	Employment (from Table 4-1)		**Employee Households** (calculated based on 1.87 workers per household) (1)	
	Office Scenario	R&D Scenario	Office Scenario	R&D Scenario
New Office / R&D	4,206	3,005	2,247	1,605
Net Decrease, SRI Employment	(400)	(400)	(214)	(214)
Commercial Amenity	46	46	25	25
Community Amenity	2	2	1	1
Rental Units / Property Management	14	14	7	7
Net Change	3,868	2,667	2,066	1,424

(1) Derived from 2017-2021 U.S. Census American Community Survey data for San Mateo County

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[11] Not including 895 unpaid family workers.

Multiple-earner households have two or more workers and take a variety of forms, such as roommates and housemates, couples, and multi-generational households. The analysis makes an adjustment to recognize that if an added employee lives in a household with one or more other workers, that added employee is not responsible for creating demand for an entire housing unit, only a portion of a unit.

There is no implicit assumption in the calculation that employees within the Proposed Project would live with one another. Multiple-earner households are a factor that must be recognized in the analysis, irrespective of where the other working member(s) of the household is employed. Were the adjustment for multiple-earner households to be limited to the special case of Proposed Project employees living with one another in the same unit, housing needs of Proposed Project employees would be overstated by allotting an entire housing unit to one worker, even if that worker shares a housing unit with another worker who is employed elsewhere. Such an approach would result in double counting a portion of the housing demand. The following two examples provide further illustrations as to why an adjustment to account for multiple-earner households is necessary regardless of where the other working member(s) of the household is employed:

- *Example #1* – Consider a worker added by the Proposed Project who lives with a worker who has taken a job elsewhere in the region at a separate growing company. If it were assumed that each new worker (added by expansions at two separate businesses) would require their own housing unit, the total housing demand would be overstated due to double counting the one unit that is shared by the two workers.

- *Example #2* – Consider two workers added by the Proposed Project as well as two workers at long-established local employers. Say the two workers at long-established employers live with one another and the two workers employed at the Proposed Project live with one another. There would be a need for two housing units in total. Now, instead say that the two workers in the Proposed Project are in separate units, each with one of the workers at a long-established employer. There is still a need for two housing units in total. There is no difference in housing demand whether the two workers at the Proposed Project live with one another or live separately with a worker who holds a job elsewhere.

Step 3 – Occupational Distribution

Occupational distribution for employees added by the Proposed Project is based on data from a national survey by the Bureau of Labor Statistics (BLS). Occupation refers to job description, such as management, sales clerk, cashier, etc. The survey provides the occupational distribution for various North American Industry Classification System (NAICS) industry categories. The following industry categories were identified as representative for the Proposed Project:

- *Office* – The mix of tenants in the Office Use Scenario is not known and may include a variety of tenancies over the life of the buildings. The occupation profile of workers within the office space is based on a mix of industries that typically occupy office space. Industry categories are weighted to reflect the mix of employment in San Mateo County using Quarterly Census of Employment and Wages data published by BLS for the 4th Quarter of 2022. The specific NAICS industry categories include:

  513200 Software Publishers
  518200 Data Processing, Hosting, and Related Services
  519200 Web Search Portals and Other Information Services
  523000 Securities, Commodity Contracts, and Other Financial Investments
  524200 Agencies, Brokerages, and Other Insurance Related Activities
  541100 Legal Services
  541200 Accounting, Tax Preparation, Bookkeeping, and Payroll Services
  541300 Architectural, Engineering, and Related Services
  541600 Management, Scientific, and Technical Consulting Services
  541500 Computer Systems Design and Related Services
  813200 Grantmaking and Giving Services
  813300 Social Advocacy Organizations
  813400 Civic and Social Organizations

- *R&D* – NAICS 541710 for Research and Development in the Physical, Engineering, and Life Sciences is used to represent the occupation profile of workers in research and development space in the R&D Use Scenario.

- *SRI International* – The occupation profile of SRI International workers is estimated based on two representative industry categories including NAICS 541710 Research and Development in the Physical, Engineering, and Life Sciences and 541330 Engineering Services.

- *Commercial Amenity* – NACIS 722300 Special Food Services is used to represent the occupation profile of workers in the commercial amenity building, where employment is expected to be primarily food-related.

For the community amenity and on-site property management and maintenance, KMA selected representative occupations from the BLS data as shown in Appendix A Tables 9 and 10.

Table 4-3 provides a summary of worker occupations by major category. Appendix A provides a further breakdown of worker occupations by Standard Occupational Classification (SOC) System codes.

Table 4-3. Net Change in On-Site Employee Households by Land Use and Occupation Category

	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.
	Included in Both Office and R&D Scenarios				Office Scenario			R&D Scenario		
Occupation Category	Commercial Amenity	Community Amenity	Rental Units Prop. Mgmt.	SRI Occupancy Net Decrease	Office Uses	Office Scenario Total [sum of A to E]	% of Total	R&D Uses	R&D Scenario Total [sum of A.to D. + H.]	% of Total
Management Occupations	1.2	0.0	1.5	(33.1)	346.6	316.3	15.3%	308.1	277.7	19.5%
Business and Financial Operations	0.4	0.0	0.0	(25.8)	277.5	252.2	12.2%	184.5	159.2	11.2%
Computer and Mathematical	0.0	0.0	0.0	(25.3)	936.1	910.8	44.1%	235.9	210.6	14.8%
Architecture and Engineering	0.0	0.0	0.0	(66.4)	19.6	(46.7)	-2.3%	233.4	167.0	11.7%
Life, Physical, and Social Science	0.0	0.0	0.0	(27.5)	0.9	(26.6)	-1.3%	359.0	331.5	23.3%
Community and Social Services	0.0	0.0	0.0	(0.2)	0.0	(0.2)	0.0%	3.0	2.8	0.2%
Legal	0.0	0.0	0.0	(0.8)	14.9	14.0	0.7%	9.0	8.2	0.6%
Education, Training, and Library	0.0	0.0	0.0	(0.3)	71.9	71.6	3.5%	3.2	2.9	0.2%
Arts, Design, Entertainment, Sports, Media	0.0	0.0	0.0	(2.3)	59.4	57.1	2.8%	17.9	15.6	1.1%
Healthcare Practitioners and Technical	0.2	0.0	0.0	(2.7)	4.0	1.5	0.1%	39.6	37.1	2.6%
Healthcare Support	0.0	0.0	0.0	(0.6)	0.1	(0.4)	0.0%	8.6	8.1	0.6%
Protective Service	0.0	0.0	0.0	(0.4)	3.9	3.5	0.2%	4.4	4.1	0.3%
Food Preparation and Serving Related	18.3	0.5	0.0	(0.0)	0.2	18.9	0.9%	0.4	19.2	1.3%
Building and Grounds Cleaning and Maint.	0.9	0.0	3.0	(0.4)	6.2	9.7	0.5%	4.1	7.6	0.5%
Personal Care and Service	0.1	0.0	0.0	(0.2)	0.0	(0.1)	0.0%	3.3	3.2	0.2%
Sales and Related	1.2	0.0	0.0	(3.4)	233.7	231.5	11.2%	31.6	29.4	2.1%
Office and Administrative Support	0.8	0.0	0.0	(14.6)	250.7	236.8	11.5%	98.8	84.9	6.0%
Farming, Fishing, and Forestry	0.0	0.0	0.0	(0.2)	0.0	(0.2)	0.0%	3.3	3.0	0.2%
Construction and Extraction	0.0	0.0	0.0	(0.2)	0.2	(0.0)	0.0%	3.6	3.3	0.2%
Installation, Maintenance, and Repair	0.3	0.5	3.0	(3.0)	6.4	7.3	0.4%	14.8	15.7	1.1%
Production	0.2	0.0	0.0	(4.9)	4.9	0.2	0.0%	31.1	26.4	1.9%
Transportation and Material Moving	0.8	0.0	0.0	(1.4)	10.0	9.4	0.5%	7.9	7.4	0.5%
Totals (rounded)	25	1	7	(214)	2,247	2,066	100%	1,605	1,424	100%

Source: Bureau of Labor Statistics Occupational Employment Survey.
See Appendix A Tables 2 to 10 for more detailed breakdown of occupation categories.

Step 4 – Estimate of Employee Wage and Salary Distribution

The employee wage and salary distribution are based on the occupational distribution from Step 3 in combination with 2023 wage and salary information for San Mateo County for each occupation published by the California Employment Development Department (EDD). In addition to the average compensation levels, the analysis also utilizes data regarding the percentile distribution of wages within individual occupation categories in estimating the distribution of worker compensation levels. The data on employee wages and salaries utilized in the analysis is presented in Appendix A.

Step 5 – Household Size Distribution

In this step, the household size distribution of workers is estimated using U.S. Census 2017-2021 ACS data for San Mateo County. Data for the County is used since workers are more representative of the larger area in which workers live (the County) than the City of Menlo Park. In addition to the distribution in household sizes, the data also accounts for a range in the number of workers in households of various sizes. Table 4-4 indicates the percentage distribution utilized in the analysis.

Table 4-4. Percent of Households by Size and No. of Workers

No. of Persons in Household	No. of Workers in Household	Percent of Total Households
1	1	15.2%
2	1	13.0%
	2	17.8%
3	1	7.4%
	2	10.8%
	3+	3.3%
4	1	4.5%
	2	9.1%
	3+	6.0%
5	1	1.8%
	2	3.7%
	3+	2.5%
6	1	1.1%
	2	2.3%
	3+	1.5%
Total		100%

Source: 2017-2021 American Community Survey data for San Mateo County.

Step 6 – Estimate of Households that meet HCD Size and Income Criteria

This step in the analysis calculates the number of employee households that fall into each income category for each size household. This calculation is based on the employee wage and salary distribution (Step 4), the worker household distribution (Step 5) and the 2023 HCD income limits for San Mateo County, as described above.

Household incomes are estimated based upon ratios between individual employee income and household income derived from U.S. Census data shown in Table 4-5. The ratios adjust employee incomes upward even for households with only one worker in consideration of non-wage/salary income sources such as child support, disability, social security, investment income and others. The resulting household income estimates are shown in Appendix A.

Table 4-5. Ratio of Household Income to Individual Worker Income

Individual Worker Income	One Worker Households	Two Worker Households	Three or More Workers
$25,000 to $50,000	1.39	3.34	4.77
$50,001 to $75,000	1.20	2.49	3.42
$75,001 to $100,000	1.11	2.17	2.79
$100,001 to $150,000	1.07	1.94	2.40
$150,001 to $200,000	1.04	1.75	2.03
$200,001 to $250,000	1.04	1.64	1.84
$250,001 to $300,000	1.04	1.57	1.66
$300,001 to $500,000	1.05	1.45	1.53
$500,001 and above	1.02	1.29	1.35

Source: KMA analysis of 2017 to 2021 American Community Survey PUMS data for San Francisco Bay Area.

Estimated household incomes are compared to HCD income criteria to determine the percentage that qualify within each income category. The comparison is made for each potential household size/number of workers combination. The result is multiplied by the percentage of households by size and number of workers from Step 5 to calculate the distribution of worker households by income.

Table 4-6 presents the estimated number of households in each income tier by worker occupation category. It represents the output of the analysis, after completing Step 4 (employee compensation levels), Step 5 (household size distribution of worker households), and Step 6 which uses this information to calculate the number of households that fall into each income category.

TABLE 4-6

EMPLOYEE HOUSEHOLDS BY OCCUPATION AND INCOME (STEPS 4, 5, AND 6)
HNA - PARKLINE PROJECT
MENLO PARK, CA

	OFFICE (IN OFFICE USE SCENARIO)							R&D (IN R&D USE SCENARIO)						
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Step 4, 5, & 6 - Employee Households within Major Occupation Categories														
Management	-	3.1	13.6	35.0	35.8	259.2	346.6	-	2.7	11.9	32.3	30.1	231.1	308.1
Business and Financial Operations	0.8	16.6	47.1	79.7	48.3	85.0	277.5	0.7	12.5	33.4	54.6	32.2	51.1	184.5
Computer and Mathematical	0.7	13.6	63.7	165.7	124.5	567.8	936.1	0.1	2.7	17.6	41.8	33.2	140.6	235.9
Architecture and Engineering	-	-	-	-	-	-	-	0.4	5.2	24.9	54.4	37.4	111.1	233.4
Life, Physical and Social Science	-	-	-	-	-	-	-	1.7	16.2	53.7	94.4	58.5	134.5	359.0
Community and Social Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Education Training and Library	1.1	8.9	21.4	25.7	8.4	6.5	71.9	-	-	-	-	-	-	-
Arts, Design, Entertainment, Sports, & Media	0.2	3.0	9.9	15.5	11.1	19.6	59.4	-	-	-	-	-	-	-
Healthcare Practitioners and Technical	-	-	-	-	-	-	-	0.5	3.5	7.0	10.4	6.0	12.3	39.6
Healthcare Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Protective Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Preparation and Serving Related	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Building Grounds and Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Personal Care and Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sales and Related	3.9	15.6	35.4	67.7	41.9	69.1	233.7	-	-	-	-	-	-	-
Office and Admin	16.7	50.0	40.0	86.5	46.2	11.3	250.7	4.8	16.2	20.5	34.9	15.8	6.5	98.8
Farm, Fishing, and Forestry	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction and Extraction	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Installation Maintenance and Repair	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Production	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transportation and Material Moving	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Households: Major Occupations	23.4	110.9	231.0	475.9	316.2	1,018.5	2,175.9	8.2	59.0	169.1	322.8	213.1	687.2	1,459.4
Households: all other occupations[1]	0.8	3.6	7.6	15.6	10.4	33.3	71.2	0.8	5.9	16.9	32.3	21.3	68.8	146.1
Total Households	**24.2**	**114.5**	**238.6**	**491.5**	**326.5**	**1,051.8**	**2,247.1**	**9.0**	**64.9**	**186.0**	**355.1**	**234.5**	**756.0**	**1,605.5**
Total Households - Rounded	24	115	239	491	327	1,051	2,247	9	65	186	355	234	756	1,605

Notes:

[1] Represents occupation categories which have a minor amount of employment and for which detailed compensation analysis was not completed. These worker households are assumed to hav a similar income distribution to other employees in the same industry. See Appendix A Tables 1 to 10 for information on major and detailed occupation categories identified for detailed compensation analysis.

TABLE 4-6

EMPLOYEE HOUSEHOLDS BY OCCUPATION AND INCOME (STEPS 4, 5, AND 6)
HNA - PARKLINE PROJECT
MENLO PARK, CA

	COMMERCIAL AMENITY							COMMUNITY AMENITY						
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Step 4, 5, & 6 - Employee Households within Major Occupation Categories														
Management	0.0	0.1	0.2	0.4	0.2	0.3	1.2	-	-	-	-	-	-	-
Business and Financial Operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Computer and Mathematical	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Architecture and Engineering	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Life, Physical and Social Science	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Community and Social Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Education Training and Library	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arts, Design, Entertainment, Sports, & Media	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Healthcare Practitioners and Technical	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Healthcare Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Protective Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Preparation and Serving Related	3.9	2.0	5.1	6.3	0.7	0.2	18.3	0.1	0.0	0.2	0.2	0.0	-	0.5
Building Grounds and Maintenance	0.1	0.2	0.2	0.3	0.1	0.0	0.9	-	-	-	-	-	-	-
Personal Care and Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sales and Related	0.3	0.1	0.3	0.4	0.0	0.0	1.2	-	-	-	-	-	-	-
Office and Admin	0.0	0.2	0.1	0.3	0.1	0.0	0.8	-	-	-	-	-	-	-
Farm, Fishing, and Forestry	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction and Extraction	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Installation Maintenance and Repair	-	-	-	-	-	-	-	0.1	0.1	0.1	0.2	0.0	0.0	0.5
Production	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transportation and Material Moving	0.1	0.1	0.2	0.3	0.1	0.0	0.8	-	-	-	-	-	-	-
Households: Major Occupations	4.5	2.7	6.1	8.0	1.2	0.6	23.1	0.2	0.2	0.2	0.4	0.0	0.0	1.1
Households: all other occupations(1)	0.3	0.2	0.4	0.5	0.1	0.0	1.4	-	-	-	-	0.0	-	0.0
Total Households	**4.8**	**2.9**	**6.5**	**8.5**	**1.3**	**0.6**	**24.6**	**0.2**	**0.2**	0.2	0.4	0.0	0.0	**1.1**
Total Households - Rounded	5	3	7	8	1	1	25	-	-	1	-	-	-	1

Notes:

(1) Represents occupation categories which have a minor amount of employment and for which detailed compensation analysis was not completed. These worker households are assumed to have a similar income distribution to other employees in the same industry. See Appendix A Tables 1 to 10 for information on major and detailed occupation categories identified for detailed compensation analysis.

TABLE 4-6
EMPLOYEE HOUSEHOLDS BY OCCUPATION AND INCOME (STEPS 4, 5, AND 6)
HNA - PARKLINE PROJECT
MENLO PARK, CA

	RESIDENTIAL PROPERTY MANAGEMENT							NET REDUCTION IN SRI OCCUPANCY						
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Step 4, 5, & 6 - Employee Households within Major Occupation Categories														
Management	0.1	0.2	0.4	0.4	0.2	0.3	1.5	-	(0.3)	(1.3)	(3.9)	(3.2)	(24.4)	(33.1)
Business and Financial Operations	-	-	-	-	-	-	-	(0.1)	(1.5)	(4.5)	(7.5)	(4.4)	(7.7)	(25.8)
Computer and Mathematical	-	-	-	-	-	-	-	(0.0)	(0.3)	(2.0)	(4.6)	(3.6)	(14.8)	(25.3)
Architecture and Engineering	-	-	-	-	-	-	-	(0.0)	(1.7)	(9.8)	(16.2)	(11.8)	(26.8)	(66.4)
Life, Physical and Social Science	-	-	-	-	-	-	-	(0.1)	(1.2)	(4.1)	(7.2)	(4.4)	(10.5)	(27.5)
Community and Social Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Education Training and Library	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arts, Design, Entertainment, Sports, & Media	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Healthcare Practitioners and Technical	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Healthcare Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Protective Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Preparation and Serving Related	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Building Grounds and Maintenance	0.2	0.6	0.4	1.2	0.4	0.2	3.0	-	-	-	-	-	-	-
Personal Care and Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sales and Related	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Office and Admin	-	-	-	-	-	-	-	(0.8)	(2.5)	(3.1)	(5.1)	(2.2)	(0.9)	(14.6)
Farm, Fishing, and Forestry	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction and Extraction	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Installation Maintenance and Repair	0.2	0.6	0.5	1.3	0.4	0.1	3.0	-	-	-	-	-	-	-
Production	-	-	-	-	-	-	-	(0.4)	(0.9)	(1.0)	(1.8)	(0.6)	(0.2)	(4.9)
Transportation and Material Moving	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Households: Major Occupations	0.4	1.3	1.3	3.0	0.9	0.6	7.5	(1.5)	(8.5)	(25.8)	(46.4)	(30.3)	(85.2)	(197.6)
Households: all other occupations(1)	-	-	-	-	-	0.0	0.0	(0.1)	(0.7)	(2.1)	(3.8)	(2.5)	(7.0)	(16.1)
Total Households	**0.4**	**1.3**	**1.3**	**3.0**	**0.9**	**0.6**	**7.5**	**(1.6)**	**(9.2)**	**(27.9)**	**(50.2)**	**(32.8)**	**(92.2)**	**(213.7)**
Total Households - Rounded	-	1	1	3	1	1	7	(2)	(9)	(28)	(50)	(33)	(92)	(214)

Notes:

(1) Represents occupation categories which have a minor amount of employment and for which detailed compensation analysis was not completed. These worker households are assumed to have a similar income distribution to other employees in the same industry. See Appendix A Tables 1 to 10 for information on major and detailed occupation categories identified for detailed compensation analysis.

4.3 Summary by Income Level

Table 4-7 summarizes the estimated on-site worker housing demand within commuting distance of Menlo Park by affordability level as a result of increased on-site employment with development of the Proposed Project.

Table 4-7. Added On-Site Employee Households by Income

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Office Use Scenario							
Office	24	115	239	491	327	1,051	2,247
SRI Occupancy, Net Decrease	(2)	(9)	(28)	(50)	(33)	(92)	(214)
Amenity Café	5	3	7	8	1	1	25
Community Amenity	0	0	1	0	0	0	1
Rental Units / Property Mangmt	0	1	1	3	1	1	7
Net Change: On-site Worker Households, Office Scenario	**27**	**110**	**220**	**452**	**296**	**961**	**2,066**
R&D Use Scenario							
R&D	9	65	186	355	234	756	1,605
SRI Occupancy, Net Decrease	(2)	(9)	(28)	(50)	(33)	(92)	(214)
Amenity Café	5	3	7	8	1	1	25
Community Amenity	0	0	1	0	0	0	1
Rental Units / Property Mangmt	0	1	1	3	1	1	7
Net Change: On-site Worker Households, R&D Scenario	**12**	**60**	**167**	**316**	**203**	**666**	**1,424**

With the Office Use Scenario, the net increase in on-site employment is estimated to result in demand for an additional 2,066 housing units comprised of 27 Extremely Low, 110 Very Low, 220 Low, 452 Moderate, 296 Above Moderate Income and 961 Over 150% AMI units.

With the R&D Use Scenario, the net increase in on-site employment is estimated to result in demand for an additional 1,424 housing units comprised of an estimated 12 Extremely Low, 60 Very Low, 167 Low, 316 Moderate, 203 Above Moderate Income and 666 Over 150% AMI units.

5.0 HOUSING DEMAND OF OFF-SITE WORKERS IN SERVICES TO NEW RESIDENTS

The following section provides an analysis of the linkages between development of the new residential units on the Proposed Project site, jobs generated in off-site services such as retail and restaurants, and the housing needs of the workers who hold these off-site jobs. The analysis of off-site jobs supported by residential units is consistent with HNAs prepared for prior development projects in Menlo Park that included a residential component.

The analysis of housing demands for off-site workers starts with the estimated rental rate for the new units and moves through a series of linkages from the estimated income of the household that rents the unit, the portion of income available for expenditures on goods and services, jobs associated with the purchase and delivery of those services, the income of the workers doing those jobs and, ultimately, the affordability level of the housing needed by the workers.

The number of jobs by industry supported by the household spending of residents living in the Proposed Project is estimated using the IMPLAN (IMpact Analysis for PLANning) model, a model widely used to quantify the impacts of changes in a local economy. The number of jobs[12] by industry is then used to estimate worker housing need by income level using the same approach as in Section 4.

5.1 Estimated Household Incomes of New Residents

The estimated household incomes of residents in the new market rate residential units are drawn from the analysis provided in Section 3.2. For BMR units, household income is estimated based on the income level applicable to the affordable rents, identified in Section 3.1. Household income figures are then multiplied by the number of units to estimate the aggregate household income for all residents of the Proposed Project as shown in Table 5-1. Aggregate household income is used to estimate household spending, the input to the IMPLAN model that is used to quantify the number of off-site jobs associated with the household spending of new residents.

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[12] The proposed new housing units are assumed to accommodate a net increase in residents in Menlo Park and the greater Bay Area. The off-site jobs in services to these new residents, estimated using the IMPLAN model, are likewise assumed to be net new. This assumption is consistent with that of prior HNAs and the observed pattern, discussed in Section 5.2.3, that the number of resident-serving jobs tends to be generally proportionate to population.

Table 5-1. Aggregate Household Income of New Residents

	Estimated Household Income (1)			Number of Units			Aggregate Income
	Affordable Building	BMR within Mixed Income Component	Market Rate	Affordable Building	BMR within Mixed Income Component	Market Rate	
Studios	$78,060	$104,400	$149,760	20	11	64	$12,294,240
1-Bedrooms	$83,640	$119,300	$182,360	20	30	168	$35,888,280
2-Bedrooms	$100,380	$134,200	$232,520	30	22	122	$34,331,240
3-Bedrooms	$115,950	$149,100	$270,920	30	2	12	$7,027,740
Townhomes		$149,100	$414,920	-	3	16	$7,086,020
Total				100	68	382	$96,627,520
Average Per Household							$175,686

(1) For market rate units, see Table 3-4. For BMR units within the mixed income component, incomes are estimated at 80% of AMI using HCD income limits. For units within the 100% affordable building, incomes are estimated at 60% of AMI based on income limits published by the California Tax Credit Allocation Committee (TCAC), based on requirements for a project financed with tax credits.

Income Available for Expenditures

The input into the IMPLAN model used in this analysis is the net income available for expenditures. To arrive at income available for expenditures, gross income must be adjusted for Federal and State income taxes, contributions to Social Security and Medicare, savings, and payments on household debt. Per KMA correspondence with the producers of the IMPLAN model (IMPLAN Group LLC), other taxes including sales tax and property tax are handled internally within the model as part of the analysis of expenditures. Payroll deductions for medical benefits and pre-tax medical expenditures are also handled internally within the model. Table 5-2 shows the calculation of the percentage of household income available for expenditures.

Table 5-2. Percent of Income Available for Expenditures (1)	
Gross Income	100%
Less:	
Federal Income Taxes (2)	10.9%
State Income Taxes (3)	4.7%
FICA Tax Rate (4)	7.65%
Savings & other deductions (5)	6.8%
Subtotal deductions	30%
Percent of Income Available for Expenditures (6)	***70%***

(1) Calculated as gross income after deduction of taxes and savings. Income available for expenditures is the input to the IMPLAN model which is used to estimate the resulting employment impacts. Housing costs are not deducted as part of this adjustment step because they are addressed separately as expenditures within the IMPLAN model.
(2) Reflects average tax rates (as opposed to marginal) based on U.S. Internal Revenue Services, Tax Statistics, Tables 1.2 and 2.1 for 2020.Tax rates reflect averages for applicable income range. Assumes the standard deduction.
(3) Average tax rate estimated by KMA based on marginal rates per the California Franchise Tax Board and ratios of taxable income to gross income estimated based on U.S. Internal Revenue Service data.
(4) For Social Security and Medicare.
(5) Household savings including retirement accounts like 401k / IRA and other deductions such as interest costs on credit cards, auto loans, etc., necessary to determine the amount of income available for expenditures. The 6.8% rate used in the analysis is based on and average for the 2002 to 2022 period computed from U.S. Bureau of Economic Analysis data, specifically the National Income and Product Accounts, Table 2.1 Personal Income and Its Disposition.
(6) Deductions from gross income to arrive at the income available for expenditures are consistent with the way the IMPLAN model and National Income and Product Accounts (NIPA) defines income available for personal consumption expenditures. Income taxes, contributions to Social Security and Medicare, and savings are deducted; however, property taxes and sales taxes are not. Housing costs are not deducted as part of the adjustment because they are addressed separately as expenditures within the IMPLAN model.

Income available for expenditures is estimated at approximately 70% of gross income. Federal tax rates are estimated at 10.9% of gross income based upon Internal Revenue Service data. State taxes are estimated to average 4.7% of gross income based on tax rates per the California Franchise Tax Board. The employee share of FICA payroll taxes for Social Security and Medicare is 7.65% of gross income. A ceiling of $160,200 per employee applies to the 6.2% Social Security portion of this tax rate; however, since the ceiling applies per employee not per household, the rate is assumed to apply to all household income for purposes of the analysis.

Savings and repayment of household debt represent another necessary adjustment to gross income. Savings includes various IRA and 401 K type programs as well as non-retirement household savings and investments. Debt repayment includes auto loans, credit cards, and all other non-mortgage debt. Savings and repayment of debt are estimated to represent a combined 6.8% of gross income based on the average for the 2002 to 2022 period derived from United States Bureau of Economic Analysis data.

The percentage of income available for expenditure for input into the IMPLAN model is prior to deducting housing costs. The reason is for consistency with the IMPLAN model which defines housing costs as expenditures. The IMPLAN model addresses the fact that expenditures on housing do not generate employment to the degree other expenditures such as retail or restaurants do, but there is some maintenance and property management employment generated.

After deducting income taxes, Social Security, Medicare, savings, and repayment of debt, the estimated income available for expenditures is 70% of gross household income.

Another adjustment made to spending is to account for standard operational vacancy in rental units of 5%, a level of vacancy considered average for rental units in a healthy market.

Table 5-3 presents the estimate of household income available for expenditures in the local economy after adjustments to income available for expenditures and vacancy:

Table 5-3. Income Available for Expenditures	
Aggregate Annual Household Income, New Residents (Table 5-1)	$96,627,520
Percent Available for Expenditure (Table 5-2)	70%
Adjustment for 5% rental vacancy	95%
Aggregate Household Income Available	$64,257,000

The estimated household income available for expenditure associated with the up to 550 new residential units is the input into the IMPLAN model.

5.2 The IMPLAN Model

Consumer spending by residents of new housing units will create jobs, particularly in sectors such as restaurants, health care, and retail, which are closely connected to the expenditures of residents. The widely used economic analysis tool, IMPLAN, was used to quantify these new jobs by industry sector.

5.2.1 IMPLAN Model Description

The IMPLAN model is an economic analysis software package now commercially available through the IMPLAN Group, LLC. IMPLAN was originally developed by the U.S. Forest Service, the Federal Emergency Management Agency, and the U.S. Department of the Interior Bureau of Land Management and has been in use since 1979 and refined over time. It has become a widely used tool for analyzing economic impacts for a broad range of applications from major construction projects to natural resource programs.

IMPLAN is based on an input-output accounting of commodity flows within an economy from producers to intermediate and final consumers. The model establishes a matrix of supply chain relationships between industries and also between households and the producers of household goods and services. Assumptions about the portion of inputs or supplies for a given industry likely to be met by local suppliers, and the portion supplied from outside the region or study area are derived internally within the model using data on the industrial structure of the region.

The output or result of the model is generated by tracking changes in purchases for final use (final demand) as they filter through the supply chain. Industries that produce goods and services for final demand or consumption must purchase inputs from other producers, which in turn, purchase goods and services. The model tracks these relationships through the economy to the point where leakages from the region stop the cycle. This allows the user to identify how a change in demand for one industry will affect a list of over 500 other industry sectors. The projected response of an economy to a change in final demand can be viewed in terms of economic output, employment, or income.

Data sets are available for each county and state, so the model can be tailored to the specific economic conditions of the region being analyzed. This analysis utilizes the data set for San Mateo County. As will be discussed, much of the employment impact is in local-serving sectors, such as retail, eating and drinking establishments, and medical services. It is likely that many off-site employment impacts will occur in Menlo Park and other nearby jurisdictions; however, employment impacts will also extend throughout the county and beyond based on where residents of the Proposed Project will shop, dine, seek medical care and other services. Consistent with the approach taken in most residential affordable housing nexus analyses, the analysis includes job impacts throughout the county.

5.2.2 Application of the IMPLAN Model to Estimate Job Growth

The IMPLAN model was applied to link income to household expenditures to job growth. The estimated annual household spending of the residents of the up to 550 new housing units is the input to the IMPLAN model. The IMPLAN model then distributes spending among various types of goods and services (industry sectors) based on data from the Consumer Expenditure Survey and the Bureau of Economic Analysis Benchmark input-output study, to estimate the number of off-site jobs.

Job creation, driven by increased demand for products and services, was projected for each of the industries that will serve the new households. A total of 289 jobs are estimated to be generated by spending of the residents, as summarized in Table 5-4. Of the estimated 289 jobs, 28 jobs are estimated to be captured as part of on-site employment totals, primarily the dining uses in the commercial amenity and property management and maintenance of the residential units. Since these jobs are already considered as part of the Section 4 analysis addressing on-site jobs, an adjustment is made to remove them for the purposes of the Section 5 analysis addressing off-site jobs.

Table 5-4. Jobs Generated from Household Spending of 550 Residential Units	
Aggregate Household Expenditures, 550 units	$64,257,000
Estimated Number of Jobs Generated	289.3
Less: Estimated Portion Included in On-Site Employment Totals (1)	(27.8)
Estimated Number of Off-site Jobs	261.5

(1) Adjustment to remove residential property management jobs and a portion of restaurant / dining-related jobs already considered as part of on-site employment totals evaluated in Section 4 and associated with the residential and commercial amenity uses.

The Proposed Project would add new residential units to Menlo Park, increasing the population and creating net new demand for products and services, the jobs associated with delivery of these products and services are also estimated to be net new jobs. While there may be an ability for existing off-site health care facilities, schools and other services to absorb a share of new demand to some extent, existing establishments will still require additional employees in many cases. For example, individual health care providers are only able to see so many patients in a day. Employment in sectors that serve residents tends to expand with population. As indicated in Section 5.2.3, the ratio between employment in resident-serving sectors of the economy and the number of housing units is relatively consistent at the city and county geographic scales, indicating resident-serving jobs tend to be proportionate to the number of housing units and population.

Table 5-5 provides a detailed breakdown of the employment by industry sorted by projected employment. The Consumer Expenditure Survey published by the Bureau of Labor Statistics tracks expenditure patterns by income level. IMPLAN utilizes this data to reflect the pattern by income bracket. Estimated employment is shown for each IMPLAN industry sector representing 1% or more of total employment. The jobs that are generated are heavily retail jobs, jobs in restaurants and other eating establishments, and in services that are provided locally such as health care.

Table 5-5. Off-Site Jobs Generated by Industry from Housing Spending

Industry Category	Off-Site Jobs Total (1)	Percent
Full-service restaurants	17.8	7%
Limited-service restaurants	9.5	4%
Subtotal Restaurant	27.4	10%
Retail - Building material and garden equipment and supplies stores	2.1	1%
Retail - Clothing and clothing accessories stores	5.3	2%
Retail - Electronics and appliance stores	2.4	1%
Retail - Food and beverage stores	9.4	4%
Retail - Furniture and home furnishings stores	2.3	1%
Retail - Gasoline	1.3	1%
Retail - General merchandise stores	6.7	3%
Retail - Health and personal care stores	4.4	2%
Retail - Miscellaneous store retailers	4.7	2%
Retail - Motor vehicle and parts dealers	2.7	1%
Retail – Non-store retailers	3.5	1%
Retail - Sporting goods, hobby, musical instrument, and bookstores	2.2	1%
Personal care services	8.3	3%
Subtotal Retail and Service	55.3	21%
Offices of dentists	4.8	2%
Offices of other health practitioners	5.1	2%
Outpatient care centers	3.2	1%
Offices of physicians	6.6	3%
Other ambulatory health care services	0.8	0%
Home health care services	6.1	2%
Hospitals	5.6	2%
Subtotal Healthcare	32.3	12%
Elementary and secondary schools	3.1	1%
Junior colleges, colleges, universities, and professional schools	3.2	1%
Other educational services	5.3	2%
Subtotal Education	11.6	4%
Individual and family services	11.7	4%
Other personal services	11.5	4%
Automotive repair and maintenance	10.3	4%
Child day care services	5.3	2%
Other financial investment activities	7.1	3%
Automotive repair and maintenance	6.1	2%
Religious organizations	2.9	1%
Fitness and recreational sports centers	3.2	1%
Transit and ground passenger transportation	3.0	1%
All Other	73.7	28%
Total Number of Off-Site Jobs Generated	**261.5**	**100%**

(1) Estimated off-site employment generated by household expenditures of Project residents for industries representing more than 1% of total employment. Employment estimates are based on the IMPLAN Group's economic model, IMPLAN, for San Mateo County. Includes both full- and part-time jobs. Figures are adjusted to remove 28 jobs estimated to be included in on-site employment totals as described above.

5.2.3 Cross-Check Based on Existing Number of Resident-Serving Jobs

As context for the estimated number of off-site jobs and a secondary cross-check for reasonableness, Table 5-6 provides comparisons to the existing ratio of resident-serving jobs in sectors such as health care, retail, food service and education and the number of residential units within Menlo Park and San Mateo County. In Menlo Park, there are 7,401 existing jobs in resident-serving sectors based on data from the U.S. Census and 13,912 residential units based on data from the California Department of Finance. These figures translate to a ratio of approximately 293 resident-serving jobs for every 550 residential units[13]. The ratio for San Mateo County is similar at 268 resident-serving jobs for every 550 residential units. Based on existing relationships between resident-serving jobs and residential units for both the city and the county, estimates for the Proposed Project appear reasonable.

Table 5-6. Comparison to Existing City and County Relationships Between Number of Residential Units and Number of Jobs in Key Resident Serving Sectors

	Existing Jobs (1)		Jobs Per 550 Residential Units		
	City of Menlo Park	**San Mateo County**	**Actual: City of Menlo Park (4)**	**Actual: San Mateo County (4)**	**Estimate for Proposed Project (5)**
Key Resident-Serving Sectors					
Health Care	2,448	41,590	96.8	79.4	54.8
Retail Trade	1,277	29,896	50.5	57.1	47.0
Food Service	1,299	27,484	51.4	52.5	41.2
Education	1,230	24,353	48.6	46.5	11.6
Other Services(2)	866	12,686	34.2	24.2	49.8
Arts, Entertainment, and Recreation	281	4,567	11.1	8.7	8.5
Subtotal Resident-Serving	7,401	140,576	**293**	**268**	**213**
Other Sectors	49,812	261,243	1,969	499	76
Total All Sectors	57,213	401,819	2,262	767	289
Number of Residential Units(3)	13,912	287,967			

(1) U.S. Census Longitudinal Employer-Household Dynamics, 2020 data for workplace geography.

(2) Includes a broad range of services from auto repair to dry cleaning, to religious organizations.

(3) Number of housing units as of January 1, 2023 per California Department of Finance Table E-5, Population and Housing Estimates for Cities, Counties, and the State, 2021-2023 with 2020 Census Benchmark.

(4) Calculated by dividing the total number of jobs by the number of residential units and multiplying by 550 units.

(5) For comparison purposes, figures are prior to adjustment to remove jobs included in on-site totals

Note: The number of jobs by industry from the HNA have been aggregated by major industry category to allow ready comparison to actual existing jobs in the City of Menlo Park and in San Mateo County.

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[13] Calculated as 7,401 jobs divided by 13,912 residential units and multiplied by 550 units. This 550-unit figure is selected for ready comparison to the Proposed Project. Since Menlo Park residents will additionally use retail and services located in other nearby communities, the relationship for San Mateo County as a whole is also provided.

5.3 Analysis of Housing Need by Income

This section presents a summary of the analysis linking the number of off-site jobs associated with the new residential units to the estimated number of housing units required in each of six income categories. The analysis is based on the same methodology as Section 4 and consists of the following analysis steps.

Step 1 – Adjustment from Employees to Employee Households

This step (Table 5-7) converts the number of employees identified in Table 5-5 to the number of employee households, recognizing that there is, on average, more than one worker per household, and thus the number of housing units in demand for new workers is reduced. The workers-per-worker-household ratio eliminates from the equation all non-working households, such as retired persons and students. The San Mateo County average of 1.87 workers per worker household derived from the U. S. Census Bureau 2017-2021 American Community Survey is used for this step in the analysis, consistent with Section 4. The estimated 261.5 off-site jobs is divided by 1.87 to estimate the number of worker households of 139.7.

Table 5-7. Estimated Net Change in On-Site Employee Households	
Off-Site Jobs in Services to New Residents	261.5
Number of Employee Households - Off-site workers (at 1.87 workers per household) (1)	139.7

(1) Derived from 2017-2021 U.S. Census American Community Survey data for San Mateo County

Step 2 – Occupational Distribution of Employees

The occupational breakdown of employees is the first step to arrive at income level. The output from the IMPLAN model provides the number of employees by industry sector, shown in Table 5-5. The IMPLAN output is then paired with data from the Department of Labor, Bureau of Labor Statistics Occupational Employment Survey (OES) to estimate the occupational composition of employees for each industry sector. As shown in Table 5-8, new jobs will be distributed across a variety of occupational categories. The three largest occupational categories are sales and related (13.7%), office and administrative support (13.1%), and food preparation and serving (10.7%). Table 5-8 indicates the percentage and number of employee households by occupation for off-site workers.

Table 5-8. Worker Households by Occupation – Jobs in Off-Site Services to New Residential Units

Occupation Category	Number of Worker Households	% of Jobs
Management Occupations	6.4	4.6%
Business and Financial	6.7	4.8%
Computer and Mathematical	2.0	1.4%
Architecture and Engineering	0.3	0.2%
Sciences	0.4	0.3%
Community & Social Services	2.5	1.8%
Legal	0.7	0.5%
Education, and Library	5.0	3.6%
Arts, Design, Entertainment	2.1	1.5%
Healthcare Practitioners	9.1	6.5%
Healthcare Support	10.7	7.6%
Protective Service	1.4	1.0%
Food Prep and Serving	14.9	10.7%
Building and Grounds.	5.9	4.2%
Personal Care and Service	9.3	6.7%
Sales and Related	19.2	13.7%
Office and Admin Support	18.2	13.1%
Farming, Fishing, Forestry	0.1	0.1%
Construction and Extraction	1.2	0.9%
Installation, Maint. and Repair	7.3	5.2%
Production	2.2	1.6%
Transportation	14.0	10.0%
Totals	**139.7**	**100.0%**

See Appendix A Tables 11 and 12 for additional detail.

Step 3 – Estimates of Employee Households by Income

In this step, occupations are translated to employee incomes based on recent wage and salary information for workers in San Mateo County from the BLS Occupational Employment Survey as updated to reflect 2023 wage levels by EDD. The wage and salary information summarized in Appendix A Table 12 provided the income inputs to the analysis.

For each occupational category shown in Table 5-8, the OES data provides a distribution of specific occupations within the category. For example, within the Food Preparation and Serving Category, there are Supervisors, Cooks, Bartenders, Waiters and Waitresses, Dishwashers, etc. In total, there are approximately 100 detailed occupation categories included in the analysis, as shown in Appendix A Table 12. Each of these occupation categories has a different distribution of wages, which was obtained from BLS and is specific to workers in the County as of 2023.

Household incomes are estimated from employee incomes using ratios between individual employee income and household income derived from 2017-2021 ACS data for the San Francisco Bay Area. Ratios used in this section are the same as those used in Section 4 and presented in Table 4-5.

Estimated household incomes are compared to the income criteria shown in Table 2-4 to determine the percentage that qualify within each income category for each potential household size/number of workers combination.

Step 4 – Distribution of Household Size and Number of Workers

In this step, we account for the distribution in household sizes and number of workers using local data obtained from the U.S. Census. 2017-2021 ACS data is used to develop a set of percentage factors representing the distribution of household sizes and number of workers within working households. The percentage factors are the same as used in Section 4 and presented in Table 4-4. Application of these percentage factors accounts for the following:

- Households have a range in size and a range in the number of workers.
- Large households generally have more workers than smaller households.

The result of this step is a distribution of working households by number of workers and household size.

Step 5 – Estimate of Number of Households that Meet Size and Income Criteria

Step 5 is the final step to calculate the number of worker households meeting the size and income criteria for the six income tiers. The calculation combines the results from Step 3 on percentage of worker households that would meet the income criteria at each potential household size / number of workers combination, with Step 4, the percentage of worker household having a given household size / number of workers combination. The result is the percentage of households that fall into each income tier. The percentages are then multiplied by the number of households from Step 1 to arrive at number of households in each income tier.

Table 5-9 presents the resulting estimates of the number of households within each income category by worker occupation category.

Table 5-9. Employee Households by Occupation and Income (Steps 3, 4, and 5) for Workers in Off-Site Services to New Residents

Major Occupation Category [(1)]	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Management	0.0	0.2	0.7	1.3	0.7	3.6	6.4
Business and Financial Operations	0.0	0.4	1.1	1.8	1.2	2.1	6.7
Computer and Mathematical	-	-	-	-	-	-	-
Architecture and Engineering	-	-	-	-	-	-	-
Life, Physical and Social Science	-	-	-	-	-	-	-
Community and Social Services	-	-	-	-	-	-	-
Legal	-	-	-	-	-	-	-
Education Training and Library	0.5	0.9	1.2	1.8	0.5	0.2	5.0
Arts, Design, Entertainment, Sports, & Media	-	-	-	-	-	-	-
Healthcare Practitioners and Technical	0.1	0.3	0.8	2.2	1.4	4.2	9.1
Healthcare Support	2.4	1.0	3.9	2.7	0.5	0.1	10.7
Protective Service	-	-	-	-	-	-	-
Food Preparation and Serving Related	3.7	1.4	4.5	5.0	0.4	0.1	14.9
Building Grounds and Maintenance	0.8	1.1	1.3	2.2	0.4	0.1	5.9
Personal Care and Service	1.8	1.1	2.8	3.0	0.4	0.1	9.3
Sales and Related	3.4	2.2	4.7	6.5	1.4	0.8	19.2
Office and Admin	1.4	3.6	3.1	6.9	2.6	0.7	18.2
Farm, Fishing, and Forestry	-	-	-	-	-	-	-
Construction and Extraction	-	-	-	-	-	-	-
Installation Maintenance and Repair	0.2	1.4	1.7	2.8	1.0	0.3	7.3
Production	-	-	-	-	-	-	-
Transportation and Material Moving	2.3	2.1	3.5	4.8	1.1	0.1	14.0
Households: Major Occupations	16.6	15.6	29.3	41.2	11.6	12.4	126.8
Households: all other occupations [(2)]	1.7	1.6	3.0	4.2	1.2	1.3	13.0
Total Households	**18.3**	**17.2**	**32.3**	**45.4**	**12.8**	**13.7**	**139.7**
Rounded	**18.0**	**17.0**	**32.0**	**46.0**	**13.0**	**14.0**	**140.0**

(1) See Appendix A Tables 11 and 12 for information on major and detailed occupation categories identified for detailed compensation analysis.

(2) Represents occupation categories which have a minor amount of employment, and for which detailed compensation analysis was not completed. These worker households are assumed to have a similar income distribution to other employees.

5.4 Summary of Housing Need by Income, Off-site Workers

Table 5-10 summarizes the demand for housing by workers in off-site services to the up to 550 new residential units by income category.

Table 5-10. Estimated Off-Site Employee Households by Income

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Worker Households by Income	18	17	32	46	13	14	140

As shown in Table 5-10, the up to 550 residential units are estimated to create a demand for an additional 140 housing units for off-site workers in services such as retail, restaurants, and education. Housing demand for new off-site workers is distributed across the income tiers with the greatest number of households in the Moderate Income category. The finding that the jobs associated with consumer spending tend to be low-paying jobs where a significant share of workers require housing affordable to incomes from extremely low to moderate is not surprising. As noted above, consumer spending results in employment that is concentrated in lower paid occupations including food preparation, administrative, and retail sales.

6.0 NET IMPACT ON HOUSING AVAILABILITY

This section combines the findings of the prior three sections to estimate the net impact on housing availability from the Proposed Project by income. Net impacts on housing availability represent the combined housing supply and demand effects of the Proposed Project including from:

- Added housing supply from construction of new residential units, from Section 3; and
- Added housing demand from added jobs, including on-site jobs, from the analysis in Section 4, and off-site jobs in services to residents, from the analysis in Section 5.

Additions to housing supply increase housing availability while increases in housing demand reduce housing availability.

Section 6.1 addresses total housing availability impacts regardless of location. Section 6.2 provides an estimate specific to impacts occurring within Menlo Park.

6.1 Net Impact on Housing Availability Regionally

The Proposed Project is estimated to result in a net decrease in available housing units of 1,656 units regionally in the Office Use Scenario and 1,014 Units in the R&D Use Scenario, as shown in Table 6-1. The net decrease in regional housing availability represents an increase in housing demand that exceeds the number of new residential units added to the housing supply by the Proposed Project. This estimate reflects the combined effect of:

- Addition of up to 550 new residential units to the housing supply; and
- 2,206 units of added housing demand from new on-site and off-site workers in the Office Use Scenario, or 1,564 units of added housing demand in the R&D Use Scenario.

Table 6-1. Estimated Net Impact of Project on Housing Availability Regionally

	Office Use Scenario	R&D Use Scenario
A. Added Housing Supply (Section 3)	550 Units	550 Units
B. Added Worker Housing Demand		
Housing Demand for On-site workers (Section 4)	2,066 Units	1,424 Units
Housing Demand for Off-site workers in services to new residents (Section 5)	140 Units	140 Units
Subtotal Added Worker Housing Demand	2,206 Units	1,564 Units
C. Net Decrease in Regional Housing Availability [A. - B.]	(1,656 Units)	(1,014 Units)

Table 6-2 provides a breakout of the findings by income category. In the Office Use Scenario, the 1,656-unit net decrease in housing availability in the region is comprised of 45 Extremely Low, 127 Very Low, 84 Low, 498 Moderate, and 947 Over 150% AMI units, partially offset by a net increase in available housing within the Above Moderate Income category of 45 units. The net increase in available housing in the Above Moderate category results from the number of new housing units exceeding the added employee housing demand within this income category.

In the R&D Use Scenario, the 1,014-unit net decrease in housing availability in the region is comprised of 30 Extremely Low, 77 Very Low, 31 Low, 362 Moderate, and 652 Over 150% AMI units, partially offset by a net increase in available housing within the Above Moderate Income category of 138 units.

Added housing supply within the Low Income category identified in Table 6-2 reflects deed-restricted BMR units. Added housing supply within the Above Moderate and Over 150% of AMI Income categories reflects market rate units. Market rents are free to adjust in response to rental market conditions and therefore affordability of the market rate units may adjust as well.

Table 6-2. Net Impacts on Regional Housing Availability by Income Category

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
A. Office Use Scenario							
1. New Housing Units Added by Project	0	0	168	0	354	28	550
2. Net Increase in Housing Demand from Added Workers							
On-Site Workers	27	110	220	452	296	961	2,066
Off-site workers in services to residents	18	17	32	46	13	14	140
Subtotal Worker Housing Demand	45	127	252	498	309	975	2,206
3. Net Increase / (Decrease) in Available Housing [= (1) - (2)], **Office Use Scenario** [(1)]	**(45)**	**(127)**	**(84)**	**(498)**	**45**	**(947)**	**(1,656)**
B. R&D Use Scenario							
1. New Housing Units Added by Project	0	0	168	0	354	28	550
2. Net Increase in Housing Demand from Added Workers							
On-Site Workers	12	60	167	316	203	666	1,424
Off-site workers in services to residents	18	17	32	46	13	14	140
Subtotal Worker Housing Demand	30	77	199	362	216	680	1,564
3. Net Increase / (Decrease) in Available Housing [= (1) - (2)], **R&D Use Scenario** [(1)]	**(30)**	**(77)**	**(31)**	**(362)**	**138**	**(652)**	**(1,014)**

[(1)] Negative figures mean that added housing demand exceeds added housing supply in the applicable income category, resulting in a net decrease in available housing.

6.2 Menlo Park Share of Impact on Housing Supply and Housing Demand

KMA estimated the share of housing supply and housing demand that would occur within the City of Menlo Park. Estimates represent an allocation of the total housing availability impacts presented in Table 6-2 based on where housing units included in the Proposed Project will be constructed (in Menlo Park) and where workers will live (a share in Menlo Park and a share outside of Menlo Park). Two scenarios are presented regarding the share of workers who will seek and find housing within the City of Menlo Park:

A. ***Current Commute Share Estimate*** (5.3% based on Census data) – The current commute share estimate uses data on existing commute patterns to estimate the number of workers who will live in Menlo Park. The 5.3% city-wide average share of Menlo Park's workforce that lives in the city is used. The city-wide average commute share is similar to the 4.9% share of existing SRI International employees that live in Menlo Park based on data reported by the Project Sponsor[14].

B. ***Increased Commute Share Estimate*** (20% based on 2000 Nexus Study) – The City Council has expressed an interest in improving the jobs housing balance and obtaining data to inform the goal of increasing the number of workers who live and work in Menlo Park. Therefore, for informational purposes, the report provides an additional goal-based estimate of housing units in Menlo Park based on a 20% commute share, which was a goal identified in the City's 2000 Commercial Linkage Fee Nexus Study. The possibility that availability and affordability of housing have contributed to a downward trend in Menlo Park's commute share is a primary reason for including this additional goal-based commute share estimate. The goal-based estimate also illustrates a scenario in which the residential units added by the Proposed Project encourage a larger share of workers to live in Menlo Park.

The current 5.3% and 20% increased commute shares, described above, are applied to estimate the number of employees that will live in Menlo Park. The analysis under the two commute share scenarios is described below and is followed by additional discussion of the commute shares.

A. Current Commute Share Estimate

The analysis of housing availability impacts within Menlo Park under the Current Commute Share reflects the following allocation of total regional impacts identified in Section 6.1:

(1) **Menlo Park Share of Added Housing Supply** – All residential units added by the Proposed Project are in the City of Menlo Park; therefore, all 550 units are identified as additional housing supply in Menlo Park.

(2) **Menlo Park Share of Added Housing Demand** – 117 units of 2,206 total units of housing need from added jobs are estimated to be within Menlo Park in the Office Use

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[14] According to the Project Sponsor, 54 of the approximately 1,100 existing SRI International employees live in Menlo Park, which equates to a 4.9% share living in Menlo Park.

Scenario and 83 of 1,564 in the R&D Use Scenario, based on the existing share of Menlo Park workers who live in the city. This result is based on combining the findings on worker housing need by income level summarized in Table 6-2 with a 5.3% commute share factor, as shown in Table 6-3.

In the Office Use Scenario with the Current Commute Share Estimate, the 550 units of added housing supply exceed the 117-units of added housing demand by 433 units, resulting in a 433-unit net increase in housing availability in Menlo Park.

In the R&D Use Scenario with the Current Share Estimate, the 550 units of added housing supply exceed the 83-units of added housing demand by 467 units, resulting in a 467-unit net increase in housing availability in Menlo Park.

The estimated net increase in housing availability in Menlo Park by income category is shown in Table 6-3. The commute share factors are applied uniformly across each of the household income tiers to arrive at estimates of Menlo Park's "share" of worker housing demand by income tier. The actual distribution by income tier in Menlo Park would likely vary from these estimates based on factors such as the existing housing stock in Menlo Park, limited availability of affordable units, and the future production of market rate and affordable units in Menlo Park.

Table 6-3. Estimated Menlo Park Share of Net Impacts on Housing Availability by Income – Current Commute Share Estimate

	Basis for allocation to Menlo Park	**Extremely Low**	**Very Low**	**Low**	**Moderate**	**Above Moderate**	**Over 150% AMI**	**Total**
Office Use Scenario								
1. New Housing Units Added by Project	*all units are in Menlo Park*	0	0	168	0	354	28	550
2. Net Increase in Housing Demand from Added Workers								
On-Site Workers	*Based on 5.3% Menlo Park commute share*	1	6	12	24	16	51	110
Off-site workers in services to residents		1	1	2	2	0	1	7
Subtotal Worker Housing Demand		2	7	14	26	16	52	117
3. Net Increase / (Decrease) in Available Housing in Menlo Park [= (1) - (2)], **Office Use Scenario** (1)		**(2)**	**(7)**	**154**	**(26)**	**338**	**(24)**	**433**
R&D Use Scenario								
1. New Housing Units Added by Project	*all units are in Menlo Park*	0	0	168	0	354	28	550
2. Net Increase in Housing Demand from Added Workers								
On-Site Workers	*Based on 5.3% Menlo Park commute share*	1	3	9	17	10	35	75
Off-site workers in services to residents		1	1	2	2	1	1	8
Subtotal Worker Housing Demand		2	4	11	19	11	36	83
3. Net Increase / (Decrease) in Available Housing in Menlo Park [= (1) - (2)], **R&D Use Scenario** (1)		**(2)**	**(4)**	**157**	**(19)**	**343**	**(8)**	**467**

(1) Negative figures represent a net increase in housing demand that exceeds added housing supply within the particular income category.

B. Increased Commute Share Estimate

The Increased Commute Share Estimate is based on the City's 2000 Nexus Study which incorporated a commute share assumption of 20%. This 20% commute share assumption reflects a goal to house a larger share of the city's workforce locally that was approximately double the 10% commute share for Menlo Park as of the time the Nexus Study was prepared[15]. As stated in the 2000 Nexus Study:

> *Using a relatively higher number provides a goal for the City to achieve. Although inflated housing prices in the 1990's have resulted in a decrease in the percentage of Menlo Park workers who can afford to live in Menlo Park, the City's goal is to encourage local workers to live in Menlo Park in order to achieve a better jobs/housing balance.*

This Increased Commute Share Estimate provides additional information regarding how analysis findings would vary were the City to seek to house 20% of the added workforce locally consistent with the goal identified in the 2000 Nexus Study. Findings are summarized in Table 6-4.

- With the Office Use Scenario, application of the 20% goal-based commute share results in allocation of 440 out of 2,206 units of added housing demand from new jobs. The 550 units of added housing supply exceeds the 440-units of added housing demand in Menlo Park by 110 units, resulting in a 110-unit net increase in housing availability in Menlo Park in the Office Use Scenario.

- With the R&D Use Scenario, application of the 20% goal-based commute share results in allocation of 312 out of 1,564 units of added housing demand from new jobs. The 550 units of added housing supply exceeds the 312-units of added housing demand in Menlo Park by 238 units, resulting in a 238-unit net increase in housing availability in Menlo Park in the R&D Use Scenario.

Table 6-4 provides housing availability findings by income level with the Increased Commute Share Estimate.

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[15] Per the 1990 Census, Menlo Park's commute share was 10% based on a total number working in Menlo Park of 26,048 of which 2,662 lived in Menlo Park. Figures do not include those who work out of their homes rather than commute to a separate workplace. The 1990 Census was the most recent data available at the time the 2000 Nexus Study was prepared as the 2000 Census data was not yet released. The 2000 Nexus Study references a separate factor of 23%, also as of 1990, which is not comparable to the 10% commute share in 1990. This 23% factor represents the share of Menlo Park *employed residents* (residents who are employed) who work in Menlo Park versus commute out of Menlo Park to a job located in another city.

Table 6-4. Estimated Menlo Park Share of Net Impacts on Housing Availability by Income Level – Increased Commute Share Estimate

	Basis for allocation to Menlo Park	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Office Use Scenario								
1. New Housing Units Added by Project	*all units are in Menlo Park*	0	0	168	0	354	28	550
2. Net Increase in Housing Demand from Added Workers	*2000 Nexus goal-based commute share of 20%*							
On-Site Workers		5	22	44	90	59	192	412
Off-site workers in services to residents		4	3	6	9	3	3	28
Subtotal Worker Housing Demand		9	25	50	99	62	195	440
3. Net Increase / (Decrease) in Available Housing in Menlo Park [= (1) - (2)], **Office Use Scenario** (1)		**(9)**	**(25)**	**118**	**(99)**	**292**	**(167)**	**110**
R&D Use Scenario								
1. New Housing Units Added by Project	*all units are in Menlo Park*	0	0	168	0	354	28	550
2. Net Increase in Housing Demand from Added Workers	*2000 Nexus goal-based commute share of 20%*							
On-Site Workers		2	12	33	63	41	133	284
Off-site workers in services to residents		4	3	6	9	3	3	28
Subtotal Worker Housing Demand		6	15	39	72	44	136	312
3. Net Increase / (Decrease) in Available Housing in Menlo Park [= (1) - (2)], **R&D Use Scenario** (1)		**(6)**	**(15)**	**129**	**(72)**	**310**	**(108)**	**238**

(1) Negative figures represent a net increase in housing demand that exceeds added housing supply within the particular income category.

6.3 Additional Discussion of Commute Share

According to the U.S. Census 2017-2021 American Community Survey (ACS), 5.3% of those who currently work in the City of Menlo Park also live in the City of Menlo Park. The remaining 94.7% of the workforce commutes in from outside of the city. The existing percentage of workers commuting in from other jurisdictions is attributable to a number of factors including the supply of housing relative to the number of jobs and the high cost of housing in Menlo Park. Nevertheless, 5.3% does provide a benchmark for the propensity of Menlo Park workers to seek and find housing within the city.

The percentage of workers in Menlo Park who also live in the city has been generally decreasing over the decades with 10% of workers living in the city as of the 1990 Census, decreasing to 7.2% with the 2000 Census to 5.3% in the most recent ACS data. Workers most everywhere tend to commute more in recent years than in the past and, in addition, Menlo Park has become less affordable over time. The relationship between job growth in Menlo Park relative to the amount and affordability level of housing that has been added over time is likely a significant factor in this trend. However, in any metropolitan region such as the Bay Area, there are numerous individual factors that influence how workers, in general, select their neighborhoods or communities to live in beyond basic housing supply, price/rent, and proximity to work considerations. Examples listed below are by no means exhaustive and no hierarchy is implied by the order:

- Type of unit; people tend to be looking for a specific kind of housing – an apartment, a condo, a detached home. These choices are tied to stage of life as well as affordability and other factors.
- Commute to work – Travel time to work and commute options are important to those with a regular commute. In many households, more than one household member works, so a residential location may be a compromise to make commuting in multiple directions acceptable. Increased acceptance and flexibility around remote work in the wake of the coronavirus pandemic has encouraged some workers to live further from their workplaces, sometimes beyond daily commuting distance.
- Proximity to social, ethnic and religious communities.
- Accessibility to recreational resources. This can be general like proximity to parks and playgrounds, or specific to certain recreational interests ranging from jogging trails, to golf, to just about any recreational pursuit.
- Quality of schools – either indicated by specific measures or purely perception. This is mainly a factor of concern for those with children or seeking housing with future children in mind.
- Accessibility to culture and entertainment.
- Public safety – like schools either based on hard data or simply perceptions and reputation which may not be supported by hard data.
- Air quality is a commonly cited factor in the Los Angeles basin, but far less so in the Bay Area.
- Weather and microclimates in the Bay Area dictate communities of choice for many. People tend to either hate the cool fog near the ocean or love it.

Although many factors influence housing decisions, because the number of workers that both live and work in Menlo Park is so low and the cost of housing is so high, it is possible that the 5.3% existing commute share does not reflect the proportion of workers who would live in Menlo Park if they could find housing and could afford it. The possibility that availability and affordability of housing have contributed to a downward trend in Menlo Park's commute share is a primary reason for including a separate Increased Commute Share Estimate, described above.

SCI International provided data on commute patterns for its existing Menlo Park workforce. The data provided by SCI International indicates that approximately 4.9% of its existing Menlo Park workforce lives in Menlo Park, which is similar to the overall average for Menlo Park's workforce per the ACS data. Given the commute shares derived from the SCI International data and ACS data are similar, and the net increase in employment at the Project Site will be through addition of non-SCI International employees, the ACS data is applied for purposes of the Current Commute Share Estimate.

The current commute share of 5.3% is applied for purposes of the Current Commute Share Estimate as this factor represents the best and most current data available on the share of workers likely to seek and find housing in Menlo Park. The following is a discussion of factors that suggest a higher commute share could be possible in the future as well as opposing factors that suggest the current commute share likely provides a good indicator.

Factors that Suggest Potential for Increased Commute Share

There are several factors that suggest that an increase in the share of workers who live in Menlo Park might be possible:

1. The 550 new residential units added by the Proposed Project represents an approximately 4% increase in the size of the existing Menlo Park housing stock of 13,912 units[16]. Inclusion of housing within the Proposed Project could potentially contribute to some increase in the percentage share of workers living locally. The new housing added by the Proposed Project would be very accessible to jobs within the Proposed Project as well as other nearby employers in Menlo Park.

2. The number of housing units added by the Proposed Project exceeds added housing demand in Menlo Park based on existing commute shares, resulting in an increase in housing availability that could accommodate a potential increase in the share of workers that live locally.

3. In addition to the residential units within the Proposed Project, a number of housing developments are currently going through the entitlement process or were recently approved in Menlo Park including the Menlo Uptown Project with 483 units, Menlo Portal Project with 335 units, 111 Independence Drive with 105 units, Menlo Flats with 158 units, 123 Independence with 432 units, the Willow Village Master Plan Project with 1,730 units, and the recently completed Springline project with 183 units. Combined with the 550 units included in the Proposed Project, a total of approximately 4,000 new units are proposed, approved, or recently completed. These new units will increase the opportunities for workers to live in Menlo Park and create the potential for an increase in the percentage share of workers who live locally. Construction of new housing can be expected to contribute toward increasing the number of workers that live locally by providing additional housing opportunities in Menlo Park.

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[16] Number of housing units as of January 1, 2023 per California Department of Finance Table E-5, Population and Housing Estimates for Cities, Counties, and the State, 2021-2023 with 2020 Census Benchmark.

Factors That Suggest Current Commute Share Provides a Good Indicator

While the factors described previously suggest an increase in commute share could be possible, following are opposing factors that suggest that the Current Commute Share Estimate likely provides a good indicator of the share of workers who would live in Menlo Park, or that any increase in commute share is likely to be modest:

1. Census data for Menlo Park since 1990 do not show a correlation between job growth and number of Menlo Park workers residing locally. The number of jobs in Menlo Park increased by 15,520 or 58% from the 1990 Census to the 2017 - 2021 ACS. During the same period, the number who both live and work in Menlo Park, excluding those who work out of their homes, decreased from 2,662 to 2,038 (a 33% decrease). An analysis of compensation levels for jobs added since 1990 was not prepared; however, anecdotally one can observe that the employment growth during this period probably included a number of highly compensated jobs. Despite the addition of over 15,000 jobs during this period, of which at least a portion were likely highly compensated, the number of workers who both live and work in Menlo Park declined.

2. The expanding size of the Bay Area’s job and housing markets combined with an increase in multiple-earner households has created more options for where to live and work and more households who must take locations of multiple jobs into account in selecting a residential location.

3. The Proposed Project is conducive to both transit and automobile commuting based on its proximity to Caltrain and freeways including US-101 and SR-84 / the Dumbarton Bridge.

4. Menlo Park is viewed as a highly desirable place to live. Workers in the Proposed Project who wish to live in Menlo Park would be competing for a limited amount of available housing with many other households in the Peninsula / Silicon Valley housing market who may also be seeking to live in Menlo Park.

5. The experience of remote work during the coronavirus pandemic has led many employers to provide additional flexibility to work remotely on a more permanent basis. For employees that split their time between remote and in-person work, this additional flexibility may encourage employees to explore housing options further from their workplace, which may be an additional contributing factor to a declining share of workers who live in Menlo Park.

6. The focus of the commute shares described in this report are on the percentage share of those who work in Menlo Park that also live in Menlo Park. However, it is also possible to look at commuting from the opposite direction: considering residents of Menlo Park who are in the workforce, what share work in Menlo Park and what share commute out

of the city to a job located elsewhere? Data from the ACS indicates that 16% of working residents of Menlo Park work in Menlo Park while the remaining 84% commute out to jobs in other cities, not including those who work out of their homes. The fact that many residents commute out to jobs elsewhere suggests a limit to how much Menlo Park's commute share could be increased by adding additional housing.

6.4 Estimated Commute Shed for Proposed Project

It is anticipated that workers at the Proposed Project would commute to the Project site from throughout the region. Table 6-5 presents data on commuting by jurisdiction. Based on the data in Table 6-5, it is anticipated that approximately two thirds of workers would live in Santa Clara and San Mateo counties. Remaining workers are estimated to commute primarily from San Francisco and Alameda counties. Approximately 4% are estimated to commute from other counties. These figures are based on Census data on existing commute patterns. The Increased Commute Share Estimate is not presented in Table 6-5 because the 20% goal is focused on Menlo Park's commute share and does not identify targets for any other specific jurisdiction. Progress toward the 20% commute share goal would tend to reduce commuting from other jurisdictions relative to levels indicated in Table 6-5 by increasing the share of workers that live in Menlo Park.

Table 6-5. Estimated Commute Shed for Project (Percent of Workers by Place of Residence) (1)

San Mateo County	**38.7%**	**Santa Clara County**	**30.4%**	**Alameda County**	**12.2%**
Atherton	0.9%	Alum Rock	0.0%	Alameda	0.2%
Belmont	0.9%	Cambrian Park	0.0%	Albany	0.1%
Broadmoor	0.1%	Campbell	0.7%	Ashland	0.4%
Burlingame	0.7%	Cupertino	1.1%	Berkeley	0.3%
Colma	0.0%	Gilroy	0.2%	Castro Valley	0.5%
Daly City	1.5%	Lexington Hills	0.0%	Cherryland	0.1%
East Palo Alto	3.1%	Los Altos	1.1%	Dublin	0.5%
El Granada	0.3%	Los Altos Hills	0.4%	Emeryville	0.1%
Emerald Lake Hills	0.2%	Los Gatos	0.3%	Fairview	0.1%
Foster City	1.2%	Loyola	0.1%	Fremont	3.8%
Half Moon Bay	0.5%	Milpitas	0.4%	Hayward	1.6%
Highlands-Baywood Park	0.2%	Monte Sereno	0.0%	Livermore	0.3%
Hillsborough	0.5%	Morgan Hill	0.1%	Newark	1.0%
La Honda CDP, California	0.1%	Mountain View	4.9%	Oakland	1.3%
Ladera CDP, California	0.1%	Palo Alto	4.0%	Pleasanton	0.5%
Menlo Park	**5.3%**	San Jose	8.8%	San Leandro	0.4%
Millbrae	0.4%	San Martin	0.1%	San Lorenzo	0.2%
North Fair Oaks	1.3%	Santa Clara	1.7%	Union City	0.9%
Pacifica	0.6%	Saratoga	0.5%	Balance of County (1)	0.0%
Portola Valley	0.5%	Stanford	0.3%		
Redwood City	9.1%	Sunnyvale	5.3%	**All Other Counties**	
San Bruno	1.1%	Balance of County (1)	0.4%	San Francisco	12.0%
San Carlos	1.6%			Contra Costa County	2.1%
San Mateo	3.7%			Santa Cruz County	0.5%
South San Francisco	1.0%			Marin, Napa, Sonoma	0.7%
West Menlo Park	0.5%			Other Counties	3.5%
Woodside	0.5%				
Balance of County (1)	2.8%			Total, all counties	100.0%

(1) Data is derived from the 2012-2016 American Community Survey, the most recent available complete commute distribution data at the jurisdiction level. The share of Menlo Park's workforce living in Menlo Park is an exception for which more recent data is available from the 2017-2021 American Community Survey.

(2) Includes workers residing in jurisdictions for which the relevant commute data has been suppressed by the U.S. Census. For San Mateo County, a reconciliation adjustment to data for the balance of San Mateo County is made to account for the reduction in the Menlo Park Share relative to the prior data.

Sources: U.S. Census Bureau, American Community Survey 2012-2016 Five-year estimates. Special Tabulation: Census Transportation Planning; American Community Survey 2017-2021.

7.0 DISPLACEMENT ANALYSIS

This section provides a discussion of the potential for the Proposed Project to contribute to displacement of existing residents and neighborhood change. Given the complex array of factors that influence housing markets and neighborhood change, precise estimates or projections of outcomes are not feasible; instead, a qualitative discussion of the potential for the Proposed Project to impact displacement is provided.

This analysis is provided for informational purposes but is not required under CEQA. The Proposed Project is not located in or adjacent to a community identified as at risk of displacement[17] and is not subject to the Settlement Agreement with the City of East Palo Alto that caused preparation of in-depth analyses of displacement impacts for previous development proposals. For these reasons, the displacement analysis provided herein is qualitative in nature and does not include a detailed quantitative assessment of displacement impacts as in prior HNAs for previous proposed developments that were subject to the Settlement Agreement and proximate to neighborhoods with an elevated risk of displacement.

Displacement Risk

Displacement occurs when housing or neighborhood conditions force existing residents to move, or households feel like their move is involuntary. Displacement can be caused by a range of physical, economic and social factors including but not limited to foreclosure, condominium conversion, building deterioration or condemnation, increased taxes, natural disasters, eminent domain, and increases in housing costs[18, 19, 20].

Lower income communities in the Bay Area have become increasingly vulnerable to displacement of existing residents. Employment growth, constrained housing production, and rising income inequality are among the factors that have contributed to increased displacement pressures, especially within lower income communities in locations accessible to employment centers where many households are housing-cost burdened.

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[17] Chapple, K., & Thomas, T., and Zuk, M. (2021). Urban Displacement Project website. Berkeley, CA: Urban Displacement Project. Accessed at https://www.urbandisplacement.org/maps/california-estimated-displacement-risk-model/ on 9/28/2023.

[18] Zuk, M. et. al. 2017. Gentrification, Displacement, and the Role of Public Investment. Journal of Planning Literature. Journal of Planning Literature 1-14.

[19] Center for Community Innovation (2020). Investment and Disinvestment as Neighbors, A Study of Baseline Housing Conditions in the Bay Area Peninsula.

[20] Bradshaw, K. (2019). Uneven Ground: How unequal land use harms communities in southern San Mateo County. Palo Alto Online. https://paloaltoonline.atavist.com/uneven-ground.

The Proposed Project is in a census tract with low renter displacement risk according to the California Displacement Risk Model by the Urban Displacement Project[21]. Adjacent census tracts also have low renter displacement risk.

The nearest U.S. Census tracts identified as having an elevated or high risk of displacement are approximately two to three miles away in East Palo Alto, the Belle Haven neighborhood of Menlo Park (Belle Haven), the unincorporated community of North Fair Oaks, and the Stanford University campus[22]. A recent study by UC Berkeley's Center for Community Innovation and its Y-PLAN initiative, titled *Investment and Disinvestment as Neighbors: A Study of Baseline Housing Conditions in the Bay Area Peninsula*, provided an assessment of the baseline housing conditions in the Belle Haven neighborhood, City of East Palo Alto, and North Fair Oaks neighborhood (unincorporated San Mateo County). The study found indications of recent changes including increased population turnover, declining school age population, and an increase in homelessness. The study also identified a high incidence of rent burdened households and disproportionate pressure on the local housing market compared to the rest of San Mateo County. The study found more signs of disinvestment in East Palo Alto and more indications of real estate speculation in Belle Haven[23].

7.1 Considerations in Evaluating Potential to Contribute to Displacement

The following section outlines factors considered in the evaluation of whether the Proposed Project is likely to have an influence on displacement in communities identified as vulnerable to displacement.

(1) No existing housing units will be removed.

(2) The Proposed Project is not located in or adjacent to a neighborhood identified as at risk of displacement.

(3) No physical changes to a community vulnerable to displacement are proposed.

(4) The Proposed Project adds 550 new units to the housing supply, including up to 168 below market rate units and 382 market rate units, which will make additional housing

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[21] Chapple, K., & Thomas, T., and Zuk, M. (2021). Urban Displacement Project website. Berkeley, CA: Urban Displacement Project. Accessed at https://www.urbandisplacement.org/maps/california-estimated-displacement-risk-model/.

[22] The Stanford University campus is an area identified as at risk of displacement by the California Displacement Risk Model, likely due to a lower income student population. Since Stanford University housing is for those affiliated with the university, occupants of on-campus housing may be insulated, to some degree, from outside displacement pressures.

[23] Center for Community Innovation. (2020). Investment and Disinvestment as Neighbors, A Study of Baseline Housing Conditions in the Bay Area Peninsula.

opportunities available in a very competitive housing market. The 550 new units in the Proposed Project equate to an approximately 4% increase in the existing 13,912-unit Menlo Park housing stock[24] and a 0.2% increase in the 287,967-unit housing stock of San Mateo County.

(5) The Proposed Project results in an estimated net increase in regional housing demand for between 1,014 to 1,656 units within commuting distance, depending on the scenario, which could contribute to upward pressure on home prices and rents to the extent regional housing supply does not keep pace with added demand.

(6) The Proposed Project results in an estimated net increase in housing availability in Menlo Park of between 110 and 467 units, depending on the scenario regarding use (R&D vs. office) and commute share (5.3% current share vs. 20% increased commute share). The basis for these figures is described in Section 6.2 and considers the 550 new units constructed and the net increase in worker housing demand.

(7) Several recent studies have explored the effects of new market rate housing development on housing costs and displacement pressures within the immediate vicinity of new housing development[25]. The studies found that new residential development has moderating effects on rents and displacement pressures at the local level. New

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[24] Number of housing units as of January 1, 2023. per California Department of Finance Table E-5, Population and Housing Estimates for Cities, Counties, and the State, 2021-2023 with 2020 Census Benchmark.

[25] Asquith, Brian J., Evan Mast, and Davin Reed. 2019. "Supply Shock Versus Demand Shock: The Local Effects of New Housing in Low-Income Areas." Upjohn Institute Working Paper 19-316. W. E. Upjohn Institute for Employment Research. https://doi.org/10.17848/wp19-316

Damiano, Anthony, Frenier, Chris. 2020. “Build Baby Build?: Housing Submarkets and the Effects of New Construction on Existing Rents” University of Minnesota CURA Center for Urban and Regional Affairs. https://www.tonydamiano.com/project/new-con/bbb-wp.pdf

Li, Xiaodi. 2019. “Do New Housing Units in Your Backyard Raise Your Rents?” NYU Wagner and NYU Furman Center. https://72187189-93c1-48bc-b596-fc36f4606599.filesusr.com/ugd/7fc2bf_2fc84967cfb945a69a4df7baf8a4c387.pdf

Mast, Evan. 2019. “The Effect of New Market-Rate Housing Construction on the Low-Income Housing Market” Upjohn Institute Working Paper 19-307 W. E. Upjohn Institute for Employment Research. https://research.upjohn.org/cgi/viewcontent.cgi?article=1325&context=up_workingpapers

Pennington, Kate. 2021. “Does Building New Housing Cause Displacement?: The Supply and Demand Effects of Construction in San Francisco.” Department of Agricultural and Resource Economics, University of California, Berkeley. https://www.dropbox.com/s/oplls6utgf7z6ih/Pennington_JMP.pdf?dl=0

Phillips, Shane, Manville, Michael, Lens Michael. 2021. “Research Roundup: The Effect of Market-Rate Development on Neighborhood Rents” UCLA Lewis Center for Regional Policy Studies. https://www.lewis.ucla.edu/research/market-rate-development-impacts/

residential developments were found to decrease rents in the area surrounding the new housing either in absolute terms or relative to market trend.

7.2 Comparison to Other Recent Projects with In-Depth Displacement Analyses

The attributes of the Proposed Projects were compared to two separate projects for which a more in-depth quantitative evaluation of potential displacement impacts was prepared. The purpose is to provide additional context for gauging potential displacement impacts. The two projects are:

- Commonwealth Building 3 (Commonwealth), which would develop a 249,500 square foot office building, adding an estimated 1,996 jobs[26].

- Willow Village Master Plan Project (Willow Village), which would develop approximately 1.8 million square feet of office, accessory, and non-office commercial uses, a 193-key hotel, 1,730 multifamily residential units, parking, park and open space improvements, replacing approximately 1 million square feet of existing office and R&D buildings. The estimated net increase in on-site employment with the Willow Village Project is 4,332 jobs.[27]

The comparison is summarized in Table 7-1.

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[26] Keyser Marston Associates, Inc. Housing Needs Assessment. Commonwealth Building 3 Project. July 2021. Available at: https://menlopark.gov/files/sharedassets/public/v/1/community-development/documents/projects/under-review/162-164-jefferson-drive/20220701_appendices-full-commonwealth-building-3.pdf

[27] Keyser Marston Associates, Inc. Housing Needs Assessment. Willow Village Master Plan Project. March 2022. Available at: https://menlopark.gov/files/sharedassets/public/v/1/community-development/documents/projects/under-review/willow-village/draft-eir/full-appendices.pdf

Table 7-1. Proposed Project vs. Projects with In-Depth Displacement Evaluations

	Commonwealth	*Willow Village*	*Proposed Project*
Project Scope	249,500 square foot office building, no housing included.	1,730 residential units, 193-key hotel, and redevelop existing 1 million square foot campus, with 1.8 million square feet office, retail and accessory space for a net add of ~800,000 square feet.	550 new residential units, redevelop existing 1.38 million square foot office/R&D campus with no net increase in non-residential building area.
BMR % Share of Residential Units	No residential included	18%	31% (1)
Regional Housing Availability Impact	(1,046 unit) Net decrease in regional housing availably	(815 unit) Net decrease in regional housing availably	(1,656 units) to (1,014 units) Net decrease in regional housing availably
Menlo Park Housing Availability Impact Current Commute Scenario	(62-unit) to (77-unit) Net decrease in housing availably in Menlo Park	1,553 Unit Net increase in available housing in Menlo Park	433-Unit to 467-Unit Net increase in housing availability in Menlo Park
Proximity to Communities at Risk of Displacement	Adjacent to Belle Haven	Adjacent to Belle Haven, near East Palo Alto border	Approximately 2-3 miles away from nearest communities at risk of displacement.
Other Factors	New building in existing office park. No housing component.	Transformative project creating new mixed use neighborhood. 312 BMR units.	Redevelops existing office/R&D campus. 168 BMR units.
HNA Displacement Analysis Conclusion	Not a significant contributor to substantial pre-existing displacement pressures in East Palo Alto and Belle Haven	At most, a minor contributing factor to substantial pre-existing displacement pressures	Not likely to materially increase pre-existing displacement pressures

(1) Percentage is calculated based on all 550 residential units including all of the up to 100 BMR units in a stand-alone affordable building.

The displacement analyses for Commonwealth concluded the project would not be a significant contributor to displacement. The analysis for Willow Village concluded that the project would likely, at most, represent a minor influence on displacement pressures. While these other projects were not found to be significant contributors to displacement, the attributes of the Proposed Project would suggest it would be even less likely to be a material contributor to displacement, due to the following:

- The Proposed Project is within, and surrounded by, a community identified as having a low displacement risk and is some distance from the nearest community vulnerable to displacement. In contrast, Commonwealth and Willow Village are directly adjacent to Belle Haven, a community at risk of displacement,[28] and are both closer to East Palo Alto.

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[28] Chapple, K., & Thomas, T., and Zuk, M. (2021). Urban Displacement Project website. Berkeley, CA: Urban Displacement Project. Accessed at https://www.urbandisplacement.org/maps/california-estimated-displacement-risk-model/ on 9/28/2023.

- The Proposed Project increases housing availability in Menlo Park, whereas Commonwealth adds to housing demand in Menlo Park.

- Willow Village introduces new retail amenities near an existing neighborhood vulnerable to displacement, which could create additional interest in living nearby and upward pressure on housing costs. While the Proposed Project will create publicly accessible open space, it does not present the same potential for an amenity-driven influence on displacement pressures, due to the lack of direct proximity to neighborhoods at risk of displacement.

7.3 Displacement Analysis Conclusion

The Proposed Project is not likely to have a material impact on displacement pressures in communities vulnerable to displacement, located roughly two to three miles away. This finding is based on the factors described above, including that the Proposed Project adds 550 units to the housing supply, including 168 BMR units, and is in an area with a low risk of displacement. Relative to other projects which were found to, at most, represent a minor contributing factor to substantial pre-existing displacement pressures, the nature and location of the Proposed Project suggests a material impact is less likely.

8.0 ANALYSIS OF PROJECT VARIANT

The DEIR evaluates an Increased Development Variant (Project Variant) with up to 800 residential units, an increase of 250 units over the up to 550 units included in the Proposed Project. The 250 additional residential units with the Project Variant are accommodated by increasing the massing and height of the proposed multifamily buildings and expanding the Project site to encompass 201 Ravenswood Avenue. The unit mix would also shift toward larger units that have more bedrooms per unit on average.

The number of BMR units within the mixed income component would increase from 68 units to 97 units based on applying the City's 15% inclusionary requirement to the 646 units within the mixed income component of the Project Variant[29]. The number of units to be included within a separate 100% affordable building would also increase from 100 to 154 units. The non-residential components would remain consistent with the Proposed Project. In total, there would be 251 BMR units and 549 market rate residential units under the Project Variant.

Housing Availability Impacts with Project Variant

KMA modified the analyses described in Sections 3, 4, 5 and 6 to reflect the 250 additional units, modifications to unit mix, and additional removal of existing uses at 201 Ravenswood Avenue under the Project Variant. The resulting modified findings regarding net impact on housing availability with the Project Variant are summarized below:

- **Regional Housing Availability Impact with Project Variant** – The Project Variant results in a 1,484-unit net decrease in housing availability within the region in the Office Use Scenario and an 842-unit decrease in housing availability within the region in the R&D Use Scenario, based on the difference between the estimated regional employee housing demand in each scenario and the 800 new housing units. Regional employee housing demand under the Project Variant is estimated to be as follows:

  - *Office Use Scenario* – In the Office Use Scenario, the Project Variant would create a demand for an estimated 2,284 additional housing units regionally, including 2,060 housing units based on the 3,856 jobs added on-site, plus an estimated demand for 224 housing units for workers in off-site services to new residents such as restaurants, retail, education, medical care, and others.

  - *R&D Use Scenario* – In the R&D Use Scenario, the Project Variant would create a demand for an estimated 1,642 additional housing units regionally, including 1,418

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[29] With the Project Variant it is assumed that 15 percent (97 units) of the 646 units within the mixed income component are deed-restricted BMR units affordable to low-income households, that the unit mix by number of bedrooms and unit type for these 97 BMR units is consistent with the market rate units, and that a site will be dedicated to an affordable housing developer that could accommodate up to 154 additional BMR units.

housing units based on the 2,655 jobs added on-site, plus an estimated demand for 224 housing units for workers in off-site services to new residents such as restaurants, retail, education, medical care, and others.

➢ **Housing Availability Increase in Menlo Park with Project Variant** – The net impact on housing availability in Menlo Park is based on an estimated Menlo Park share of the total regional employee housing demand and the 800 new units added. The Menlo Park share of regional employee housing demand is estimated under the same two commute share scenarios described previously, with both the Office Use and R&D Use Scenarios.

Office Use Scenario

- *Current Commute Share Estimate (5.3%)* – Assuming existing commute patterns hold, there is an estimated net increase in available housing in Menlo Park of 679 units, based on the 800 new units in the Project Variant, less an estimated Menlo Park share of regional employee housing demand of 121 units.
- *Increased Commute Share Estimate (20%)* – Assuming an increased 20% share of workers are housed in the city, there is an estimated net increase in available housing in Menlo Park of 343 units, considering the 800 new units in the Project Variant, less an estimated Menlo Park share of regional employee housing demand of 457 units.

R&D Use Scenario

- *Current Commute Share Estimate (5.3%)* – Assuming existing commute patterns hold, there is an estimated net increase in available housing in Menlo Park of 713 units, based on the 800 new units in the Project Variant, less an estimated Menlo Park share of regional employee housing demand of 87 units.
- *Increased Commute Share Estimate (20%)* – Assuming an increased 20% share of workers are housed in the city, there is an estimated net increase in available housing in Menlo Park of 471 units, considering the 800 new units in the Project Variant, less an estimated Menlo Park share of regional employee housing demand of 329 units.

Table 8-1 provides a summary of housing availability impact findings for the Project Variant.

Table 8-1. Summary of Housing Availability Impacts, Project Variant

	Regional Total		**Menlo Park Share**			
			Current Commute Share Estimate		Increased Commute Share Estimate at 20%	
	Office Use Scenario	R&D Use Scenario	Office Use Scenario	R&D Use Scenario	Office Use Scenario	R&D Use Scenario
Project Variant Findings (with 800 residential units)						
A. Added Housing Supply (New Units)	800 Units	800 Units	800 Units	800 Units	800 Units	800 Units
B. Added Employee Housing Demand	2,284 Units	1,642 Units	121 Units	87 Units	457 Units	329 Units
C. Housing Availability, Net Impact [A. - B.]	(1,484 Units)	(842 Units)	679 Units	713 Units	343 Units	471 Units
	Net Decrease in Available Housing in Region		Net Increase in Available Housing in Menlo Park		Net Increase in Available Housing in Menlo Park	
Comparison to Findings for Proposed Project (with 550 residential units)						
D. Findings for Proposed Project at 550 units (from Table 1-1)	(1,656 Units)	(1,014 Units)	433 Units	467 Units	110 Units	238 Units
	Net Decrease in Available Housing in Region		Net Increase in Available Housing in Menlo Park		Net Increase in Available Housing in Menlo Park	
E. Net Difference in Findings with Project Variant [C. – D.]	**(+) 172 Units** of Available Housing in Region		**(+) 246 Units** of Available Housing in Menlo Park		**(+) 233 Units** of Available Housing in Menlo Park	

The net differences in housing availability impacts with the Project Variant, compared to the Proposed Project with 550 units, are shown in Row E of Table 8-1. The 250 added units do not translate into a one-to-one increase in housing availability because on-site and off-site employee housing demand associated with the residential units also increase and partially offset the 250-unit incremental increase in housing supply.

Table 8-2 provides a breakout of the estimated net impacts on housing availability by income level with the Project Variant. Housing availability impacts by income level are provided for the region and for Menlo Park under both the Current Commute Share and Increased Commute Share estimates.

Table 8-2. Net Impacts on Housing Demand and Housing Supply by Income Level, Project Variant

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Regional Total							
- Office Use Scenario	(57)	(137)	(19)	(522)	158	(907)	(1,484)
- R&D Use Scenario	(42)	(87)	34	(386)	251	(612)	(842)
Menlo Park Share: Current Commute Share Estimate (5.3%)							
- Office Use Scenario	(3)	(7)	237	(28)	456	24	679
- R&D Use Scenario	(3)	(4)	239	(21)	462	40	713
Menlo Park Share: Increased Commute Share Estimate (20%)							
- Office Use Scenario	(11)	(28)	197	(105)	410	(120)	343
- R&D Use Scenario	(8)	(18)	208	(78)	428	(61)	471

Note: Negative figures represent a net decrease in housing availability resulting from housing demand that exceeds added housing supply within the applicable income category.

Table 8-3 shows the net change in on-site and off-site employment with both the Proposed Project and the Project Variant. With the Project Variant, there are additional on-site jobs in rental property management and off-site services to new residents, due to the increase in the number of residential units. Inclusion of 201 Ravenswood Avenue within the Project Variant site is estimated to result in removal of 18 additional existing jobs.

Table 8-3. Net Change in Employment and Employee Housing Demand, Project vs. Project Variant

	Employees				Employee Households			
	Project		Project Variant		Project		Project Variant	
	Office Use Scenario	R&D Use Scenario	Office Use Scenario	R&D Use Scenario	Office Use Scenario	R&D Use Scenario	Office Use Scenario	R&D Use Scenario
On-Site Jobs								
New Office / R&D Use	4,206	3,005	4,206	3,005	2,247	1,605	2,247	1,605
Commercial Amenity	46	46	46	46	25	25	25	25
Community Amenity	2	2	2	2	1	1	1	1
Rental Units / Property Management	14	14	20	20	7	7	11	11
Net change in SRI employment (1)	(400)	(400)	(400)	(400)	(214)	(214)	(214)	(214)
201 Ravenswood existing	not a part		(18)	(18)	not a part		(10)	(10)
Net Change / On-Site Jobs	3,868	2,667	3,856	2,655	2,066	1,424	2,060	1,418
Off-Site Jobs, Services to Residents	262	262	419	419	140	140	224	224
Combined Total	**4,130**	**2,929**	**4,275**	**3,074**	**2,206**	**1,564**	**2,284**	**1,642**

APPENDIX A – WORKER OCCUPATIONS AND COMPENSATION LEVELS

APPENDIX A TABLE 1
ESTIMATED WORKER OCCUPATION DISTRIBUTION, 2022
OFFICE WORKERS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Major Occupations (2% or more)	**Worker Occupation Distribution Office**
Management Occupations	*15.4%*
Business and Financial Operations Occupations	*12.3%*
Computer and Mathematical Occupations	*41.7%*
Educational Instruction and Library Occupations	*3.2%*
Arts, Design, Entertainment, Sports, and Media Occupations	*2.6%*
Sales and Related Occupations	*10.4%*
Office and Administrative Support Occupations	*11.2%*
All Other Worker Occupations - Office	*3.2%*
TOTAL	100.0%

Source: Bureau of Labor Statistics
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 2
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
OFFICE WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Occupation [3]	2023 Avg. Worker Compensation[1]	Household Income Estimate [4]			% of Total Occupation Group [2]	% of Total Workers
		One Worker	Two Workers	Three+ Workers		
Page 1 of 2						
Management Occupations						
Chief Executives	$315,500	$330,000	$457,000	$482,000	2.2%	0.3%
General and Operations Managers	$191,600	$199,000	$335,000	$389,000	22.6%	3.5%
Marketing Managers	$222,400	$230,000	$366,000	$410,000	11.3%	1.7%
Sales Managers	$205,600	$213,000	$338,000	$379,000	11.0%	1.7%
Computer and Information Systems Managers	$245,000	$254,000	$403,000	$451,000	28.4%	4.4%
Financial Managers	$241,900	$251,000	$398,000	$446,000	5.9%	0.9%
Human Resources Managers	$215,700	$223,000	$355,000	$397,000	2.7%	0.4%
Managers, All Other	$226,900	$235,000	$373,000	$418,000	10.1%	1.6%
Other Management Occupations	$223,600	$232,000	$368,000	$412,000	5.9%	0.9%
Weighted Mean Annual Wage	***$223,600***	**$232,000**	**$371,000**	**$418,000**	**100.0%**	**15.4%**
Business and Financial Operations Occupations						
Human Resources Specialists	$111,900	$120,000	$217,000	$269,000	11.4%	1.4%
Project Management Specialists	$146,600	$157,000	$284,000	$352,000	17.9%	2.2%
Management Analysts	$133,100	$142,000	$258,000	$320,000	10.5%	1.3%
Training and Development Specialists	$95,300	$106,000	$207,000	$266,000	4.1%	0.5%
Market Research Analysts and Marketing Specialists	$110,700	$118,000	$214,000	$266,000	22.9%	2.8%
Business Operations Specialists, All Other	$93,600	$104,000	$203,000	$261,000	9.9%	1.2%
Accountants and Auditors	$115,300	$123,000	$223,000	$277,000	10.8%	1.3%
Financial and Investment Analysts	$138,500	$148,000	$268,000	$333,000	3.6%	0.4%
Other Business and Financial Operations Occupations	$119,600	$128,000	$232,000	$287,000	8.9%	1.1%
Weighted Mean Annual Wage	***$119,600***	**$128,000**	**$235,000**	**$292,000**	**100.0%**	**12.3%**
Computer and Mathematical Occupations						
Computer Systems Analysts	$156,000	$162,000	$273,000	$317,000	4.5%	1.9%
Information Security Analysts	$151,100	$157,000	$264,000	$307,000	2.6%	1.1%
Computer User Support Specialists	$86,100	$96,000	$187,000	$240,000	8.0%	3.3%
Network and Computer Systems Administrators	$136,200	$146,000	$264,000	$327,000	2.4%	1.0%
Software Developers	$200,500	$208,000	$330,000	$369,000	55.7%	23.2%
Software Quality Assurance Analysts and Testers	$152,000	$158,000	$266,000	$309,000	5.5%	2.3%
Web and Digital Interface Designers	$211,800	$219,000	$348,000	$390,000	2.6%	1.1%
Computer Occupations, All Other	$160,500	$167,000	$280,000	$326,000	4.3%	1.8%
Data Scientists	$167,600	$174,000	$293,000	$341,000	3.1%	1.3%
Other Computer and Mathematical Occupations	$179,000	$186,000	$313,000	$364,000	11.1%	4.6%
Weighted Mean Annual Wage	***$179,000***	**$186,000**	**$304,000**	**$348,000**	**100.0%**	**41.7%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 2
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
OFFICE WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

	2023 Avg. Worker	Household Income Estimate [4]			% of Total	
Occupation [3]	**Compensation[1]**	**One Worker**	**Two Workers**	**Three+ Workers**	**Occupation Group [2]**	**% of Total Workers**
Page 2 of 2						
Educational Instruction and Library Occupations						
Archivists	$69,900	$84,000	$174,000	$239,000	2.1%	0.1%
Librarians and Media Collections Specialists	$95,800	$107,000	$208,000	$267,000	53.6%	1.7%
Library Technicians	$64,100	$77,000	$159,000	$219,000	37.1%	1.2%
Other Educational Instruction and Library Occupations	$82,600	$92,000	$179,000	$231,000	7.2%	0.2%
Weighted Mean Annual Wage	***$82,600***	**$94,000**	**$187,000**	**$246,000**	**100.0%**	**3.2%**
Arts, Design, Entertainment, Sports, and Media Occupations						
Art Directors	$171,900	$179,000	$300,000	$349,000	4.8%	0.1%
Special Effects Artists and Animators	$137,700	$147,000	$267,000	$331,000	13.1%	0.3%
Graphic Designers	$96,700	$108,000	$210,000	$270,000	12.6%	0.3%
Producers and Directors	$161,900	$168,000	$283,000	$329,000	4.0%	0.1%
Public Relations Specialists	$107,900	$115,000	$209,000	$259,000	12.3%	0.3%
Editors	$104,400	$112,000	$202,000	$251,000	12.6%	0.3%
Technical Writers	$143,400	$153,000	$278,000	$344,000	11.1%	0.3%
Writers and Authors	$194,500	$202,000	$340,000	$395,000	5.5%	0.1%
Media and Communication Workers, All Other	$102,800	$110,000	$199,000	$247,000	2.3%	0.1%
Audio and Video Technicians	$83,200	$93,000	$180,000	$232,000	2.3%	0.1%
Other Arts, Design, Sports, and Media Occupations	$126,900	$136,000	$246,000	$305,000	19.4%	0.5%
Weighted Mean Annual Wage	***$126,900***	**$136,000**	**$244,000**	**$301,000**	**100.0%**	**2.6%**
Sales and Related Occupations						
First-Line Supervisors of Non-Retail Sales Workers	$123,900	$132,000	$240,000	$298,000	5.7%	0.6%
Advertising Sales Agents	$88,700	$99,000	$192,000	$248,000	6.6%	0.7%
Sales Representatives	$129,800	$139,000	$251,000	$312,000	51.4%	5.3%
Sales Reps., Wholesale, Manuf., Technical, Scientific	$131,100	$140,000	$254,000	$315,000	22.7%	2.4%
Sales Reps., Wholesale & Manuf., Except Tech. and Scientific	$94,200	$105,000	$204,000	$263,000	4.5%	0.5%
Sales Engineers	$164,700	$171,000	$288,000	$335,000	2.8%	0.3%
Sales and Related Workers, All Other	$98,500	$110,000	$214,000	$275,000	3.0%	0.3%
Other Sales and Related Occupations	$125,300	$134,000	$243,000	$301,000	3.3%	0.3%
Weighted Mean Annual Wage	***$125,300***	**$135,000**	**$245,000**	**$305,000**	**100.0%**	**10.4%**
Office and Administrative Support Occupations						
First-Line Supervisors of Office and Admin. Support Workers	$88,700	$99,000	$192,000	$248,000	8.2%	0.9%
Bookkeeping, Accounting, and Auditing Clerks	$65,700	$79,000	$163,000	$225,000	7.3%	0.8%
Customer Service Representatives	$56,900	$69,000	$142,000	$195,000	32.7%	3.6%
Library Assistants, Clerical	$59,100	$71,000	$147,000	$202,000	15.9%	1.8%
Executive Secretaries and Executive Admin. Assistants	$104,500	$112,000	$202,000	$251,000	4.4%	0.5%
Secretaries and Administrative Assistants	$64,600	$78,000	$161,000	$221,000	4.8%	0.5%
Data Entry Keyers	$49,000	$68,000	$164,000	$234,000	4.6%	0.5%
Office Clerks, General	$54,600	$66,000	$136,000	$187,000	9.3%	1.0%
Other Office and Administrative Support Occupations	$63,200	$76,000	$157,000	$216,000	12.9%	1.4%
Weighted Mean Annual Wage	***$63,200***	**$75,000**	**$154,000**	**$210,000**	**100.0%**	**11.2%**
						96.8%

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[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. EDD data is adjusted

[2] Occupation percentages are based on the 2022 National Industry - Specific Occupational Employment survey compiled by the Bureau of Labor Statistics. Wages are

[3] Including occupations representing 2% or more of the major occupation group.

[4] Household income estimated based average worker compensation and ratios between employee income and household income see Table 3-6.

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 3
ESTIMATED WORKER OCCUPATION DISTRIBUTION, 2022
COMMERCIAL AMENITY WORKERS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

	Worker Occupation Distribution Commercial Amenity
Major Occupations (2% or more)	
Management Occupations	*4.9%*
Food Preparation and Serving Related Occupations	*74.3%*
Building and Grounds Cleaning and Maintenance Occupations	*3.7%*
Sales and Related Occupations	*4.8%*
Office and Administrative Support Occupations	*3.2%*
Transportation and Material Moving Occupations	*3.4%*
All Other Worker Occupations - Commercial Amenity	*5.8%*
TOTAL	100.0%

Source: Bureau of Labor Statistics
Keyser Marston Associates, Inc.
\\sf-fs2\WP\12\12095\014\Parkline occupation and compensation 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 4
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
COMMERCIAL AMENITY WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Occupation [3]	2023 Avg. Worker Compensation[1]	Household Income Estimate [4] One Worker	Two Workers	Three+ Workers	% of Total Occupation Group [2]	% of Total ial Amenity Workers
Page 1 of 2						
Management Occupations						
General and Operations Managers	$191,600	$199,000	$335,000	$389,000	37.5%	1.8%
Facilities Managers	$138,500	$148,000	$268,000	$333,000	2.2%	0.1%
Food Service Managers	$77,300	$86,000	$168,000	$216,000	50.6%	2.5%
Other Management Occupations	$126,200	$135,000	$244,000	$303,000	9.7%	0.5%
Weighted Mean Annual Wage	***$126,200***	**$134,000**	**$240,000**	**$292,000**	**100.0%**	**4.9%**
Food Preparation and Serving Related Occupations						
Chefs and Head Cooks	$76,500	$85,000	$166,000	$214,000	3.9%	2.9%
First-Line Supervisors of Food Preparation and Serving Workers	$55,000	$66,000	$137,000	$188,000	8.2%	6.1%
Cooks, Institution and Cafeteria	$51,000	$61,000	$127,000	$174,000	12.6%	9.3%
Cooks, Restaurant	$44,900	$63,000	$150,000	$214,000	4.7%	3.5%
Food Preparation Workers	$40,600	$57,000	$135,000	$194,000	10.0%	7.4%
Bartenders	$44,200	$62,000	$148,000	$211,000	2.9%	2.2%
Fast Food and Counter Workers	$40,400	$56,000	$135,000	$193,000	27.3%	20.3%
Waiters and Waitresses	$40,700	$57,000	$136,000	$194,000	10.2%	7.6%
Food Servers, Nonrestaurant	$52,300	$63,000	$130,000	$179,000	5.3%	4.0%
Dining Room and Cafeteria Attendants and Bartender Helpers	$40,400	$56,000	$135,000	$193,000	3.6%	2.7%
Dishwashers	$41,200	$57,000	$137,000	$196,000	4.8%	3.6%
Food Preparation and Serving Related Workers, All Other	$41,500	$58,000	$138,000	$198,000	2.0%	1.5%
Other Food Preparation and Serving Related Occupations	$45,600	$63,000	$152,000	$217,000	4.3%	3.2%
Weighted Mean Annual Wage	***$45,600***	**$60,000**	**$137,000**	**$193,000**	**100.0%**	**74.3%**
Building and Grounds Cleaning and Maintenance Occupations						
Supervisors of Personal Service and Entertainment and Rec Worker	$65,600	$79,000	$163,000	$224,000	6.6%	0.2%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	$47,000	$65,000	$157,000	$224,000	70.8%	2.6%
Maids and Housekeeping Cleaners	$48,700	$68,000	$163,000	$232,000	18.3%	0.7%
Landscaping and Groundskeeping Workers	$52,900	$64,000	$132,000	$181,000	3.2%	0.1%
Other Building and Grounds Cleaning and Maintenance Occupations	$48,800	$68,000	$163,000	$233,000	1.1%	0.0%
Weighted Mean Annual Wage	***$48,800***	**$66,000**	**$158,000**	**$224,000**	**100.0%**	**3.7%**
Sales and Related Occupations						
First-Line Supervisors of Retail Sales Workers	$59,900	$72,000	$149,000	$205,000	2.6%	0.1%
Cashiers	$40,900	$57,000	$136,000	$195,000	79.1%	3.8%
Retail Salespersons	$45,800	$64,000	$153,000	$218,000	4.2%	0.2%
Sales Representatives of Services, Except Advertising, Insurance, Fi	$129,800	$139,000	$251,000	$312,000	11.6%	0.6%
Other Sales and Related Occupations	$52,200	$63,000	$130,000	$178,000	2.5%	0.1%
Weighted Mean Annual Wage	***$52,200***	**$67,000**	**$150,000**	**$209,000**	**100.0%**	**4.8%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 4
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
COMMERCIAL AMENITY WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

	2023 Avg. Worker Compensation[1]	Household Income Estimate [4]			% of Total Occupation Group [2]	% of Total ial Amenity Workers
Occupation [3]		**One Worker**	**Two Workers**	**Three+ Workers**		
Page 2 of 2						
Office and Administrative Support Occupations						
First-Line Supervisors of Office and Admin. Support Workers	$88,700	$99,000	$192,000	$248,000	5.1%	0.2%
Bookkeeping, Accounting, and Auditing Clerks	$65,700	$79,000	$163,000	$225,000	12.8%	0.4%
Customer Service Representatives	$56,900	$69,000	$142,000	$195,000	13.2%	0.4%
Receptionists and Information Clerks	$47,900	$67,000	$160,000	$228,000	2.1%	0.1%
Dispatchers, Except Police, Fire, and Ambulance	$54,400	$66,000	$135,000	$186,000	2.1%	0.1%
Production, Planning, and Expediting Clerks	$73,200	$88,000	$182,000	$250,000	5.3%	0.2%
Shipping, Receiving, and Inventory Clerks	$52,500	$63,000	$131,000	$179,000	8.8%	0.3%
Other Office and Administrative Support Occupations	$63,000	$76,000	$157,000	$215,000	50.7%	1.6%
Weighted Mean Annual Wage	***$63,000***	**$76,000**	**$156,000**	**$214,000**	**100.0%**	**3.2%**
Transportation and Material Moving Occupations						
Supervisors of Transportation and Material-Moving Workers	$70,400	$85,000	$175,000	$241,000	6.2%	0.2%
Driver/Sales Workers	$48,000	$67,000	$160,000	$229,000	23.9%	0.8%
Heavy and Tractor-Trailer Truck Drivers	$68,400	$82,000	$170,000	$234,000	4.0%	0.1%
Light Truck Drivers	$53,800	$65,000	$134,000	$184,000	17.0%	0.6%
Motor Vehicle Operators, All Other	$50,200	$60,000	$125,000	$172,000	2.2%	0.1%
Laborers and Freight, Stock, and Material Movers, Hand	$48,100	$67,000	$161,000	$229,000	17.2%	0.6%
Packers and Packagers, Hand	$43,700	$61,000	$146,000	$208,000	8.8%	0.3%
Stockers and Order Fillers	$45,700	$64,000	$153,000	$218,000	16.9%	0.6%
Other Transportation and Material Moving Occupations	$50,600	$61,000	$126,000	$173,000	3.9%	0.1%
Weighted Mean Annual Wage	***$50,600***	**$67,000**	**$153,000**	**$215,000**	**100.0%**	**3.4%**
						94.2%

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[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. EDD data is adjusted by KMA

[2] Occupation percentages are based on the 2022 National Industry - Specific Occupational Employment survey compiled by the Bureau of Labor Statistics. Wages are based on

[3] Including occupations representing 2% or more of the major occupation group.

[4] Household income estimated based average worker compensation and ratios between employee income and household income identified in Table 3-6.

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 5
ESTIMATED WORKER OCCUPATION DISTRIBUTION, 2022
R&D WORKERS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Major Occupations (2% or more)	**Worker Occupation Distribution R&D**
Management Occupations	*19.2%*
Business and Financial Operations Occupations	*11.5%*
Computer and Mathematical Occupations	*14.7%*
Architecture and Engineering Occupations	*14.5%*
Life, Physical, and Social Science Occupations	*22.4%*
Healthcare Practitioners and Technical Occupations	*2.5%*
Office and Administrative Support Occupations	*6.2%*
All Other Worker Occupations - R&D	*9.1%*
TOTAL	100.0%

Source: Bureau of Labor Statistics
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 6
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
R&D WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

	2023 Avg.	Household Income Estimate [4]			% of Total	% of Total
Occupation [3]	**Worker Compensation[1]**	**One Worker**	**Two Workers**	**Three+ Workers**	**Occupation Group [2]**	**R&D Workers**
Page 1 of 3						
Management Occupations						
Chief Executives	$315,500	$330,000	$457,000	$482,000	3.4%	0.7%
General and Operations Managers	$191,600	$199,000	$335,000	$389,000	18.4%	3.5%
Marketing Managers	$222,400	$230,000	$366,000	$410,000	3.9%	0.8%
Sales Managers	$205,600	$213,000	$338,000	$379,000	2.6%	0.5%
Administrative Services Managers	$148,100	$158,000	$287,000	$356,000	2.4%	0.5%
Computer and Information Systems Managers	$245,000	$254,000	$403,000	$451,000	9.1%	1.7%
Financial Managers	$241,900	$251,000	$398,000	$446,000	5.3%	1.0%
Industrial Production Managers	$183,800	$191,000	$321,000	$374,000	3.3%	0.6%
Human Resources Managers	$215,700	$223,000	$355,000	$397,000	2.3%	0.4%
Architectural and Engineering Managers	$208,500	$216,000	$343,000	$384,000	8.2%	1.6%
Medical and Health Services Managers	$186,800	$194,000	$326,000	$380,000	4.5%	0.9%
Natural Sciences Managers	$242,300	$251,000	$398,000	$446,000	20.8%	4.0%
Managers, All Other	$226,900	$235,000	$373,000	$418,000	9.5%	1.8%
Other Management Occupations	$221,200	$229,000	$364,000	$407,000	6.2%	1.2%
Weighted Mean Annual Wage	***$221,200***	**$229,000**	**$368,000**	**$415,000**	**100.0%**	**19.2%**
Business and Financial Operations Occupations						
Buyers and Purchasing Agents	$103,800	$111,000	$201,000	$249,000	7.0%	0.8%
Compliance Officers	$99,300	$111,000	$215,000	$277,000	6.4%	0.7%
Human Resources Specialists	$111,900	$120,000	$217,000	$269,000	8.6%	1.0%
Logisticians	$92,400	$103,000	$200,000	$258,000	4.7%	0.5%
Project Management Specialists	$146,600	$157,000	$284,000	$352,000	20.8%	2.4%
Management Analysts	$133,100	$142,000	$258,000	$320,000	6.7%	0.8%
Training and Development Specialists	$95,300	$106,000	$207,000	$266,000	3.0%	0.3%
Market Research Analysts and Marketing Specialists	$110,700	$118,000	$214,000	$266,000	6.3%	0.7%
Business Operations Specialists, All Other	$93,600	$104,000	$203,000	$261,000	16.7%	1.9%
Accountants and Auditors	$115,300	$123,000	$223,000	$277,000	11.6%	1.3%
Financial and Investment Analysts	$138,500	$148,000	$268,000	$333,000	4.1%	0.5%
Other Business and Financial Operations Occupations	$116,300	$124,000	$225,000	$279,000	4.2%	0.5%
Weighted Mean Annual Wage	***$116,300***	**$126,000**	**$232,000**	**$291,000**	**100.0%**	**11.5%**
Computer and Mathematical Occupations						
Computer Systems Analysts	$156,000	$162,000	$273,000	$317,000	6.2%	0.9%
Information Security Analysts	$151,100	$157,000	$264,000	$307,000	5.6%	0.8%
Computer and Information Research Scientists	$242,200	$251,000	$398,000	$446,000	5.2%	0.8%
Computer User Support Specialists	$86,100	$96,000	$187,000	$240,000	4.1%	0.6%
Computer Network Architects	$174,900	$182,000	$306,000	$355,000	3.6%	0.5%
Network and Computer Systems Administrators	$136,200	$146,000	$264,000	$327,000	6.7%	1.0%
Computer Programmers	$148,000	$158,000	$286,000	$355,000	4.7%	0.7%
Software Developers	$200,500	$208,000	$330,000	$369,000	36.0%	5.3%
Software Quality Assurance Analysts and Testers	$152,000	$158,000	$266,000	$309,000	3.5%	0.5%
Computer Occupations, All Other	$160,500	$167,000	$280,000	$326,000	5.4%	0.8%
Operations Research Analysts	$116,600	$125,000	$226,000	$280,000	3.3%	0.5%
Statisticians	$165,700	$172,000	$290,000	$337,000	4.5%	0.7%
Data Scientists	$167,600	$174,000	$293,000	$341,000	6.7%	1.0%
Other Computer and Mathematical Occupations	$173,200	$180,000	$303,000	$352,000	4.7%	0.7%
Weighted Mean Annual Wage	***$173,200***	**$181,000**	**$299,000**	**$346,000**	**100.0%**	**14.7%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 6
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
R&D WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

		Household Income Estimate [4]				
Occupation [3]	2023 Avg. Worker Compensation[1]	One Worker	Two Workers	Three+ Workers	% of Total Occupation Group [2]	% of Total R&D Workers
Page 2 of 3						
Architecture and Engineering Occupations						
Aerospace Engineers	$173,100	$180,000	$303,000	$352,000	5.6%	0.8%
Bioengineers and Biomedical Engineers	$140,000	$150,000	$271,000	$336,000	3.8%	0.6%
Chemical Engineers	$110,900	$118,000	$215,000	$266,000	2.2%	0.3%
Computer Hardware Engineers	$189,100	$197,000	$330,000	$384,000	13.2%	1.9%
Electrical Engineers	$176,600	$184,000	$309,000	$359,000	7.6%	1.1%
Electronics Engineers, Except Computer	$173,700	$181,000	$304,000	$353,000	6.5%	0.9%
Industrial Engineers	$135,000	$144,000	$261,000	$324,000	10.0%	1.4%
Mechanical Engineers	$140,700	$150,000	$272,000	$338,000	19.1%	2.8%
Engineers, All Other	$149,300	$160,000	$289,000	$359,000	8.4%	1.2%
Electrical and Electronic Engineering Technicians	$83,900	$93,000	$182,000	$234,000	3.7%	0.5%
Industrial Engineering Technologists and Technicians	$88,900	$99,000	$193,000	$248,000	2.3%	0.3%
Mechanical Engineering Technologists and Technicians	$93,200	$104,000	$202,000	$260,000	3.7%	0.5%
Engineering Technologists and Technicians, Except Drafters, All Othe	$82,100	$91,000	$178,000	$229,000	3.9%	0.6%
Other Architecture and Engineering Occupations	$146,500	$157,000	$284,000	$352,000	10.2%	1.5%
Weighted Mean Annual Wage	***$146,500***	**$155,000**	**$275,000**	**$335,000**	**100.0%**	**14.5%**
Life, Physical, and Social Science Occupations						
Biochemists and Biophysicists	$136,500	$146,000	$264,000	$328,000	10.7%	2.4%
Microbiologists	$127,500	$136,000	$247,000	$306,000	3.2%	0.7%
Biological Scientists, All Other	$133,700	$143,000	$259,000	$321,000	9.3%	2.1%
Medical Scientists, Except Epidemiologists	$145,200	$155,000	$281,000	$349,000	23.2%	5.2%
Physicists	$164,600	$171,000	$288,000	$334,000	4.7%	1.0%
Chemists	$129,100	$138,000	$250,000	$310,000	9.8%	2.2%
Biological Technicians	$76,800	$86,000	$167,000	$214,000	12.3%	2.7%
Chemical Technicians	$65,800	$79,000	$164,000	$225,000	3.1%	0.7%
Life, Physical, and Social Science Technicians, All Other	$87,000	$97,000	$189,000	$243,000	6.4%	1.4%
Other Life, Physical, and Social Science Occupations	$123,600	$132,000	$239,000	$297,000	17.5%	3.9%
Weighted Mean Annual Wage	***$123,600***	**$133,000**	**$242,000**	**$302,000**	**100.0%**	**22.4%**
Healthcare Practitioners and Technical Occupations						
Pharmacists	$171,800	$179,000	$300,000	$349,000	2.1%	0.1%
Veterinarians	$143,800	$154,000	$278,000	$345,000	2.1%	0.1%
Registered Nurses	$174,900	$182,000	$306,000	$355,000	17.4%	0.4%
Nurse Practitioners	$206,400	$214,000	$339,000	$380,000	2.6%	0.1%
Physicians, All Other	$243,400	$252,000	$400,000	$448,000	5.4%	0.1%
Clinical Laboratory Technologists and Technicians	$80,600	$90,000	$175,000	$225,000	44.3%	1.1%
Veterinary Technologists and Technicians	$59,600	$72,000	$148,000	$204,000	3.7%	0.1%
Medical Records Specialists	$72,600	$87,000	$181,000	$248,000	3.2%	0.1%
Health Information Technologists and Medical Registrars	$129,000	$138,000	$250,000	$310,000	2.3%	0.1%
Healthcare Practitioners and Technical Workers, All Other	$96,400	$107,000	$209,000	$269,000	2.8%	0.1%
Other Healthcare Practitioners and Technical Occupations	$118,100	$126,000	$229,000	$284,000	14.2%	0.4%
Weighted Mean Annual Wage	***$118,100***	**$127,000**	**$228,000**	**$280,000**	**100.0%**	**2.5%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 6
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
R&D WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Page 3 of 3

Occupation [3]	2023 Avg. Worker Compensation[1]	Household Income Estimate [4]			% of Total Occupation Group [2]	% of Total R&D Workers
		One Worker	Two Workers	Three+ Workers		
Office and Administrative Support Occupations						
First-Line Supervisors of Office and Admin. Support Workers	$88,700	$99,000	$192,000	$248,000	8.8%	0.5%
Bookkeeping, Accounting, and Auditing Clerks	$65,700	$79,000	$163,000	$225,000	10.4%	0.6%
Customer Service Representatives	$56,900	$69,000	$142,000	$195,000	6.7%	0.4%
Production, Planning, and Expediting Clerks	$73,200	$88,000	$182,000	$250,000	4.5%	0.3%
Shipping, Receiving, and Inventory Clerks	$52,500	$63,000	$131,000	$179,000	3.3%	0.2%
Executive Secretaries and Executive Admin. Assistants	$104,500	$112,000	$202,000	$251,000	15.7%	1.0%
Secretaries and Administrative Assistants	$64,600	$78,000	$161,000	$221,000	18.6%	1.1%
Data Entry Keyers	$49,000	$68,000	$164,000	$234,000	2.1%	0.1%
Office Clerks, General	$54,600	$66,000	$136,000	$187,000	15.0%	0.9%
Statistical Assistants	$66,700	$80,000	$166,000	$228,000	2.5%	0.2%
Other Office and Administrative Support Occupations	$71,700	$86,000	$178,000	$245,000	12.4%	0.8%
Weighted Mean Annual Wage	***$71,700***	**$84,000**	**$168,000**	**$225,000**	**100.0%**	**6.2%**
						90.9%

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[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. EDD data is adjusted by KMA to

[2] Occupation percentages are based on the 2022 National Industry - Specific Occupational Employment survey compiled by the Bureau of Labor Statistics. Wages are based on

[3] Including occupations representing 2% or more of the major occupation group.

[4] Household income estimated based average worker compensation and ratios between employee income and household income identified in Table 3-6.

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
\\sf-fs2\WP\12\12095\014\Parkline occupation and compensation 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 7
ESTIMATED WORKER OCCUPATION DISTRIBUTION, 2022
EXISTING SRI WORKERS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

	Worker Occupation Distribution EXISTING SRI
Major Occupations (2% or more)	
Management Occupations	*15.5%*
Business and Financial Operations Occupations	*12.1%*
Computer and Mathematical Occupations	*11.9%*
Architecture and Engineering Occupations	*31.1%*
Life, Physical, and Social Science Occupations	*12.9%*
Office and Administrative Support Occupations	*6.8%*
Production Occupations	*2.3%*
All Other Worker Occupations - EXISTING SRI	*7.5%*
TOTAL	100.0%

Source: Bureau of Labor Statistics
Keyser Marston Associates, Inc.
\\sf-fs2\WP\12\12095\014\Parkline occupation and compensation 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 8
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
EXISTING SRI WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Occupation [3]	2023 Avg. Worker Compensation[1]	Household Income Estimate [4]			% of Total Occupation Group [2]	% of Total Existing Sri Workers
		One Worker	Two Workers	Three+ Workers		
Page 1 of 3						
Management Occupations						
Chief Executives	$315,500	$330,000	$457,000	$482,000	2.9%	0.4%
General and Operations Managers	$191,600	$199,000	$335,000	$389,000	21.3%	3.3%
Marketing Managers	$222,400	$230,000	$366,000	$410,000	3.6%	0.6%
Sales Managers	$205,600	$213,000	$338,000	$379,000	2.7%	0.4%
Administrative Services Managers	$148,100	$158,000	$287,000	$356,000	2.3%	0.4%
Computer and Information Systems Managers	$245,000	$254,000	$403,000	$451,000	7.8%	1.2%
Financial Managers	$241,900	$251,000	$398,000	$446,000	4.9%	0.8%
Industrial Production Managers	$183,800	$191,000	$321,000	$374,000	2.7%	0.4%
Human Resources Managers	$215,700	$223,000	$355,000	$397,000	2.0%	0.3%
Construction Managers	$149,200	$159,000	$289,000	$358,000	2.5%	0.4%
Architectural and Engineering Managers	$208,500	$216,000	$343,000	$384,000	18.5%	2.9%
Medical and Health Services Managers	$186,800	$194,000	$326,000	$380,000	2.8%	0.4%
Natural Sciences Managers	$242,300	$251,000	$398,000	$446,000	13.3%	2.1%
Managers, All Other	$226,900	$235,000	$373,000	$418,000	7.8%	1.2%
Other Management Occupations	$215,200	$223,000	$354,000	$396,000	4.8%	0.7%
Weighted Mean Annual Wage	***$215,200***	**$223,000**	**$359,000**	**$407,000**	**100.0%**	**15.5%**
Business and Financial Operations Occupations						
Buyers and Purchasing Agents	$103,800	$111,000	$201,000	$249,000	5.6%	0.7%
Compliance Officers	$99,300	$111,000	$215,000	$277,000	4.4%	0.5%
Human Resources Specialists	$111,900	$120,000	$217,000	$269,000	7.3%	0.9%
Logisticians	$92,400	$103,000	$200,000	$258,000	4.3%	0.5%
Project Management Specialists	$146,600	$157,000	$284,000	$352,000	31.2%	3.8%
Management Analysts	$133,100	$142,000	$258,000	$320,000	6.7%	0.8%
Training and Development Specialists	$95,300	$106,000	$207,000	$266,000	2.7%	0.3%
Market Research Analysts and Marketing Specialists	$110,700	$118,000	$214,000	$266,000	6.9%	0.8%
Business Operations Specialists, All Other	$93,600	$104,000	$203,000	$261,000	13.0%	1.6%
Accountants and Auditors	$115,300	$123,000	$223,000	$277,000	11.1%	1.3%
Financial and Investment Analysts	$138,500	$148,000	$268,000	$333,000	2.8%	0.3%
Other Business and Financial Operations Occupations	$120,900	$129,000	$234,000	$290,000	4.0%	0.5%
Weighted Mean Annual Wage	***$120,900***	**$130,000**	**$239,000**	**$299,000**	**100.0%**	**12.1%**
Computer and Mathematical Occupations						
Computer Systems Analysts	$156,000	$162,000	$273,000	$317,000	8.3%	1.0%
Information Security Analysts	$151,100	$157,000	$264,000	$307,000	5.5%	0.7%
Computer and Information Research Scientists	$242,200	$251,000	$398,000	$446,000	3.5%	0.4%
Computer User Support Specialists	$86,100	$96,000	$187,000	$240,000	5.1%	0.6%
Computer Network Architects	$174,900	$182,000	$306,000	$355,000	4.3%	0.5%
Network and Computer Systems Administrators	$136,200	$146,000	$264,000	$327,000	7.8%	0.9%
Computer Programmers	$148,000	$158,000	$286,000	$355,000	3.5%	0.4%
Software Developers	$200,500	$208,000	$330,000	$369,000	35.7%	4.2%
Software Quality Assurance Analysts and Testers	$152,000	$158,000	$266,000	$309,000	3.5%	0.4%
Computer Occupations, All Other	$160,500	$167,000	$280,000	$326,000	6.5%	0.8%
Operations Research Analysts	$116,600	$125,000	$226,000	$280,000	2.9%	0.3%
Statisticians	$165,700	$172,000	$290,000	$337,000	2.9%	0.3%
Data Scientists	$167,600	$174,000	$293,000	$341,000	5.8%	0.7%
Other Computer and Mathematical Occupations	$170,700	$177,000	$298,000	$347,000	4.6%	0.6%
Weighted Mean Annual Wage	***$170,700***	**$178,000**	**$296,000**	**$342,000**	**100.0%**	**11.9%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
Parkline occupation and compensation 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 8
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
EXISTING SRI WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Occupation [3]	2023 Avg. Worker Compensation[1]	Household Income Estimate [4]			% of Total Occupation Group [2]	% of Total Existing Sri Workers
		One Worker	Two Workers	Three+ Workers		
Page 2 of 3						
Architecture and Engineering Occupations						
Surveyors	$106,900	$114,000	$207,000	$257,000	2.6%	0.8%
Aerospace Engineers	$173,100	$180,000	$303,000	$352,000	2.9%	0.9%
Civil Engineers	$122,900	$131,000	$238,000	$295,000	24.2%	7.5%
Computer Hardware Engineers	$189,100	$197,000	$330,000	$384,000	4.2%	1.3%
Electrical Engineers	$176,600	$184,000	$309,000	$359,000	7.4%	2.3%
Electronics Engineers, Except Computer	$173,700	$181,000	$304,000	$353,000	2.6%	0.8%
Environmental Engineers	$136,100	$145,000	$263,000	$327,000	2.2%	0.7%
Industrial Engineers	$135,000	$144,000	$261,000	$324,000	5.2%	1.6%
Mechanical Engineers	$140,700	$150,000	$272,000	$338,000	12.0%	3.7%
Engineers, All Other	$149,300	$160,000	$289,000	$359,000	4.4%	1.4%
Architectural and Civil Drafters	$80,400	$90,000	$174,000	$224,000	5.8%	1.8%
Civil Engineering Technologists and Technicians	$93,100	$104,000	$202,000	$260,000	4.3%	1.3%
Electrical and Electronic Engineering Technicians	$83,900	$93,000	$182,000	$234,000	2.9%	0.9%
Surveying and Mapping Technicians	$90,100	$100,000	$195,000	$252,000	2.4%	0.8%
Other Architecture and Engineering Occupations	$132,100	$141,000	$256,000	$317,000	16.9%	5.2%
Weighted Mean Annual Wage	***$132,100***	**$141,000**	**$253,000**	**$311,000**	**100.0%**	**31.1%**
Life, Physical, and Social Science Occupations						
Biochemists and Biophysicists	$136,500	$146,000	$264,000	$328,000	9.3%	1.2%
Microbiologists	$127,500	$136,000	$247,000	$306,000	2.8%	0.4%
Biological Scientists, All Other	$133,700	$143,000	$259,000	$321,000	8.3%	1.1%
Medical Scientists, Except Epidemiologists	$145,200	$155,000	$281,000	$349,000	20.4%	2.6%
Physicists	$164,600	$171,000	$288,000	$334,000	4.2%	0.5%
Chemists	$129,100	$138,000	$250,000	$310,000	8.8%	1.1%
Environmental Scientists and Specialists, Including Health	$123,100	$132,000	$238,000	$296,000	4.1%	0.5%
Geoscientists, Except Hydrologists and Geographers	$123,200	$132,000	$238,000	$296,000	2.6%	0.3%
Biological Technicians	$76,800	$86,000	$167,000	$214,000	10.8%	1.4%
Chemical Technicians	$65,800	$79,000	$164,000	$225,000	3.0%	0.4%
Life, Physical, and Social Science Technicians, All Other	$87,000	$97,000	$189,000	$243,000	5.9%	0.8%
Other Life, Physical, and Social Science Occupations	$123,300	$132,000	$239,000	$296,000	19.8%	2.5%
Weighted Mean Annual Wage	***$123,300***	**$133,000**	**$242,000**	**$301,000**	**100.0%**	**12.9%**
Office and Administrative Support Occupations						
First-Line Supervisors of Office and Admin. Support Workers	$88,700	$99,000	$192,000	$248,000	8.2%	0.6%
Bookkeeping, Accounting, and Auditing Clerks	$65,700	$79,000	$163,000	$225,000	11.1%	0.8%
Customer Service Representatives	$56,900	$69,000	$142,000	$195,000	4.2%	0.3%
Receptionists and Information Clerks	$47,900	$67,000	$160,000	$228,000	2.1%	0.1%
Production, Planning, and Expediting Clerks	$73,200	$88,000	$182,000	$250,000	5.0%	0.3%
Shipping, Receiving, and Inventory Clerks	$52,500	$63,000	$131,000	$179,000	2.8%	0.2%
Executive Secretaries and Executive Admin. Assistants	$104,500	$112,000	$202,000	$251,000	11.3%	0.8%
Secretaries and Administrative Assistants	$64,600	$78,000	$161,000	$221,000	24.4%	1.7%
Office Clerks, General	$54,600	$66,000	$136,000	$187,000	19.1%	1.3%
Other Office and Administrative Support Occupations	$69,300	$84,000	$172,000	$237,000	11.9%	0.8%
Weighted Mean Annual Wage	***$69,300***	**$82,000**	**$164,000**	**$222,000**	**100.0%**	**6.8%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
Parkline occupation and compensation 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 8
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
EXISTING SRI WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Occupation [3]	2023 Avg. Worker Compensation[1]	Household Income Estimate [4] One Worker	Two Workers	Three+ Workers	% of Total Occupation Group [2]	% of Total Existing Sri Workers
Page 3 of 3						
Production Occupations						
First-Line Supervisors of Production and Operating Workers	$90,000	$100,000	$195,000	$251,000	8.6%	0.2%
Electrical, electronic, and electromechanical assemblers	$53,100	$64,000	$132,000	$182,000	10.6%	0.2%
Miscellaneous Assemblers and Fabricators	$48,600	$68,000	$162,000	$232,000	15.7%	0.4%
Machinists	$76,000	$85,000	$165,000	$212,000	7.9%	0.2%
Welders, Cutters, Solderers, and Brazers	$66,500	$80,000	$165,000	$227,000	4.9%	0.1%
Inspectors, Testers, Sorters, Samplers, and Weighers	$59,600	$72,000	$148,000	$204,000	23.0%	0.5%
Production Workers, All Other	$49,100	$68,000	$164,000	$234,000	4.5%	0.1%
Other Production Occupations	$61,400	$74,000	$153,000	$210,000	24.7%	0.6%
Weighted Mean Annual Wage	***$61,400***	**$75,000**	**$157,000**	**$215,000**	**100.0%**	**2.3%**
						92.5%

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[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. EDD data is adjusted

[2] Occupation percentages are based on the 2022 National Industry - Specific Occupational Employment survey compiled by the Bureau of Labor Statistics. Wages are

[3] Including occupations representing 2% or more of the major occupation group.

[4] Household income estimated based average worker compensation and ratios between employee income and household income identified in Table 3-6.

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
Parkline occupation and compensation 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 9
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
APARTMENT PROPERTY MANAGEMENT WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Representative Occupations [2]	2023 Avg. Worker Compensation[1]	Household Income Estimate [3] One Worker	Two Workers	Three+ Workers	% of Total Prop Mgmt Workers
Property, Real Estate, and Community Association Managers	$101,800	$109,000	$197,000	$244,000	20.0%
Maintenance and Repair Workers, General	$66,000	$80,000	$164,000	$226,000	40.0%
Grounds Maintenance Workers, All Other	$59,900	$72,000	$149,000	$205,000	40.0%
					100.0%

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[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. EDD data is adjusted by KMA to reflect minimum wage. Annual compensation is calculated by EDD by multiplying hourly wages by 40 hours per work week by 52 weeks.

[2] Representative employee occupations selected by KMA from OES data.

[3] Household income estimated based average worker compensation and ratios between employee income and household income identified in Table 3-6.

Sources: U.S. Bureau of Labor Statistics
Keyser Marston Associates, Inc.
\\sf-fs2\WP\12\12095\014\Parkline occupation and compensation 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 10
AVERAGE ANNUAL WORKER COMPENSATION AND ESTIMATED HOUSEHOLD INCOME, 2023
COMMUNITY AMENITY WORKER OCCUPATIONS
PARKLINE - HOUSING NEEDS ASSESSMENT
CITY OF MENLO PARK

Representative Occupations [2]	2023 Avg. Worker Compensation[1]	Household Income Estimate [3] One Worker	Two Workers	Three+ Workers	% of Total Com Amen Workers
Bicycle Repairers	$49,400	$69,000	$165,000	$236,000	50.0%
Food Preparation Workers	$40,600	$57,000	$135,000	$194,000	50.0%
					100.0%

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[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. EDD data is adjusted by KMA to reflect minimum wage. Annual compensation is calculated by EDD by multiplying hourly wages by 40 hours per work week by 52 weeks.

[2] Representative employee occupations selected by KMA from OES data.

[3] Household income estimated based average worker compensation and ratios between employee income and household income identified in Table 3-6.

Sources: U.S. Bureau of Labor Statistics

APPENDIX A TABLE 11
WORKER OCCUPATION DISTRIBUTION
SERVICES TO HOUSEHOLDS EARNING $150K - $200K, RESIDENT SERVICES
HOUSING NEEDS ASSESSMENT - PARKLINE PROJECT
MENLO PARK, CA

Major Occupations (2% or more)	**Worker Occupation Distribution[1] Services to Households Earning $150k - $200k**
Management Occupations	*4.3%*
Business and Financial Operations Occupations	*4.4%*
Educational Instruction and Library Occupations	*3.3%*
Healthcare Practitioners and Technical Occupations	*6.0%*
Healthcare Support Occupations	*7.1%*
Food Preparation and Serving Related Occupations	*9.9%*
Building and Grounds Cleaning and Maintenance Occupations	*3.9%*
Personal Care and Service Occupations	*6.2%*
Sales and Related Occupations	*12.7%*
Office and Administrative Support Occupations	*12.1%*
Installation, Maintenance, and Repair Occupations	*4.8%*
Transportation and Material Moving Occupations	*9.3%*
All Other Worker Occupations - Services to Households Earning $150k - $200k	*16.0%*
INDUSTRY TOTAL	100.0%

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[1] Distribution of employment by industry is per the IMPLAN model and the distribution of occupational employment within those industries is based on the Bureau of Labor Statistics Occupational Employment Survey.

Source: Bureau of Labor Statistics, IMPLAN
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 12
AVERAGE ANNUAL WORKER COMPENSATION, 2023
SERVICES TO HOUSEHOLDS EARNING $150K - $200K
HOUSING NEEDS ASSESSMENT - PARKLINE PROJECT
MENLO PARK, CA

Occupation [3]	2023 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total No. of Service Workers
Page 1 of 4			
Management Occupations			
General and Operations Managers	$185,700	38.5%	1.6%
Sales Managers	$205,600	4.6%	0.2%
Administrative Services and Facilities Managers	$134,400	3.1%	0.1%
Computer and Information Systems Managers	$245,000	3.1%	0.1%
Financial Managers	$241,900	9.3%	0.4%
Food Service Managers	$77,300	3.8%	0.2%
Medical and Health Services Managers	$186,800	5.4%	0.2%
Property, Real Estate, and Community Association Managers	$101,800	8.0%	0.3%
Social and Community Service Managers	$95,400	3.0%	0.1%
All other Management Occupations (Avg. All Categories)	$176,700	21.2%	0.9%
Weighted Mean Annual Wage	***$176,700***	**100.0%**	**4.3%**
Business and Financial Operations Occupations			
Human Resources Specialists	$111,900	5.3%	0.2%
Management Analysts	$133,100	5.1%	0.2%
Training and Development Specialists	$95,300	3.6%	0.2%
Market Research Analysts and Marketing Specialists	$110,700	8.0%	0.4%
Project Management and Business Operations Specialists	$101,400	10.3%	0.5%
Accountants and Auditors	$115,300	16.7%	0.7%
Personal Financial Advisors	$183,200	11.4%	0.5%
Loan Officers	$102,700	5.7%	0.3%
Financial, Investment, and Risk Specialists	$130,200	11.2%	0.5%
All Other Business and Financial Operations Occupations (Avg. All Categorie	$124,200	22.6%	1.0%
Weighted Mean Annual Wage	***$124,200***	**100.0%**	**4.4%**
Educational Instruction and Library Occupations			
Career/Technical Education Teachers, Postsecondary	$101,800	3.6%	0.1%
Preschool Teachers, Except Special Education	$57,900	20.8%	0.7%
Elementary School Teachers, Except Special Education	$98,600	5.8%	0.2%
Secondary School Teachers	$96,600	4.1%	0.1%
Self-Enrichment Teachers	$66,300	12.3%	0.4%
Substitute Teachers, Short-Term	$60,600	3.3%	0.1%
Tutors and Teachers and Instructors, All Other*	$45,600	8.0%	0.3%
Teaching Assistants, Except Postsecondary*	$47,300	15.7%	0.5%
All Other Educational Instruction and Library Occupations (Avg. All Categorie	$63,400	26.2%	0.9%
Weighted Mean Annual Wage	***$63,400***	**100.0%**	**3.3%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department, IMPLAN

APPENDIX A TABLE 12
AVERAGE ANNUAL WORKER COMPENSATION, 2023
SERVICES TO HOUSEHOLDS EARNING $150K - $200K
HOUSING NEEDS ASSESSMENT - PARKLINE PROJECT
MENLO PARK, CA

Occupation [3]	2023 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total No. of Service Workers
Page 2 of 4			
Healthcare Practitioners and Technical Occupations			
Pharmacists	$171,800	5.5%	0.3%
Physical Therapists	$131,600	4.1%	0.2%
Registered Nurses	$174,900	22.8%	1.4%
Physicians and Ophthalmologists, Except Pediatric	$194,000	3.8%	0.2%
Dental Hygienists	$128,400	6.1%	0.4%
Pharmacy Technicians	$64,100	7.9%	0.5%
Veterinary Technologists and Technicians	$59,600	3.9%	0.2%
Licensed Practical and Licensed Vocational Nurses	$84,200	6.8%	0.4%
All Other Healthcare Practitioners and Technical Occupations (Avg. All Cate	$136,300	39.0%	2.3%
Weighted Mean Annual Wage	***$136,300***	**100.0%**	**6.0%**
Healthcare Support Occupations			
Home Health and Personal Care Aides	$36,200	60.4%	4.3%
Nursing Assistants	$61,100	9.0%	0.6%
Massage Therapists	$82,200	4.1%	0.3%
Dental Assistants	$66,200	8.0%	0.6%
Medical Assistants	$61,600	8.3%	0.6%
All Other Healthcare Support Occupations (Avg. All Categories)	$45,800	10.2%	0.7%
Weighted Mean Annual Wage	***$45,800***	**100.0%**	**7.1%**
Food Preparation and Serving Related Occupations			
Supervisors of Food Preparation and Serving Workers	$55,000	7.6%	0.7%
Cooks, Fast Food	$39,500	4.6%	0.4%
Cooks, Restaurant	$44,900	11.0%	1.1%
Food Preparation Workers	$40,600	6.7%	0.7%
Bartenders	$44,200	3.6%	0.4%
Fast Food and Counter Workers	$40,400	31.3%	3.1%
Waiters and Waitresses	$40,700	19.8%	2.0%
Dishwashers	$41,200	3.7%	0.4%
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	$39,500	3.4%	0.3%
All Other Food Preparation and Serving Related Occupations (Avg. All Cate	$42,300	8.3%	0.8%
Weighted Mean Annual Wage	***$42,300***	**100.0%**	**9.9%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department, IMPLAN
Keyser Marston Associates, Inc.
\\sf-fs2\WP\12\12095\014\HNA - Parkline 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 12
AVERAGE ANNUAL WORKER COMPENSATION, 2023
SERVICES TO HOUSEHOLDS EARNING $150K - $200K
HOUSING NEEDS ASSESSMENT - PARKLINE PROJECT
MENLO PARK, CA

Occupation [3]	2023 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total No. of Service Workers
Page 3 of 4			
Building and Grounds Cleaning and Maintenance Occupations			
Supervisors of Landscaping, Lawn, & Groundskeeping Workers	$80,200	3.6%	0.1%
Janitors and Cleaners	$47,000	45.5%	1.8%
Maids and Housekeeping Cleaners	$48,700	8.2%	0.3%
Pest Control Workers	$59,000	4.9%	0.2%
Landscaping and Groundskeeping Workers	$52,900	31.1%	1.2%
All Other Building and Grounds Cleaning and Maintenance Occupations (Av	$51,000	6.8%	0.3%
Weighted Mean Annual Wage	***$51,000***	**100.0%**	**3.9%**
Personal Care and Service Occupations			
Supervisors of Personal Service, Entert. & Rec. Workers	$61,900	5.7%	0.4%
Animal Caretakers	$44,600	20.6%	1.3%
Amusement and Recreation Attendants	$40,300	3.6%	0.2%
Hairdressers, Hairstylists, and Cosmetologists	$51,400	21.4%	1.3%
Manicurists and Pedicurists	$38,600	7.0%	0.4%
Childcare Workers	$42,300	13.0%	0.8%
Exercise Trainers and Group Fitness Instructors	$82,800	10.3%	0.6%
Recreation Workers	$46,900	3.7%	0.2%
All Other Personal Care and Service Occupations (Avg. All Categories)	$51,200	14.8%	0.9%
Weighted Mean Annual Wage	***$51,200***	**100.0%**	**6.2%**
Sales and Related Occupations			
First-Line Supervisors of Retail Sales Workers	$59,900	9.2%	1.2%
Cashiers	$40,900	26.8%	3.4%
Counter and Rental Clerks	$46,900	4.7%	0.6%
Retail Salespersons	$45,800	36.3%	4.6%
Securities, Commodities, and Financial Services Sales	$151,700	5.1%	0.6%
Sales Representatives	$129,800	5.5%	0.7%
Sales Reps., Wholesale & Manuf., Except Tech. and Scientific	$94,200	3.2%	0.4%
All Other Sales and Related Occupations (Avg. All Categories)	$58,600	9.3%	1.2%
Weighted Mean Annual Wage	***$58,600***	**100.0%**	**12.7%**
Office and Administrative Support Occupations			
First-Line Supervisors of Office and Admin. Support Workers	$88,700	7.2%	0.9%
Bookkeeping, Accounting, and Auditing Clerks	$65,700	8.0%	1.0%
Customer Service Representatives	$56,900	14.5%	1.8%
Receptionists and Information Clerks	$47,900	11.4%	1.4%
Medical Secretaries and Administrative Assistants	$57,100	4.4%	0.5%
Secretaries and Administrative Assistants	$64,600	10.7%	1.3%
Office Clerks, General	$54,600	17.0%	2.1%
All Other Office and Administrative Support Occupations (Avg. All Categorie	$60,200	26.7%	3.2%
Weighted Mean Annual Wage	***$60,200***	**100.0%**	**12.1%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department, IMPLAN

APPENDIX A TABLE 12
AVERAGE ANNUAL WORKER COMPENSATION, 2023
SERVICES TO HOUSEHOLDS EARNING $150K - $200K
HOUSING NEEDS ASSESSMENT - PARKLINE PROJECT
MENLO PARK, CA

Occupation [3]	2023 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total No. of Service Workers
Page 4 of 4			
Installation, Maintenance, and Repair Occupations			
Supervisors of Mechanics, Installers, and Repairers	$99,700	8.1%	0.4%
Automotive Body and Related Repairers	$68,300	12.1%	0.6%
Automotive Service Technicians and Mechanics	$71,200	30.8%	1.5%
Bus and Truck Mechanics and Diesel Engine Specialists	$83,000	5.2%	0.3%
Maintenance and Repair Workers, General	$66,000	20.2%	1.0%
All Other Installation, Maintenance, and Repair Occupations (Avg. All Categc	$73,200	23.4%	1.1%
Weighted Mean Annual Wage	***$73,200***	**100.0%**	**4.8%**
Transportation and Material Moving Occupations			
Supervisors of Transportation and Material-Moving Workers	$70,400	4.7%	0.4%
Driver/Sales Workers	$48,000	3.7%	0.3%
Heavy and Tractor-Trailer Truck Drivers	$68,400	9.0%	0.8%
Light Truck Drivers	$53,800	6.1%	0.6%
Passenger Vehicle Drivers	$37,800	9.1%	0.8%
Parking Attendants	$42,300	10.6%	1.0%
Cleaners of Vehicles and Equipment	$44,700	10.5%	1.0%
Laborers and Freight, Stock, and Material Movers, Hand	$48,100	11.4%	1.1%
Stockers and Order Fillers	$45,700	16.8%	1.6%
All Other Transportation and Material Moving Occupations (Avg. All Categori	$49,200	18.0%	1.7%
Weighted Mean Annual Wage	***$49,200***	**100.0%**	**9.3%**
			84.0%

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[1] The methodology utilized by the Bureau of Labor Statistics (BLS) assumes hourly paid employees are employed full-time. Annual compensation is calculated by multiplying hourly wages by 40 hours per work week by 52 weeks.

[2] Occupation percentages are based on the National Industry - Specific Occupational Employment survey compiled by the Bureau of Labor Statistics. Wages are based on Occupational Employment Survey data applicable to San Mateo County as of First Quarter 2023.

[3] Including occupations representing 3% or more of the major occupation group

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department, IMPLAN
Keyser Marston Associates, Inc.
\\sf-fs2\WP\12\12095\014\HNA - Parkline 10-2-23; 4/12/2024; dd

APPENDIX A TABLE 13
COMMUTE PATTERNS FOR OTHER SAN MATEO COUNTY JURISDICTIONS
HOUSING NEEDS ASSESSMENT - PARKLINE PROJECT
MENLO PARK, CA

	Pct. of All Workers who Live & Work in City
	ACS 2017-21
San Mateo County [1]	
Burlingame	9.7%
Daly City	31.9%
Foster City	12.0%
Menlo Park	5.3%
Redwood City	16.9%
San Bruno	18.5%
San Carlos	12.8%
San Mateo	22.5%
South San Francisco	11.4%
Select Cities in Santa Clara County	
Mountain View	12.1%
Palo Alto	8.8%

Notes:
1. Percentages computed excluding those workers who worked from home.

Sources:
US Census Bureau, ACS 2017-21 5yr estimate.

Appendix 3.16-1

Water Supply Assessment

FINAL REPORT | APRIL 2024

Parkline Water Supply Assessment

PREPARED FOR

Menlo Park Municipal Water

CITY OF
MENLO PARK

PREPARED BY

WEST YOST
Water. Engineered.

Parkline Water Supply Assessment

Prepared for

Menlo Park Municipal Water

Project No. 1070-60-22-01

REGISTERED PROFESSIONAL ENGINEER
ELIZABETH TEIEN DRAYER
No. C46872
Exp. 6-30-25
CIVIL
STATE OF CALIFORNIA

Elizabeth Drayer

	April 29, 2024
Project Manager: Elizabeth Drayer, PE	Date
Rhodora N.	April 29, 2024
QA/QC Review: Rhodora Biagtan, PE	Date

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FINAL REPORT | APRIL 2024

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Appendix B. SRI-Parkline Existing Water Demand Summary Table (February 2024)

Appendix C. Regional Water System Supply Reliability and UWMP 2020 Memorandum (June 2021)

LIST OF ACRONYMS AND ABBREVIATIONS

AWSP	Alternative Water Supply Planning Program
BAWSCA	Bay Area Water Supply and Conservation Agency
CEQA	California Environmental Quality Act
City	City of Menlo Park
CWC	California Water Code
DWR	State of California Department of Water Resources
EIR	Environmental Impact Report
FERC	Federal Energy Regulatory Commission
gpm	Gallons Per Minute
HEU	Housing Element Update
ISG	Individual Supply Guarantee
MG	Million Gallons
MG/yr	Million Gallons Per Year
mgd	Million Gallons Per Day
MOU	Memorandum of Understanding
MPMW	Menlo Park Municipal Water
Project Site	The location of Parkline (333 Ravenswood Avenue)
Proposed Project	Parkline
R&D	Research and Development
RWS	San Francisco Public Utilities Commission Regional Water System
SB	Senate Bill
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
WBSD	West Bay Sanitary District
WSA	Water Supply Assessment
WSAP	Water Shortage Allocation Plan
WSCP	Water Shortage Contingency Plan
WSIP	Water System Improvement Program

Parkline Water Supply Assessment

EXECUTIVE SUMMARY

Overview

This Water Supply Assessment (WSA) has been prepared in accordance with California Water Code sections 10910 through 10915 in connection with Parkline (Proposed Project). The Project Site is located at 333 Ravenswood Avenue in the City of Menlo Park (City) within the Lower Zone of the Menlo Park Municipal Water (MPMW) existing service area (Project Site). It is currently occupied by SRI International's research campus. The Proposed Project would redevelop SRI International's existing research campus into the following:

- A new office/research and development (R&D) campus with no increase in office/ R&D square footage
- Up to 550 new rental dwelling units at a range of affordability levels (comprised of 450 multi-family units and townhomes, and a proposed land dedication to an affordable housing developer that could accommodate up to 100 affordable units)
- New bicycle and pedestrian connections
- Open space

The Proposed Project would demolish all buildings on SRI International's Campus, excluding Buildings P, S, and T, which would remain onsite and be operated by SRI International and its tenants. Because future commercial tenants in the Office/R&D District are not yet known, proposed commercial buildings in the Office/R&D District are designed to accommodate either office uses, R&D or life science uses, or a combination of both. Therefore, this WSA evaluates two buildout scenarios within the Office R&D District: a 100 percent office scenario (referred to hereafter as "Project Scenario 1") and a 100 percent R&D scenario (referred to hereafter as "Project Scenario 2"). This ensures the Proposed Project's maximum potential impact and any future commercial tenant mix is within the scope of the WSA analysis, as R&D uses are anticipated to utilize more water than office uses.

In addition, a project variant could reasonably be approved instead of the Proposed Project: the Increased Development Variant (Project Variant). The Project Variant is a variation of the Proposed Project at the same Project Site and generally has the same objectives, background, and development controls, but with several specific differences:

1. The Project Variant would include up to 250 additional residential rental dwelling units compared to the two project scenarios (an increase from 550 to 800 units);
2. The Project Variant would include a 2-million-gallon underground emergency water reservoir that would be built and operated by MPMW;
3. The Project Variant would reduce the underground parking footprint within the site, both by removing underground parking from the multifamily residential buildings and removing the underground parking connection between Buildings Office/R&D 1 and Office/R&D 2. As a result, the parking garages PG1 and PG2 increase in square footage and height as compared to the Proposed Project; and
4. The Project Variant would include an additional parcel located at 201 Ravenswood Avenue to create a continuous project frontage along Ravenswood Avenue.

This WSA evaluates both Project Scenario 2 and the Project Variant in detail to provide a conservative analysis. To provide a conservative estimate, the water demand for the Project Variant assumes a 100 percent R&D Scenario within the Office R&D District, similar to the Project Scenario 2.

Projected Water Demands

The projected water demands for buildout of the Proposed Project were estimated by PAE in a memo dated February 2024, which is included in Appendix A of this WSA. For the purposes of this WSA, only net new demand associated with the Proposed Project needs to be evaluated, since existing demand is already accounted for in MPMW's current water supply planning. Existing demands associated with SRI International's research campus, which currently occupies the Project Site, were subtracted from the projected water demands for the Proposed Project. The existing demand associated with the property at 201 Ravenswood Avenue was also subtracted for the Project Variant only. In addition, a WSA that was recently prepared for the City's Housing Element Update (HEU; ESA, 2022) included 400 dwelling units associated with Parkline. Since those 400 dwelling units are already specifically accounted for in the HEU WSA, that means the projected Parkline water demand that is associated with the HEU is accounted for separate and apart from the projected water demands for buildout of the Proposed Project. For the purposes of this WSA, the demand associated with the HEU is not included in the analysis, so it is not double counted.

Based on the above, the water demand for the Proposed Project considered in this WSA is as follows:

- 10 million gallons per year (MG/yr) for the Project Scenario 1
- 39 MG/yr for the Project Scenario 2
- 49 MG/yr for the Project Variant

In addition, a summary of the calculations leading to the estimated water demands shown above is presented in the body of this WSA within Table 2-1 *Projected Water Demand for the Proposed Project and Project Variant*. Of the two buildout scenarios for the Proposed Project, Project Scenario 2 would result in the greatest water demand; thus, Project Scenario 2 and the Project Variant are evaluated in detail in this WSA. Potable water is assumed to be used to meet the projected water demands. No recycled water infrastructure is currently in place nor planned for installation near the Project Site.

Note that when the MPMW 2020 UWMP was being prepared, the Proposed Project was not accounted for in the growth forecasts, so its water demand was not included. MPMW's 2020 UWMP also did not account for the demand associated with the City's latest HEU, as explained in the separate WSA for the HEU prepared by ESA in November 2022. To address this issue, consistent with CWC Section 10910(c)(3), this WSA provides an assessment of supply for MPMW during normal, single dry, and multiple dry water years for a 20-year projection and compares it to existing and planned future demands, including the demand associated with the City's HEU (which includes 400 dwelling units at Parkline) and the demand associated with the Proposed Project.

Water Supply Availability and Reliability

MPMW is a Wholesale Customer of the San Francisco Public Utilities Commission (SFPUC). MPMW purchases all its potable water supplies from the Regional Water System (RWS), which is operated by the SFPUC. The availability and reliability of MPMW's water supplies as described in this WSA are based primarily on information contained in the MPMW 2020 UWMP and the SFPUC 2020 UWMP. The MPMW 2020 UWMP is incorporated by reference into this WSA.

The reliability of the SFPUC RWS supply is highly dependent on the assumption of whether the 2018 Bay-Delta Plan Amendment is implemented. The Bay-Delta Plan Amendment was adopted in December 2018 by the State Water Resources Control Board (SWRCB) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 40 percent of the "unimpaired flow" on the three tributaries from February through June in every year type, whether wet, normal, dry, or critically dry. The implementation of the Bay-Delta Plan Amendment significantly impacts the SFPUC RWS supply reliability in dry years; however, the actual implementation of the Bay-Delta Plan Amendment is uncertain. In November 2022, key stakeholders signed a Memorandum of Understanding (MOU) indicating a mutual agreement among the signatories to commit to collaborate with the state. While a Voluntary Agreement is still not finalized, the signing of a MOU signals that stakeholders are committed to reaching an agreement.

Due to the uncertainties surrounding the implementation of the Bay-Delta Plan Amendment, this WSA presents findings for two supply alternatives, one assuming the Bay-Delta Plan Amendment is implemented and one assuming that the Bay-Delta Plan Amendment is not implemented.

Under the scenario where it is assumed the Bay-Delta Plan Amendment is implemented, the following may occur:

- **Normal Years (Project Scenario 2)**: Under normal years, the total projected water supplies will meet the projected water demand associated with Project Scenario 2, in addition to demand associated with the HEU and MPMW's existing and planned future uses through 2040.
- **Dry Years (Project Scenario 2)**: For MPMW with Project Scenario 2 and the HEU demand, supply shortfalls are projected in single dry years (ranging from 34 to 38 percent) and in multiple dry years (ranging from 34 to 48 percent) through 2040. Although the MPMW 2020 UWMP only projected supplies and demands through 2040, similar supply shortfalls occur through 2045 based on SFPUC's analysis.
- **Normal Years (Project Variant)**: Under normal years, the total projected water supplies will meet the projected water demand associated with the Project Variant, in addition to demand associated with the HEU and MPMW's existing and planned future uses through 2040.
- **Dry Years (Project Variant)**: For MPMW with the Project Variant and the HEU demand, supply shortfalls are projected in single dry years (ranging from 34 to 39 percent) and in multiple dry years (ranging from 34 to 49 percent) through 2040. Although the MPMW 2020 UWMP only projected supplies and demands through 2040, similar supply shortfalls occur through 2045 based on SFPUC's analysis.

As further described in this WSA, with the implementation of the Bay-Delta Plan Amendment, significant supply shortfalls are projected in dry years for all agencies that receive water supplies from the SFPUC RWS, as well as other agencies whose water supplies would be affected by the Amendment. If supply shortfalls do occur under this scenario, MPMW expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its Water Shortage Contingency Plan (WSCP). The projected single dry-year shortfalls for Project Scenario 2 or the Project Variant would require implementation of Stage 4 of the MPMW WSCP, and the projected multiple dry-year shortfalls would require implementation of Stage 4 or 5 of the MPMW WSCP.

Under the scenario where it is assumed the Bay-Delta Plan Amendment is not implemented, the following may occur:

- **Normal Years (Project Scenario 2)**: Under normal years, the total projected water supplies will meet the projected water demand associated with Project Scenario 2, in addition to demand associated with the HEU and MPMW's existing and planned future uses through 2040.
- **Dry Years (Project Scenario 2)**: For MPMW with Project Scenario 2 and the HEU demand, supply shortfalls are projected in single and multiple dry years (ranging from less than 1 to 5 percent) through 2040. Although the MPMW 2020 UWMP only projected supplies and demands through 2040, similar supply shortfalls occur through 2045 based on SFPUC's analysis. A 16.5 percent supply shortfall is projected during the fourth and fifth consecutive dry years for base year 2045 based on SFPUC's analysis. With the addition of the Proposed Project and HEU demands, this shortfall could be greater than 16.5 percent.
- **Normal Years (Project Variant)**: Under normal years, the total projected water supplies will meet the projected water demand associated with the Project Variant, in addition to demand associated with the HEU and MPMW's existing and planned future uses through 2040.
- **Dry Years (Project Variant)**: For MPMW with the Project Variant and the HEU demand, supply shortfalls are projected in single and multiple dry years (ranging from 1 to 6 percent) through 2040. Although the MPMW 2020 UWMP only projected supplies and demands through 2040, similar supply shortfalls occur through 2045 based on SFPUC's analysis. A 16.5 percent supply shortfall is projected during the fourth and fifth consecutive dry years for base year 2045 based on SFPUC's analysis. With the addition of the Proposed Project and HEU demands, this shortfall could be greater than 16.5 percent.

These projected supply shortfalls are significantly less than the projected supply shortfalls if the Bay-Delta Plan Amendment is implemented. If supply shortfalls do occur under this scenario, MPMW expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its WSCP. The projected single and multiple dry year shortfalls would require implementation of Stage 1 of the MPMW WSCP for both Project Scenario 2 and the Project Variant, except for a multiple dry year shortfall in 2045, which would require implementation of Stage 2 or 3[1] of the MPMW WSCP. Under all scenarios, the Proposed Project and the Project Variant would be subject to the same water conservation and water use restrictions as other water users within the MPMW system.

As described in this WSA, the SFPUC is implementing an Alternative Water Supply Planning Program to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities on the RWS. Also, MPMW is implementing an Emergency Water Storage/Supply Project to provide a backup water supply to MPMW's Lower Zone, where the Project Site is located.

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[1] Assumes the 16.5 percent shortfall from the SFPUC analysis is added to any of the shortfalls predicted for MPMW between 2025 and 2040, which range from 1 to 6 percent.

1.0 INTRODUCTION

Parkline (Proposed Project) would include a new office/research and development (R&D) campus with no increase in office/R&D square footage; up to 550 new rental dwelling units at a range of affordability levels (comprised of 450 multi-family units and townhomes, and a proposed land dedication to an affordable housing developer that could accommodate up to 100 affordable units); new bicycle and pedestrian connections; approximately 26 acres of the Project Site to be available as open space; removal and planting of trees resulting in a net increase in total trees on the Project Site; and decommissioning of a 6-megawatt natural gas cogeneration plant. The Proposed Project would demolish all buildings on the Project Site, which is SRI International’s existing campus, excluding Buildings P, S, and T, which would remain onsite and be operated by SRI International and its tenants.

In addition, the City of Menlo Park (City) is also evaluating a project variant, which could reasonably be approved instead of the Proposed Project, which is referred to as the Increased Development Variant (Project Variant). The Project Variant would include up to 250 additional residential rental dwelling units compared to the two project scenarios (an increase from 550 to 800 units); a 2-million-gallon underground emergency water reservoir that would be built and operated by Menlo Park Municipal Water (MPMW); and inclusion of an additional parcel located at 201 Ravenswood Avenue as part of the Project Site to create a continuous project frontage along Ravenswood Avenue.

The purpose of this Water Supply Assessment (WSA) is to support the Environmental Impact Report (EIR) prepared by the City for the Proposed Project.

1.1 Legal Requirement for a Water Supply Assessment

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 were companion measures which sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

SB 610 amended California Water Code Sections 10910 through 10915 (inclusive) to require lead agencies conducting environmental review under CEQA for a proposed development project[2] that meets specified criteria to:

- Identify any public water purveyor that may supply water for the proposed development project
- Request a WSA from the identified water purveyor

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[2] The definition of a “project” subject to the requirement to prepare a WSA is provided in Water Code Section 10912(a) and is discussed further in Section 3.1 of this WSA.

The purpose of a WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the proposed project, while still meeting the water purveyor's existing and planned future uses. Water Code Sections 10910 through 10915 set forth the specific information that must be included in a WSA.

SB 221 amended State law (California Government Code Section 66473.7) to require that approval by a city or county of certain residential subdivisions[3] requires an affirmative written verification of sufficient water supply. SB 221 was intended as a failsafe mechanism to ensure that collaboration on finding the needed water supplies to serve a new large residential subdivision occurs before construction begins.

1.2 Need for and Purpose of Water Supply Assessment

The purpose of this WSA is to perform the evaluation required by SB 610 (Water Code Sections 10910 through 10915) in connection with the Proposed Project, located within the MPMW service area. This WSA does not reserve water, or function as a "will serve" letter or any other form of commitment to supply water (see Water Code Section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable policies and procedures, consistent with existing law.

1.3 Water Supply Assessment Preparation, Format, and Organization

The format of this WSA is intended to follow Water Code Sections 10910 through 10915 to clearly delineate compliance with the specific requirements for a WSA. This WSA includes the following sections:

Section 1:	Introduction
Section 2:	Description of the Proposed Project
Section 3:	Required Determinations
Section 4:	Menlo Park Municipal Water System
Section 5:	Menlo Park Municipal Water Demands
Section 6:	Menlo Park Municipal Water Supplies
Section 7:	Water Supply Reliability
Section 8:	Determination of Water Supply Sufficiency Based on the Requirements of SB 610
Section 9:	Verification of Water Supply Sufficiency Based on the Requirements of SB 221
Section 10:	Water Supply Assessment Approval Process
Section 11:	References

Relevant citations of Water Code sections 10910 through 10915 are included throughout this WSA in *italics* to demonstrate compliance with the specific requirements of SB 610.

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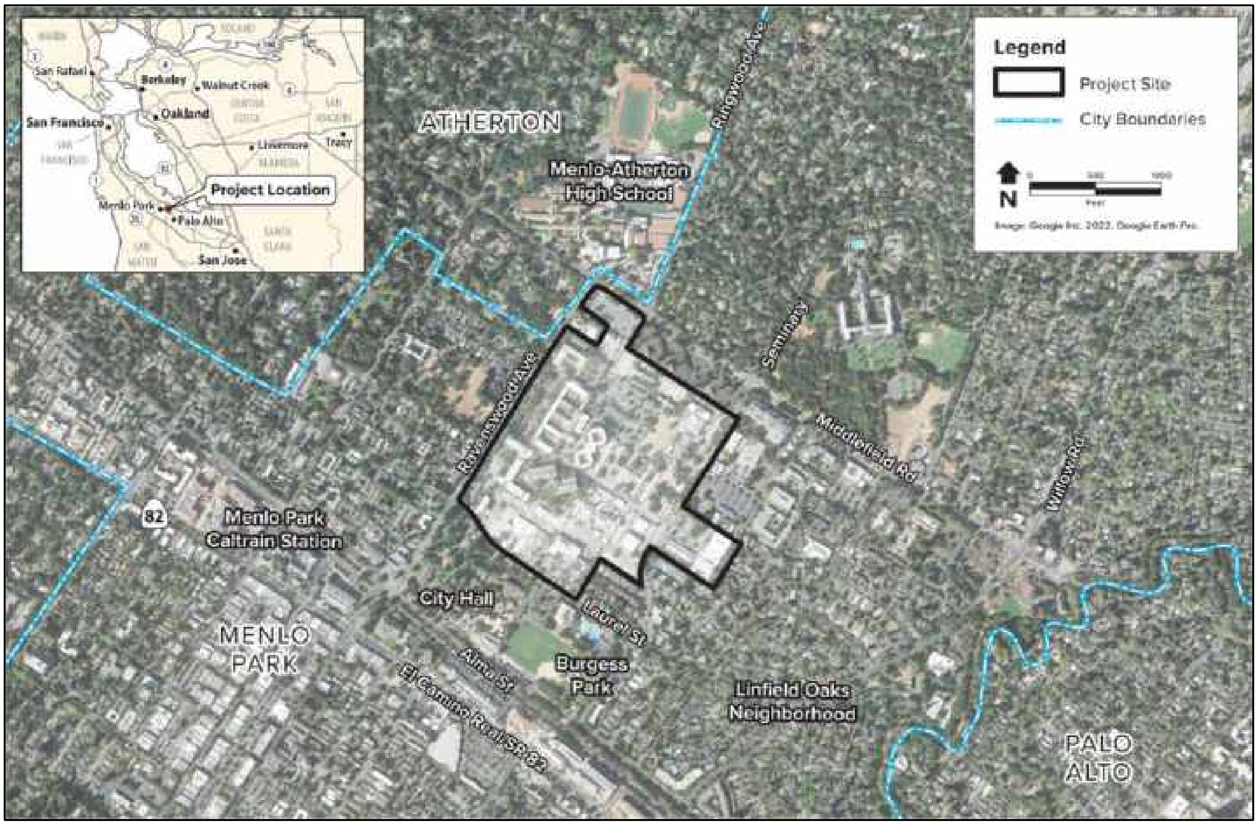
[3] Per Government Code Section 66473.7(a)(1) subdivision means a proposed residential development of more than 500 dwelling units.

2.0 DESCRIPTION OF THE PROPOSED PROJECT

The following sections describe the Project, including its location, proposed land uses, and projected water demand.

2.1 Proposed Project Location, Project Overview, Project Variant Overview

The 63.2-acre Project Site is located at 333 Ravenswood Avenue[4] in the City of Menlo Park within the MPMW existing service area. The Project Site includes SRI International's research campus, which consists of 38 buildings with approximately 1.38 million square feet of mostly R&D space and areas for supporting uses. The Project Site is between El Camino Real and Middlefield Road, near the downtown area and Menlo Park Caltrain station. The Project Site consists of five parcels (Assessor's Parcel Numbers 062-390-660, 062-390-670, 062-390-730, 062-390-760, and 062-390-780). The location of the Project Site is shown on Figure 2-1. As described below, the Project Variant would be expanded to also include the parcel located at 201 Ravenswood Avenue.



Source: ICF, 2023

Figure 2-1. Project Site Location

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[4] The Project Site also includes the addresses 301 Ravenswood Avenue and 555 and 565 Middlefield Road.

The Proposed Project would redevelop the SRI International Campus by creating a new office/R&D campus with no increase in office/R&D square footage; up to 550 new rental dwelling units at a range of affordability levels; new bicycle and pedestrian connections; and open space. The Proposed Project would demolish 35 of the 38 existing buildings on the Project Site; existing Buildings P, S, and T would remain onsite and be operated by SRI International and its tenants,[5] and a 6-megawatt natural gas cogeneration plant would be decommissioned. In total, the Proposed Project would result in approximately 1,768,802 square feet of mixed-use development, with approximately 1,093,602 square feet of office/R&D uses and approximately 675,200 square feet of residential uses. Approximately 26 acres of open space areas and supporting amenities would be developed at the Project Site, including a network of publicly-accessible bicycle and pedestrian trails, open spaces, and active/passive recreational areas that would be available to the public. In addition, the Proposed Project would include community-oriented facilities, such as a community playing field, a children's playground area, and a community amenity building that would accommodate retail uses.

The Proposed Project would organize land uses generally within two land use districts on the Project Site, consisting of (1) an approximately 10-acre Residential District in the southwestern portion of the Project Site, and (2) an approximately 53.2-acre Office/R&D District in the remainder of the Project Site. Because future commercial tenants in the Office/R&D District are not yet known, proposed commercial buildings in the Office/R&D District are designed to accommodate either office uses, R&D or life science uses, or a combination of both. Therefore, this WSA evaluates two buildout scenarios within the Office R&D District: a 100 percent office scenario (referred to hereafter as "Project Scenario 1") and a 100 percent R&D scenario (referred to hereafter as "Project Scenario 2"). This ensures the Proposed Project's maximum potential impact and any future commercial tenant mix is within the scope of the WSA analysis. The scenario that results in the greatest water demand (i.e., Project Scenario 2) is evaluated in this WSA, to be conservative. The conceptual site plan for the Proposed Project (Project Scenarios 1 and 2) is shown on Figure 2-2.

---

[5] SRI International is proposing to construct tenant improvements at Buildings P, S, and T, as well as related site utility work, to modernize the buildings for SRI International's near-term and ongoing operations. The proposed tenant improvements in Buildings P, S, and T are not part of the Proposed Project.

Source: Studios Architecture, OJB, Kier+Wright, 2023

Figure 2-2. Proposed Project (Scenarios 1 and 2) Conceptual Site Plan

In addition, a project variant could reasonably be approved instead of the Proposed Project: the Increased Development Variant (Project Variant). The Project Variant is a variation of the Proposed Project at the same Project Site and generally has the same objectives, background, and development controls, but with several specific differences:

1. The Project Variant would include up to 250 additional residential rental dwelling units compared to the two Project Scenarios (an increase from 550 to 800 units);
2. The Project Variant would include a two-million-gallon underground emergency water reservoir that would be built and operated by MPMW;
3. The Project Variant would reduce the underground parking footprint within the site, both by removing underground parking from the multifamily residential buildings and removing the underground parking connection between Buildings Office/R&D 1 and Office/R&D 2. As a result, the parking garages PG1 and PG2 increase in square footage and height as compared to the Proposed Project; and
4. The Project Variant site plan would expand to include an additional parcel located at 201 Ravenswood Avenue to create a continuous project frontage along Ravenswood Avenue. The existing First Church of Christ, Scientist currently located on that parcel would be demolished.

The Project Variant also includes two residential swimming pools to be located within the multifamily residential buildings. Besides the items discussed above, the Project Variant would not change many of the other basic characteristics of the Proposed Project. For example, the total office/R&D development in the Office/R&D District would remain the same as the Proposed Project.

The Project Variant would be available for selection by the Project Sponsor (Lane Partners) and decision-makers as part of an approval action. The City could approve a modified version of the Project Variant with some or all of the above components. For the purposes of the WSA, the Project Variant includes all three components to ensure a complete analysis.

Under the Project Variant, the same existing buildings would be demolished (approximately 1,093,602 square feet) and the same existing buildings would be retained (Buildings P, S, and T, totaling approximately 286,730 square feet). The emergency water reservoir would have a recreational open space area above it, and would include a pump station building, surge tank, and a well head. The conceptual site plan for the Project Variant is shown on Figure 2-3.

Source: Studios Architecture, OJB, Kier+Wright, 2024

Figure 2-3. Project Variant Conceptual Site Plan

2.2 Projected Water Demand for the Proposed Project and Project Variant

As discussed above, this WSA evaluates two buildout scenarios within the Office R&D District (Project Scenario 1 and Project Scenario 2) as well as the Project Variant. Water demand was projected for the two buildout scenarios and the Project Variant by PAE in a memo dated February 2024, which is included in Appendix A of this WSA. The sources and methodology used to estimate water consumption for the Proposed Project and the Project Variant are described in detail in Appendix A and the results are presented within the first part of Table 2-1.

The projected water demand for the Proposed Project and the Project Variant are included in Table 2-1. The projected new water demand varies from 66.5 million gallons per year (MG/yr) for Project Scenario 1, to 95.7 MG/yr for Project Scenario 2, to 105.5 MG/yr for the Project Variant[6]. With Buildings P, S, and T, which would remain onsite and be operated by SRI International and its tenants, the total projected water demand varies from 76.1 MG/yr for Project Scenario 1, to 105.3 MG/yr for Project Scenario 2, to 115.1 MG/yr for the Project Variant.

Only the net new water demand associated with the Proposed Project is evaluated for the purposes of this WSA because the existing water demand is already accounted for in MPMW’s current water supply planning. Thus, the water demand associated with SRI International’s existing research campus, which consists of 38 buildings, is subtracted from the total demand associated with the Proposed Project. In addition, since the Project Variant plans to replace the existing church located at 201 Ravenswood Avenue, the existing demand associated with that property is subtracted from the total demand for the Project Variant only.

The Project Site’s existing water demand was estimated by Kier and Wright in a table dated February 2024, which is included in Appendix B of this WSA. As shown in Appendix B, three years of historical data were evaluated for the existing SRI International research campus (2014, 2019, and 2022) and average historical data from 2022 to 2024 was evaluated for the existing property located at 201 Ravenswood Avenue. To capture recent trends in water use on SRI International’s research campus while accounting for temporary decreases in demand associated with the COVID-19 pandemic, the water demands from 2019 were chosen to be representative of existing conditions. This results in 46.9 MG/yr (128,486 gallons per day, gpd) of existing demand for SRI International’s research campus and 47.1 MG/yr (129,052 gpd) when the demand associated with the property at 201 Ravenswood Avenue is included.

As described above, the existing property located at 201 Ravenswood Avenue and its associated demand will only be included under the Project Variant. Therefore, for Scenarios 1 and 2, the water demand associated with 201 Ravenswood Avenue was not included in the estimate for existing water use at the Project Site. When the existing water demand is subtracted from the projected water demand for the Proposed Project, the total net new water demand varies from 29.2 MG/yr for Project Scenario 1, to 58.4 MG/yr for Project Scenario 2 to 68 MG/yr for the Project Variant, as shown in Table 2-1.

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[6] In order to provide a conservative estimate, the water demand calculations for the Project Variant assume a 100 percent R&D Scenario within the Office R&D District, similar to Project Scenario 2.

Of this water demand, only the portion that has not already been evaluated in a previous WSA needs to be evaluated in this WSA. As discussed in Section 3, a WSA was recently prepared for the City's Housing Element Update (HEU; ESA, 2022) that assumed 400 dwelling units for Parkline. Therefore, so that the water demand associated with these 400 dwelling units is not double counted, the water demand associated with those dwelling units has not been evaluated in this WSA.[7] When the water demand associated with the 400 dwelling units (which was evaluated in a previous WSA) is subtracted from the projected water demand for the Proposed Project and the Project Variant, the resulting demand to be evaluated in this WSA is 10 MG/yr for Project Scenario 1, 39 MG/yr for Project Scenario 2, and 49 MG/yr for the Project Variant. Of the two buildout scenarios for the Proposed Project, Project Scenario 2 would result in the greatest water demand; thus, Project Scenario 2 and the Project Variant are evaluated in detail in this WSA. In addition, to provide for a conservative analysis, the Project Variant assumes 100 percent R&D uses for the commercial buildings, which would use comparatively more water than assuming 100 percent office use buildout.

The water demand projections shown in Table 2-1 assume that potable water will be used to meet the projected water demands. The Proposed Project is not expected to use recycled water, since no existing recycled water infrastructure is currently in place near the Project Site, as further described in Section 6.4.

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[7] The City has noted that the number of housing units in the Housing Element Update was conceptual by site and may change depending on actual development proposals.

Table 2-1. Projected Water Demand for the Proposed Project and Project Variant

Building Type	Proposed Project Buildout Scenarios: Project Scenario 1: 100% Office and 550 Residential Units, MG/yr	Proposed Project Buildout Scenarios: Project Scenario 2: 100% R&D and 550 Residential Units, MG/yr	Project Variant: 100% R&D with 800 Residential Units and/or Emergency Reservoir, MG/yr
Proposed Project and Project Variant			
Office/R&D - New[(a)]	15.4	44.6	44.6
Multi-Family[(a)]	26.7	26.7	38.8
Multi-Family Pool[(a)]	--	--	0.5
Amenities[(a)]	2.2	2.2	2.2
Landscaping[(a)]	22.3	22.3	19.4
Total Projected Water Demand	**66.5**	**95.7**	**105.5**
Office/R&D - Existing to Remain[(b)]	9.6	9.6	9.6
Total Projected Water Demand + Existing Buildings P, S & T	**76.1**	**105.3**	**115.1**
Increase in Water Demand from Existing Conditions			
Existing Water Use at Project Site[(b)]	46.9	46.9	47.1
Net New Proposed Project Water Demand	**29.2**	**58.4**	**68.0**
Water Demand Not Already Evaluated in a Previous WSA			
Project Residential Demand Included in Housing Element Update WSA (400 Units)[(c)]	19.4	19.4	19.4
Proposed Project Water Demand to be Evaluated in this WSA(d)	**10**	**39**	**49**

(a) Source: PAE, 2024. Preliminary Building Energy Estimate [Update], Parkline Project. February 20, 2024.

(b) Source: Kier & Wright, 2024. SRI-Parkline Existing Water Demand Summary Table. February, 2024. For the SRI Campus, 2019 data is assumed to be most representative of existing conditions. For the property located at 201 Ravenswood Avenue, the existing demand is only included for the Project Variant, since that is the only scenario where that property is considered part of the Project Site.

(c) Source: Menlo Park HEU (ESA, 2022). Refer to Table 2-1 for the 400 new units attributed to Parkline and refer to Table 5-1 for the demand factor assumed (133 gallons per day per dwelling unit). The City has noted that the number of housing units in the Housing Element Update was conceptual by site and may change depending on actual development proposals.

(d) Demand totals are rounded to the nearest million gallon, for use throughout the remainder of this WSA.
MG/yr = million gallons per year; R&D = research and development; WSA = Water Supply Assessment.

Note: Totals shown may not be exact due to rounding.

3.0 REQUIRED DETERMINATIONS

The following sections describe the required determinations for a WSA.

3.1 Does SB 610 Apply to the Proposed Project?

> *10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.*
>
> > *10912 (a) "Project" means any of the following:*
> >
> > *(1) A proposed residential development of more than 500 dwelling units.*
> >
> > *(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.*
> >
> > *(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.*
> >
> > *(4) A proposed hotel or motel, or both, having more than 500 rooms.*
> >
> > *(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.*
> >
> > *(6) A mixed-use project that includes one or more of the projects specified in this subdivision.*
> >
> > *(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.*

In a recently approved WSA that was prepared for the City of Menlo Park HEU (ESA, 2022), 400 dwelling units were included that were identified as part of the pending Proposed Project. Therefore, those 400 dwelling units and their associated water demands are not evaluated in this WSA. In addition, there are three existing buildings (Buildings P, S, and T) that would remain at the Project Site to be operated by SRI International. The demand associated with Buildings P, S and T is not new, and is therefore not evaluated in this WSA. The remainder of the Proposed Project is new and has not been the subject of a previously adopted WSA and therefore, according to Water Code Section 10910(a), that Proposed Project requires a WSA.

As shown in Table 3-1, the Proposed Project and the Project Variant meet the definition of a "Project" as specified in Water Code Section 10912(a), because both contain over 500 dwelling units and include non-residential development that cumulatively requires a quantity of water equivalent to or greater than the amount of water required by a 500-dwelling unit project.

The City has also determined that the Proposed Project is subject to the California Environmental Quality Act (CEQA) and that an EIR is required. The EIR for the Proposed Project will utilize the findings of this WSA as appropriate.

Table 3-1. Do the Proposed Project and Project Variant Meet the SB 610 Definition of a "Project"?

SB 610 Project Definition Components	Proposed Project and Project Variant Quantity	Do the Proposed Project and Project Variant Meet the SB 610 Definition of a "Project"?
Residential > 500 dwelling units	550 units for Proposed Project / 800 units for the Project Variant	YES / YES
Retail > 1,000 employees or > 500,000 square feet	N/A	NO
Commercial Office Building > 1,000 employees or > 250,000 square feet	No net increase	NO
Hotel/Motel > 500 rooms	N/A	NO
Industrial Plant/Park > 1,000 employees or > 40 acres or > 650,000 square feet	N/A	NO
Mixed Use Project that includes one or more of the above	YES	YES
A Project that would demand the amount of water required by a 500-dwelling unit project	YES	YES
SB 610 Required?	--	**YES**

3.2 Does SB 221 Apply to the Proposed Project?

In 2001, SB 221 amended State law to require that approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. Per California Government Code Section 66473.7(a)(1), a subdivision means a proposed residential development of more than 500 dwelling units. The Proposed Project, with 550 to 800 new residential dwelling units (depending on whether the Proposed Project or the Project Variant is selected) in MPMW's water service area, is subject to the requirements of SB 221.

3.3 Who is the Identified Public Water System?

> *10910(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined by Section 10912, that may supply water for the project…*
>
> *10912 (c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections…*

The Project Site is located in the City within MPMW's service area. MPMW's service area consists of three zones:

- Lower Zone: located north and east of El Camino Real and serves residential, small commercial, and light industrial land uses;
- High Pressure Zone: located in northern Menlo Park between Highway 101 and Bayfront Expressway, north of Chilco Street, and serves multi-family residential, commercial and light industrial, and a mobile home park outside the City's northern-most boundary; and
- Upper Zone: located in the southwest portion of Menlo Park near Interstate 280 and geographically and hydraulically disconnected from the other pressure zones.

The Project Site is located in MPMW's Lower Zone. Therefore, MPMW is the identified public water system for the Proposed Project.

3.4 Does the Identified Public Water Supplier have an adopted UWMP and does the UWMP include the projected water demand for the Proposed Project?

> *10910(c)(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).*

According to California Water Code (CWC) Section 10617, an urban water supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water per year. MPMW meets the definition of an urban water supplier and is therefore required to prepare an Urban Water Management Plan (UWMP). MPMW's most recently adopted UWMP is the 2020 UWMP, which was adopted in May 2021. The MPMW 2020 UWMP is incorporated by reference into this WSA.

The MPMW 2020 UWMP incorporated the future population, employment and water demand projections for buildout of the City's General Plan, including the additional allowable development associated with major development projects within the MPMW service area. However, implementation of the Proposed Project was not accounted for in the growth forecasts when MPMW was preparing its 2020 UWMP. Therefore, consistent with CWC Section 10910(c)(3), this WSA provides an assessment of supply for MPMW during normal, single dry, and multiple dry water years for a 20-year projection and compares it to existing and planned future demands, including: (1) the demand forecasts from MPMW's 2020 UWMP; (2) new demand associated with implementation of the Proposed Project; and (3) the demand associated with the City's HEU. The demand associated with the City's HEU was already addressed as part of a separate WSA, but still must be considered since it was not included in the demand forecasts in MPMW's 2020 UWMP.

4.0 MENLO PARK MUNICIPAL WATER SYSTEM

The following sections describe the MPMW existing water service area, including existing and projected population.

4.1 Water Service Area

MPMW is located within the City, along the San Francisco Peninsula in San Mateo County, between the cities of Palo Alto, East Palo Alto, and Redwood City. MPMW provides water service to approximately half of the City, serving an area of approximately 9 square miles. The remainder of the City is served by California Water Service, O'Connor Tract Co-operative Water Company, and Palo Alto Park Mutual Water Company.

MPMW provides water service to approximately 4,300 service connections as of 2023. Land uses throughout the water service area consist primarily of residential, commercial, and industrial land uses. Customer service connections include residential users, industrial connections, commercial service connections, irrigation accounts, and 'Other' connections (including temporary services and sales, private fire services, and hydrant services).

4.2 Population

The MPMW service area is largely built-out, with future growth trends principally due to redevelopment within the Bayfront Area. As shown in Table 4-1, MPMW's 2020 UWMP indicates that the total population within the MPMW service area is projected to increase to 30,184 people by 2040, a 65 percent increase from the current 2020 population of 18,276 people. The City's Planning Division expects more than 40 percent of the projected population increase to occur by 2025, based on approved and pending projects in the Bayfront Area (driven primarily by the ConnectMenlo General Plan).

Table 4-1. MPMW Service Area Existing and Projected Population

Year	2020	2025	2030	2035	2040
Population Served	18,276	23,383	25,166	27,675	30,184

Source: MPMW 2020 UWMP, Table 3-1.

5.0 MENLO PARK MUNICIPAL WATER DEMANDS

> *10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*
>
> *10910(c)(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.*

The descriptions provided below for MPMW’s water demands are based on the MPMW 2020 UWMP (adopted in May 2021) and incorporate the new demand associated with Proposed Project (and the Project Variant) and the City’s HEU, where needed.

5.1 Historical and Existing Water Demand

Table 5-1 shows the MPMW water demand (based on water production) for 2010 through 2020. According to MPMW’s 2020 UWMP, from 2010 through 2020, the service area population had grown by about 24 percent, while the total volume of water sold increased by just 1.6 percent. The decrease in water demand from 2013 to 2016 can be attributed to mandatory statewide restrictions issued by the State Water Resources Control Board (SWRCB) during the drought and water conservation efforts by the City’s residents and businesses. Since 2016, there has been a rebound in demand.

Table 5-1. MPMW Service Area Historical Water Demand

Year	Potable Water Demand, MG
2010	1,052
2011	1,033
2012	1,079
2013	1,189
2014	1,030
2015	883
2016	898
2017	1,003
2018	1,108
2019	1,028
2020	1,069

Source: MPMW 2020 UWMP, Table 4-2.

5.2 Future Water Demand

Table 5-2 and Table 5-2V show MPMW's projected normal year water demands through 2040 for Project Scenario 2 and the Project Variant, respectively. Both tables show the demand associated with MPMW's 2020 UWMP with the addition of the demand associated with the City's HEU, as well as the demand associated with the Proposed Project. The 2020 UWMP projections are based on anticipated future water demands corresponding to buildout of the City's current General Plan, including development of ConnectMenlo and other planned projects within MPMW's service area. The projected increase in the 2020 UWMP demand over time reflects a rebound in water use following the end of the suppressed demands due to the 2015-2016 drought and an accelerated growth in employment due to planned development projects.

The water demand associated with the HEU reflects the addition of 1,790 new residential units that will be served by MPMW, as described in the City's HEU WSA (ESA, 2022). Project Scenario 2 and the Project Variant demands reflect the net increase in demand associated with the Project Site that is not already accounted for in the HEU WSA, as previously presented in Table 2-1.

Table 5-2. Projected Future Water Demand - Normal Years (Project Scenario 2)

Description	Projected Water Demand after Passive and Active Conservation, MG			
	2025	2030	2035	2040
2020 UWMP Demand[(a)]	1,296	1,345	1,410	1,483
HEU WSA Demand[(b)]	87	87	87	87
Demand Subtotal Before the Proposed Project	1,383	1,432	1,497	1,570
Project Scenario 2 Demand[(c)]	39	39	39	39
Updated Normal Year Demand	1,422	1,471	1,536	1,609

(a) Source: MPMW 2020 UWMP, Tables 4-5 and 4-7.
(b) Source: Menlo Park HEU WSA. Refer to Table 5-2 for the quantity of HEU residential unit demand attributed to MPMW (267 AFY).
(c) Refer to Table 2-1 of this WSA. To be conservative, all Proposed Project demands are assumed to be in place by 2025.

Table 5-2V. Projected Future Water Demand - Normal Years (Project Variant)

Description	Projected Water Demand after Passive and Active Conservation, MG			
	2025	2030	2035	2040
2020 UWMP Demand[(a)]	1,296	1,345	1,410	1,483
HEU WSA Demand[(b)]	87	87	87	87
Demand Subtotal Before the Project Variant	1,383	1,432	1,497	1,570
Project Variant Demand[(c)]	49	49	49	49
Updated Normal Year Demand	1,432	1,481	1,546	1,619

(a) Source: MPMW 2020 UWMP, Tables 4-5 and 4-7.
(b) Source: Menlo Park HEU WSA. Refer to Table 5-2 for the quantity of HEU residential unit demand attributed to MPMW (267 AFY).
(c) Refer to Table 2-1 of this WSA. To be conservative, all Project Variant demand is assumed to be in place by 2025.

5.3 Dry Year Water Demand

As shown in Table 5-1, MPMW's 2015 and 2016 demands were significantly lower than the demand in previous years. This reduction in demand occurred in response to the drought and mandated statewide reductions in urban potable water usage.

Following the drought, MPMW updated the stages of action to be taken in response to water supply shortages. The updated stages of action are reflected in MPMW's Water Shortage Contingency Plan (WSCP) and are included in Chapter 8 of the MPMW 2020 UWMP. MPMW has also implemented a demand management program with mandatory prohibitions that are in force at all times, as described in Chapter 8 of the MPMW 2020 UWMP. The projected future water demands presented in Table 5-2 and Table 5-2V include continued implementation of the existing demand management program and is based on future normal hydrologic years.

Under dry water year conditions, MPMW anticipates implementing the demand reduction measures outlined in the WSCP as appropriate to reduce water demands to match the reduction in supply. However, to be conservative, the MPMW 2020 UWMP and this WSA do not assume additional water conservation will occur in single dry or multiple dry years, even though additional water conservation is likely to occur during dry years or other water supply shortages as a result of MPMW implementing additional water conservation measures.

Table 5-3 and Table 5-3V present the projected future single and multiple dry year water demand with Project Scenario 2 and the Project Variant, respectively. Similar to the future normal year analysis, the projected water demand from MPMW's 2020 UWMP is added to the demand associated with the portion of the City's HEU that will be served by MPMW, as well as the net increase in Proposed Project demand not previously accounted for, as presented in Table 2-1.

Table 5-3. Projected Future Water Demand - Dry Years (Project Scenario 2)

Hydrologic Condition	Demand Reduction[a]	Projected Water Demand, MG			
		2025	2030	2035	2040
Single Dry Year					
2020 UWMP Demand[b]	0%	1,296	1,345	1,410	1,483
HEU WSA Demand[c]	0%	87	87	87	87
Demand Subtotal Before the Proposed Project	--	*1,383*	*1,432*	*1,497*	*1,570*
Project Scenario 2 Demand[d]	0%	39	39	39	39
Updated Single Dry Year Demand	**--**	**1,422**	**1,471**	**1,536**	**1,609**
Multiple Dry Years					
2020 UWMP Demand[e,f]	0%	1,296	1,345	1,410	1,483
HEU WSA Demand[c]	0%	87	87	87	87
Demand Subtotal Before the Proposed Project	--	*1,383*	*1,432*	*1,497*	*1,570*
Project Scenario 2 Demand[d]	0%	39	39	39	39
Updated Multiple Dry Year Demand	**--**	**1,422**	**1,471**	**1,536**	**1,609**

(a) Conservatively assumes no demand reduction in dry years. Demands may be reduced in dry years as a result of MPMW's implementation of its Water Shortage Contingency Plan; however, such a demand reduction is not assumed or relied upon for the purposes of the Single Dry Year and Multiple Dry Year evaluations for this WSA.

(b) Source: MPMW 2020 UWMP, Table 7-5.

(c) Source: Menlo Park HEU WSA. Refer to Table 5-2 for the quantity of HEU residential unit demand attributed to MPMW (267 AFY).

(d) Refer to Table 2-1 of this WSA. To be conservative, it is assumed that all Proposed Project demand is in place by 2025.

(e) Source: MPMW 2020 UWMP, Table 7-6.

(f) Represents demands for each year of the 5-year multiple dry year period.

MG = million gallons; UWMP = urban water management plan; HEU WSA = housing element update water supply assessment.

Table 5-3V. Projected Future Water Demand - Dry Years (Project Variant)

Hydrologic Condition	Demand Reduction[a]	Projected Water Demand, MG			
		2025	2030	2035	2040
Single Dry Year					
2020 UWMP Demand[b]	0%	1,296	1,345	1,410	1,483
HEU WSA Demand[c]	0%	87	87	87	87
Demand Subtotal Before the Project Variant	--	*1,383*	*1,432*	*1,497*	*1,570*
Project Variant Demand[d]	0%	49	49	49	49
Updated Single Dry Year Demand	**--**	**1,432**	**1,481**	**1,546**	**1,619**
Multiple Dry Years					
2020 UWMP Demand[e,f]	0%	1,296	1,345	1,410	1,483
HEU WSA Demand[c]	0%	87	87	87	87
Demand Subtotal Before the Project Variant	--	*1,383*	*1,432*	*1,497*	*1,570*
Project Variant Demand[d]	0%	49	49	49	49
Updated Multiple Dry Year Demand	**--**	**1,432**	**1,481**	**1,546**	**1,619**

(a) Conservatively assumes no demand reduction in dry years. Demands may be reduced in dry years as a result of MPMW's implementation of its Water Shortage Contingency Plan; however, such a demand reduction is not assumed or relied upon for the purposes of the Single Dry Year and Multiple Dry Year evaluations for this WSA.

(b) Source: MPMW 2020 UWMP, Table 7-5.

(c) Source: Menlo Park HEU WSA. Refer to Table 5-2 for the quantity of HEU residential unit demand attributed to MPMW (267 AFY).

(d) Refer to Table 2-1 of this WSA. To be conservative, it is assumed that all Project Variant demand is in place by 2025.

(e) Source: MPMW 2020 UWMP, Table 7-6.

(f) Represents demands for each year of the 5-year multiple dry year period.

MG = million gallons; UWMP = urban water management plan; HEU WSA = housing element update water supply assessment.

6.0 MENLO PARK MUNICIPAL WATER SUPPLIES

10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system…under the existing water supply entitlements, water rights, or water service contracts.

10910(e) If no water has been received in prior years by the public water system…under the existing water supply entitlements, water rights, or water service contracts, the public water system…shall also include in its water supply assessment…an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system.

10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree… For a basin that has not been adjudicated,… information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

The descriptions provided below for MPMW's water supplies are based on the MPMW 2020 UWMP (adopted in May 2021) and the SFPUC 2020 UWMP (adopted in June 2021), as well as information provided by City staff. As described in Section 3.4 of this WSA, implementation of the Proposed Project was not accounted for in the growth forecasts when MPMW was preparing its 2020 UWMP. Therefore, consistent with CWC Section 10910(c)(3), this WSA provides an assessment of supply for MPMW, which will build from the supply summary presented below. That supply assessment will be presented in Section 7.

6.1 Water Supply Overview

MPMW currently purchases all its potable water supplies from the SFPUC RWS. MPMW has reservoirs in its Upper Zone to provide for emergency supply and an emergency groundwater well has been constructed at MPMW's Corporation Yard. Additional groundwater wells and reservoirs for emergency supply are in the planning stages for the Lower Zone and the High Pressure Zone.

Recycled water supplied by West Bay Sanitary District (WBSD) is currently utilized within the MPMW service area for irrigation at the Sharon Heights Golf & Country Club and is under development for the Bayfront Area. According to the MPMW 2020 UWMP, MPMW plans to utilize up to 120 MG/yr of recycled water from WBSD for landscape and golf course irrigation and commercial non-potable applications at Sharon Heights and in the Bayfront Area. Currently no recycled water infrastructure is in place nor planned for installation in the area near the Project Site. Thus, potable water is assumed to meet all of the Project's water demands.

6.2 Water Supply from the SFPUC RWS

The SFPUC RWS supplies water to both retail and wholesale customers. Retail customers include residents, businesses, and industries located within the City and County of San Francisco's boundaries. Wholesale customers include 26 cities and water supply agencies in Alameda, San Mateo and Santa Clara counties, including MPMW.

MPMW is a member agency of Bay Area Water Supply and Conservation Agency (BAWSCA) and purchases treated water from the SFPUC RWS in accordance with the November 2018 Amended and Restated Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda, San Mateo and Santa Clara Counties, which was adopted in 2019. The term of the agreement is 25 years, with a beginning date of July 1, 2009 and an expiration date of June 30, 2034. Per the agreement, MPMW has an Individual Supply Guarantee (ISG) of 4.456 million gallons per day (mgd), or 1,630 million gallons per year, supplied by the SFPUC RWS. From 2019 to 2023, MPMW has purchased between 52 percent and 66 percent of its ISG.

Additional discussion of the SFPUC RWS water supplies is provided in MPMW's 2020 UWMP and SFPUC's 2020 UWMP.

6.3 Groundwater Supply

MPMW does not rely upon groundwater supplies for its potable water supply since the entirety of the MPMW supply is purchased from the SFPUC RWS. However, MPMW has undertaken a multi-year Emergency Water Storage/Supply Project to construct emergency groundwater wells. As such, this WSA evaluates groundwater basin conditions pursuant to Section 10910(f).

6.3.1 Groundwater Basin Description

The MPMW service area overlies the southern end of the Santa Clara Valley Groundwater Basin's San Mateo Plain Groundwater Subbasin (DWR basin number 2-9.03; DWR, 2004; or "subbasin"). The subbasin is not adjudicated, nor has it been found by the Department of Water Resources (DWR) to be in a condition of overdraft. As part of the implementation of the Sustainable Groundwater Management Act (SGMA), the subbasin was ranked as a "very low priority" basin under the California Statewide Groundwater Elevation Monitoring basin prioritization process. As such, the basin is not subject to the requirements of SGMA.

Located within the 45-square mile San Francisquito Creek Watershed, the MPMW service area contains both mountainous bedrock terrain and comparatively flat alluvial deposits. Coarse- and fine-grained alluvial deposits from the San Francisquito Creek can be found in the MPMW service area. A shallow aquifer and a deep aquifer that has an upper and a lower zone underlies the MPMW service area. Both aquifers lie beneath a laterally extensive confining layer. The shallow aquifer is unconfined while the deep aquifer is semi-confined. Pump tests and empirical transmissivity data show the feasibility of developing a municipal supply from the groundwater subbasin. The groundwater subbasin is estimated to be as thick as 1,000 feet in some locations.

Groundwater in the Santa Clara Valley Groundwater Basin naturally flows toward the San Francisco Bay from the uplands in the southwest. Reverse groundwater gradients, from the San Francisco Bay toward the uplands, have been seen when pumping has exceeded the rate of recharge. The estimated annual recharge rate of the San Francisquito Creek watershed ranges from 4,000 to 8,000 acre-feet per year, equivalent to 3.6 to 7.2 mgd.

Additional discussion of the groundwater conditions and groundwater management is provided in MPMW's 2020 UWMP.

6.3.2 MPMW Emergency Water Storage/Supply Project

The MPMW Emergency Water Storage/Supply Project intends to provide a backup water supply to the portion of MPMW's service area located east of El Camino Real, which lacks sufficient emergency storage and supply, in the event water from the SFPUC RWS is reduced or unavailable. The MPMW Emergency Water Storage/Supply Project will provide a total capacity of up to 3,000 gallons per minute (gpm), or approximately 4.32 mgd, between two to three wells. MPMW initiated the project in 2010 and completed site screening, site ranking, and detailed engineering and hydrologic evaluation in 2013, including extensive community engagement. MPMW selected the Corporation Yard at 333 Burgess Drive for the first well, drilled the well in 2017, and completed construction of the wellhead facilities in 2020. In early 2023, MPMW received approval from the SWRCB to operate the Corporation Yard Well as a standby well for use during emergencies up to a limited number of days per year. MPMW plans to perform final testing of the well in 2024. It should be noted that the Corporation Yard Well is located adjacent to the Parkline Project Site to the southeast of the Project Site.

In addition, MPMW drilled at three sites: (1) Fire Station No. 1 located at 300 Middlefield Road; (2) Willow Oaks school field located at 620 Willow Road; and (3) the SRI International parking lot located at 333 Ravenswood Avenue. MPMW is currently evaluating the three sites to determine well yields, develop cost estimates, and provide necessary information for staff to recommend next steps to City Council. MPMW also installed a monitoring well in the SRI parking lot to measure the groundwater level over a 12-month period to determine the feasibility of a future underground reservoir to increase supply reliability. The 2 MG storage facility proposed as part of the Project Variant is related to that effort. The SWRCB would need to amend MPMW's drinking water permit once any new wells and/or reservoir are constructed.

6.4 Recycled Water Supply

WBSD provides wastewater collection services to the MPMW service area. WBSD also acts as the recycled water purveyor in MPMW's Upper Zone and WBSD is developing a recycled water system to serve the Lower Zone and High Pressure Zone.

Currently, recycled water is only used at the Sharon Heights Golf & Country Club, which is a 170-acre property located in the Upper Zone of MPMW's service area. The recycled water system consists of the Sharon Heights Recycled Water Facility, a pump station, recycled water distribution pipelines to the golf course irrigation system, and a solids disposal pipeline. In 2020, the Sharon Heights Recycled Water Facility provided 20 MG of recycled water to the Sharon Heights Golf & Country Club, offsetting demand in potable water purchased from SFPUC. A second phase of the project, in the very early planning stages, could supply approximately 28 MG of recycled water over seven months a year to the Stanford Linear Accelerator Center for irrigation and industrial uses such as for cooling towers.

WBSB anticipates developing a similar recycled water facility in the Bayfront Area. WBSD has completed a feasibility study exploring the viability of a Resource Recovery Center at WBSD's former treatment plant behind Bedwell Bayfront Park, which could produce approximately 500,000 gallons per day of recycled water for reuse (the MPMW 2020 UWMP projects an annual recycled water supply of 72 MG/yr from this new facility). The feasibility study concluded that the project is feasible.

In the southwest portion of MPMW's Lower Zone (where the Project Site is located), no existing recycled water infrastructure is in place. WBSB does not currently have any plans to extend the existing recycled water system to this region. Therefore, the Proposed Project is assumed to be supplied by potable water only.

6.5 Summary of Existing and Additional Planned Future Water Supplies

Table 6-1 provides a summary of MPMW's current and projected future normal year supplies as presented in MPMW's 2020 UWMP. The availability and reliability of MPMW's water supplies in dry years is discussed in Section 7 of this WSA.

Table 6-1. MPMW Current and Projected Future Water Supplies – Normal Years

	Water Supply, MG				
Water Source	2020 Actual[a,b]	2025[c]	2030[c]	2035[c]	2040[c]
Potable Water - Purchased from SFPUC RWS	1,069	1,630	1,630	1,630	1,630
Recycled Water - Sharon Heights Recycled Water Facility	20	48	48	48	48
Recycled Water - Bayfront Recycled Water Facility	--	0	72	72	72
Total	**1,089**	**1,678**	**1,750**	**1,750**	**1,750**

(a) 1,069 MG represents only 65.5% of the ISG to MPMW.

(b) Source: MPMW 2020 UWMP, Table 4-7.

(c) Source: MPMW 2020 UWMP, Table 6-9.

7.0 WATER SUPPLY RELIABILITY

> *10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*
>
> *10911(a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:*
>
> *(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.*
>
> *(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.*
>
> *(3) Based on the consideration set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to able to acquire additional water supplies.*

The current reliability of MPMW's water supply is largely dependent upon its water supply contract with SFPUC and SFPUC's water supply reliability. The reliability discussion provided below is based on the MPMW 2020 UWMP (adopted in May 2021) and the SFPUC 2020 UWMP (adopted in June 2021) and includes more recent updates where information was available. It should be noted that SFPUC's 2020 UWMP extends to a 2045 horizon year, which is beyond the statutorily required horizon year of 2040 presented in the MPMW 2020 UWMP.

7.1 SFPUC RWS Reliability

Information regarding the reliability of the SFPUC RWS was provided to MPMW by BAWSCA, in coordination with SFPUC, during the preparation of the MPMW 2020 UWMP. The following sections describe the potential impacts of the 2018 Bay-Delta Plan Amendment on SFPUC RWS reliability, allocation of RWS supplies during supply shortages, as well as SFPUC's Alternative Water Supply Planning Program designed to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities on the RWS.

7.1.1 Potential Impacts of the 2018 Bay-Delta Plan Amendment on SFPUC RWS Reliability

In December 2018, the SWRCB adopted amendments to the Water Quality Control Plan for the San Francisco Bay Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 40 percent of the "unimpaired flow" on the three tributaries from February through June in every year type, whether wet, normal, dry, or critically dry.

As of the time of this WSA, implementation of the Bay-Delta Plan Amendment remains uncertain for several reasons, as summarized below:

- Since adoption of the Bay-Delta Plan Amendment, over a dozen lawsuits have been filed in both state and federal court, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment, including two legal challenges filed by the federal government, at the request of the U.S. Department of Interior, Bureau of Reclamation in state and federal courts.
- The Bay-Delta Plan Amendment is not self-implementing and does not allocate responsibility for meeting its new flow requirements to the SFPUC or any other water rights holders. Rather, the Plan Amendment merely provides a regulatory framework for flow allocation, which must be accomplished by other regulatory and/or adjudicatory proceedings, such as a comprehensive water rights adjudication or, in the case of the Tuolumne River, the 401 certification process in the Federal Energy Regulatory Commission's (FERC) relicensing proceeding for Don Pedro Dam. This process and the other regulatory and/or adjudicatory proceedings would likely face legal challenges and have lengthy timelines, and quite possibly could result in a different assignment of flow responsibility (and therefore a different water supply impact on the SFPUC).
- In recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, SWRCB Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB ("March 1st Proposed Voluntary Agreement"). On March 26, 2019, the Commission adopted Resolution No. 19-0057 to support SFPUC's participation in the Voluntary Agreement negotiation process. Then, in November 2022, key stakeholders signed a Memorandum of Understanding (MOU) indicating a mutual agreement among the signatories to advance the Voluntary Agreement Program for consideration by their respective decisional bodies, as needed. While a Voluntary Agreement is still not finalized, the signing of a MOU signals that stakeholders are committed to collaborating with the state to finalize an agreement.

Because of the uncertainties surrounding the implementation of the Bay-Delta Plan Amendment, the SFPUC 2020 UWMP analyzed two supply scenarios, one with the Bay-Delta Plan Amendment assuming implementation starting in 2023, and one without the Bay-Delta Plan Amendment. Results of these analyses are summarized as follows[8]:

- If the Bay-Delta Plan Amendment is implemented, SFPUC will be able to meet its contractual obligations to its wholesale customers as presented in the SFPUC 2020 UWMP in normal years but would experience significant supply shortages in dry years. In single dry years,

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[8] BAWSCA Drought Allocation Tables by Agency (Table E: Percent Cutback to the Wholesale Customers with Bay-Delta Plan and Table N: Percent Cutback to the Wholesale Customers Without Bay-Delta Plan), dated April 1, 2021.

supply shortages would range from 36 to 46 percent. In multiple dry years, supply shortages would range from 36 to 54 percent. Implementation of the Bay-Delta Plan Amendment will require rationing in all single dry and multiple dry years through 2045.

- If the Bay-Delta Plan Amendment is not implemented, SFPUC would be able to meet 100 percent of the projected purchases of its wholesale customers during all year types through 2045 except during the fourth and fifth consecutive dry years for base year 2045 when 15 percent wholesale supply shortages are projected.

In June 2021, in response to various comments from wholesale customers regarding the reliability of the RWS as described in SFPUC's 2020 UWMP, the SFPUC provided a memorandum describing SFPUC's efforts to remedy the potential effects of the Bay-Delta Plan Amendment. As described in the memorandum (included in Appendix C of this WSA), SFPUC's efforts include the following:

- Pursuing a Tuolumne River Voluntary Agreement
- Evaluating the drought planning scenario in light of climate change
- Pursuing alternative water supplies
- In litigation with the State over the Bay-Delta Plan Amendment
- In litigation with the State over the proposed Don Pedro FERC Water Quality Certification

7.1.2 Allocation of RWS Supplies During Supply Shortages

The wholesale customers and SFPUC adopted the November 2018 Amended and Restated Water Supply Agreement in 2019. The agreement includes a Water Shortage Allocation Plan (WSAP) to allocate water from the RWS to retail and wholesale customers during system-wide shortages of 20 percent or less, and during water shortage events occurring as a result of implementation of the Bay-Delta Plan Amendment. The WSAP has two tiers which are described below.

- The Tier One Plan allocates water between SFPUC and the wholesale customers collectively based on the level of the shortage (up to 20 percent). This plan applies only when SFPUC determines that a system-wide water shortage exists and issues a declaration of a water shortage emergency under California Water Code Section 350. The SFPUC may also opt to request voluntary cutbacks from San Francisco and the wholesale customers to achieve necessary water use reductions during drought periods. The allocations outlined in the Tier One Plan are provided in Table 7-1.

Table 7-1. Tier One Plan Water Shortage Allocations

System-Wide Reduction Required, percent	Share of Available Water, percent	
	SFPUC	Wholesale Customers
≤ 5	35.5	64.5
6 to 10	36.0	64.0
11 to 15	37.0	63.0
16 to 20	37.5	62.5

- The Tier Two Plan allocates the collective wholesale customer share among the wholesale customers based on a formula that accounts for each wholesale customer's ISG, seasonal use of all available water supplies, and residential per capita use. BAWSCA calculates each wholesale customer's Allocation Factors annually in preparation for a potential water shortage emergency.

BAWSCA recognizes that the Tier Two Plan was not designed for RWS shortages greater than 20 percent, and in a memorandum dated March 1, 2021, BAWSCA provided a refined methodology to allocate RWS supplies during projected future single dry and multiple dry years in the instance where supply shortfalls are greater than 20 percent for the purposes of the BAWSCA member agencies' 2020 UWMPs. The revised methodology developed by BAWSCA allocates the wholesale supplies as follows:

- When the average Wholesale Customers' RWS shortages are 10 percent or less, an equal percent reduction will be applied across all agencies. This is consistent with the existing Tier Two requirements in a Tier Two application scenario.
- When average Wholesale Customers' shortages are between 10 and 20 percent, the Tier Two Plan will be applied.
- When the average Wholesale Customers' RWS shortages are greater than 20 percent, an equal percent reduction will be applied across all agencies.

In another memorandum dated February 18, 2021, BAWSCA explains that in actual RWS shortages greater than 20 percent, BAWSCA Member Agencies would have the opportunity to negotiate and agree upon a more nuanced and equitable approach. This would likely consider basic health and safety needs, the water needs to support critical institutions, and minimizing economic impacts on individual communities and the region. As such, the allocation method described in the MPMW 2020 UWMP is only intended to serve as the preliminary basis for the 2020 UWMP supply reliability analysis. The analysis provided in the SFPUC 2020 UWMP and the MPMW 2020 UWMP does not in any way imply an agreement by BAWSCA member agencies as to the exact allocation methodology.

7.1.3 Alternative Water Supply Program

In early 2020, the SFPUC began implementation of the Alternative Water Supply Planning Program (AWSP), a program designed to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities of the RWS particularly in light of the possible implementation of the Bay-Delta Plan Amendment.

Included in the AWSP is a suite of diverse, non-traditional supply projects that, to a great degree, leverage regional partnerships and are designed to meet the water supply needs of the SFPUC Retail and Wholesale Customers through 2045. As of the most recent Alternative Water Supply Planning Quarterly Update, SFPUC has budgeted $131.5 million over the next ten years to fund water supply projects. The drivers for the program include: (1) the adoption of the Bay-Delta Plan Amendment and the resulting potential limitations to RWS supply during dry years; (2) the net supply shortfall following the implementation of SFPUC's Water System Improvement Plan (WSIP)[9]; (3) San Francisco's perpetual obligation to supply

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[9] The Water System Improvement Program (WSIP) is a $4.8 billion dollar, multi-year capital program to upgrade the SFPUC's regional and local water systems. The program repairs, replaces, and seismically upgrades crucial portions of the Hetch Hetchy Regional Water System. The program consists of 87 projects (35 local projects

184 mgd to the Wholesale Customers; (4) adopted Level of Service Goals to limit rationing to no more than 20 percent system-wide during droughts; and, (5) the potential need to identify water supplies that would be required to offer permanent status to interruptible customers.

The SFPUC is considering several water supply options and opportunities to meet all foreseeable water supply needs, including surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. Some of these efforts and their expected benefit to supply reliability are listed below, and described in further detail in the MPMW 2020 UWMP and SFPUC 2020 UWMP:

- Daly City Recycled Water Expansion (Regional; Normal and Dry-Year Supply)
- Alameda County Water District – Union Sanitary District Purified Water Partnership (Regional; Normal and Dry-Year Supply)
- Crystal Springs Purified Water (Regional; Normal and Dry-Year Supply)
- Los Vaqueros Reservoir Expansion (Regional; Dry Year Supply)
- Bay Area Brackish Water Desalination (Regional; Normal and Dry-Year Supply)
- Calaveras Reservoir Expansion (Regional; Dry Year Supply)
- Groundwater Banking (Dry Year Supply)
- Inter-Basin Collaborations

Capital projects under consideration would be costly and are still in the early feasibility and conceptual planning stages. The exact yields from these projects are not quantified at this time, as these supply projects would take 10 to 30 years to implement and the exact amount of water that can be reasonably developed is currently unknown.

As with traditional infrastructure projects, these alternative water supply projects will need to progress systematically from planning to environmental review, and then on to detailed design, permitting and construction. Given the complexity and inherent challenges, these projects will require a long lead time to develop and implement.

Additional information on the AWSP is provided in Chapter 7 of MPMW's 2020 UWMP.

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located within San Francisco and 52 regional projects) spread over seven counties from the Sierra foothills to San Francisco. The San Francisco portion of the program was 100 percent complete as of October 2020. The Regional portion was scheduled to be complete in May 2023. Additional information on the WSIP is provided in Chapter 7 of MPMW's 2020 UWMP.

7.2 MPMW Water Supply Reliability

In the MPMW 2020 UWMP, projected normal year supplies are shown to be adequate to satisfy MPMW's projected normal year demands. But under dry year scenarios, MPMW's purchased supplies from the SFPUC RWS are reduced as a result of implementation of the Bay-Delta Plan Amendment, which significantly reduces dry year allocations for SFPUC wholesale customers. As further discussed in Section 8, that trend holds true in this WSA, even with the addition of the Proposed Project and HEU demands to MPMW's existing and projected demands from the 2020 UWMP.

Table 7-2 shows MPMW's projected supplies during normal, single dry and multiple dry years through 2040 based on the assumptions in the MPMW 2020 UWMP which assumes implementation of the Bay-Delta Plan Amendment. Based on the SFPUC's analysis, similar water supply quantities would be available to MPMW in 2045 under the various hydrologic conditions.[10] Recycled water is estimated to be available during all hydrologic years at a volume that meets MPMW's projected recycled water demands.

Table 7-2. Projected MPMW Water Supplies with Bay-Delta Plan Amendment

Hydrologic Condition	Projected Water Supply, MG[a]			
	2025	2030	2035	2040
Normal Year[b]	1,678	1,750	1,750	1,750
Single Dry Year[c]	877	978	1,018	1,062
Multiple Dry Years – Year 1[d]	877	978	1,018	1,062
Multiple Dry Years – Year 2[d]	760	854	887	927
Multiple Dry Years – Year 3[d]	760	854	887	927
Multiple Dry Years – Year 4[d]	760	854	887	832
Multiple Dry Years – Year 5[d]	760	854	824	832

(a) Includes projected potable water supply from the SFPUC RWS and projected recycled water supply (48 MG/yr in 2025 and 120 MG/yr for 2030 to 2040) (see Table 6-1).

(b) Source: MPMW 2020 UWMP, Table 7-4.

(c) Source: MPMW 2020 UWMP, Table 7-5.

(d) Source: MPMW 2020 UWMP, Table 7-6

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[10] BAWSCA Drought Allocation Tables by Agency (Table K: Individual Agency Drought Allocations, Base Year 2045, With Bay-Delta Plan), dated April 1, 2021.

The water supply estimates provided in Table 7-2 use the best available data at the time of the MPMW 2020 UWMP, but do not account for the following factors:

- Potential changes to the implementation of the Bay-Delta Plan Amendment as discussed in Section 7.1.1 of this WSA
- Climate change impacts on the SFPUC RWS
- Potential delays in completion of the WSIP[11]

For comparison purposes, the SFPUC 2020 UWMP also evaluated a scenario without implementation of the Bay-Delta Plan Amendment. Table 7-3 shows MPMW's projected supplies during normal, single dry and multiple dry years for 2025 through 2040 assuming that the Bay-Delta Plan Amendment is not implemented. SFPUC's analysis indicated that it would be able to meet 100 percent of the wholesale projected purchases (analysis was conducted before the Proposed Project was included) during all year types through 2045 except during the fourth and fifth consecutive dry years for base year 2045 when a 16.5 percent supply shortfall is projected for MPMW (note that 2045 supplies are not shown in Table 7-3 as they were not shown in MPMW's 2020 UWMP). With the addition of the Proposed Project and HEU demand, the supply shortfall during these years is expected to be greater than 16.5 percent.

As required under SB 610, in light of these identified water supply shortages, Section 8 of this WSA describes MPMW's proposals for reducing water demands and developing additional water supplies, including measures that are being undertaken to acquire and develop those water supplies.

Table 7-3. Projected MPMW Water Supplies without Bay-Delta Plan Amendment

Hydrologic Condition	Projected Water Supply, MG[a]			
	2025	2030	2035	2040
Normal Year[b]	1,678	1,750	1,750	1,750
Single Dry Year[c]	1,344	1,465	1,530	1,603
Multiple Dry Years – Year 1[c]	1,344	1,465	1,530	1,603
Multiple Dry Years – Year 2[c]	1,344	1,465	1,530	1,603
Multiple Dry Years – Year 3[c]	1,344	1,465	1,530	1,603
Multiple Dry Years – Year 4[c,d]	1,344	1,465	1,530	1,603
Multiple Dry Years – Year 5[c,d]	1,344	1,465	1,530	1,603

(a) Includes projected potable water supply from the SFPUC RWS (based on projected purchases) and projected recycled water supply (48 MG/yr in 2025 and 120 MG/yr for 2030 to 2040) (see Table 6-1).

(b) Source: MPMW 2020 UWMP, Table 7-4.

(c) Source: BAWSCA Drought Allocation Tables by Agency (Table A: Wholesale RWS Actual Purchases in 2020 and Projected Purchases for 2025, 2030, 2035, 2040 and 2045), dated April 1, 2021. Totals include projected recycled water supply.

(d) A 16.5 percent reduction in supply from the SFPUC RWS is projected for MPMW in the fourth and fifth years of a multiple dry year drought, but not until 2045 (BAWSCA Drought Allocation Tables by Agency (Table O2: Individual Agency Drought Allocations, Base Year 2045, Without Bay-Delta Plan), dated April 1, 2021.

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[11] The San Francisco portion of the WSIP was 100 percent complete as of October 2020. The Regional portion of the WSIP was scheduled to be complete in May 2023.

8.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY BASED ON THE REQUIREMENTS OF SB 610

> *10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*
>
> *10911 (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies.*

Due to the uncertainties surrounding the implementation of the Bay-Delta Plan Amendment, this WSA presents findings for two scenarios, one assuming the Bay-Delta Plan Amendment is implemented and one assuming that the Bay-Delta Plan Amendment is not implemented.

Table 8-1 and Table 8-1V summarize the scenario where the Bay-Delta Plan Amendment is assumed to be implemented for Project Scenario 2 and the Project Variant, respectively. As shown in Table 8-1, the total projected water supplies determined to be available in normal years will meet MPMW’s existing and planned future uses, as well as the demand associated with the City’s HEU, and the projected water demand associated with Project Scenario 2, through 2040. However, supply shortfalls are projected to occur in single dry years (ranging from 34 to 38 percent) and multiple dry years (ranging from 34 to 48 percent) through 2040. As shown in Table 8-1V, the results are similar for the Project Variant, with supply shortfalls projected to occur in single dry years (ranging from 34 to 39 percent) and multiple dry years (ranging from 34 to 49 percent) through 2040.

The supply shortfalls under implementation of the Bay-Delta Plan Amendment are not unique to MPMW. Under this scenario, significant supply shortfalls are projected to occur in dry years for all agencies that receive water from the SFPUC RWS, as well as other agencies whose water supplies would also be affected by the Amendment.

If supply shortfalls do occur under this scenario, MPMW expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its WSCP.[12] The projected single dry year shortfalls would require implementation of Stage 4 of the MPMW WSCP for both Project Scenario 2 and the Project Variant. The projected multiple dry year shortfalls would require implementation of Stage 4 or 5 of the MPMW WSCP for both Project Scenario 2 and the Project Variant. The Proposed Project would be subject to the same water conservation and water use restrictions as other water users within the MPMW system.

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[12] A main focus of MPMW’s planned demand reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. The City will utilize its emergency supply well(s) as supply augmentation during WSCP Stages 5 and 6. Other actions that the City will take will include coordination with other agencies, implementing drought surcharge, increasing water waste patrols, etc. Additional information on MPMW’s WSCP is provided in Chapter 8 of MPMW’s 2020 UWMP.

As described in Section 7.1.3 of this WSA, the SFPUC is implementing an Alternative Water Supply Planning Program to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities on the RWS. Also, as described in Section 6.3.2 of this WSA, MPMW is implementing an Emergency Water Storage/Supply Project to provide a backup water supply to MPMW's Lower Zone. However, because these potential additional supplies are still being developed, they are not included in Table 8-1 or Table 8-1V.

Table 8-2 and Table 8-2V summarize the scenario where it is assumed the Bay-Delta Plan Amendment is not implemented for Project Scenario 2 and the Project Variant, respectively. As shown in Table 8-2, the total projected water supplies determined to be available in normal years will meet MPMW's existing and planned future uses, as well as the demand associated with the City's HEU, and the projected water demand associated with Project Scenario 2, through 2040. However, supply shortfalls are projected to occur in single dry years (ranging from less than 1 percent to 5 percent) and multiple dry years (also ranging from less than 1 percent to 5 percent) through 2040. As shown in Table 8-2V, the results are similar for the Project Variant, with supply shortfalls projected to occur in single dry years (ranging from 1 to 6 percent) and multiple dry years (also ranging from 1 to 6 percent) through 2040.

As described in Section 7.2 of this WSA, based on SFPUC's analysis, a 16.5 percent supply shortfall is projected during the fourth and fifth consecutive dry years for base year 2045 (note that 2045 supplies and demands are not shown in Table 8-2 and Table 8-2V as they were not shown in MPMW's 2020 UWMP). With the addition of the Proposed Project and HEU demand, the supply shortfall during these years is expected to be greater than 16.5 percent. These projected supply shortfalls, as well as the shortfalls shown in Table 8-2 and Table 8-2V, are significantly less than the projected supply shortfalls if the Bay-Delta Plan Amendment is implemented.

If supply shortfalls do occur under this scenario, MPMW expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its WSCP.[13] The projected single dry year shortfalls would require implementation of Stage 1 of the MPMW WSCP for both Project Scenario 2 and the Project Variant. The projected multiple dry year shortfalls would also require implementation of Stage 1 of the MPMW WSCP for both Project Scenario 2 and the Project Variant, except for a multiple dry year shortfall in 2045 (not shown in Table 8-2 or Table 8-2V), which would require implementation of Stage 2 or 3[14] of the MPMW WSCP. The Proposed Project would be subject to the same water conservation and water use restrictions as other water users within the MPMW system.

As discussed above, potential additional supplies that are still being developed are described in Section 7.1.3 and Section 6.3.2 of this WSA. Those supplies were not included in Table 8-2 and Table 8-2V because they are still being investigated and planned for.

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[13] A main focus of MPMW's planned demand reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. The City will utilize its emergency supply well(s) as supply augmentation during WSCP Stages 5 and 6. Other actions that the City will take will include coordination with other agencies, implementing drought surcharge, increasing water waste patrols, etc. Additional information on MPMW's WSCP is provided in Chapter 8 of MPMW's 2020 UWMP.

[14] Assumes the 16.5 percent shortfall from the SFPUC analysis is added to any of the shortfalls predicted for MPMW between 2025 and 2040, which range from 1 to 6 percent.

Table 8-1. MPMW Summary of Water Demand Versus Supply with Bay-Delta Plan Amendment During Hydrologic Normal, Single Dry, and Multiple Dry Years (Project Scenario 2)

Hydrologic Condition		Supply and Demand Comparison, MG			
		2025	2030	2035	2040
Normal Year					
Available Water Supply(a)		1,678	1,750	1,750	1,750
2020 UWMP Demand(b)		1,296	1,345	1,410	1,483
HEU WSA Demand(b)		87	87	87	87
Project Scenario 2 Demand(b)		39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**256**	**279**	**214**	**141**
	Percent Shortfall of Demand	**-**	**-**	**-**	**-**
Single Dry Year					
Available Water Supply(a)		877	978	1,018	1,062
2020 UWMP Demand(c)		1,296	1,345	1,410	1,483
HEU WSA Demand(c)		87	87	87	87
Project Scenario 2 Demand(c)		39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(545)**	**(493)**	**(518)**	**(547)**
	Percent Shortfall of Demand	**38%**	**34%**	**34%**	**34%**
Multiple Dry Years					
Multiple-Dry Year 1	Available Water Supply(a)	877	978	1,018	1,062
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(545)**	**(493)**	**(518)**	**(547)**
	Percent Shortfall of Demand	**38%**	**34%**	**34%**	**34%**
Multiple-Dry Year 2	Available Water Supply(a)	760	854	887	927
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(662)**	**(617)**	**(649)**	**(682)**
	Percent Shortfall of Demand	**47%**	**42%**	**42%**	**42%**
Multiple-Dry Year 3	Available Water Supply(a)	760	854	887	927
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(662)**	**(617)**	**(649)**	**(682)**
	Percent Shortfall of Demand	**47%**	**42%**	**42%**	**42%**
Multiple-Dry Year 4	Available Water Supply(a)	760	854	887	832
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(662)**	**(617)**	**(649)**	**(777)**
	Percent Shortfall of Demand	**47%**	**42%**	**42%**	**48%**
Multiple-Dry Year 5	Available Water Supply(a)	760	854	824	832
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(662)**	**(617)**	**(712)**	**(777)**
	Percent Shortfall of Demand	**47%**	**42%**	**46%**	**48%**

(a) From Table 7-2 of this WSA.
(b) From Table 5-2 of this WSA.
(c) From Table 5-3 of this WSA.

Table 8-1V. MPMW Summary of Water Demand Versus Supply *with* Bay-Delta Plan Amendment During Hydrologic Normal, Single Dry, and Multiple Dry Years (Project Variant)

Hydrologic Condition		Supply and Demand Comparison, MG			
		2025	2030	2035	2040
Normal Year					
Available Water Supply(a)		1,678	1,750	1,750	1,750
2020 UWMP Demand(b)		1,296	1,345	1,410	1,483
HEU WSA Demand(b)		87	87	87	87
Project Variant Demand(b)		49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**246**	**269**	**204**	**131**
	Percent Shortfall of Demand	**-**	**-**	**-**	**-**
Single Dry Year					
Available Water Supply(a)		877	978	1,018	1,062
2020 UWMP Demand(c)		1,296	1,345	1,410	1,483
HEU WSA Demand(c)		87	87	87	87
Project Variant Demand(c)		49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(555)**	**(503)**	**(528)**	**(557)**
	Percent Shortfall of Demand	**39%**	**34%**	**34%**	**34%**
Multiple Dry Years					
Multiple-Dry Year 1	Available Water Supply(a)	877	978	1,018	1,062
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Variant Demand(c)	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(555)**	**(503)**	**(528)**	**(557)**
	Percent Shortfall of Demand	**39%**	**34%**	**34%**	**34%**
Multiple-Dry Year 2	Available Water Supply(a)	760	854	887	927
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Variant Demand(c)	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(672)**	**(627)**	**(659)**	**(692)**
	Percent Shortfall of Demand	**47%**	**42%**	**43%**	**43%**
Multiple-Dry Year 3	Available Water Supply(a)	760	854	887	927
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Variant Demand(c)	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(672)**	**(627)**	**(659)**	**(692)**
	Percent Shortfall of Demand	**47%**	**42%**	**43%**	**43%**
Multiple-Dry Year 4	Available Water Supply(a)	760	854	887	832
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Variant Demand(c)	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(672)**	**(627)**	**(659)**	**(787)**
	Percent Shortfall of Demand	**47%**	**42%**	**43%**	**49%**
Multiple-Dry Year 5	Available Water Supply(a)	760	854	824	832
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Variant Demand(c)	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(672)**	**(627)**	**(722)**	**(787)**
	Percent Shortfall of Demand	**47%**	**42%**	**47%**	**49%**

(a) From Table 7-2 of this WSA.
(b) From Table 5-2V of this WSA.
(c) From Table 5-3V of this WSA.

Table 8-2. MPMW Summary of Water Demand Versus Supply without Bay-Delta Plan Amendment During Hydrologic Normal, Single Dry, and Multiple Dry Years (Project Scenario 2)

Hydrologic Condition		Supply and Demand Comparison, MG			
		2025	2030	2035	2040
Normal Year					
Available Water Supply(a)		1,678	1,750	1,750	1,750
2020 UWMP Demand(b)		1,296	1,345	1,410	1,483
HEU WSA Demand(b)		87	87	87	87
Project Scenario 2 Demand(b)		39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**256**	**279**	**214**	**141**
	Percent Shortfall of Demand	**-**	**-**	**-**	**-**
Single Dry Year					
Available Water Supply(a)		1,344	1,465	1,530	1,603
2020 UWMP Demand(c)		1,296	1,345	1,410	1,483
HEU WSA Demand(c)		87	87	87	87
Project Scenario 2 Demand(c)		39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(78)**	**(6)**	**(6)**	**(6)**
	Percent Shortfall of Demand	**5%**	**< 1%**	**< 1%**	**< 1%**
Multiple Dry Years					
Multiple-Dry Year 1	Available Water Supply(a)	1,344	1,465	1,530	1,603
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(78)**	**(6)**	**(6)**	**(6)**
	Percent Shortfall of Demand	**5%**	**< 1%**	**< 1%**	**< 1%**
Multiple-Dry Year 2	Available Water Supply(a)	1,344	1,465	1,530	1,603
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(78)**	**(6)**	**(6)**	**(6)**
	Percent Shortfall of Demand	**5%**	**< 1%**	**< 1%**	**< 1%**
Multiple-Dry Year 3	Available Water Supply(a)	1,344	1,465	1,530	1,603
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(78)**	**(6)**	**(6)**	**(6)**
	Percent Shortfall of Demand	**5%**	**< 1%**	**< 1%**	**< 1%**
Multiple-Dry Year 4	Available Water Supply(a)	1,344	1,465	1,530	1,603
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(78)**	**(6)**	**(6)**	**(6)**
	Percent Shortfall of Demand	**5%**	**< 1%**	**< 1%**	**< 1%**
Multiple-Dry Year 5	Available Water Supply(a)	1,344	1,465	1,530	1,603
	2020 UWMP Demand(c)	1,296	1,345	1,410	1,483
	HEU WSA Demand(c)	87	87	87	87
	Project Scenario 2 Demand(c)	39	39	39	39
	Updated Water Demand	*1,422*	*1,471*	*1,536*	*1,609*
	Potential Surplus (Deficit)	**(78)**	**(6)**	**(6)**	**(6)**
	Percent Shortfall of Demand	**5%**	**< 1%**	**< 1%**	**< 1%**

(a) From Table 7-3 of this WSA.
(b) From Table 5-2 of this WSA.
(c) From Table 5-3 of this WSA.

Table 8-2V. MPMW Summary of Water Demand Versus Supply without Bay-Delta Plan Amendment During Hydrologic Normal, Single Dry, and Multiple Dry Years (Project Variant)

Hydrologic Condition		Supply and Demand Comparison, MG			
		2025	2030	2035	2040
Normal Year					
Available Water Supply[a]		1,678	1,750	1,750	1,750
2020 UWMP Demand[b]		1,296	1,345	1,410	1,483
HEU WSA Demand[b]		87	87	87	87
Project Variant Demand[b]		49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**246**	**269**	**204**	**131**
	Percent Shortfall of Demand	**-**	**-**	**-**	**-**
Single Dry Year					
Available Water Supply[a]		1,344	1,465	1,530	1,603
2020 UWMP Demand[c]		1,296	1,345	1,410	1,483
HEU WSA Demand[c]		87	87	87	87
Project Variant Demand[c]		49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(88)**	**(16)**	**(16)**	**(16)**
	Percent Shortfall of Demand	**6%**	**1%**	**1%**	**1%**
Multiple Dry Years					
Multiple-Dry Year 1	Available Water Supply[a]	1,344	1,465	1,530	1,603
	2020 UWMP Demand[c]	1,296	1,345	1,410	1,483
	HEU WSA Demand[c]	87	87	87	87
	Project Variant Demand[c]	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(88)**	**(16)**	**(16)**	**(16)**
	Percent Shortfall of Demand	**6%**	**1%**	**1%**	**1%**
Multiple-Dry Year 2	Available Water Supply[a]	1,344	1,465	1,530	1,603
	2020 UWMP Demand[c]	1,296	1,345	1,410	1,483
	HEU WSA Demand[c]	87	87	87	87
	Project Variant Demand[c]	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(88)**	**(16)**	**(16)**	**(16)**
	Percent Shortfall of Demand	**6%**	**1%**	**1%**	**1%**
Multiple-Dry Year 3	Available Water Supply[a]	1,344	1,465	1,530	1,603
	2020 UWMP Demand[c]	1,296	1,345	1,410	1,483
	HEU WSA Demand[c]	87	87	87	87
	Project Variant Demand[c]	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(88)**	**(16)**	**(16)**	**(16)**
	Percent Shortfall of Demand	**6%**	**1%**	**1%**	**1%**
Multiple-Dry Year 4	Available Water Supply[a]	1,344	1,465	1,530	1,603
	2020 UWMP Demand[c]	1,296	1,345	1,410	1,483
	HEU WSA Demand[c]	87	87	87	87
	Project Variant Demand[c]	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(88)**	**(16)**	**(16)**	**(16)**
	Percent Shortfall of Demand	**6%**	**1%**	**1%**	**1%**
Multiple-Dry Year 5	Available Water Supply[a]	1,344	1,465	1,530	1,603
	2020 UWMP Demand[c]	1,296	1,345	1,410	1,483
	HEU WSA Demand[c]	87	87	87	87
	Project Variant Demand[c]	49	49	49	49
	Updated Water Demand	*1,432*	*1,481*	*1,546*	*1,619*
	Potential Surplus (Deficit)	**(88)**	**(16)**	**(16)**	**(16)**
	Percent Shortfall of Demand	**6%**	**1%**	**1%**	**1%**

(a) From Table 7-3 of this WSA.
(b) From Table 5-2V of this WSA.
(c) From Table 5-3V of this WSA.

9.0 VERIFICATION OF WATER SUPPLY SUFFICIENCY BASED ON THE REQUIREMENTS OF SB 221

The Proposed Project may also be subject to the requirements of SB 221 (Government Code section 66473.7). SB 221 applies to residential development projects of more than 500 dwelling units and requires that the water supplier (MPMW) provide a written verification that the water supply for the Project is sufficient. As previously discussed, the Proposed Project may include up to 550 dwelling units and the Project Variant may include up to 800 dwelling units.

Verification must demonstrate supply sufficiency by showing that water supplies available during normal, single dry and multiple dry years within a projected 20-year period will meet the projected demand associated with the Proposed Project and the Project Variant, in addition to existing and planned future uses, including, but not limited to, agriculture and industrial uses. Per the requirements of SB 221, the following must be considered:

- Historical water deliveries for the previous 20 years
- Urban water shortage contingency analysis prepared for the UWMP
- Supply reduction for specific water use sectors
- Amount of water expected from specified supply projects

The specific considerations to be evaluated for the SB 221 verification are described below and reference applicable sections of the MPMW 2020 UWMP and this WSA.

9.1 Historical Water Deliveries

MPMW's water supplies are described in Section 6 of this WSA and Chapter 6 of the MPMW 2020 UWMP. Table 9-1 presents MPMW's historical use of these supplies over the past 20 years. The use of these supplies will continue into the future with increasing recycled water usage, as described in Section 6 of this WSA.

Table 9-1. MPMW Historical Water Supplies

Water Source	Historical Water Supply, MG				
	2000	2005	2010	2015	2020
Potable Water Purchased Water from the SFPUC RWS	1,354[a]	1,268[b]	1,052[c]	883[c]	1,069[c]
Recycled Water Purchased from WBSD	--	--	--	--	20[d]
Total	**1,354**	**1,268**	**1,052**	**883**	**1,089**

(a) MPMW 2015 UWMP, Appendix E, Table 4
(b) MPMW 2015 UWMP, Table 3-1.
(c) MPMW 2020 UWMP, Table 4-2.
(d) MPMW 2020 UWMP, Table 4-7.

Water supply availability and reliability during normal, single dry, and multiple dry years is described in Section 7 of this WSA.

9.2 Projected Water Demand by Customer Sector

Projected potable and recycled water demands in the MPMW service area are described in Section 5.2 of this WSA and is largely based on information provided in Chapter 4 of MPMW’s 2020 UWMP. Projected potable water demand by customer sector within MPMW’s service area is documented in the MPMW’s 2020 UWMP (Chapter 4). That demand is summarized in Table 9-2 and Table 9-2V below, which includes the City’s HEU Demand, as well as the demand associated with Project Scenario 2 and the Project Variant, respectively.

Table 9-2. Actual and Projected Potable Water Demands (Project Scenario 2)

	Water Demand, MG				
Water Use Type	2020 (Actual)[a]	2025[b]	2030[b]	2035[b]	2040[b]
Single Family	361	306	299	293	288
Multi-Family	113	158	176	203	230
Commercial	203	346	345	373	401
Industrial	140	134	122	112	102
Institutional/ Governmental	98	98	105	115	126
Landscape	139	95	61	71	85
Losses	12	110	116	122	128
Other Potable	3	1	1	1	2
2020 UWMP Demand Subtotal	*1,069*	*1,248*	*1,225*	*1,290*	*1,362*
HEU WSA Demand[c]	87	87	87	87	87
Project Scenario 2 Demand[c]	39	39	39	39	39
Updated Water Demand	**1,195**	**1,374**	**1,351**	**1,416**	**1,488**

(a) MPMW 2020 UWMP, Table 4-1.
(b) MPMW 2020 UWMP, Table 4-6.
(c) From Table 5-2 of this WSA.

Table 9-2V. Actual and Projected Potable Water Demands (Project Variant)

Water Use Type	Water Demand, MG				
	2020 (Actual)[(a)]	2025[(b)]	2030[(b)]	2035[(b)]	2040[(b)]
Single Family	361	306	299	293	288
Multi-Family	113	158	176	203	230
Commercial	203	346	345	373	401
Industrial	140	134	122	112	102
Institutional/ Governmental	98	98	105	115	126
Landscape	139	95	61	71	85
Losses	12	110	116	122	128
Other Potable	3	1	1	1	2
2020 UWMP Demand Subtotal	*1,069*	*1,248*	*1,225*	*1,290*	*1,362*
HEU WSA Demand[(c)]	87	87	87	87	87
Project Variant Demand[(c)]	49	49	49	49	49
Updated Water Demand	**1,205**	**1,384**	**1,361**	**1,426**	**1,498**

(a) MPMW 2020 UWMP, Table 4-1.
(b) MPMW 2020 UWMP, Table 4-6.
(c) From Table 5-2V of this WSA.

9.3 Water Shortage Contingency Analysis

Chapter 8 and Appendix J of the MPMW 2020 UWMP provide a Water Shortage Contingency Plan to address situations when catastrophic water supply interruptions occur due to regional power outage, earthquake, or other disasters; and when drought occurs. The primary objective of the WSCP is to ensure that MPMW has adequate resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during a water supply shortage or interruption. The plan is based on Menlo Park Municipal Code Section 7.35, requiring water rationing and conservation and granting MPMW the authority to enforce penalties.

The MPMW 2020 WSCP builds upon the WSCP established in 2015, including additional provisions required by California Water Code. On an annual basis, MPMW in coordination with BAWSCA will evaluate water supply information provided by SFPUC or BAWSCA to determine if a water shortage exists, as well as the severity of a particular water shortage. In response to water use reductions required by SFPUC or another governing body, the City Council may declare a water shortage. The MPMW 2020 WSCP defines six water shortage stages ranging from 10 percent to greater than 50 percent water shortage, in addition to water waste prohibitions that are always in effect. MPMW monitors water use in its service area through monthly meter readings, which allows high water use to be identified and resolved during a water shortage. In addition, MPMW plans to install advanced metering infrastructure over the next two fiscal years to provide automated real-time water use data and allow MPMW to aggressively target leaks and high water use.

If an emergency or drought condition were to occur that requires MPMW to implement its WSCP, all MPMW customers, including those within the Proposed Project and the Project Variant, would be subject to the same water conservation and water use restrictions included in the 2020 WSCP.

9.4 Verification of Sufficient Water Supply

As described in Section 8 of this WSA, the sufficiency of supplies to meet the Proposed Project demands depends on the assumed reliability of the SFPUC RWS supplies, which depends on the assumed implementation of the Bay-Delta Plan Amendment. If the Bay-Delta Plan Amendment is assumed to be implemented, projected supplies during normal years are sufficient to meet the Proposed Project demands, but significant supply shortfalls are projected in dry years for agencies that receive water supplies from the SFPUC RWS, as well as other agencies whose water supplies would be affected by the Amendment. For MPMW with Project Scenario 2, supply shortfalls are projected in single dry years (ranging from 34 to 38 percent) and in multiple dry years (ranging from 34 to 48 percent) through 2040. For MPMW with the Project Variant, supply shortfalls are projected in single dry years (ranging from 34 to 39 percent) and in multiple dry years (ranging from 34 to 49 percent) through 2040. Based on SFPUC's analysis, there would be similar findings through 2045.

If the Bay-Delta Plan Amendment is assumed not to be implemented, projected supplies during normal years are sufficient to meet the Proposed Project demands, but supply shortfalls are projected in dry years. For MPMW with Project Scenario 2, supply shortfalls are projected in single dry years (ranging from less than 1 to 5 percent) and in multiple dry years (also ranging from less than 1 to 5 percent) through 2040. For MPMW with the Project Variant, supply shortfalls are projected in single dry years (ranging from 1 to 6 percent) and in multiple dry years (also ranging from 1 to 6 percent) through 2040. In addition, a 16.5 percent supply shortfall or greater is projected during the fourth and fifth consecutive dry years for base year 2045 based on SFPUC's analysis.

As described in Section 8 of this WSA, if supply shortfalls occur, MPMW expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its WSCP. Under the scenario which assumes the Bay-Delta Plan Amendment is implemented, the projected single dry year and multiple dry year shortfalls would require implementation of Stages 4 or 5 of the MPMW WSCP. Under the scenario which assumes the Bay-Delta Plan Amendment is not implemented, the projected single dry year and multiple dry year shortfalls would require implementation of Stages 1, 2 or 3[15] of the MPMW WSCP. The Proposed Project and the Project Variant would be subject to the same water conservation and water use restrictions as other water users within the MPMW system.

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[15] For 2045, assumes the 16.5 percent shortfall from the SFPUC analysis is added to any of the shortfalls predicted for MPMW between 2025 and 2040, which range from 1 to 6 percent.

10.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS

> *10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.*

The Menlo Park City Council must approve this WSA at a regular or special meeting. This WSA will be included in the Draft EIR being prepared for Parkline.

11.0 REFERENCES

Bay Area Water Supply and Conservation Agency, 2021. *Drought Allocation Tables by Agency.* April 1, 2021.

Erler & Kalinowski, Inc. 2016b. *2015 Urban Water Management Plan for Menlo Park Municipal Water District*. June 2016.

EKI Environment and Water, Inc. 2021. *2020 Urban Water Management Plan for Menlo Park Municipal Water District.* June 2021.

ESA, 2022. *City of Menlo Park Housing Element Update, Water Supply Assessment for the Water Service Provided by California Water Service (Bear Gulch District) and Menlo Park Municipal Water.* November 2022.

Kier & Wright, 2024. *SRI-Parkline Existing Water Demand Summary Table.* February, 2024.

PAE, 2024. *Parkline Project Preliminary Building Energy Estimate [Update].* February 20, 2024.

San Francisco Public Utilities Commission. 2019. *Water Supply Reliability Information for BAWSCA Member Agencies' Water Supply Assessments*. July 2019.

San Francisco Public Utilities Commission. 2021. *2020 Urban Water Management Plan for the City and County of San Francisco*. June 2021.

San Francisco Public Utilities Commission. 2021. *Memorandum regarding Regional Water System Supply Reliability and UWMP 2020*. June 2, 2021.

Appendix A

Parkline Project Preliminary Building Energy Estimate (February 2024)

Memo

Date: February 20th, 2024
Project: Parkline Project
Project Number: 21-1438
To: Lane Partners
From: Matt Hyder (PAE)
Subject: Preliminary Building Energy Estimate [Update]

Preliminary Building Energy Estimate

This memo provides a preliminary estimate for the building energy usage for the Parkline project (SRI project). It is intended to provide information necessary to complete the annual carbon emissions calculation for the project as part of SB7 certification and to provide information to the City and its consultants in connection with environmental review for the Project pursuant to the California Environmental Quality Act (CEQA).

The estimated annual electricity, natural gas, and water consumption is summarized in Table 2 and Table 3 below. To clarify how these values were generated, PAE has provided Table 10 and Table 11, which contains information on the calculations and assumptions used in our analysis.

PROJECT DESCRIPTION

The Project site is currently SRI International's research and development (R&D) campus, consisting of 38 buildings totaling approximately 1.4 million gross square feet of office, R&D, amenity, and support land uses. Support facilities for the existing project site include a natural gas cogeneration power plant facility and the accessory back-up boiler, emergency diesel generator, and other support equipment.

The project would redevelop the project site with a mixed-use, transit-oriented development organized into two land use districts within the Project site, including an approximately 10-acre Residential District in the southwestern portion of the Project site and an approximately 53-acre Office/R&D District that would comprise the remainder of the Project site. In addition, the Project would also include approximately 25 acres of publicly accessible open space areas and supporting amenities, including a network of pedestrian and bicycle trails, open spaces and active/passive recreational areas.

The Office/R&D District would include five new office/R&D buildings totaling approximately 1.1 million square feet, a commercial amenity building of approximately 40,000 square feet, and a community amenity building of approximately 2,000 square feet. Approximately 2,800 parking spaces would be provided within three above-grade parking structures, surface parking areas, and underground parking areas.

The Residential District would include 450 new rental housing units of approximately 519,750 square feet on site, in a mix of multifamily buildings between three and six stories tall and two-story townhomes. The Residential District would include up to 469 parking spaces for the units within podium parking structures and surface parking areas. In addition, the Project includes up to an additional 100 units that would be developed in the future by an affordable housing developer. This affordable housing building would contain an additional 50 parking spaces for the units within podium parking structures.

Existing Buildings P, S, and T would remain on site and occupied by SRI International and its tenants. The Project would demolish the remaining 35 existing structures and decommission the existing natural gas cogeneration power plant facility.

PROJECT VARIANTS

The CEQA analysis for the project will evaluate an additional project variant. Project variant is a variation of the project at the same project site, with the same project objectives, background, and development controls, but with additions and changes to the project, the inclusion of which may or may not change environmental impacts.

> Increased Development Variant: This variant would increase the number of on-site residential units from 550 units up to 800 units (up to 154 of which would be affordable and developed by an affordable housing developer) subject to final confirmation by the City. This variant also includes two residential swimming pools, one on the R1 roof deck and another on R2 roof deck. Building heights along Laurel remain unchanged at two stories for the townhomes and three to four-stories for R1 and R2, while heights are increased along Ravenswood. One level of underground parking is proposed below office/R&D buildings O1 and O5. This variant would also add an approximately 2-million-gallon underground water reservoir and associated aboveground facilities to be implemented by the City at a later date if the site is selected by the City for that use. The emergency reservoir would be located in the northeastern corner of the Project site below the proposed recreational field and would be leased to the City for construction and operation. A generator may be required at the pump station to serve the emergency reservoir, to be determined by the City.

EXECUTIVE SUMMARY & METHODOLOGY

A summary of the estimated building energy and water consumption values are provided in Table 2 and Table 3 below. An energy modeling analysis has not currently been completed at this stage. This detailed building level energy modeling analysis is not typical for a project at this early entitlement phase. Therefore, these values were calculated using energy benchmarking data based on a large project portfolio of comparable projects.

SCENARIOS ANALYZED

For Office/R&D Buildings 1 through 5, this analysis evaluates two potential buildout schemes: (1) Buildout Scheme 1 (S1) analyzes the commercial buildings as programmed for 100% office, which represents a smaller energy and water usage consumption as compared to 100% R&D and (2) Buildout Scheme 2 (S2) analyzes the commercials buildings as R&D programming, which represents higher energy and water use consumption compared to 100% office.

Additionally, this analysis includes evaluation of the Increased Development Variant without the emergency water reservoir because the energy use associated with the reservoir (to be used only for preventative maintenance and emergencies) would be negligible.

Lastly, the estimated energy usage for the parking garages and commercial surface parking includes the Menlo Park code required electric vehicle charging at 10% of the total 2,800 commercial spaces for initial project operation. Residential uses are required per code to include 1 EV charger per residential unit. Campus site lighting (street lighting, landscape lighting, exterior signage, etc.) was not included in our estimate as additional energy demand for those uses are minimal.

Table 1 below details the schemes and variants analyzed in this memorandum.

Table 1. Schemes and Variants

Scheme / Variant	Alteration
Buildout Scheme 1 (S1)	All office for O1 through 5
Buildout Scheme 2 (S2)	R&D programming for O1 through 5 (60% lab and 40% office)
Base Scheme	550 total residential units
Increased Development Variant	800 total residential units and Emergency Water Reservoir [1]

Notes:

[1]: Energy and water use estimates for Energy Water Reservoir are assumed to be negligible based on equipment being used only during emergencies and preventative system testing.

METHODOLOGY

To calculate energy consumption, we multiplied the anticipated energy use intensity (EUI) for each program type by their respective building areas. For interior water consumption, we multiplied the anticipated water use intensity (WUI) for each program type by the respective building areas. Landscape water consumption is based on estimated values provided by OJB using the maximum applied water allowance for the site. Pool heating energy and water consumption has been estimated based on pool area and volume.

Where feasible, PAE sourced energy and water benchmarking data from our own project portfolio rather than generic public databases. PAE's inventory of projects contains new, higher-performing buildings located in California than the general energy databases available online. This project portfolio data is representative of efficient and modern new construction design and engineering in compliance with California building and energy standards, including CALGreen and Title 24 requirements. As such, data from PAE projects represent comparable energy consumption data that are indicative of the anticipated energy at the project.

For building water consumption estimates, PAE sourced WUIs from multiple sources. The EIA Commercial Buildings Energy Consumption Survey (CBECS) was used to determine water usage for office amenity buildings. For R&D buildings, the Labs 21 Laboratory Benchmarking Tool was used to estimate building water consumption. This water consumption estimation for R&D is similar to consumption estimates from the 1350 Adams Court and 777 Airport Boulevard EIR Water Supply Assessments. Residential building water consumption was estimated from HUD benchmarking data and matches the same consumption estimates from the Menlo Park Housing Element EIR Water Supply Assessment.

The benchmarked estimated values below include only the new proposed buildings included in the project proposal. All new buildings are anticipated to be all electric designs. There are three existing buildings set to remain, Buildings P, S, and T. Therefore, these existing buildings are excluded from these estimates and are assumed to continue the same energy and water usage.

Table 2. Summary of Annual Building Energy Usage Estimate Totals by Scheme and Variant

Building Type	Scheme 1: 100% Office and 550 Residential Units (kWh/year)	Scheme 2: R&D and 550 Residential Units (kWh/year)	Increased Development Variant: R&D and 800 Residential Units (kWh/year)
Office / R&D	14,639,200	46,229,053	46,229,053
Multifamily	5,540,687	5,540,687	8,993,769
Multifamily Pools	-	-	358,028
Amenities	984,878	984,878	984,878
Parking (surface and garage)	1,732,197	1,732,197	1,887,093
EV Charging (Transportation Energy)	2,188,310	2,188,310	2,427,484
Total	25,085,273	56,675,125	60,880,304

Table 3. Summary of Annual Water Usage Estimate Totals by Scheme and Variant

Building Type	Scheme 1: 100% Office and 550 Residential Units (gal/year)	Scheme 2: 100% R&D and 550 Residential Units (gal/year)	Increased Development Variant: 100% R&D and 800 Residential Units (gal/year)
Office / R&D	15,353,360	44,587,840	44,587,840
Multifamily	26,699,750	26,699,750	38,836,000
Multifamily Pools	-	-	479,878
Amenities	2,151,040	2,151,040	2,151,040
Landscaping[2]	22,259,730	22,259,730	19,433,440
Total	66,463,880	95,698,360	105,488,198

Notes:

1: Parking structures and lots assumed to have no water use and are not included in this table.

2: Landscaping water use estimation provided by OJB.

ANTICIPATED ENERGY AND WATER DEMAND FOR PROPOSED PROJECT

The energy and water calculations are detailed in Table 4 through Table 9 below. These calculations make use of gross floor area for each building on the campus as well as program-based EUIs and WUIs. Information on the EUIs and WUIs is provided in the following Assumptions section. For these calculations, PAE assumed all new buildings to be all-electric. As such, only kWh values have been provided for these buildings.

Table 4. 100% Office vs. R&D Building Energy and Water Estimate Calculation

Office / R&D Building		Annual Electricity Consumption (kWh)		Annual Water Consumption (gal)	
	Gross Floor Area (ft²)	S1: Office	S2: R&D	S1: Office	S2: R&D
O1	184,000	2,561,442	8,088,765	2,686,400	7,801,600
O2	227,300	3,164,217	9,992,263	3,318,580	9,637,520
O3	227,300	3,164,217	9,992,263	3,318,580	9,637,520
O4	229,000	3,187,882	10,066,996	3,343,400	9,709,600
O5	184,000	2,561,442	8,088,765	2,686,400	7,801,600
Total	1,051,600	14,639,200	46,229,053	15,353,360	44,587,840

Table 5. Multifamily Building Energy and Water Estimate Calculation for the Base Scheme vs. Increased Development Variant

Multifamily Building		# of Units		Gross Floor Area (ft²)		Annual Electricity Consumption (kWh)		Annual Water Consumption (gal)	
Base	Variant	Base	Variant	Base	Variant	Base	Variant	Base	Variant
R1	R1	150	300	180,000	398,000	1,477,079	3,265,986	7,281,750	14,563,500
R2	R2	150	300	180,000	393,000	1,477,079	3,224,956	7,281,750	14,563,500
R3	R3-Aff.	131	154	157,200	178,000	1,289,982	1,460,667	6,359,395	7,475,930
R4-Aff.	TH1	100	19	120,000	55,000	984,719	451,330	4,854,500	922,355
TH	TH2	19	27	38,000	72,000	311,828	590,832	922,355	1,310,715
Total		550	800	675,200	1,096,000	5,540,687	8,993,769	26,699,750	38,836,000

Table 6. Pool Energy and Water Estimate Calculation for Increased Development Variant

Pools	Gross Pool Area (ft²) [1]		Annual Electricity Consumption (kWh)		Annual Water Consumption (gal/year)	
	Base	Variant	Base	Variant	Base	Variant
R1 Pool	-	1,500	-	179,014	-	239,939
R2 Pool	-	1,500	-	179,014	-	239,939
Total	-	3,000	-	358,028	-	479,878

Notes:

1. Pool dimensions are 60’W x 25’L x 4.5’D average. Base residential includes no pools.

Table 7. Amenities Building Energy and Water Estimate Calculation

Amenity Building	Gross Floor Area (ft^2)	Annual Electricity Consumption (kWh/year)	Annual Water Consumption (gal/year)
Commercial Amenity	40,000	937,934	2,048,512
Public Amenity [1]	2,002	46,944	102,528
Total	42,002	984,878	2,151,040

Notes:

1. Public Amenity space to be located in ground level of R3 building.

Table 8. Landscaping/ Irrigation Water Estimate Calculation

Landscaping	Gross Landscaped Area (ft^2)		Annual Water Consumption (gal/year)	
	Base	Variant	Base	Variant
Landscaped Area	1,150,671	1,060,309	22,259,730	19,433,440
Total	1,150,671	1,060,309	22,259,730	19,433,440

Table 9. Parking Energy Estimate[1] Calculation

Parking Structure		Gross Floor Area (ft^2)		Annual Electricity Consumption, (kWh/year)		Annual Electricity Consumption, EV Charging (kWh/year) [1]	
Base	Variant	Base	Variant	Base	Variant	Base	Variant
PG1	PG1	239,700	264,200	351,246	387,147	139,917	154,218
PG2	PG2	242,700	326,500	355,642	478,439	141,669	190,584
PG3	PG3	218,400	210,800	320,034	308,897	127,484	123,048
Office Basement parking	Office Basement parking	104,400	88,900	152,983	130,270	60,940	51,893
R1 Parking	R1 Parking	72,000	139,893	105,506	204,993	426,669	829,000
R2 Parking	R2 Parking	78,000	120,255	114,298	176,216	462,225	712,626
R3 Parking	R3 Parking	64,000	26,697	93,783	39,121	379,261	158,205
R4 Parking	TH1 Parking	24,000	9,460	35,169	13,862	142,223	56,060
R5 Parking	TH2 Parking	9,000	10,800	13,188	15,826	53,334	64,000
Residential Surface Parking	Residential Surface Parking	24,000	-	21,101	-	142,223	-
Commercial Surface Parking	Commercial Surface Parking	192,500	150,500	169,249	132,322	112,366	87,850
Total		1,268,700	1,348,005	1,732,197	1,887,093	2,188,310	2,427,484

Notes:

1: Electric vehicle (EV) charging is based on 10% of commercial parking spaces (2,800 total parking spaces) and 1 charging station per residential unit for residential uses (550 for the base scheme and 800 for variant).

ASSUMPTIONS

The calculations for estimating the energy and water demand as described in Table 4 through Table 9 above are based on the following data sources and assumptions as shown in Table 10 and Table 11.

Table 10. Energy Use Intensity (EUI) Assumptions Summary

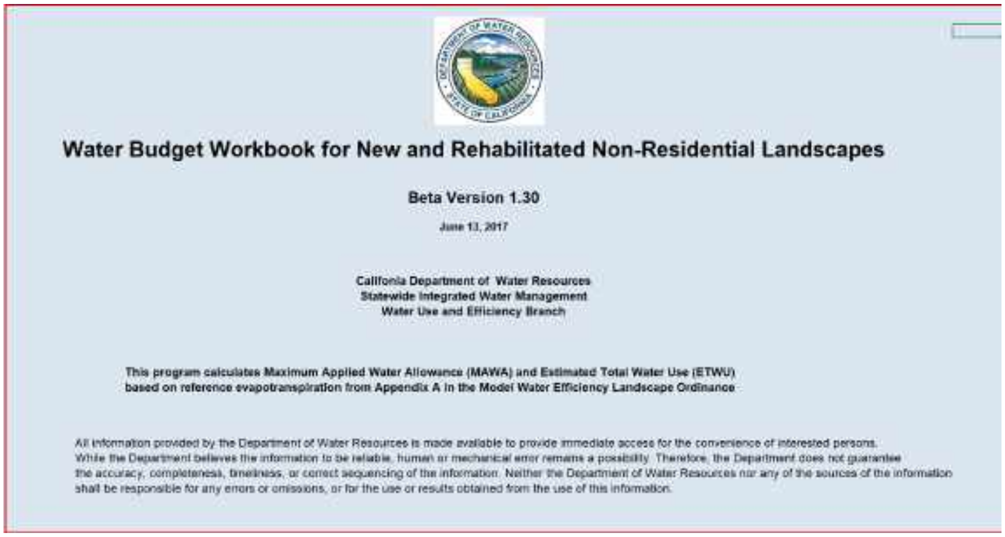
Building Type	EUI (kBtu/ft^2/year)	Source
R&D (Office / Lab)	150	PAE Project Portfolio representing highest energy use scenario of R&D program with 60% laboratory, 40% office
Office	47.5	PAE Project Portfolio representing typical office use building
Multifamily	28	PAE Project Portfolio
Pools	407	PAE Pool calculations, pool heating to 80F with air-source heat pump
Amenities	80	Combination between Office, Fitness, and Restaurant EUIs • Program Split: 57% Office, 24% Fitness, 19% Restaurant Split (per Project Amenity Floor Plans issued on 08/01/22) • Office EUI: 47.5 kBtu/ft^2/yr (PAE Project Portfolio) • Fitness EUI: 47 kBtu/ft^2/yr (Building Performance Database filtering for data on recreation buildings built between 2000 and 2020 in the Bay Area – median value) • Restaurant EUI: 220 kBtu/ft^2/yr (PAE Project Portfolio)
Parking Garage	5	PAE Project Portfolio
Surface Parking	3	EnergyStar Portfolio Manager
Commercial EV charging	1.9	PAE Project Portfolio (based on 10% of spaces per Menlo Park code)
Residential EV charging	20.2	PAE Project Portfolio (based on 1 charger per residential unit per Menlo Park code)

Table 11. Water Use Intensity (WUI) and Gallons Per Day (GPD) Assumptions Summary

Building Type	WUI ($gal/ft^2/yr$)	GPD ($gal/day/ft^2$)	# of days	Source
R&D (Office / Lab)	42.4	0.162	261	Labs 21 Laboratory Benchmarking Tool for R&D lab, 777 Airport Blvd EIR Water Supply Assessment
All Office	14.6	0.056	261	US Energy Information Administration (EIA) Commercial Buildings Energy Consumption Survey (CBECS) for office
Multifamily	40.0	0.110 (133 GPD/unit)	365	HUD benchmarking data, Menlo Park 2022 Housing Element EIR Water Supply Assessment
Pools	160.0	0.44	365	PAE Pool calculations, includes make-up water from evaporation and annual drain and re-fill of entire pool.
Commercial Amenities	51.2	0.196	261	Combination between Office, Fitness, and Restaurant WUIs • Program Split: 57% Office, 24% Fitness, 19% Restaurant Split (per SRI Office Amenity Floor Plans issued on 08/01/22) • Office WUI: 14.6 $gal/ft^2/yr$ (0.056 GPD/ft^2) (EIA CBECS data) • Fitness WUI: 21.0 $gal/ft^2/yr$ (0.08 GPD/ft^2) (Based on water use from Willow Village Water Supply Assessment) • Cafeteria/Kitchen WUI: 200 $gal/ft^2/yr$ (0.77 GPD/ft^2) (Based on water use from Willow Village Water Supply Assessment)
Landscaping / Irrigation	19.6	0.053	365	Data provided from OJB calculations
Parking and EV charging	-	-	-	No water usage assumed at parking garages or surface parking lots

ATTACHMENT A: LANDSCAPING IRRIGATION WATER DEMAND DATA

Note: Data in this Attachment A has been prepared by OJB Landscape Architecture for both the Project Buildout Schemes 1/2 and the Increased Development Variant by utilizing "Water budget Workbook for New and Rehabilitated Non-Residential Landscapes" developed by the California Department of Water Resources (Version 1.30; June 12, 2017).



Water Budget Workbook for New and Rehabilitated Non-Residential Landscapes

Beta Version 1.30

June 13, 2017

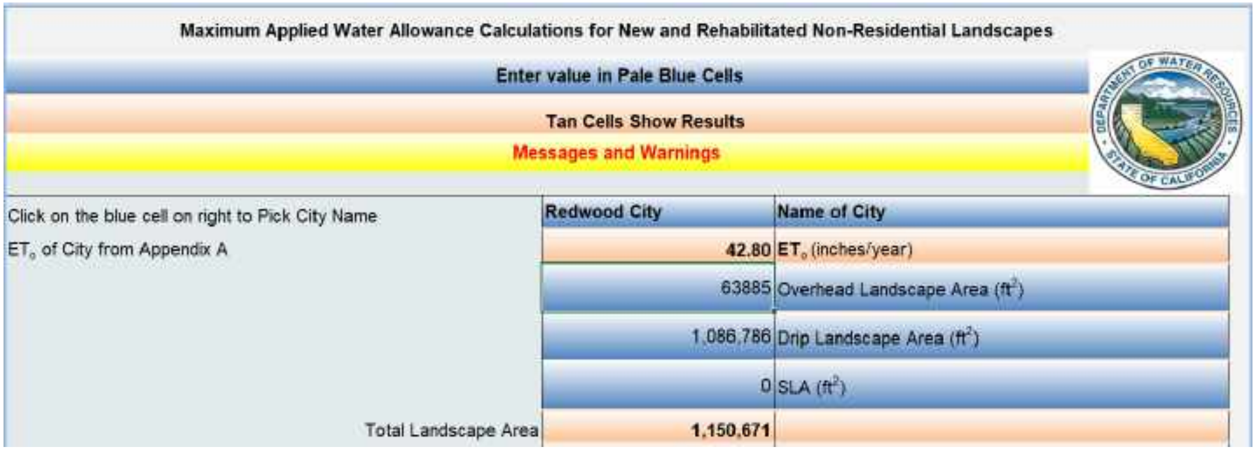
Califonia Department of Water Resources
Statewide Integrated Water Management
Water Use and Efficiency Branch

This program calculates Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU) based on reference evapotranspiration from Appendix A in the Model Water Efficiency Landscape Ordinance

All information provided by the Department of Water Resources is made available to provide immediate access for the convenience of interested persons. While the Department believes the information to be reliable, human or mechanical error remains a possibility. Therefore, the Department does not guarantee the accuracy, completeness, timeliness, or correct sequencing of the information. Neither the Department of Water Resources nor any of the sources of the information shall be responsible for any errors or omissions, or for the use or results obtained from the use of this information.

ATTACHMENT A: LANDSCAPING IRRIGATION WATER DEMAND DATA

1. PROJECT BUILDOUT SCHEMES 1/2



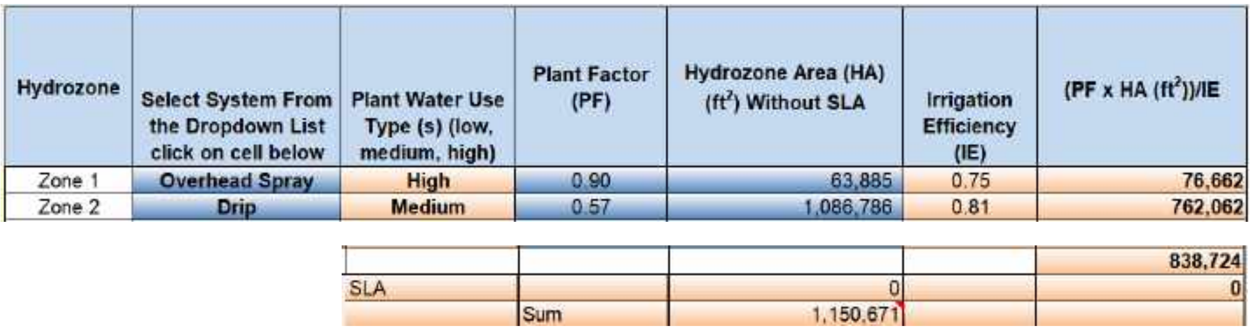
Maximum Applied Water Allowance Calculations for New and Rehabilitated Non-Residential Landscapes

Enter value in Pale Blue Cells

Tan Cells Show Results

Messages and Warnings

Click on the blue cell on right to Pick City Name	**Redwood City**	**Name of City**
ET$_o$ of City from Appendix A	**42.80**	**ET$_o$** (inches/year)
	63885	Overhead Landscape Area (ft^2)
	1,086,786	Drip Landscape Area (ft^2)
	0	SLA (ft^2)
Total Landscape Area	**1,150,671**	

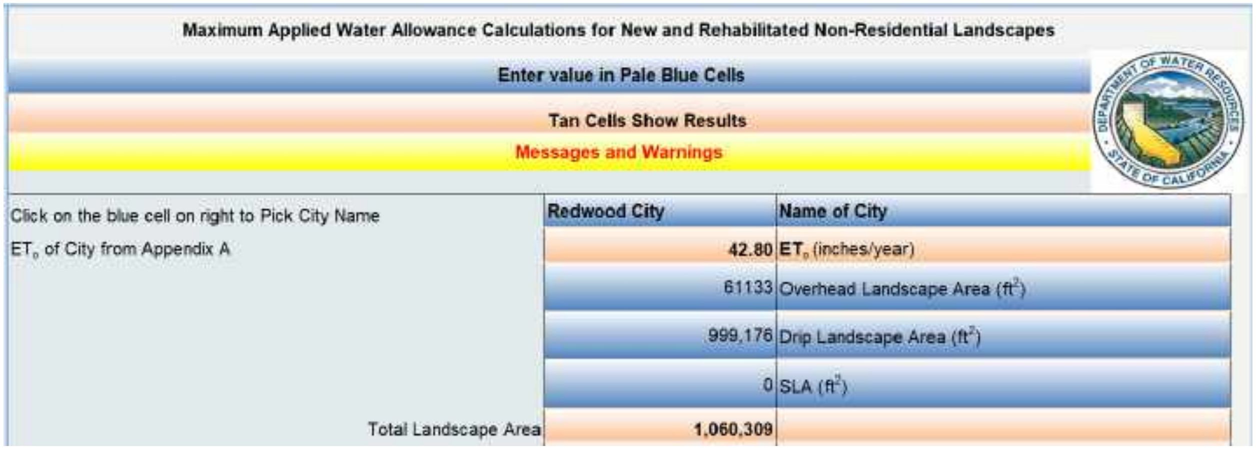


Hydrozone	Select System From the Dropdown List click on cell below	Plant Water Use Type (s) (low, medium, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft^2) Without SLA	Irrigation Efficiency (IE)	(PF x HA (ft^2))/IE
Zone 1	**Overhead Spray**	**High**	0.90	63,885	0.75	**76,662**
Zone 2	**Drip**	**Medium**	0.57	1,086,786	0.81	**762,062**
						838,724
	SLA		0			0
		Sum	1,150,671			

Total Landscape Area including Special Landscape Area

ETWU =	**22,259,730 Gallons**
	2,975,703 Cubic Feet
	29,757.03 HCF
	68.31 Acre-feet
	22.26 Millions of Gallons

2. INCREASED DEVELOPMENT VARIANT [UPDATED 2024]



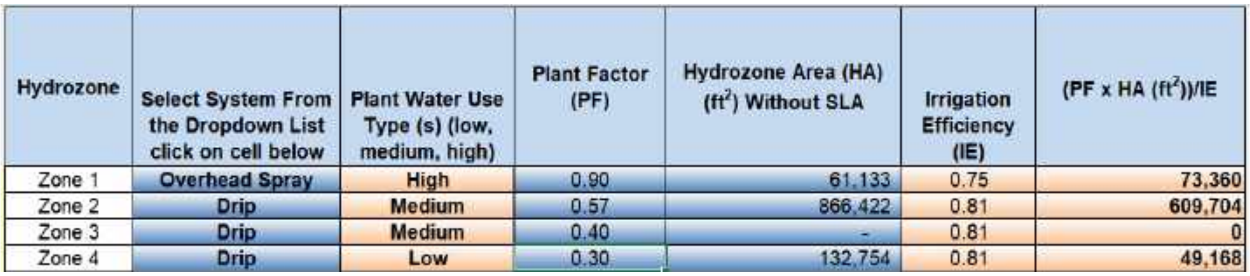
Maximum Applied Water Allowance Calculations for New and Rehabilitated Non-Residential Landscapes

Enter value in Pale Blue Cells

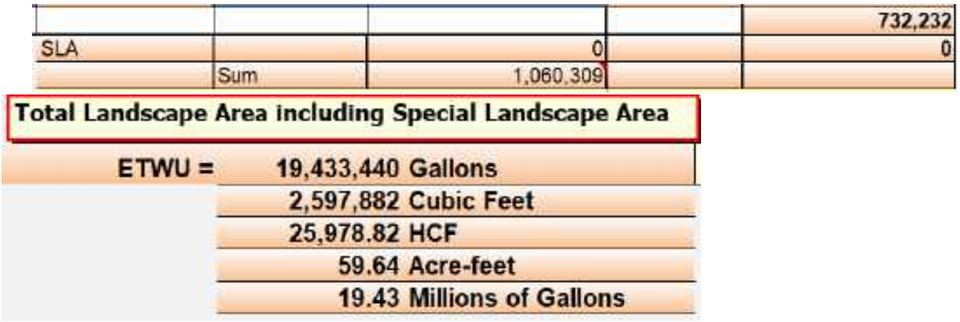
Tan Cells Show Results

Messages and Warnings

Click on the blue cell on right to Pick City Name	**Redwood City**	**Name of City**
ET_o of City from Appendix A	**42.80**	**ET_o** (inches/year)
	61133	Overhead Landscape Area (ft^2)
	999,176	Drip Landscape Area (ft^2)
	0	SLA (ft^2)
Total Landscape Area	**1,060,309**	



Hydrozone	Select System From the Dropdown List click on cell below	Plant Water Use Type (s) (low, medium, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft^2) Without SLA	Irrigation Efficiency (IE)	(PF x HA (ft^2))/IE
Zone 1	**Overhead Spray**	**High**	0.90	61,133	0.75	**73,360**
Zone 2	**Drip**	**Medium**	0.57	866,422	0.81	**609,704**
Zone 3	**Drip**	**Medium**	0.40	-	0.81	**0**
Zone 4	**Drip**	**Low**	0.30	132,754	0.81	**49,168**



				732,232
SLA		0		0
	Sum	1,060,309		

Total Landscape Area including Special Landscape Area

ETWU = 19,433,440 Gallons
2,597,882 Cubic Feet
25,978.82 HCF
59.64 Acre-feet
19.43 Millions of Gallons

Appendix B

SRI-Parkline Existing Water Demand Summary Table (February 2024)

EXISTING WATER DEMAND SUMMARY TABLE										
ENTITY	**YEAR**	**DEMAND (GPD)**	**DEMAND REDUCTION FROM 2014**	**PROJECT SIZE (AC)**	**OCCUPANTS[4]**	**OCCUPANT REDUCTION FROM 2014**	**EX. BLDG AREA (SF)**	**DEMAND LOAD GPD/SF**	**EX. BLDG P, S & T PRORATED GPD BASED ON 283,826 SF[4]**	**COMMENTS**
BKF Engineers	2014	201,994[1]	-	63.2	1,786	-	1,380,332[2]	0.15	41,534	Estimated demand based on 2010 SBSA Waste Discharge Permit Application
City of Menlo Park	2019	128,486[3]	36%	63.2	1,382	23%	1,380,332[2]	0.09	26,419	Existing occupant load based on SRI Campus Population 2003-2022
City of Menlo Park	2022	101,672[3]	50%	63.2	1,100	38%	1,380,332[2]	0.07	20,906	Existing occupant load based on SRI Campus Population 2003-2022
Cal Water	2022-2024	567[4]	N/A	1.0	N/A	N/A	12,700	0.04	N/A	Estimated demand based on Cal Water Service meter readings 2022-2024

[1] Water usages based on: meter readings for the Laurel Meter 64139858 as shown in Attachment A - Application for Wastewater Discharge Permit

[2] Existing building square footage based on: SRI – Explanation of Updates to Water Demand Memorandum by BKF Engineers dated March 12, 2014 and 201 Ravenswood Avenue Permit PLN2018-00113

[3] Demand based on City of Menlo Park monthly water statements

[4] Water usages based on: Cal Water Service meter readings for First Church of Christ located at 201 Ravenswood Avenue (Meter 62323191)

Table 1: Existing Domestic Water Demands

Site Area:	64.2	AC
Occupants:	1,786	
Building Area:	1,393,032	SF

Use	Water Use (gpd)
SRI Indoor Water Demand (Sanitary)	**42,930**
Other Water Demands	
Process	20,430
Wash/Rinse	2,580
Boiler	44,002
Cooling	48,392
SRI Total Other Water Demands	**115,404**
SRI Irrigation Water Demand	**43,660**
Church Indoor Water Demand	**567**
Total Water Demand	**202,561**

Note:
1. Estimate demands based on the 2010 SBSA Waste Discharge Permit Application, see attached.

Appendix C

Regional Water System Supply Reliability and UWMP 2020 Memorandum (June 2021)

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

TO: SFPUC Wholesale Customers

FROM: Steven R. Ritchie, Assistant General Manager, Water

DATE: June 2, 2021

RE: Regional Water System Supply Reliability and UWMP 2020

This memo is in response to various comments from Wholesale Customers we have received regarding the reliability of the Regional Water System supply and San Francisco's 2020 Urban Water Management Plan (UWMP).

As you are all aware, the UWMP makes clear the potential effect of the amendments to the Bay-Delta Water Quality Control Plan adopted by the State Water Resources Control Board on December 12, 2018 should it be implemented. Regional Water System-wide water supply shortages of 40-50% could occur until alternative water supplies are developed to replace those shortfalls. Those shortages could increase dramatically if the State Water Board's proposed Water Quality Certification of the Don Pedro Federal Energy Regulatory Commission (FERC) relicensing were implemented.

We are pursuing several courses of action to remedy this situation as detailed below.

Pursuing a Tuolumne River Voluntary Agreement

The State Water Board included in its action of December 12, 2018 a provision allowing for the development of Voluntary Agreements as an alternative to the adopted Plan. Together with the Modesto and Turlock Irrigation Districts, we have been actively pursuing a Tuolumne River Voluntary Agreement (TRVA) since January 2017. We believe the TRVA is a superior approach to producing benefits for fish with a much more modest effect on our water supply. Unfortunately, it has been a challenge to work with the State on this, but we continue to persist, and of course we are still interested in early implementation of the TRVA.

Evaluating our Drought Planning Scenario in light of climate change

Ever since the drought of 1987-92, we have been using a Drought Planning Scenario with a duration of 8.5 years as a stress test of our Regional Water System supplies. Some stakeholders have criticized this methodology as being too conservative. This fall we anticipate our Commission convening a workshop regarding our use of the 8.5-year Drought Planning Scenario, particularly in light of climate change resilience assessment work that we have funded through the Water Research Foundation. We look forward to a valuable discussion with our various stakeholders and the Commission.

Pursuing Alternative Water Supplies

The SFPUC continues to aggressively pursue Alternative Water Supplies to address whatever shortfall may ultimately occur pending the outcome of negotiation and/or litigation. The most extreme degree of Regional Water System supply shortfall is modeled to be 93 million gallons per day under implementation of the Bay-Delta Plan amendments. We are actively pursuing more than a dozen projects, including recycled water for irrigation, purified water for potable use, increased reservoir storage and conveyance, brackish water desalination, and partnerships with other agencies, particularly the Turlock and Modesto Irrigation Districts. Our goal is to have a suite of alternative water supply projects ready for CEQA review by July 1, 2023.

In litigation with the State over the Bay-Delta Plan Amendments

On January 10, 2019, we joined in litigation against the State over the adoption of the Bay-Delta Water Quality Control Plan Amendments on substantive and procedural grounds. The lawsuit was necessary because there is a statute of limitations on CEQA cases of 30 days, and we needed to preserve our legal options in the event that we are unsuccessful in reaching a voluntary agreement for the Tuolumne River. Even then, potential settlement of this litigation is a possibility in the future.

In litigation with the State over the proposed Don Pedro FERC Water Quality Certification

The State Water Board staff raised the stakes on these matters by issuing a Water Quality Certification for the Don Pedro FERC relicensing on January 15, 2021 that goes well beyond the Bay-Delta Plan amendments. The potential impact of the conditions included in the Certification appear to virtually double the water supply impact on our Regional Water System of the Bay-Delta Plan amendments. We requested that the State Water Board reconsider the Certification, including conducting hearings on it, but the State Water Board took no action. As a result, we were left with no choice but to once again file suit against the State. Again, the Certification includes a clause that it could be replaced by a Voluntary Agreement, but that is far from a certainty.

I hope this makes it clear that we are actively pursuing all options to resolve this difficult situation. We remain committed to creating benefits for the Tuolumne River while meeting our Water Supply Level of Service Goals and Objectives for our retail and wholesale customers.

cc.: SFPUC Commissioners
Nicole Sandkulla, CEO/General Manager, BAWSCA

Appendix 4.1

Project Variant Air Quality, Greenhouse Gas, and Health Risk Assessment Analysis Memorandum

ENVIRONMENT
& HEALTH

MEMORANDUM

Date: April 24, 2024

To: Lane Partners

From: Michael Keinath
Sarah Manzano

Subject: **CEQA Air Quality, Greenhouse Gas, and Health Risk Assessment Analysis of the Parkline Project Increased Development Variant**

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1. INTRODUCTION

As a supplemental analysis to the CEQA Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report dated February 2024 (referred to hereafter as "AQTR") prepared for the construction and operation of the proposed Parkline mixed-use development at 333 Ravenswood Avenue in the City of Menlo Park, California for Lane Partners (referred to hereafter as "the Project"), Ramboll separately evaluated potential criteria air pollutant (CAP) emissions, greenhouse gas (GHG) emissions, and health impacts associated with the proposed Increased Development Variant (Project Variant or Variant) at the maximally exposed individual on-site and off-site receptor (MEIR) as detailed below.

An analysis consistent with the Project analysis was performed to evaluate the potential impacts associated with the Variant, which includes an expanded project boundary area, an increase in dwelling units (from 550 to 800 units), changes to parking garages, and the addition of the emergency reservoir that would be developed and operated by the City, as further described in Section 3 below. This memorandum summarizes air quality, GHG and health risk assessment (HRA) analysis of the Variant and only presents information where it differs from the analysis for the Project. Table and figure references included herein correspond to the similar tables or figures in the AQTR that would be replaced by the changes associated with the Variant. Tables not listed in this memorandum are not included herein as the changes associated with the Variant do not affect these tables, so the versions provided in the AQTR remain the same for the analysis of the Variant. Consistent with the analysis for the Project, Project Variant emissions and impacts were compared against thresholds set forth in the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) Guidelines released in 2023.[1]

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[1] BAAQMD, 2023. 2022 CEQA Air Quality Guidelines. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. April 2023.

SUMMARY OF CONCLUSIONS

Table ES-1 below shows a summary of emissions and health impacts from the Project Variant. As shown below, the conclusions do not change from the analysis of the Project. Emissions of CAPs during construction are below thresholds. Construction emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ are below thresholds of significance. Operational emissions of NO_X, PM_{10} and $PM_{2.5}$ are below thresholds of significance in both the unmitigated and mitigated scenarios. Operational emissions of ROG exceed thresholds of significance in the unmitigated scenario but are below thresholds in the mitigated scenario. Excess Lifetime Cancer Risk, Chronic hazard index (HI), and $PM_{2.5}$ concentration are below thresholds.[2] $PM_{2.5}$ concentration is further below thresholds when mitigation for fugitive dust is incorporated.

The Project Variant also would not change conclusions of the AQTR analysis of impacts related to odor and carbon monoxide. The Variant would not substantially change emissions of odor and would not increase traffic volumes to above the screening levels discussed in the carbon monoxide assessment provided in the AQTR.

Table ES-1 Summary of Variant Emissions and Impacts

	Units	Variant	Threshold	Exceed Threshold?
Construction Emissions				
ROG	lb/day	42	54	No
NO_x		20	54	No
PM_{10}		0.94	82	No
$PM_{2.5}$		0.47	54	No
GHG	MT/year	2,084	--	--
Unmitigated Operational Emissions[3]				
ROG	tons/year	12	10	Yes
NO_x		-19	10	No
PM_{10}		3.3	15	No
$PM_{2.5}$		-0.57	10	No
ROG	lb/day	68	54	Yes
NO_x		-105	54	No
PM_{10}		18	82	No
$PM_{2.5}$		-3.1	54	No
Mitigated Operational Emissions				
ROG	tons/year	8.3	10	No
NO_x		-19	10	No

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[2] The Acute HI was not estimated for the Variant since the laboratory emissions would not change with the Variant and the laboratory emissions are the only contributor to acute HI analyzed.

[3] The unmitigated emissions, including for ROG, do not take into account the mitigation measures for low VOC architectural coatings or all-electric landscaping equipment. Both are mitigation measures that are incorporated into the mitigated operational emissions results.

	Units	Variant		Threshold	Exceed Threshold?
PM_{10}		3.3		15	No
$PM_{2.5}$		-0.60		10	No
ROG	lb/day	46		54	No
NO_x		-106		54	No
PM_{10}		18		82	No
$PM_{2.5}$		-3.3		54	No
Project Health Risk Results Impacts					
		On-site	Off-site		
Excess Lifetime Cancer Risk	in a million	3.7	4.8	10	No
Chronic HI	Unitless	0.016	0.0093	1	No
Acute HI	Unitless	0.078	0.061	1	No
$PM_{2.5}$ Concentration	$\mu g/m^3$	0.011	0.22	0.3	No
Mitigated $PM_{2.5}$ Concentration	$\mu g/m^3$	0.11	0.12	0.3	No
Cumulative Risks and Hazards					
		On-site	Off-site		
Excess Lifetime Cancer Risk	in a million	30	48	100	No
Chronic HI	Unitless	0.044	0.042	10	No
$PM_{2.5}$ Concentration	$\mu g/m^3$	0.28	0.27	0.8	No

2. PROJECT VARIANT

The Project Variant deviates from the Project in the following ways:

- The Project Variant site plan would be expanded to include the parcel located at 201 Ravenswood to create a continuous Project frontage area along Ravenswood Avenue and increase the overall Project site area by approximately 43,762 square feet;
- The Project Variant would include up to 250 additional residential rental dwelling units compared to the Proposed Project (an increase from 550 to 800 units, inclusive of an increase from 100 to up to 154 units to be developed by an affordable housing developer);
- The Project Variant would reconfigure the residential areas compared to the Project by moving both the affordable housing and a portion of the townhouses to the northeast corner of the site;
- The Project Variant would reduce the underground parking footprint within the site, both by removing underground parking from the multifamily residential buildings and removing the underground parking connection between Buildings Office/R& 1 and Office/R&D 2. As a result, the parking garages PG1 and PG2 would increase in square footage and height as compared to the Proposed Project; and
- The Project Variant would include a two-million-gallon underground emergency water reservoir that would be built and operated by the City of Menlo Park.

- The reconfiguration of the Phase 1 and Phase 3 residential areas caused the on-site traffic route to change for the Project Variant compared to the Project.

No other changes to the Project would occur under the Variant. Updates to the land use summary to reflect the Variant can be found in **Table 1V**.[4]

An analysis consistent with the Project analysis was performed to evaluate the potential impacts associated with the changes associated with the Project Variant. This memorandum summarizes air quality, GHG and health risk assessment (HRA) analysis of the Variant and only presents information where it differs from the analysis for the Project. Table and figure references included herein correspond to the similar tables or figures in the AQTR that would be replaced by the changes associated with the Variant. Tables not listed in this memorandum are not included herein as the changes associated with the Variant do not affect those tables.

2.1 Construction Emissions

The Project Variant would extend the construction schedule from six years for the Project to approximately eight years with three development phases and an additional phase for the emergency water reservoir. Similar to the Proposed Project, there would be no overlapping construction between Phase 1 and Phase 2, and approximately 17 months of overlapping construction between Phase 2 and Phase 3. As with the Project, construction of the Variant is assumed to start in June 2025. During the Project Preparation phase under the Variant, the site preparation and grading schedules would be advanced by four months compared to the Project schedules, while the number of construction days would remain the same as under the Project. The Phase 1 building construction schedule is extended by approximately one year, the Phase 1 architectural coating is extended by about five months, and the remaining phases are pushed back accordingly. This results in the full buildout being expected to occur in September 2033 under the Variant, as compared to November 2031 under the Project. **Figure 1V** shows the location of each phase and the emergency water reservoir. **Table 2V** shows a summary of the expected construction phasing and sub-phasing of the Variant provided by the Project Applicant. Variant construction and operation schedule by phase are shown in **Figure 2V**. Off-road construction equipment activities for the Project Variant are presented in **Table 3V**. Estimated construction trips are shown in **Table 4V**. Fugitive dust emissions from demolition, grading equipment (i.e., graders and scrapers), bulldozing, and material loading activities are calculated in **Table 5V – Table 8V**. Emissions from off-gassing activities including architectural coatings and paving are presented in **Table 10V**[5] and **Table 11V**[6], respectively.

A summary of maximum annual average daily construction CAP emissions for the Project Variant is shown in **Summary Table A**, below. Detailed construction CAP emissions for the Project Variant are summarized in **Table 12V**. Total GHG emissions for construction are summarized in **Table 13V**. **Table 14V** presents the daily construction CAP emissions and total GHG emissions for the entire construction duration, respectively. The Project Variant results in additional construction activity to build the additional 250 dwelling units and the emergency water reservoir. This increased activity would result in increased emissions for all the CAP and GHG pollutants; however excavation would decrease due the reduction in underground parking.

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[4] Table numbers referenced herein correspond to the similar table in the Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report.

[5] Architectural coating emissions from the emergency water reservoir are assumed to be negligible since it would require minimal painting.

[6] Paving emissions from the emergency water reservoir are included in the Phase 1 paving emissions since the construction of the water reservoir occurs during Phase 1 construction.

Summary Table A. Summary of Maximum Annual Average Daily Construction CAP Emissions and Total Construction GHG Emissions

	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
	lb/day				MT
BAAQMD Threshold of Significance	54	54	82	54	--
Construction Emissions	42	20	0.94	0.47	7,780
Exceed Threshold?	No	No	No	No	--
Source: Table 12V, Table 13V, and Table 14V					

2.2 Operational Emissions

The net (Project Variant minus existing) CAP, GHG and TAC operational emissions were evaluated. Similar to the analysis for the Project, partial buildout emissions for operational emissions were scaled using the portion of the Project Variant that would become operational in each year of construction, as shown in **Table 15V**. The only difference between the Project and Variant with respect to the baseline conditions is that the Church located at 201 Ravenswood would be removed. However, since greater baseline emissions result in lower net emissions for the Project, it was conservatively assumed that the baseline does not change with the Variant. Therefore, Baseline emissions for the analysis of the Variant are identical to those for the analysis of the Project. For details on the Baseline emissions, please see the AQTR.

For the on-road mobile sources, **Table 16V** shows the daily trip rates and daily vehicle miles traveled (VMT) for full buildout and partial buildout of Project Variant. **Table 17V** presents the adjusted fleet mix for the Project Variant, which differs slightly from the Project due to changes in the EMFAC2021 fleet composition assumptions between 2031 and 2033. The Transportation Engineer (Hexagon) provided trips and VMT associated with the Project Variant, which showed increased weekday daily residential trips from 1,840 trips to 2,714 trips and VMT from 16,215 miles to 23,911 miles, respectively, as compared to the Project. **Tables 18V** and **19V** include the EMFAC CAP and GHG emission factors based on default EMFAC fleet mix for the Project Variant full buildout year (2033), which reflect the later buildout date for the Variant as compared to the Project. Mobile CAP and GHG emissions under the Project Variant are summarized in **Table 20V**.

Compared to the Project, the Project Variant would replace the 200 kW generator for Residential Buildings 1 and 2 with a 400 kW generator, replace the 200 kW generator for Residential Building 3 with a 250 kW generator, and add one 450 kW generator for the emergency water reservoir. A summary of on-site generator emissions can be found in **Table 24V**, which were converted to annual average emission rates as shown in **Appendix Table B.2**.

The Project Variant would increase use of energy and water and generation of solid waste due to the additional residential units and larger parking garages.[7] The carbon intensity factors for total energy delivered by Pacific Gas and Energy's (PG&E) for the Project Variant were estimated at 93 lbs CO_2e/MWh delivered in the full buildout year (2033), slightly lower than those for the Project.

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[7] The operational energy use for the Variant parking garage is greater than the underground parking garage for the Project due to the larger square footage of the Variant parking garages.

This estimation utilized the same linear interpolation method as the Project for the years between 2030 and 2035. Emission factors for natural gas use for the Project Variant remain the same as those for the Project. A summary of electricity use and emissions for Project Variant conditions are shown in **Table 30V**. Similar to the Project, expected electricity use for the Variant was provided by PAE.[8] Indoor and outdoor water use rates for the Project Variant are provided in **Table 31V**. Water and wastewater emissions are summarized in **Table 32V**. CO_2 emissions from solid waste disposal are considered Biogenic and are reported in **Table 33V**. Average annual GHG emissions from refrigerants for the Project Variant are presented in **Table 34V**.

Landscaping emissions from the unmitigated scenario and the mitigated scenario, which utilizes all electric landscaping equipment, are summarized in **Table 35V** and **Table 36V**, respectively. The unmitigated and mitigated architectural coating emissions, the latter of which utilizes low VOC coatings, are summarized in **Table 37V** and **Table 38V**, respectively. The consumer product emissions are summarized in **Table 40V**.

Project Variant net unmitigated and mitigated CAP emissions are summarized in **Table 41V** and **Table 42V**, respectively. Operational GHG emissions are summarized in **Table 43V**. **Summary Table B**, below, compares the operational CAP emissions to the applicable thresholds of significance, and shows the annual net operational GHG emissions. With the additional residential land use and the emergency water reservoir, the Project Variant results in increased emissions for all the CAP and GHG pollutants associated with the increase in mobile trips, generator sizes, architectural coatings, and consumer products, compared to the Project. However, the impact conclusions remain the same. Emissions of NO_X, PM_{10} and $PM_{2.5}$ are below thresholds of significance in both the unmitigated and mitigated scenarios. ROG emissions exceed thresholds of significance in the unmitigated scenario but are below thresholds in the mitigated scenario.

Summary Table B. Summary of Maximum Annual Average Daily Net Operational CAP Emissions and Annual Net Operational GHG Emissions

	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
	lb/day				MT/year
BAAQMD Threshold of Significance	54	54	82	54	N/A
Unmitigated Emissions	68	-105	18	-3.1	-11,826
Exceed Threshold?	*Yes*	*No*	*No*	*No*	--
Mitigated Emissions	46	-106	18	-3.3	-11,826
Exceed Threshold?	*No*	*No*	*No*	*No*	--

Source: Table 41V, Table 42V, and Table 43V.
Note: The unmitigated emissions do not take into account the Project Variant commitments to low VOC architectural coatings or all-electric landscaping equipment. Both are Project Variant mitigation measures that are incorporated into the mitigated operational emissions.

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[8] Preliminary Building Energy Estimate [Update] Memo from PAE dated February 20th, 2024.

The combined annual construction and operational emissions were averaged over 365 days and compared with operational average daily thresholds, as shown in **Table 44V** and **Table 45V**. **Summary Table C**, below, summarizes the maximum daily average CAP emissions during the Project Variant's interim operations when construction and operations occur at the same time, which is expected to occur in 2033. The inclusion of larger parking garages, additional residential land use and the emergency water reservoir for the Project Variant results in increased net construction and operational CAP emissions for all pollutants compared to the Project. The increases are primarily driven by operational sources as discussed above. Under the unmitigated scenario, the ROG emissions exceed BAAQMD thresholds and the emissions of other pollutants do not exceed thresholds. Under the mitigated scenario, none of the emissions exceed thresholds of significance, so the impact conclusions remain the same as for the Project.

Summary Table C. Summary of Annual Average Daily Net Construction and Operational CAP Emissions for Maximum Year

	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
	lb/day			
BAAQMD Threshold of Significance	54	54	82	54
Unmitigated Emissions	58	-103	21	-2.7
Exceed Threshold?	**Yes**	No	No	No
Mitigated Emissions	40	-103	20	-2.9
Exceed Threshold?	No	No	No	No
Source: Table 44V and Table 45V				

The Variant would not change the conclusions of the climate impacts from GHG emissions. The Variant would also not include natural gas use in the new construction. The Variant would also result in a reduction in energy compared to existing conditions and would include electric vehicle charging in compliance with CALGreen Tier 2. A separate transportation evaluation for the Variant will analyze the consistency of the Project's VMT with the City's reduction thresholds.

2.3 Health Impacts

The HRA for the Project Variant was performed using the same methodology as the HRA for the Project. Although the baseline conditions changed with the Variant due to the removal of the church located at 201 Ravenswood Avenue, there would not be any removal of TAC or $PM_{2.5}$ sources that would impact the health risk assessment. The net increase in Project Variant traffic may slightly decrease as a result of the removal of the church, but this was conservatively not taken into account. Therefore, the baseline health risk for the analysis of the Variant are assumed to be identical to those for the analysis of the Project. The construction analysis incorporated the increase in construction activity to build the additional dwelling units, larger parking garages and the emergency water reservoir and the decrease in excavation due to the reduction in underground parking. The annual average emission rates for off-road and on-road construction activities, as used in the model, are presented in **Appendix Table B.1**. The HRA for Variant operations incorporates the larger generator sizes, and the increased Variant traffic volumes.[9] The laboratory exhaust would remain the same as under the Project, since the Variant does not affect the Office/R&D district.

The construction areas are shown in **Figure 1V**. As shown in the figure, the townhomes and affordable housing building were moved, compared to the Project, to the side of the site near the intersection of Ravenswood Avenue and Middlefield Road. The area for construction of the emergency water reservoir is also added. The modeled sources of toxic contaminants from traffic, laboratory exhaust and generators are shown in **Figure 3V**.

Consistent with the analysis for the Project, emissions rates from traffic were determined by multiplying the traffic volumes provided by the transportation engineer for the Project Variant and roadways source length shown in **Table 47V.** Their respective emission factors, which are slightly different from the Project due to the varying operational years, are shown in **Table 49V**. **Appendix Table B.2** shows all the operational emission rates used in the model.

The exposure assumptions for the Project Variant are the same as those for the Project analysis, including four exposure scenarios listed below:

- Scenario 1: Offsite receptors' exposure beginning at the start of construction.
- Scenario 2: Offsite and onsite Phase 1 receptors' exposure beginning at the start of Phase 2 construction.
- Scenario 3: Offsite and onsite receptors' exposure beginning at the start of Phase 3 construction.
- Scenario 4: Offsite and onsite receptors' exposure to Project Buildout operations.

However, the exposure durations for the scenarios that include construction (Scenarios 1 through 3) change with the construction schedule for the Variant. Further details on how the exposure parameters were applied in each calendar year and scenario are shown in **Tables 52Va-d.**

A summary of results from the HRA is shown in **Summary Table D**. A breakdown of excess lifetime cancer risk from Project Variant construction, operational generators, operational traffic, and laboratories at the MEIR from each scenario is shown in **Table 54V**. Similar breakdowns for chronic HI, acute HI, and $PM_{2.5}$ concentration are shown in **Table 55V, Table 56V** and **Table 57V**, respectively.[10] These tables also show the scenario and the year for which the maximum impact occurred since chronic HI and $PM_{2.5}$ concentrations are annual impacts. Mitigated impacts include reductions to fugitive dust due to watering as discussed in the AQTR. **Appendix C** presents the HRA results for every receptor type for each modeled scenario.

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[9] Offsite traffic volumes were provided by Hexagon for a slightly different variant design where all residential units were located on the west side of the site adjacent to Laurel Street, and which did not include the church parcel (and therefore the traffic volumes did not take into account the associated reduction in trips). However, only minor changes to traffic volumes are expected as a result of the Variant design changes, so the traffic volumes were not updated for this analysis. Moreover, with respect to the health risk assessment, traffic impacts contribute insignificantly to several impact results. For example, traffic contributes only approximately 3.5% of the total cancer risk (0.13 out of 3.7 in a million) at the on-site MEI and approximately 4.4% of the total chronic HI (0.0007 out of 0.016) at the on-site MEI. Notably, impacts from Project traffic within the on-site roadways were re-modeled to reflect the current variant design of the location of the residential loop roadway as that analysis is derived from standard trip rates to determine the on-site traffic volumes.

[10] The acute HI was not estimated for the Variant since the laboratory emissions would not change with the Variant and the laboratory emissions are the only contributor to acute HI analyzed. Therefore, the acute HI impacts from the Variant would be the same as from the Project.

As shown in Summary Table D, all health impacts are below thresholds under the Project Variant, which is the same conclusion as the Project analysis.

The cancer risk MEIR for the Variant is an offsite daycare receptor across Laurel Street. The MEIR for the Variant is farther north than the MEIR for the Project, which was a neighboring resident. The residential construction is more spread out with the Variant site layout, which results in less construction near the Project's offsite MEIR. Therefore, the MEIR changed from the neighboring resident to the daycare receptor due to the conservative exposure parameters assumed for daycare receptors. The cancer risk at the off-site MEIR increased from 4.1 to 4.8 in a million, and the maximum exposure scenario remained Scenario 2 under the Variant, the same as the Project, due to the daycare's close proximity to the Phase 1 residential construction area.

The cancer risk of the on-site MEIR decreased from 6.0 to 3.7 in a million compared to the Project. The on-site MEIR for the Variant is a Phase 1 townhome resident located at the northern corner of the project site near the construction of Phase 3 construction. The MEI's cancer risk is attributed to the Phase 3 residential construction, and the additional construction from the emergency water reservoir, and is not as impacted by nearby generators compared to the Project.

Similar to the Project, the chronic HI at both the on-site MEIR and off-site MEIR for the Variant are well below the CEQA thresholds. The locations of the MEIRs are at the same locations as the Project, but with different Chronic HI risk values due to the changes in construction, generator sizes, and on-site traffic route. While the emissions from laboratories do not change with Variant, the location of the acute HI MEIs changed since the location of on-site receptors changed with the Variant's site layout. Additionally, the change in height of the nearby buildings that are part of the Variant, as compared to the Project, and their proximity to laboratory exhaust affects the dispersion, which affects the on-site and off-site MEIR locations for acute HI risks.

Both unmitigated and mitigated $PM_{2.5}$ concentrations are below the thresholds under the Variant, consistent with the conclusion of the analysis for the Project. The unmitigated and mitigated $PM_{2.5}$ concentration for the on-site MEIR and the mitigated $PM_{2.5}$ concentration for the off-site MEIR are dominated by the proximity to onsite traffic along Loop Road. The unmitigated $PM_{2.5}$ concentration for the off-site MEIR is dominated by Phase 2 construction.

Summary Table D. Summary of Health Risk Assessment Results

Health Impacts	BAAQMD Threshold of Significance	On-site MEIR	*Exceed Threshold?*	Off-site MEIR	*Exceed Threshold?*
Excess Lifetime Cancer Risk(in a million)	10	3.7	*No*	4.8	*No*
HI (Chronic)	1	0.016	*No*	0.0093	*No*
HI (Acute)	1	0.078	*No*	0.061	*No*
Unmitigated $PM_{2.5}$ Concentration ($\mu g/m^3$)	0.3	0.11	*No*	0.22	*No*
Mitigated $PM_{2.5}$ Concentration ($\mu g/m^3$)		0.11	*No*	0.12	*No*

Source: Table 54V, Table 55V, Table 56V and Table 57V
Note: The $PM_{2.5}$ concentration at the on-site MEIR is predominantly from traffic, as shown in Table 57V. Therefore, the effects of the construction watering mitigation are minimal at this particular receptor.

The locations of all off-site MEIRs and the on-site chronic HI MEIR are different for the Project Variant than for the Project; therefore, nearby stationary source impacts at the Project Variant MEIRs are evaluated and summarized in **Table 58V**. Health impacts from the continued operation of the generators at P, S, and T at the Project MEIR are shown in **Table 59V**. A summary of cumulative impacts at the Project Variant MEIR is shown in **Table 59V** and **Summary Table E** below. Compared to the Project, the cumulative chronic HI increased under the Variant while cancer risk and $PM_{2.5}$ concentration remained at the same level for on-site MEIRs. For off-site MEIRs, the cumulative cancer risk and chronic HI increased slightly, while the cumulative $PM_{2.5}$ concentration decreased by 22% due to the reduction of fugitive dust emissions resulting from the schedule change of the site preparation subphase for the Project Variant as discussed above.

Summary Table E. Summary of Cumulative Health Risk Assessment Results

	BAAQMD Cumulative Threshold of Significance	**On-site MEIR**	***Exceed Threshold?***	**Off-site MEIR**	***Exceed Threshold?***
Excess Lifetime Cancer Risk (in a million)	100	30	*No*	48	*No*
Chronic HI	10	0.044	*No*	0.042	*No*
$PM_{2.5}$ Concentration ($\mu g/m^3$)	0.8	0.28	*No*	0.27	*No*
Source: Table 59V					

TABLES

Table 1V
Land Use Summary for Project Variant
Parkline
Menlo Park, California

Site	Land Use Type	Description	CalEEMod Land Use Category[1]	Land Use Quantity[2]				Units
Existing Conditions	Commercial	Commercial - Office/R&D	Research & Development	1,094				ksf
	Parking	Surface Parking	Parking Lot	1,352				ksf
Project Variant				**Phase 1**	**Phase 2**	**Phase 3**	**Full Buildout**	**Units**
Full Buildout Conditions	Commercial	Commercial - Office/R&D	Research & Development	408	684	--	1,092	ksf
	Residential	Residential Apartments	Apartments Mid Rise	600	--	154	754	DU
	Residential	Residential Townhome	Condo/Townhouse	46	--	--	46	DU
	Retail	Retail	Convenience Market (24 hour)	2.0	--	--	2.0	ksf
	Parking	Non-Residential Parking Garage	Enclosed Parking with Elevator	890	1,410	--	2,300	Spaces
	Parking	Non-Residential Surface Parking	Parking Lot	500	--	--	500	Spaces
	Parking	Residential Parking Garage	Enclosed Parking with Elevator	746	--	50	919	Spaces
	Recreational	Recreational	City Park	25	--	--	25	Acres
	--	Water Reservoir[3]	--	2	--	--	--	Mgal

Notes:

[1] CalEEMod Land Use Category represents the land uses from CalEEMod used for default assumptions.

[2] Land use quantities were provided by the Project Applicant.

[3] The Project Variant includes an underground emergency water reservoir and associated aboveground facilities. Operations of the proposed water reservoir would not generate CAP emissions, except for its use of emergency generators. Thus, emissions calculations for non-stationary sources would exclude this land use.

Abbreviations:

CAP - criteria air pollutants
DU - Dwelling Unit
ksf - 1000 square feet
Mgal - million gallon
R&D - Research and Development

Table 2V
Construction Phasing Schedule for Project Variant
Parkline
Menlo Park, California

Construction Phase[1]	Construction Subphase[1]	Start Date	End Date[2]	Days per Week	Number of Work Days	Demolished Area (sqft)[3]
Project Preparation	Demolition	6/9/2025	2/24/2026	5	178	1,095,719
	Site Preparation	8/26/2025	3/12/2026	5	135	--
	Grading	3/13/2026	8/3/2026	5	100	--
Phase 1	Building Construction	5/22/2026	7/26/2029	5	799	--
	Architectural Coating	7/27/2029	12/3/2030	5	353	--
	Paving	12/4/2030	2/7/2031	5	48	--
Phase 2	Demolition	3/10/2031	4/8/2031	5	22	--
	Building Construction	4/9/2031	12/16/2031	5	180	--
	Architectural Coating	12/17/2031	1/4/2033	5	275	--
	Paving	1/5/2033	4/19/2033	5	75	--
Phase 3	Demolition	12/3/2031	1/1/2032	5	22	--
	Building Construction	1/2/2032	10/7/2032	5	200	--
	Architectural Coating	10/8/2032	8/11/2033	5	220	--
	Paving	8/12/2033	9/22/2033	5	30	--
Water Reservoir[4]	Demolition	2/11/2026	2/11/2026	5	1	15,000
	Site Preparation	2/11/2026	2/11/2026	5	1	--
	Excavation	2/24/2026	7/27/2026	5	63	--
	Building Construction	3/9/2026	4/23/2027	5	285	--
	Architectural Coating	1/29/2027	4/23/2027	5	60	--
	Paving	3/1/2027	4/23/2027	5	40	--

Notes:

[1] Construction phasing information was provided by the Project Sponsor. While most construction using diesel-powered equipment will be between 8am and 6pm, consistent with noise ordinances, modeling was performed assuming a 7am start time to capture any potential equipment use at this time, if necessary and approved. However, equipment will not be running their engines for this entire 11 hour period. No nighttime construction is expected.

[2] Occupancy is expected to begin in 2031 for Phase 1 and 2033 for Phase 2 and Phase 3

[3] Demolition of all buildings will occur in Phase 1. Demolition in Phase 2 and 3 is for minor structures and utilities

[4] Water reservoir construction was separately added for the Project Variant, and its construction timeline coincides with that of Phase 1.

Abbreviations:

sqft - square feet

References:

Email communication titled "RE: Devcon - CEQA Construction Data" from Timothy O'Rourke at DevCon Construction. April 24, 2023

Table 3V
Construction Equipment for Project Variant
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Equipment Type[1]	CalEEMod Equipment Type[2]	Fuel[1]	Quantity[1]	Daily Usage (hours/day)[3]	Utilization[1]	Horsepower[1]	Engine Tier[4]
Project Preparation	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	2	8	5%	33	Electric
		Excavators	Excavators	Diesel	3	8	90%	36	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	8	90%	367	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	8	55%	367	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	6	8	70%	84	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Grading	Excavators	Excavators	Diesel	2	8	70%	36	Tier 4 Final
		Graders	Graders	Diesel	1	8	75%	148	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	25%	367	Tier 4 Final
		Scrapers	Scrapers	Diesel	2	8	45%	423	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	8	60%	84	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
Phase 1	Building Construction	Cranes	Cranes	Diesel	5	7	95%	367	Tier 4 Final
		Forklifts	Forklifts	Diesel	4	8	35%	82	Tier 4 Final
		Generator Sets	Generator Sets	Diesel	5	8	45%	14	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	4	7	50%	84	Tier 4 Final
		Drill Rigs	Bore/Drill Rigs	Diesel	3	8	15%	220	Tier 4 Final
		Welders	Welders	Diesel	4	8	45%	46	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Paving	Pavers	Pavers	Diesel	2	8	85%	81	Tier 4 Final
		Paving Equipment	Paving Equipment	Diesel	2	8	85%	89	Tier 4 Final
		Rollers	Rollers	Diesel	2	8	20%	36	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Architectural Coating	Industrial Saws	Concrete/Industrial Saws	Electric	1	6	65%	81	Electric
		Aerial Lifts	Aerial Lifts	Diesel	4	6	85%	62	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
Phase 2	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	8	5%	33	Electric
		Excavators	Excavators	Diesel	1	8	90%	36	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	90%	367	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Building Construction	Cranes	Cranes	Diesel	3	7	95%	367	Tier 4 Final
		Forklifts	Forklifts	Diesel	4	8	35%	82	Tier 4 Final
		Generator Sets	Generator Sets	Diesel	5	8	45%	14	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	5	7	50%	84	Tier 4 Final
		Welders	Welders	Diesel	5	8	45%	46	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Paving	Pavers	Pavers	Diesel	2	8	85%	81	Tier 4 Final
		Paving Equipment	Paving Equipment	Diesel	2	8	85%	89	Tier 4 Final
		Rollers	Rollers	Diesel	2	8	20%	36	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
	Architectural Coating	Industrial Saws	Concrete/Industrial Saws	Electric	1	6	65%	81	Electric
		Aerial Lifts	Aerial Lifts	Diesel	3	6	85%	62	Tier 4 Final
		Water Truck[5]	Off-Highway Trucks	Diesel	1	2	100%	--	--
Phase 3	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	8	5%	33	Electric
		Excavators	Excavators	Diesel	1	8	90%	36	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	90%	367	Tier 4 Final
	Building Construction	Cranes	Cranes	Diesel	1	7	95%	367	Tier 4 Final
		Forklifts	Forklifts	Diesel	2	8	35%	82	Tier 4 Final
		Generator Sets	Generator Sets	Diesel	2	8	45%	14	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	7	50%	84	Tier 4 Final
		Welders	Welders	Diesel	2	8	45%	46	Tier 4 Final
	Paving	Pavers	Pavers	Diesel	1	8	85%	81	Tier 4 Final
		Paving Equipment	Paving Equipment	Diesel	1	8	85%	89	Tier 4 Final
		Rollers	Bore/Drill Rigs	Diesel	1	8	20%	36	Tier 4 Final
	Architectural Coating	Industrial Saws	Concrete/Industrial Saws	Electric	1	6	65%	81	Electric
		Aerial Lifts	Aerial Lifts	Diesel	2	6	85%	62	Tier 4 Final
Water Reservoir	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	8	5%	33	Electric
		Excavators	Excavators	Diesel	1	8	90%	36	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	90%	367	Tier 4 Final
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	55%	367	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	8	70%	84	Tier 4 Final
	Excavation	Excavators	Excavators	Diesel	2	8	85%	36	Tier 4 Final
		Graders	Graders	Diesel	1	8	25%	148	Tier 4 Final
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	8	10%	367	Tier 4 Final
		Drill Rigs	Bore/Drill Rigs	Diesel	2	8	70%	221	Tier 4 Final
	Building Construction	Cranes	Cranes	Diesel	1	7	15%	367	Tier 4 Final
		Forklifts	Forklifts	Diesel	1	8	35%	82	Tier 4 Final
		Generator Sets	Generator Sets	Diesel	1	8	45%	14	Tier 4 Final
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	7	35%	84	Tier 4 Final
	Paving	Pavers	Pavers	Diesel	1	8	85%	81	Tier 4 Final
		Paving Equipment	Paving Equipment	Diesel	1	8	85%	89	Tier 4 Final
		Rollers	Rollers	Diesel	1	8	20%	36	Tier 4 Final
	Architectural Coating	Industrial Saws	Concrete/Industrial Saws	Electric	1	6	65%	81	Electric
		Aerial Lifts	Aerial Lifts	Diesel	1	6	85%	62	Tier 4 Final

Notes:

[1] All construction equipment information provided by the Project Sponsor.

[2] CalEEMod equipment types are assigned using CalEEMod User's Guide Appendix G.

[3] While most construction using diesel-powered equipment will be between 7am and 6pm, consistent with noise ordinances, modeling was performed assuming a 7am start time to capture any potential equipment use at this time, if necessary and approved. However, equipment will not be running their engines for this entire 11 hour period. No nighttime construction is expected.

[4] The majority of the equipment in the contractor’s fleet already has Tier 4 engines. Therefore, the unmitigated scenario assumes all Tier 4 engines, except for those that are electric.

[5] The water truck is assumed to be a heavy heavy-duty diesel truck (HHDT) and emissions are calculated based on EMFAC on-road vehicle emission factors.

Abbreviations:

EMFAC - California Air Resources Board EMission FACtor model

HHDT - heavy heavy-duty diesel truck

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Email communication titled "RE: Parkline - CEQA Construction Data with Variant" from Timothy O'Rourke at DevCon Construction. March 8, 2024.

Table 4V
Construction Trips for Project Variant
Parkline
Menlo Park, California

Construction Phase	Subphase	Construction Days	Worker Trip Rates[1] (trips/day)	Vendor Trip Rates[1] (trips/day)	Haul Amount[1] (CY)	Hauling Trips[1] (one-way trips/subphase)	Trip Lengths[2] (miles/one way trip)			Worker VMT (miles/phase)	Vendor VMT (miles/phase)	Hauling VMT (miles/phase)
							Worker	Vendor	Hauling			
Project Preparation	Demolition	178	12	0	332,824	3,750	11.7	8.4	20	24,991	0	75,000
	Site Preparation	135	29	5		0	11.7	8.4	20	45,806	5,670	0
	Grading	100	20	10		17,692	11.7	8.4	20	23,400	8,400	353840
Phase 1	Building Construction	799	475	28		15,590	11.7	8.4	20	4,440,443	187,925	311,800
	Architectural Coating	353	125	12		0	11.7	8.4	20	516,263	35,582	0
	Paving	48	15	12		0	11.7	8.4	20	8,424	4,838	0
Phase 2	Demolition	22	4	0	11,500	555	11.7	8.4	20	1,030	0	11,100
	Building Construction	180	390	22		1,150	11.7	8.4	20	821,340	33,264	23,000
	Architectural Coating	275	100	7		0	11.7	8.4	20	321,750	16,170	0
	Paving	75	8	9		0	11.7	8.4	20	7,020	5,670	0
Phase 3	Demolition	22	4	0	2,600	98	11.7	8.4	20	1,030	0	1,960
	Building Construction	200	120	15		250	11.7	8.4	20	280,800	25,200	5,000
	Architectural Coating	220	95	7		0	11.7	8.4	20	244,530	12,936	0
	Paving	30	8	5		0	11.7	8.4	20	2,808	1,260	0
Water Reservoir	Demolition	1	5	0	13,050	2	11.7	8.4	20	59	0	40
	Site Preparation	1	5	5		0	11.7	8.4	20	59	42	0
	Excavation	63	10	3		2,610	11.7	8.4	20	7,371	1,588	52,200
	Building Construction	285	25	7		614	11.7	8.4	20	83,363	16,758	12,280
	Architectural Coating	60	20	8		0	11.7	8.4	20	14,040	4,032	0
	Paving	40	5	5		0	11.7	8.4	20	2,340	1,680	0

EMFAC Data

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	San Mateo County Calendar Years 2025-2031 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	25% LDA, 50% LDT1, 25% LDT2	Gasoline
Vendor		50% MHDT, 50% HHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

[1] Worker trips, vendor trips, hauling trips, and hauling amount were provided by the Project Sponsor.

[2] Worker, vendor, and hauling trip lengths are based on CalEEMod Appendix G defaults for the Metropolitan Transportation Commission.

Abbreviations:

EMFAC - California Air Resources Board EMission FACtor model
LDA - light-duty automobile
LDT1 - light-duty trucks (GVWR <6,000 lbs and ETW <= 3,750 lbs)
LDT2 - light-duty trucks (GVWR <6,000 lbs and ETW 3,751-5,760 lbs)
MHDT - medium heavy-duty trucks
HHDT - heavy heavy-duty trucks
VMT - vehicle miles traveled

References

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools
Email communication titled "RE: Devcon - CEQA Construction Data" from Timothy O'Rourke at DevCon Construction. March 8, 2024.

Table 5V
Fugitive Dust Emissions from Building Demolition Waste for Project Variant
Parkline
Menlo Park, California

Construction Area	Year	Number of Days	Building Waste[1]		Emission Factor - Mechanical or Explosive Dismemberment[2]	Emission Factor - Debris Loading[3]	Emissions w/o Watering		Emissions w/ Watering[4]	
					PM$_{2.5}$	PM$_{2.5}$	PM$_{2.5}$		PM$_{2.5}$	
		days	ft^2	ton	lb/ton	lb/ton	lb/day	ton/yr	lb/day	ton/yr
Project Preparation	2025	140	1,095,719	50,403	1.4E-04	0.0031	0.91	0.064	0.58	0.041
Project Preparation	2026	38					0.91	0.017	0.58	0.011
Water Reservoir	2026	1	15,000	690			2.2	0.0011	1.4	7.1E-04

Notes:

[1] Conversion of building waste to tons assumes a conversion factor of 0.046 tons per square foot, per the CalEEMod® User's Guide, Appendix C Section 4.5.1 Mechanical or Explosive Dismemberment.

[2] Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C Section 4.5.1 Mechanical or Explosive Dismemberment, which is based on AP 42 Section 13.2.4.3 for batch drop operations. The equation is:
$EF = k*(0.0032)*(U/5)^{1.3}/(M/2)^{1.4}$ (lb/ton of debris)
0.35 = k_{PM10} Particle size multiplier (dimensionless)
0.053 = $k_{PM2.5}$ Particle size multiplier (dimensionless)
4.20 = U, mean wind speed (mph)
2 = M, material moisture content (%)

[3] Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C Section 4.5.2 Debris Loading, which is based on AP 42 Section 13.2. The equation is:
$EF = k*EF_{L\text{-}TSP}$
0.35 = k_{PM10} Particle size multiplier (dimensionless)
0.053 = $k_{PM2.5}$ Particle size multiplier (dimensionless)
0.058 = $EF_{L\text{-}TSP}$, lb/ton

[4] Fugitive PM$_{2.5}$ emissions from demolition will be controlled by watering the construction site two times per day, which is estimated to reduce emissions by 61% per CalEEMod® recommendation.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
cy - cubic yards
EF - emission factor
lb - pounds
PM$_{2.5}$ - particulate matter less than 2.5 microns
sqft - square feet
VMT - vehicle miles traveled
yr - years

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 6V
Fugitive Dust Emissions from Off-Road Grading Activity for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Subphase	Year	Number of Days	Maximum Area Disturbed per sub-activity[1]	Grading VMT[2]	$PM_{2.5}$ Emission Factor[3]	Emissions w/o Watering		Emissions w/ Watering[4]	
							$PM_{2.5}$		$PM_{2.5}$	
			Days	acre/day	mile/day	lb/VMT	lb/day	ton/yr	lb/day	ton/yr
Project Preparation	Site Preparation	2025	87	4.0	2.8	0.17	0.46	0.020	0.18	0.0078
	Site Preparation	2026	48	4.0	2.8		0.46	0.011	0.18	0.0043
	Grading	2026	100	4.0	2.8		0.46	0.023	0.18	0.0089
Water Reservoir	Site Preparation	2026	1	1.0	0.7		0.11	5.7E-05	0.045	2.2E-05

Notes:

[1] Maximum graded area is based on Project Variant-specific estimate following guidance in the CalEEMod® User's Guide, Appendix C Section 4.4.1 Grading Equipment Passes.

[2] VMT per day calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equation is:

$VMT = A_S/W_b$ x (43,560 sqft/acre)/(5,280 ft/mile), where:

A_S = A_S, acres graded per day (varies by sub-activity)

12 = W_b, blade width of grading equipment (CalEEMod® default)

[3] Emission factors calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equations are:

$EF_{PM10} = 0.051 \times (S)^{2.0} \times F_{PM10}$

$EF_{PM2.5} = 0.04 \times (S)^{2.5} \times F_{PM2.5}$ where:

7.1 = S, mean vehicle speed (mph) (AP-42 default)

0.6 = F_{PM10}, PM_{10} scaling factor (AP-42 default)

0.031 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor (AP-42 default)

[4] Fugitive PM emissions will be controlled by watering the construction site three times per day, which is estimated to reduce emissions by 61% per CalEEMod® recommendation.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
ft - feet
lb - pounds
mph - miles per hour
$PM_{2.5}$ - particulate matter less than 2.5 microns
VMT - vehicle miles traveled
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 7V
Fugitive Dust Emissions from Off-Road Bulldozing Activity for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Subphase	Year	Number of Days	CalEEMod Equipment	Total Equipment Work Hours[1] (hours/day)	Utilization	$PM_{2.5}$ Emission Factor[2] (lbs/hour)	Emissions w/o Watering		Emissions w/ Watering[3]	
								$PM_{2.5}$		$PM_{2.5}$	
			days					lb/day	ton/yr	lb/day	ton/yr
Project Preparation	Site Preparation	2025	87	Rubber Tired Dozers	16	55%	0.41	3.6	0.16	1.42	0.062
	Site Preparation	2026	48	Rubber Tired Dozers	16	55%		3.6	0.088	1.42	0.034
	Grading	2026	100	Rubber Tired Dozers	8	25%		0.83	0.041	0.32	0.016
Water Reservoir	Site Preparation	2026	1	Rubber Tired Dozers	8	55%		1.8	9.1E-04	0.71	3.6E-04
	Excavation	2026	63	Rubber Tired Dozers	8	10%		0.33	0.010	0.129	0.0041

Notes:

[1] Construction schedule is based on Project Variant-specific estimate. Includes planned hours for all tracked dozers to be used during the given phase. There are two rubber tired dozers being utilized during the Site Preparation subphase.

[2] Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C Section 4.4.2 Bulldozing, which is based on AP-42, Section 11.9 for bulldozing equipment. The equation is:

$EF_{PM2.5} = C_{TSP} \times s^{1.2} / M^{1.3} \times F_{PM2.5}$, where the following default values are used:

5.7 = C_{TSP}, arbitrary coefficient
6.9 = s, material silt content (%)
7.9 = M, material moisture content (%)
0.105 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor

[3] Fugitive emissions were controlled by watering three times per day and a control efficiency of 61% (CalEEMod® default) was used in estimating the emissions.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod® - California Emissions Estimator Model	$PM_{2.5}$ - particulate matter less than 2.5 microns
EF - emission factor	VMT - vehicle miles traveled
lbs - pounds	

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 8V
Fugitive Dust Emissions from Truck Loading Activity for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Subphase	Year	Number of Days	Haul Trips	Material Loaded[1]	Emission Factor[2]	Emissions w/o Watering		Emissions w/ Watering[3]	
						$PM_{2.5}$	$PM_{2.5}$		$PM_{2.5}$	
			days	# trips	ton	lb/ton	lb/day	ton/yr	lb/day	ton/yr
Project Preparation	Demolition	2025	140	2,960	33,628	3.1E-05	0.0075	5.3E-04	0.0029	2.1E-04
	Demolition	2026	38	790	8,978		0.0075	1.4E-04	0.0029	5.5E-05
	Grading	2026	100	17,692	201,010		0.063	0.0032	0.025	0.0012
Phase 1	Building Construction	2026	154	3,005	34,145		0.0069	5.4E-04	0.0027	2.1E-04
	Building Construction	2027	251	4,897	55,638		0.0069	8.7E-04	0.0027	3.4E-04
	Building Construction	2028	252	4,910	55,791		0.0069	8.7E-04	0.0027	3.4E-04
	Building Construction	2029	142	2,777	31,554		0.0069	4.9E-04	0.0027	1.9E-04
Phase 2	Demolition	2031	22	555	4,732		0.0067	7.4E-05	0.0026	2.9E-05
	Building Construction	2031	180	1,150	9,806		0.0017	1.5E-04	6.7E-04	6.0E-05
Phase 3	Demolition	2031	21	95	895		0.0013	1.4E-05	5.1E-04	5.5E-06
	Demolition	2032	0.73	3.3	31		0.0013	4.8E-07	5.1E-04	1.9E-07
	Building Construction	2032	200	250	2,361		3.7E-04	3.7E-05	1.4E-04	1.4E-05
Water Reservoir	Demolition	2026	1.0	2.0	10		3.2E-04	1.6E-07	1.3E-04	6.3E-08
	Excavation	2026	63	2,610	13,347		0.0066	2.1E-04	0.0026	8.2E-05
	Building Construction	2026	207	445	2,277		3.5E-04	3.6E-05	1.3E-04	1.4E-05
	Building Construction	2027	78	169	863		3.5E-04	1.4E-05	1.3E-04	5.3E-06

Notes:

[1] Total materials loaded for demolition and building construction phases were the total hauling amount for the entire phase scaled by number of trips per year and converted from cubic yards to tons assuming an average soil density of 1.5 grams per cubic centimeter, per the CalEEMod® User's Guide, Appendix C Section 4.4.3 Truck Loading.

[2] Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 13.2.4 for aggregate handling. The equation is:

EF = k x (0.0032) x $(U/5)^{1.3}$ / $(M/2)^{1.4}$, where the following default values are used:

0.35 = k_{PM10}, PM_{10} particle size multiplier
0.053 = $k_{PM2.5}$, $PM_{2.5}$ particle size multiplier
4.2 = mean wind speed (U), meters per second
9.4 = mean wind speed (U), miles per hour
12 = material moisture content (M), %

[3] Fugitive PM emissions will be controlled by watering the construction site three times per day, which is estimated to reduce emissions by 61% per CalEEMod® recommendation.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod® - California Emissions Estimator Model	lbs - pounds
EF - emission factor	$PM_{2.5}$ - particulate matter less than 2.5 microns

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 10V
Estimated Emissions from Construction Architectural Coating Off-Gassing for Project Variant
Parkline
Menlo Park, California

Inputs[1,2]

Parameter		Input	Units
Residential Surface Area to Floor Area Ratio		2.7	--
Non-Residential Surface Area to Floor Area Ratio		2.0	--
Painted Stripes Area in Parking Structures		6%	--
Painted Building Area in Parking Structures		5%	--
Application Rate		100%	--
Fraction of Surface Area	Non-Parking Interior Surfaces	75%	--
	Non-Parking Exterior Shell	25%	--
	Parking Interior Surfaces	90%	--
	Parking Exterior Shell	10%	--
Indoor Paint or Parking Stripes VOC Content		100	g/L
Outdoor Paint VOC Content		150	g/L

Project Variant Emissions by Phase

Phase	Land Use Type	Description	CalEEMod® Land Use	Square Footage[2] (square feet)	Building Surface Area[2] (square feet)	Painted Parking Stripes Area[2] (square feet)	Architectural Coating VOC emissions[3] (lbs)	Architectural Coating VOC Emissions by Phase (lbs)
Phase 1	Commercial	Commercial - Office/R&D	Research & Development	408,000	816,000	--	4,256	17,581
	Residential	Residential Apartments	Apartments Mid Rise	791,000	2,135,700	--	11,140	
	Residential	Residential Townhome	Condo/Townhouse	127,000	342,900	--	1,789	
	Retail	Retail	Convenience Market (24 hour)	2,002	4,004	--	21	
	Parking	Non-Residential Parking Garage	Enclosed Parking with Elevator	299,700	14,985	17,982	156	
	Parking	Residential Parking Garage	Enclosed Parking with Elevator	269,608	13,480	16,176	141	
	Parking	Non-Residential Surface Parking	Parking Lot	150,500	7,525	9,030	78	
	Recreational	Recreational	City Park	1,089,000	--	--	--	
Phase 2	Commercial	Commercial - Office/R&D	Research & Development	683,600	1,367,200	--	7,131	7,439
	Residential	Residential Apartments	Apartments Mid Rise	--	--	--	--	
	Residential	Residential Townhome	Condo/Townhouse	--	--	--	--	
	Retail	Retail	Convenience Market (24 hour)	--	--	--	--	
	Parking	Non-Residential Parking Garage	Enclosed Parking with Elevator	590,700	29,535	35,442	308	
	Parking	Residential Parking Garage	Enclosed Parking with Elevator	--	--	--	--	
	Parking	Non-Residential Surface Parking	Parking Lot	--	--	--	--	
	Recreational	Recreational	City Park	--	--	--	--	
Phase 3	Commercial	Commercial - Office/R&D	Research & Development	--	--	--	--	2,526
	Residential	Residential Apartments	Apartments Mid Rise	178,000	480,600	--	2,507	
	Residential	Residential Townhome	Condo/Townhouse	--	--	--	--	
	Retail	Retail	Convenience Market (24 hour)	--	--	--	--	
	Parking	Non-Residential Parking Garage	Enclosed Parking with Elevator	--	--	--	--	
	Parking	Residential Parking Garage	Enclosed Parking with Elevator	37,497	1,875	2,250	20	
	Parking	Non-Residential Surface Parking	Parking Lot	--	--	--	--	
	Recreational	Recreational	City Park	--	--	--	--	

Table 10V
Estimated Emissions from Construction Architectural Coating Off-Gassing for Project Variant
Parkline
Menlo Park, California

Project Variant Emissions by Year[4]

Phase	Year	Work Days per Year	VOC Emissions by Phase (lbs)	VOC Emissions by Year (lbs)
Phase 1	2029	113	17,581	5,612
	2030	240		11,969
Phase 2	2031	11	7,439	290
	2032	261		7,072
	2033	2.9		77
Phase 3	2032	61	2,526	697
	2033	159		1,829

Notes:

[1] Inputs and assumptions are consistent with CalEEMod® 2022.1 for BAAQMD. Indoor and outdoor paint VOC content parameters were obtained from CalEEMod Appendix G Table G-17 Architectural Coating Emissions Factors by Air District.

[2] Building square footage is based on Methodology Report. Residential building surface area assumed to be 2.7 times the square footage and non-residential square footage is assumed to be 2.0 times the square footage, consistent with CalEEMod® Appendix C. Parking surface area is representative of the surface area of the lot that is painted, in accordance with the CalEEMod default of 6% for stripes and 5% for the building.

[3] Calculated based on CalEEMod® assumption that 1 gallon of paint covers 180 square feet and that building area is assumed to be 75% indoors and 25% outdoors except for parking land uses which are 90% indoors and 10% outdoors.

[4] Emissions were broken down by year based on the Project Variant's construction schedule. Emissions were scaled by the number of work days per year for each phase.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - Emission Factor
g - grams
L - liter
lb - pound
VOC - Volatile Organic Compound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 11V
Estimated Emissions from Construction Paving Off-Gassing for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Activity	Year[1]	Asphalt-Paved Areas (sqft) by Phase[2]	Asphalt-Paved Area (acre)[3]	Asphalt Paving Off-Gassing ROG Emission Factor (lb/acre)[4]	Asphalt Paving Off-Gassing ROG Emissions (lb/year)
Phase 1	Paving	2030	179,009	4.1	2.62	11
	Paving	2031	242,941	5.6		15
Phase 2	Paving	2033	70,000	1.6		4.2
Phase 3	Paving	2033	250	0.0057		0.015
Total	--		**492,200**	**11**	--	**30**

Notes:

[1] The paving activity for each phase is based on the construction schedule and the number of working days per year.

[2] It was conservatively assumed that all impervious area in each phase is paved with asphalt. Impervious area information was provided by STUDIOS.

[3] This analysis assumes that all parking areas are asphalt paving areas.

[4] Emission factor from CalEEMod User's Guide, Appendix C.

Abbreviations:

lb - pound
ROG - reactive organic gas
sqft - square foot

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 12V
Summary of Construction CAP Emissions by Source for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Activity	Year	Source	Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Project Preparation	Demolition	2025	On-Site Exhaust	50	474	10	9.3
			Mobile Exhaust	11	394	3.4	3.3
			Roadway Dust	--	--	17	5.3
		2026	On-Site Exhaust	13	128	2.5	2.5
			Mobile Exhaust	2.7	101	0.91	0.87
			Roadway Dust	--	--	4.4	1.4
	Site Preparation	2025	On-Site Exhaust	28	150	5.8	5.7
			Mobile Exhaust	8.3	26	0.27	0.25
			Roadway Dust	--	--	1.7	0.54
		2026	On-Site Exhaust	15	81	3.1	3.1
			Mobile Exhaust	4.3	13	0.14	0.13
			Roadway Dust	--	--	1.0	0.30
	Grading	2026	On-Site Exhaust	36	267	7.0	6.9
			Mobile Exhaust	38	2,284	20	20
			Roadway Dust	--	--	97	31
Phase 1	Building Construction	2026	On-Site Exhaust	102	909	19	19
			Mobile Exhaust	222	719	7.7	7.3
			Roadway Dust	--	--	53	16
		2027	On-Site Exhaust	166	1,479	31	31
			Mobile Exhaust	342	1,112	12	11
			Roadway Dust	--	--	86	27
		2028	On-Site Exhaust	166	1,481	31	31
			Mobile Exhaust	328	1,061	12	11
			Roadway Dust	--	--	86	27
		2029	On-Site Exhaust	94	835	18	17
			Mobile Exhaust	175	571	6.4	6.0
			Roadway Dust	--	--	49	15
	Architectural Coating	2029	On-Site Exhaust	16	195	2.4	2.3
			Mobile Exhaust	36	74	0.86	0.81
			Roadway Dust	--	--	7.9	2.4
			Architectural Coating	5,612	--	--	--
		2030	On-Site Exhaust	33	408	4.9	4.6
			Mobile Exhaust	73	149	1.7	1.6
			Roadway Dust	--	--	17	5.2
			Architectural Coating	11,969	--	--	--
	Paving	2030	On-Site Exhaust	3.3	22	0.65	0.63
			Mobile Exhaust	0.88	9.2	0.080	0.076
			Roadway Dust	--	--	0.52	0.16
			Paving	11	--	--	--
		2031	On-Site Exhaust	4.7	30	0.89	0.87
			Mobile Exhaust	1.2	12	0.11	0.10
			Roadway Dust	--	--	0.73	0.23
			Paving	15	--	--	--

Table 12V
Summary of Construction CAP Emissions by Source for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Activity	Year	Source	Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 2	Demolition	2031	On-Site Exhaust	4.3	33	0.80	0.78
			Mobile Exhaust	1.1	58	0.60	0.57
			Roadway Dust	--	--	3.0	1.0
	Building Construction	2031	On-Site Exhaust	87	957	16	15
			Mobile Exhaust	163	355	4.3	4.0
			Roadway Dust	--	--	41	13
	Architectural Coating	2031	On-Site Exhaust	1.3	15	0.19	0.18
			Mobile Exhaust	2.5	4.2	0.052	0.049
			Roadway Dust	--	--	0.58	0.18
			Architectural Coating	290	--	--	--
		2032	On-Site Exhaust	30	335	4.3	4.1
			Mobile Exhaust	58	96	1.2	1.1
			Roadway Dust	--	--	14	4.2
			Architectural Coating	7,072	--	--	--
		2033	On-Site Exhaust	0.34	3.7	0.047	0.045
			Mobile Exhaust	0.65	1.1	0.013	0.012
			Roadway Dust	--	--	0.16	0.048
			Architectural Coating	77	--	--	--
	Paving	2033	On-Site Exhaust	12	77	2.2	2.2
			Mobile Exhaust	1.7	23	0.20	0.19
			Roadway Dust	--	--	1.4	0.43
			Paving	4.2	--	--	--
Phase 3	Demolition	2031	On-Site Exhaust	2.9	25	0.53	0.53
			Mobile Exhaust	0.34	10	0.10	0.10
			Roadway Dust	--	--	0.54	0.17
		2032	On-Site Exhaust	0.14	1.2	0.025	0.025
			Mobile Exhaust	0.014	0.33	0.0036	0.0034
			Roadway Dust	--	--	0.019	0.0061
	Building Construction	2032	On-Site Exhaust	34	400	6.0	6.0
			Mobile Exhaust	55	158	1.7	1.6
			Roadway Dust	--	--	16	5.0
	Architectural Coating	2032	On-Site Exhaust	2.4	41	0.26	0.26
			Mobile Exhaust	13	22	0.27	0.25
			Roadway Dust	--	--	3.1	0.94
			Architectural Coating	697	--	--	--
		2033	On-Site Exhaust	6.2	106	0.69	0.69
			Mobile Exhaust	33	55	0.67	0.63
			Roadway Dust	--	--	8.0	2.4
			Architectural Coating	1,829	--	--	--
	Paving	2033	On-Site Exhaust	1.6	12	0.31	0.31
			Mobile Exhaust	0.61	5.2	0.046	0.044
			Roadway Dust	--	--	0.35	0.11

Table 12V
Summary of Construction CAP Emissions by Source for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Activity	Year	Source	Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Water Reservoir	Demolition	2026	On-Site Exhaust	0.14	1.2	0.025	0.025
			Mobile Exhaust	0.018	0.26	0.0024	0.0023
			Roadway Dust	--	--	0.013	0.0040
	Site Preparation	2026	On-Site Exhaust	0.090	0.47	0.018	0.018
			Mobile Exhaust	0.019	0.23	0.0020	0.0019
			Roadway Dust	--	--	0.010	0.0033
	Excavation	2026	On-Site Exhaust	13	124	2.3	2.3
			Mobile Exhaust	6.6	339	3.0	2.9
			Roadway Dust	--	--	14	4.7
	Building Construction	2026	On-Site Exhaust	6.9	75	1.2	1.2
			Mobile Exhaust	17	131	1.2	1.2
			Roadway Dust	--	--	6.9	2.2
		2027	On-Site Exhaust	2.6	28	0.47	0.47
			Mobile Exhaust	6.1	47	0.44	0.42
			Roadway Dust	--	--	2.6	0.82
	Architectural Coating	2027	On-Site Exhaust	1.2	20	0.13	0.13
			Mobile Exhaust	3.7	22	0.21	0.20
			Roadway Dust	--	--	1.3	0.40
	Paving	2027	On-Site Exhaust	2.2	16	0.42	0.42
			Mobile Exhaust	0.71	8.7	0.075	0.071
			Roadway Dust	--	--	0.41	0.13

Notes:

[1] Construction emissions were estimated using the same methodologies implemented within CalEEMod® 2022.1.0. On-Site Exhaust represents emissions from off-road equipment, including onsite truck use, while mobile exhaust includes emissions from worker, vendor, and hauling trucks travelling to and from the project site. PM emissions of roadway dust are from the tire wear and brake wear of construction vehicles.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

2022 California Environmental Quality Act (CEQA) Guidelines. 2023. Bay Area Air Quality Management District (BAAQMD). April. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

Table 13V
Summary of Construction GHG Emissions by Source for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Activity	Year	Source	Construction GHG Emissions[1,2]
				CO_2e
				MT/yr
Project Preparation	Demolition	2025	On-Site Exhaust	194
			Mobile Exhaust	119
		2026	On-Site Exhaust	53
			Mobile Exhaust	31
	Site Preparation	2025	On-Site Exhaust	115
			Mobile Exhaust	15
		2026	On-Site Exhaust	64
			Mobile Exhaust	8.1
	Grading	2026	On-Site Exhaust	146
			Mobile Exhaust	683
Phase 1	Building Construction	2026	On-Site Exhaust	426
			Mobile Exhaust	429
		2027	On-Site Exhaust	694
			Mobile Exhaust	687
		2028	On-Site Exhaust	697
			Mobile Exhaust	677
		2029	On-Site Exhaust	393
			Mobile Exhaust	376
	Architectural Coating	2029	On-Site Exhaust	33
			Mobile Exhaust	65
		2030	On-Site Exhaust	69
			Mobile Exhaust	135
	Paving	2030	On-Site Exhaust	12
			Mobile Exhaust	4.0
		2031	On-Site Exhaust	16
			Mobile Exhaust	5.5
Phase 2	Demolition	2031	On-Site Exhaust	15
			Mobile Exhaust	19
	Building Construction	2031	On-Site Exhaust	344
			Mobile Exhaust	318
	Architectural Coating	2031	On-Site Exhaust	2.6
			Mobile Exhaust	4.6
		2032	On-Site Exhaust	62
			Mobile Exhaust	107
		2033	On-Site Exhaust	0.71
			Mobile Exhaust	1.2
	Paving	2033	On-Site Exhaust	44
			Mobile Exhaust	10

Table 13V
Summary of Construction GHG Emissions by Source for Project Variant
Parkline
Menlo Park, California

Construction Area	Construction Activity	Year	Source	Construction GHG Emissions[1,2]
				CO_2e
				MT/yr
Phase 3	Demolition	2031	On-Site Exhaust	13
			Mobile Exhaust	3.5
		2032	On-Site Exhaust	0.62
			Mobile Exhaust	0.12
	Building Construction	2032	On-Site Exhaust	145
			Mobile Exhaust	123
	Architectural Coating	2032	On-Site Exhaust	6.3
			Mobile Exhaust	24
		2033	On-Site Exhaust	17
			Mobile Exhaust	62
	Paving	2033	On-Site Exhaust	7.5
			Mobile Exhaust	2.6
Water Reservoir	Demolition	2026	On-Site Exhaust	0.62
			Mobile Exhaust	0.093
	Site Preparation	2026	On-Site Exhaust	0.44
			Mobile Exhaust	0.084
	Excavation	2026	On-Site Exhaust	56
			Mobile Exhaust	103
	Building Construction	2026	On-Site Exhaust	30
			Mobile Exhaust	54
		2027	On-Site Exhaust	11
			Mobile Exhaust	20
	Architectural Coating	2027	On-Site Exhaust	3.1
			Mobile Exhaust	10
	Paving	2027	On-Site Exhaust	10
			Mobile Exhaust	3.3
Total				**7,780**

Notes:

[1] Construction emissions were estimated with methodology equivalent to CalEEMod® 2022.1.0. On-Site Exhaust represents emissions from off-road equipment, including onsite truck use, while mobile exhaust includes emissions from worker, vendor, and hauling trucks travelling to and from the project site.

[2] Carbon dioxide equivalent emissions were determined using IPCC 6th Assessment Report Global Warming Potentials for CH_4 and N_2O.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CO2e - carbon dioxide equivalent
CH_4 - methane
GHG - greenhouse gas
MT - metric tons
N_2O - nitrous oxide
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

2022 California Environmental Quality Act (CEQA) Guidelines. 2023. Bay Area Air Quality Management District (BAAQMD). April. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

Table 14V
Construction Emissions by Year for Project Variant
Parkline
Menlo Park, California

Year	Construction Daily CAP Emissions[1]				Construction GHG Emissions
	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
	lb/day				MT/year
2025	0.65	7.1	0.25	0.16	443
2026	1.8	20	0.94	0.47	2,084
2027	2.0	10	0.52	0.28	1,440
2028	1.9	10	0.50	0.26	1,375
2029	23	6.4	0.32	0.17	866
2030	46	2.3	0.095	0.047	220
2031	2.2	5.7	0.27	0.14	742
2032	30	4.0	0.18	0.089	467
2033	10	1.5	0.075	0.038	144

Notes:

[1] Daily emissions are conservatively averaged over the number of work days per year (e.g., 260 days in a full year), not including weekends.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CAP - Criteria Air Pollutants
CO_2e - carbon dioxide equivalent
lb - pounds
MT - metric tons

NO_X - nitrogen oxides
PM - Particulate Matter
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
ROG - reactive organic gases

Table 15V
Building Operational Capacity For Emissions Scaling for Project Variant
Parkline
Menlo Park, California

Phase[1]	**Percent Breakdown of Land Use Type by Phase**						
	Commercial - Office/R&D	**Residential Apartments**	**Retail**	**Non-Residential Parking Garage**	**Residential Parking Garage**	**Non-Residential Surface Parking**	**Recreational**
Phase 1	37%	82%	100%	34%	88%	100%	100%
Phase 2	63%	0%	0%	66%	0%	0%	0%
Phase 3	0%	18%	0%	0%	12%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Notes:

[1] Land Use area/subphasing information and full buildout square footage by building provided by Project Applicant.

Abbreviations:

% - percent

R&D - Research and Development

Table 16V
Trips and VMT for Project Variant Operations
Parkline
Menlo Park, California

Land Use[1]			Unit Trip Rates[1,2]	Daily Trip Rates[1,2]				Annual Trips[1,3]	Annual VMT[1,3,4]	
Type[5]	**Quantity**	**Unit**	**Weekday**	**Weekday**	**Saturday**	**Sunday**	**Avg. Daily**		**Weekday Daily**	**Annual**
			Trips/day/unit area	**Trips/day**				**Trips/yr**	**Miles/day**	**Miles/yr**
Full Buildout Conditions										
Research & Development	1,094	1,000 sq.ft.	7.92	8,662	1,462	854	6,518	2,372,657	104,729	28,685,421
Apartments Mid Rise	600	D.U.	3.25	1,947	1,757	1,464	1,851	673,787	17,155	5,936,061
Single Family Housing	46	D.U.	5.17	238	240	215	235	85,549	2,096	753,682
Affordable Housing	154	D.U.	3.44	529	477	398	503	183,046	4,660	1,612,636
City Park	1	field	68	68	171	191	100	36,493	658	352,891
			Total	11,445	4,108	3,122	9,208	3,351,532	129,298	37,340,691
Partial Buildout Conditions										
			End of Phase 1	5,253	2,475	1,974	4,388	1,597,092	56,956	17,010,509
			End of Phase 2	10,678	3,390	2,509	8,470	3,082,937	122,542	34,974,373

Notes:

1. Trip rates provided by the Hexagon transportation engineer and were applied to the Project Variant land use quanties to calculate the daily trips, annual trips, and annual VMT.
2. Weekday Project Variant trip rates provided by the Hexagon transportation engineer. Saturday and Sunday trip generation are adjusted based on weekday trips and CalEEMod default trip rate ratios.
3. Annual trips are calculated assuming 52 weeks per year of operation for all fleets.
4. Weekday Daily VMT is calculated by multiplying the daily trip rates by the trip length. Annual VMT calculated using the daily VMT and the ratio of average daily trips and annual trips.
5. The retail land use for the community building is included in the "Research & Development" land use since traffic trip rates were not provided for retail land use types. Singe Family Housing trip rates are used to calculate the VMT for all townhomes.

Abbreviations:

D.U. - dwelling unit
sq.ft. - square feet
VMT - vehicle miles traveled
yr - year

Table 17V
Summary of Project Variant Fleet Mix
Parkline
Menlo Park, California

Fleet	Year	By EMFAC2007 Class[1]												
		LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	MCY	SBUS	MH
Full Buildout	2033	38%	3.8%	32%	19%	4%	0.89%	1.34%	0.77%	--	--	0.46%	--	--

Notes:

[1] Default EMFAC fleet mix was adjusted to exclude buses and motor homes, because of the infill, mixed-use nature of the Project Variant.

Abbreviations:

EMFAC - EMission FACtor model
HHDT - heavy-heavy duty trucks
LDA - light duty auto (passenger cars)
LDT1 - light-duty trucks (GVWR <6,000 lbs and ETW <= 3,750 lbs)
LDT2 - light-duty trucks (GVWR <6,000 lbs and ETW 3,751-5,760 lbs)
LHDT1 - light heavy duty trucks (GVWR 8,501-10,000 lb)
LHDT2 - light heavy duty trucks (GVWR 10,001 - 14,000 lb)
MCY - motorcycle
MDV - medium duty trucks
MH - motor homes
MHDT - medium-heavy duty trucks
OBUS - other buses
SBUS - school bus
UBUS - urban bus

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 18V
Mobile Criteria Air Pollutants Emission Factors for Project Variant
Parkline
Menlo Park, California

Calendar Year	CAP Emission Factors[1,2]																		
	ROG						NO_X			PM_{10}					$PM_{2.5}$				
	RUNEX	RUNLOSS	STREX	IDLEX	DIURN	HOTSOAK	RUNEX	STREX	IDLEX	RUNEX	PMTW	PMBW	STREX	IDLEX	RUNEX	PMTW	PMBW	STREX	IDLEX
	g/mile		g/trip				g/mile	g/trip		g/mile			g/trip		g/mile			g/trip	
2031	0.010	0.031	0.19	0.0035	0.17	0.078	0.054	0.23	0.030	0.0013	0.0083	0.012	0.0013	1.0E-04	0.0012	0.0021	0.0040	0.0012	9.6E-05
2033	0.0094	0.032	0.18	0.0033	0.17	0.076	0.049	0.22	0.028	0.0012	0.0083	0.012	0.0011	9.6E-05	0.0011	0.0021	0.0040	0.0010	9.2E-05

Notes:

[1] Emission factors for each fleet type were developed by creating weighted emission factors based on the vehicle classes in each fleet type. EMFAC2021 emissions were summed across each year for each vehicle class within a fleet type, then a vehicle class emission factor based on VMT and trip counts for the vehicle class was calculated. Emission factors for each vehicle class within a fleet type were weighted based on total EMFAC VMT and trips to create a fleet-wide emission factor for each year.

[2] Emission factors were calculated for the following calendar years: end of Phase 1 (2031), end of Phase 2 (2033), and the first year of full buildout operations (2033). Mobile emissions during interim operational years not listed were calculated using the same emission factors from the closest year, e.g., 2032 operational emissions from Phase 1 were conservatively calculated using the average emission factors from year 2031.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015

Abbreviations:

CAP - criteria air pollutants
DIURN - diurnal evaporative hydrocarbon emissions
EMFAC - California Air Resources Board EMission FACtor model
g - grams
HOTSOAK - hot soak evaporative hydrocarbon emissions
IDLEX - idle exhaust emissions
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PMTW - tire wear particulate matter emissions
PMBW - brake wear particulate matter emissions
ROG - reactive organic gases
RUNEX - running exhaust emissions
RUNLOSS - running loss evaporative hydrocarbon emissions
STREX - start exhaust tailpipe emissions
VMT - Vehicle miles traveled

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 19V
Mobile Greenhouse Criteria Air Pollutants Emission Factors for Project Variant
Parkline
Menlo Park, California

Calendar Year	GHG Emission Factors[1,2]												
	CO_2			CH_4			N_2O			HFC	CO_2e		
	RUNEX	STREX	IDLEX	RUNEX	STREX	IDLEX	RUNEX	STREX	IDLEX	RUNEX	RUNEX	STREX	IDLEX
	g/mile	g/trip		g/mile	g/trip		g/mile	g/trip		g/mile	g/mile	g/trip	
2031	296	58	6.9	0.0033	0.043	0.0018	0.0084	0.025	0.0010	2.1E-04	299	67	7.3
2033	287	57	6.5	0.0030	0.039	0.0017	0.0080	0.024	0.0010	1.6E-04	290	65	6.8

Notes:

[1] Emission factors for each fleet type were developed by creating weighted emission factors based on the vehicle classes in each fleet type. EMFAC2021 emissions were summed across each year for each vehicle class within a fleet type, then a vehicle class emission factor based on VMT and trip counts for the vehicle class was calculated. Emission factors for each vehicle class within a fleet type were weighted based on total EMFAC VMT and trips to create a fleet-wide emission factor for each year.

[2] Emission factors were calculated for the following calendar years: end of Phase 1 (2029), end of Phase 2 (2031), and the first year of full buildout operations (2031). Mobile emissions during interim operational years not listed were calculated using the same emission factors from the closest year, e.g., 2032 operational emissions from Phase 1 were conservatively calculated using the average emission factors from year 2031.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
CH_4 - methane
EMFAC - California Air Resources Board EMission FACtor model
g - grams
GHG - greenhouse gases
HFC - hydrofluorocarbons
IDLEX - idle exhaust emissions
N_20 - nitrous oxide
ROG - reactive organic gases
RUNEX - running exhaust emissions
STREX - start exhaust tailpipe emissions
VMT - Vehicle miles traveled

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 20V
Mobile Emissions Summary for Project Variant
Parkline
Menlo Park, California

Fleet Type	Year	Trip Rates[1]		Vehicle Miles Traveled[1]		CAP Emissions[2]				GHG Emissions[2]				
		Daily	Annual	Daily	Annual	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	HFC	CO_2e
		Trips/day	Trips/yr	Miles/day	Miles/yr	tons/year				tons/year				MT/year
Full Buildout	2033	9,208	3,351,532	102,584	37,340,691	3.3	2.9	5.0	0.92	12,062	0.28	0.42	0.0065	11,072
End of Phase 1	2031	4,388	1,597,092	46,732	17,010,509	1.6	1.5	2.3	0.42	5,664	0.14	0.20	0.0039	5,201
End of Phase 2	2033	8,470	3,082,937	96,083	35,070,456	3.1	2.7	4.7	0.87	11,324	0.26	0.40	0.0061	10,394

Notes:

[1] Daily trip rates and VMT were provided by the transportation consultant, for more detail see Table 16V.

[2] Criteria air pollutants and greenhouse gas emissions are calculated by year using emission factors for the associated year and fleet from EMFAC2021. Project Variant emission factors are shown in Table 18V and Table 19V.

Abbreviations:

CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
CAP - criteria air pollutant
GHG - greehouse gas
HFC - hydrofluorocarbons
MT - metric ton
N_2O - nitrogen dioxide
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 24V
Project Variant Generator Emissions
Parkline
Menlo Park, California

Generator Information[1]

Source	Number of Generators	Engine Control[2]	Fuel Type	Size	Annual Operation[3]	Load Factor
				hp	hr/yr	
Office B1 Generator	1	Tier 4	Diesel	2,012	50	0.73
Office B2 Generator	1	Tier 4	Diesel	2,012	50	0.73
Office B3 Generator	1	Tier 4	Diesel	2,012	50	0.73
Office B4 Generator	1	Tier 4	Diesel	2,012	50	0.73
Office B5 Generator	1	Tier 4	Diesel	2,012	50	0.73
Amenities Generator	1	Tier 2	Diesel	402	50	0.73
Parking PG1 Generator	1	Tier 2	Diesel	268	50	0.73
Parking PG2 Generator	1	Tier 2	Diesel	268	50	0.73
Parking PG3 Generator	1	Tier 2	Diesel	268	50	0.73
Residential R1 Generator	1	Tier 2	Diesel	536	50	0.73
Residential R2 Generator	1	Tier 2	Diesel	536	50	0.73
Residential R3 Generator	1	Tier 2	Diesel	335	50	0.73
Water Reservoir Generator	1	Tier 2	Diesel	603	50	0.73

Generator Emissions

Source	Size (hp)	Annual Emissions				
		(ton/yr)				(MT/yr)
		ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
Office B1 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Office B2 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Office B3 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Office B4 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Office B5 Generator	2,012	0.012	0.040	0.0016	0.0016	38
Amenities Generator	402	0.0042	0.074	0.0024	0.0024	7.7
Parking PG1 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Parking PG2 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Parking PG3 Generator	268	0.0028	0.050	0.0016	0.0016	5.1
Residential R1 Generator	536	0.0057	0.10	0.0032	0.0032	10.2
Residential R2 Generator	536	0.0057	0.10	0.0032	0.0032	10.2
Residential R3 Generator	335	0.0035	0.063	0.0020	0.0020	6.4
Water Reservoir Generator	603	0.0062	0.11	0.0036	0.0036	12
Total Emissions		**0.094**	**0.80**	**0.028**	**0.028**	**254**
Phase 1 Generator Emissions		0.049	0.52	0.017	0.017	122
Phase 2 Generator Emissions		0.042	0.22	0.0081	0.0081	126
Phase 3 Generator Emissions		0.0035	0.063	0.0020	0.0020	6.4

Notes:

[1] Number, size, and fuel of emergency generators were provided by the Project Applicant in Summary of Stationary Equipment Memo on February 20, 2024.

[2] All generators over 1,000 hp were assumed to be Tier 4, and all other generators are assumed to be Tier 2, consistent with BAAQMD BACT guidelines.

[3] Based on historical runtime of existing emergency generators on SRI campus, the combined operational hours from engine testing, maintenance and emergency operations for any given existing generator do not exceed 50 hours a year. Therefore, 50 hours of operation was used to represent emergency use and testing and maintenance.

Abbreviations:

BACT - Best Available Control Technology
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
g - grams
hp - horsepower
hr - hour
MT - metric tons
NOx - oxides of nitrogen
PM - particulate matter
PM_{10} - PM less than 10 microns in diameter
$PM_{2.5}$ - PM less than 2.5 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Resources Board. Airborne Toxic Control Measures (ATCM), 17 CCR § 93115. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf

BAAQMD. Best Available Control Technology (BACT) Guideline. Available online at: https://www.baaqmd.gov/~/media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en.

Table 30V
Electricity Usage and Emissions for Project Variant
Parkline
Menlo Park, California

Site	Land Use Type	Year	Electricity Usage[1]	Electricity GHG Emissions[3]
			MWh/yr	MT/yr
Full Buildout Energy Use and Emissions				
Project Variant[2]	Commercial - Office/R&D	2033	47,167	--
	Residential Apartments		8,310	
	Residential Townhome		1,042	
	Retail		47	
	Non-Residential Parking Garage		1,824	
	Residential Parking Garage		2270	
	Non-Residential Surface Parking		220	
	Recreational		--	
		Total	**60,880**	**--**

Notes:

[1] Electricity usages were obtained from the Building Energy Preliminary Estimate Memo dated February 20, 2024.

[2] The electricity emission factor for the Project Variant is zero because the project would meet Menlo Park's commitment to 100% renewable and 100% greenhouse gas-free energy.

[3] Greenhouse gas emissions from electricity were calculated using the electricity usage and the Electricity Carbon Intensity Factor presented in Table 27 of the Air Quality Technical Report and linearly interpolated for the applicable year.

Abbreviations:

MWh - Megawatt Hour
yr - year
MT - Metric Ton

References:

Pacific Architects and Engineers (PAE). February 20, 2024. Parkline - Building Energy & Water Preliminary Estimates Memo.

Table 31V
Water Usage for Project Variant Operations
Parkline
Menlo Park, California

Land Use Type	Indoor Water Use	Outdoor Water Use
	(million gal/year)	(million gal/year)
Commercial - Office/R&D	47	22
Residential Apartments	37	
Residential Townhome	2.2	
Retail	0.10	
Non-Residential Parking Garage	--	
Residential Parking Garage	--	
Recreational	--	
Total Full Buildout Water Use	**86**	**22**

Notes:

[1] Water usage for the proposed project was obtained from the Building Energy Preliminary Estimate Memo dated February 20, 2024.

Abbreviations:

CalEEMod - California Emissions Estimator Model

gal - gallon

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2022.1.0. Available online at http://www.caleemod.com

Pacific Architects and Engineers (PAE). February 20, 2024. Parkline - Building Energy & Water Preliminary Estimates Memo.

Table 32V

Water and Wastewater Emissions from Project Variant Operations

Parkline

Menlo Park, California

Land Use	Electricity Indirect Emissions[1]	Wastewater Treatment Emissions[2,3]	Total Emissions
	(MT CO_2e/yr)	(MT CO_2e/yr)	(MT CO2e/yr)
Full Buildout			
Commercial - Office/R&D	13	63	76
Residential Apartments	10	50	61
Residential Townhome	0.61	3.0	3.6
Retail	0.028	0.14	0.17
Recreational	0	0	0
Landscaping	6.1	--	6.1
Total Full Buildout Emissions	**30**	**117**	**147**

Notes:

1. Electricity indirect emissions were calculated using Project Variant water use rates shown in Table 31V and energy emission factors for 2033 from PG&E for Menlo Park, shown in Table 27 of the Air Quality Technical Report.
2. Wastewater emissions were calculated using default values and methods from CalEEMod Version 2022.1.0. The Water Electricity Intensity, Water Treatment Types, and Wastewater Treatment Direct Emission Factors can be found in tables G-32, G-34, G-35 from Appendix G of the CalEEMod user guide, respectively. These calculations were performed using project water use rates and a weighted average CO_2e emission factor based on the wastewater treatment types for San Mateo County.

3. Consistent with CalEEMod, indoor water use was assumed to be processed as wastewater and outdoor water use was assumed to not be processed as wastewater.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2e - carbon dioxide equivalents
MT - metric ton
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2020.4.0. Available online at http://www.caleemod.com

Table 33V
Solid Waste Generation and Emissions for Project Variant Operations
Parkline
Menlo Park, California

Land Use[1]	Size[1]	Units	Solid Waste Generation Rate[2] (lb/day/SP)	Solid Waste Generation (ton/yr)	CO_2 Emissions[3] (MT/year)	CH_4 Emissions[3] (MT/year)	CO_2e Emissions[3] (MT/year)
Full Buildout							
Commercial - Office/R&D	4,268	Employees	2.3	1,791	160	16	559
Residential Apartments	1,885	Resident	4.1	1,410	126	13	440
Residential Townhome	115	Resident	4.1	86	7.7	0.77	27
Retail	2.0	1000sqft	--	6.0	0.54	0.054	1.9
			Total	**3,294**	**294**	**29**	**1,028**

Notes:

[1] The number of Project Variant residents was provided by Project Sponsor, based on a value of 2.50 persons per household.

[2] Solid Waste Generation Rates were provided by the City based on CalRecycle actual solid waste generation rates, except for the retail land use. For retail, CalEEMod default solid waste generation was used. CalRecycle assumes the waste disposal rate for parking and recreational land uses is zero; therefore it is not shown on this table.

[3] Emissions shown in this table were calculated using default values and methods from CalEEMod Version 2022 including default solid waste landfill gas emission factors from CalEEMod User's Guide Appendix G Table G-37.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CH_4 - methane
CO_2 - carbon dioxide
SP - Service population
CO_2e - carbon dioxide equivalents
MT - metric ton
lb - pound
yr - year

References

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2022.1.0. Available online at http://www.caleemod.com

Table 34V
Refrigerant GHG Emissions for Project Variant
Parkline
Menlo Park, California

Land Use Type	Refrigeration Equipment[1]	Refrigerant[2]	Equipment Charge Size[2]	Annual Operational Leak Rate[2]	Service Leak Rate[2]	Times Serviced[2]	Lifetime[2]	Global Warming Potential[2]	Land Use	Average Annual Refrigerant Emissions[3]
			kg refrigerant/ 1000 sqft				years		1000 sqft	MT CO_2e/yr
Full Buildout										
Commercial - Office/R&D	Household refrigerators and/or freezers	R-134a	0.45	1%	0%	1	14	1,430	1,092	4.3
Commercial - Office/R&D	Other commercial A/C and heat pumps	R-410A	0.0023	4%	4%	18	25	2,088	1,092	0.36
Residential Apartments	Average room A/C & Other residential A/C and heat pumps	R-410A	0.0023	3%	3%	10	15	2,088	969	0.19
Residential Apartments	Household refrigerators and/or freezers	R-134a	0.12	1%	0%	1	14	1,430	969	0.96
Residential Townhome	Average room A/C & Other residential A/C and heat pumps	R-410A	0.0023	3%	3%	10	15	2,088	127	0.025
Residential Townhome	Household refrigerators and/or freezers	R-134a	0.12	1%	0%	1	14	1,430	127	0.13
Retail	Other commercial A/C and heat pumps	R-410A	0.0018	4%	4%	18	25	2,088	2.0	5.2E-04
Retail	Stand-alone retail refrigerators and freezers	R-134a	0.037	1%	0%	1	10	1,430	2.0	0.0011
Retail	Walk-in refrigerators and freezers	R-404A	4.0E-04	8%	8%	20	20	3,922	2.0	4.7E-04
									Total Full Buildout Emissions	**5.9**

Notes

[1] Refrigeration equipment types for each land use type were determined using Table 38 from CalEEMod Appendix G.

[2]

Refrigeration Equipment, Refrigerant, Equipment charge size, Annual Operational Leak Rate, Service Leak Rate, Times Serviced, Lifetime, and Global Warming Potential were based on CalEEMod defaults in Appendix G Tables 38 and 39.

[3] The emissions from the refrigeration equipment were estimated using the following equation:

$E = \Sigma(((CS \text{ x } OLR) + (CS \text{ x } SLR \text{ x } (TS / L))) \text{ x } GWP)_r \text{ x } KSF \text{ x } UC_1$, where:

= E, average annual refrigerant emissions (MT CO_2e/yr)
= CS, equipment charge size (kg refrigerant/KSF). The equipment charge size is the total quantity of Refrigerant installed in the refrigeration or A/C equipment.
= OLR, annual operational leak rate (%)
= SLR, service leak rate (%)
= TS, times serviced (number of times serviced over equipment lifetime)
=L, average equipment operation lifetime (years)
= GWP, global warming potential (unitless)
= KSF, land use size (1000 sqft)
= UC_1, unit conversion form kg to MT
= r, refrigerant
= I, equipment type

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations

A/C - air conditioning	kg - kilogram
CalEEMod® - California Emissions Estimate Model	MT- metric tons
CO_2e - carbon dioxide equivalent	sqft - square feet
GHG - greenhouse gas	yr - year

Table 35V

Unmitigated Landscaping Emissions from Project Variant Operations

Parkline

Menlo Park, California

Land Use Type	Non-Residential Area[2]	Residential Dwelling Units	Emissions from Landscaping Equipment[1]				
			ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2e
	sqft	DU	(tons/yr)				(MT/yr)
Full Buildout							
Nonresidential Landscaping Equipment	2,291,107	800	2.4	0.14	0.036	0.027	48
Residential Landscaping Equipment			0.55	0.050	0.0029	0.0022	10
Total Full Buildout Emissions			**3.0**	**0.19**	**0.038**	**0.029**	**58**
Partial Buildout[3]							
Phase 1 Emissions			1.5	0.10	0.018	0.013	29
Phase 2 Emissions			1.3	0.076	0.020	0.015	27
Phase 3 Emissions			0.14	0.012	1.1E-03	8.6E-04	2.8

Notes:

[1] Landscape emissions are calculated using the emission factors from CalEEMod Appendix G.

[2] Landscaping areas for full buildout conditions are based on the CalEEMod's default methodology of using dwelling units and non-residential building sizes to generate landscaping equipment activities.

[3] Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15V.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2e - carbon dioxide equivalent
DU - dwelling unit
MT - metric tons
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
NO_x - nitrogen oxides
PM - particulate matter
ROG - reactive organic gases
sqft - square feet
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at

Table 36V

Mitigated Landscaping Emissions from Project Variant Operations

Parkline

Menlo Park, California

Land Use Type	Non-Residential Area[2]	Residential Dwelling Units	Emissions from Landscaping Equipment[1]				
			ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2e
	sqft	DU	(tons/yr)				(MT/yr)
Full Buildout							
Nonresidential Landscaping Equipment	2,291,107	800	0	0	0	0	0
Residential Landscaping Equipment			0	0	0	0	0
Total Full Buildout Emissions			**0**	**0**	**0**	**0**	**0**

Notes:

[1] Landscape emissions are calculated assuming all landscaping equipment is electric. The energy demand is determined using CalEEMod defualt equipment horsepower converted to kilowatt hours. The electricity emission factor for the Project Variant is zero to meet Menlo Park's commitment to 100% renewable and 100% greenhouse gas-free energy.

[2] Landscaping areas for full buildout conditions are based on the CalEEMod's default methodology of using dwelling units and non-residential building sizes to generate landscaping equipment activities.

Abbreviations:

CalEEMod - California Emissions Estimator Model
DU - dwelling unit
MT - metric tons
NO_x - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
PM - particulate matter
ROG - reactive organic gases
sqft - square feet
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 37V
Unmitigated Architectural Coating Emissions from Project Variant Operations
Parkline
Menlo Park, California

Land Use Type	Building Area[1]	Building Surface Area[2]	Painted Parking Stripes Area[2]	Application Rate[3]	Indoor or Parking Stripe Paint VOC EF[4]	Outdoor Paint VOC EF[4]	Architectural Coating VOC Emissions[5]	Architectural Coating VOC Emissions as ROG
	sqft	sqft	sqft		g/L	g/L	lb/yr	tons/yr
Full Buildout								
Commercial - Office/R&D	1,091,600	2,183,200	--	10%	100	150	1,139	0.57
Residential Apartments	969,000	2,616,300	--	10%	100	150	1,364	0.68
Residential Townhome	127,000	342,900	--	10%	100	150	179	0.089
Retail	2,002	4,004	--	10%	100	150	2.1	0.0010
Non-Residential Parking Garage	890,400	1,780,800	--	10%	100	150	929	0.46
Residential Parking Garage	307,105	614,210	--	10%	100	150	320	0.16
Non-Residential Surface Parking	150,500	7,525	9,030	10%	100	100	7.7	0.0038
Recreational	1,089,000	--	--	10%	--	--	--	--
Total Full Buildout Emissions							**3,941**	**2.0**
Partial Buildout[6]								
Phase 1 Emissions							**2,322**	**1.2**
Phase 2 Emissions							**1,329**	**0.66**
Phase 3 Emissions							**290**	**0.14**

Notes:

[1] Square footage for parking areas assume 400 square feet per parking space, consistent with CalEEMod default assumptions.

[2] Consistent with CalEEMod Appendix C, residential building surface area was assumed to be 2.7 times the floor area, and non-residential 2 times the floor area. Also consistent with CalEEMod Appendix E, the parking painted stripes and building area was assumed to be 6% and 5% of the total surface area for surface lots respectively.

[3] Consistent with CalEEMod Appendix C, 10% of all surfaces were assumed to be coated each year.

[4] Consistent with CalEEMod Appendix G Table G-17, which is based on BAAQMD Regulation 8 Rule 3 paint VOC regulations, use VOC EF of 100 g/L for flat paints, generally used indoors, and 150 g/L for all other architectural coatings.

[5] Uses CalEEMod Appendix C assumption that 1 gallon of paint covers 180 square feet. Building surface area is assumed to be 75% indoors and 25% outdoors, consistent with CalEEMod Appendix C. Parking garages are assumed to have 90% indoor areas and 10% outdoor.

[6] Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15V.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
EF - emission factor
g - grams
L - liters
lb - pounds
ROG - reactive organic gases
sqft - square feet
VOC - volatile organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 38V
Mitigated Architectural Coating Emissions from Project Variant Operations
Parkline
Menlo Park, California

Land Use Type	Building Area[1]	Building Surface Area[2]	Painted Parking Stripes Area[2]	Application Rate[3]	Indoor or Parking Stripe Paint VOC EF[4]	Outdoor Paint VOC EF[4]	Architectural Coating VOC Emissions[5]	Architectural Coating VOC Emissions as ROG
	sqft	sqft	sqft		g/L	g/L	lb/yr	tons/yr
Full Buildout								
Commercial - Office/R&D	1,091,600	2,183,200	--	0.10	10	150	455	0.23
Residential Apartments	969,000	2,616,300	--	0.10	10	150	546	0.27
Residential Townhome	127,000	342,900	--	0.10	10	150	72	0.036
Retail	2,002	4,004	--	0.10	10	150	0.84	4.2E-04
Non-Residential Parking Garage	890,400	1,780,800	--	0.10	10	150	371	0.19
Residential Parking Garage	307,105	614,210	--	0.10	10	150	128	0.064
Non-Residential Surface Parking	150,500	7,525	9,030	0.10	10	100	1.1	5.4E-04
Recreational	1,089,000	--	--	0.10	--	--	--	--
Total Full Buildout Emissions							**1,574**	**0.79**
Partial Buildout[6]								
Phase 1 Emissions							**927**	**0.46**
Phase 2 Emissions							**532**	**0.27**
Phase 3 Emissions							**116**	**0.058**

Notes:

[1] Square footage for parking areas assume 400 square feet per parking space, consistent with CalEEMod default assumptions.

[2] Consistent with CalEEMod Appendix C, residential building surface area was assumed to be 2.7 times the floor area, and non-residential 2 times the floor area. Also consistent with CalEEMod Appendix E, the parking painted stripes and building area was assumed to be 6% and 5% of the total surface area for surface lots respectively.

[3] Consistent with CalEEMod Appendix C, 10% of all surfaces were assumed to be coated each year.

[4] Consistent with SCAQMD's Super-Compliant Architectural Coatings standard, a VOC EF of 10 g/L was used for indoor paint. Consistent with CalEEMod Appendix G Table G-17, which is based on BAAQMD Regulation 8 Rule 3 paint VOC regulations, a VOC EF of 150 g/L for all other architectural coatings was used.

[5] Uses CalEEMod Appendix C assumption that 1 gallon of paint covers 180 square feet. Building surface area is assumed to be 75% indoors and 25% outdoors, consistent with CalEEMod Appendix C. Parking garages are assumed to have 90% indoor areas and 10% outdoor.

[6] Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15V.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District	lb - pound
CalEEMod - California Emissions Estimator Model	ROG - reactive organic gases
EF - emission factor	sqft - square feet
g - grams	VOC - volatile organic gases
L - liters	yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

SCAQMD. Super-Compliant Architectural Coatings. Available online at: https://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings

Table 40V
Consumer Product Emissions from Project Operations for Project Variant
Parkline
Menlo Park, California

Land Use Type	Building Area[1]	Consumer Products VOC EF[2]	Days per Year	Consumer Products VOC emissions as ROG[2,3]	Consumer Products VOC emissions as ROG
	sqft	lb/sqft/day		lb/yr	tons/yr
Full Buildout					
Commercial - Office/R&D	1,091,600	1.8E-05	365	6,981	3.5
Residential Apartments	969,000	1.8E-05	365	6,197	3.1
Residential Townhome	127,000	1.8E-05	365	812	0.41
Retail	2,002	1.8E-05	365	13	0.0064
Non-Residential Parking Garage	890,400	5.7E-07	365	185	0.092
Residential Parking Garage	307,105	5.7E-07	365	64	0.032
Non-Residential Surface Parking	150,500	5.7E-07	365	31	0.016
Recreational	1,089,000	7.9E-08	365	31	0.016
Total Full Buildout Emissions				**14,314**	**7.2**
Partial Buildout[3]					
Phase 1 Emissions				8,673	4.3
Phase 2 Emissions				4,494	2.2
Phase 3 Emissions				1,146	0.57

Notes:

[1] Square footage for parking areas were provided by the Project Applicant.

[2] Consumer product VOC EFs for commercial and residential land use types are presented in the AQTR Table 39. Emission factors for parking and recreational land use types were obtained from CalEEMod 2022.1

[3] Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15V.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

CalEEMod - California Emissions Estimator Model
VOC - volatile organic compounds
EF - emisison factor
lb - pound
ROG - reactive organic gases
sqft - square feet
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 41V
Summary of Project Variant Unmitigated Operational CAP Emissions
Parkline
Menlo Park, California

Emissions Source	CAP Emissions[1]							
	(ton/year)				(lb/day)[2]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Existing Conditions[3]								
Mobile	0.22	0.29	0.23	0.044	1.2	1.6	1.3	0.24
Laboratory	2.0	--	--	--	11	--	--	--
Emergency Generators	0.018	0.31	0.010	0.010	0.10	1.7	0.056	0.056
Natural Gas Use - PG&E[7]	6.8E-04	0.013	9.4E-04	9.4E-04	0.0037	0.069	0.0051	0.0051
Natural Gas Use - Cogen[8]	0.48	23	1.5	1.5	2.6	124	8.3	8.3
Natural Gas Use - P, S, & T[9]	-0.018	-0.34	-0.025	-0.025	-0.10	-1.9	-0.14	-0.14
Landscaping	1.2	0.065	0.017	0.013	6.3	0.36	0.093	0.070
Architectural Coating	0.60	--	--	--	3.3	--	--	--
Consumer Products	3.6	--	--	--	20	--	--	--
Total Emissions	**8.1**	**23**	**1.7**	**1.6**	**44**	**126**	**10**	**8.5**
Full Buildout Conditions[4]								
Mobile	3.3	2.9	5.0	0.92	18	16	28	5.1
Laboratory	5.1	--	--	--	28	--	--	--
Emergency Generators	0.094	0.80	0.028	0.028	0.52	4.4	0.15	0.15
Landscaping	3.0	0.19	0.038	0.029	16	1.0	0.21	0.16
Architectural Coating	2.0	--	--	--	11	--	--	--
Consumer Products	7.2	--	--	--	39	--	--	--
Total Emissions	**21**	**3.9**	**5.1**	**1.0**	**113**	**21**	**28**	**5.4**
Partial Buildout Emissions[5]								
Phase 1 Emissions	10	2.1	2.3	0.45	58	11	13	2.5
Phase 2 Emissions	11	3.0	4.7	0.89	58	17	26	4.9
Phase 3 Emissions	0.87	0.075	0.0032	0.0029	4.7	0.41	0.017	0.016
Net Emissions[6]								
Net Full Buildout Emissions	**12**	**-19**	**3.3**	**-0.57**	**68**	**-105**	**18**	**-3.1**
BAAQMD Threshold Values	**10**	**10**	**15**	**10**	**54**	**54**	**82**	**54**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1.
2. Operational emissions shown represent activity and emissions across 365 days per year.
3. Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use types provided by the Project Applicant and CalEEMod defaults. The baseline conditions change as a result of the Project Variant since the Church located at 201 Ravenswood would be removed. However, it was conservatively assumed that the baseline emissions are equivalent to the Project's baseline emissions shown in Table 41 of the Air Quality Technical Report.
4. Existing and full buildout operational CAP emissions are based on Table 20V through Table 40V.
5. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15V. The sum of these emissions are slightly different than full buildout due to using different year-dependent emission factors for each phases's buildout year for mobile emissions calculations.
6. Net emissions were calculated as the difference between full buildout emissions and existing condition emissions.
7. Emissions from natural gas consumption for all non-cogen related activities on the exisiting project site.
8. Emissions from natrual gas consumption for the cogeneration plant.
9. Electricity usage for Buildings P, S, and T after removal of the cogeneration plant was accounted for by multiplying the electricity generated at the cogeneration plant for the campus by the ratio of the square footage of Buildings P,S, and T to the total existing site square footage. The electricity generated at the cogeneration plant for the campus was obtained from utility information provided by SRI International on October 13, 2022

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO_x - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 42V
Summary of Project Variant Mitigated Operational CAP Emissions
Parkline
Menlo Park, California

Emissions Source	CAP Emissions[1,2]							
	(ton/year)				(lb/day)[3]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Existing Conditions[4]								
Mobile	0.22	0.29	0.23	0.044	1.2	1.6	1.3	0.24
Laboratory	2.0	--	--	--	11	--	--	--
Emergency Generators	0.018	0.31	0.010	0.010	0.10	1.7	0.056	0.056
Natural Gas Use - PG&E[8]	6.8E-04	0.013	9.4E-04	9.4E-04	0.0037	0.069	0.0051	0.0051
Natural Gas Use - Cogen[9]	0.48	23	1.5	1.5	2.6	124	8.3	8.3
Natural Gas Use - P, S, & T[10]	-0.018	-0.34	-0.025	-0.025	-0.10	-1.9	-0.14	-0.14
Landscaping	1.2	0.065	0.017	0.013	6.3	0.36	0.093	0.070
Architectural Coating	0.60	--	--	--	3.3	--	--	--
Consumer Products	3.6	--	--	--	20	--	--	--
Total Emissions	**8.1**	**23**	**1.7**	**1.6**	**44**	**126**	**10**	**8.5**
Full Buildout Conditions[5]								
Mobile	3.3	2.9	5.0	0.92	18	16	28	5.1
Laboratory	5.1	--	--	--	28	--	--	--
Emergency Generators	0.094	0.80	0.028	0.028	0.52	4.4	0.15	0.15
Landscaping	--	--	--	--	--	--	--	--
Architectural Coating	0.79	--	--	--	4.3	--	--	--
Consumer Products	7.2	--	--	--	39	--	--	--
Total Emissions	**16**	**3.7**	**5.1**	**1.0**	**90**	**20**	**28**	**5.2**
Partial Buildout Emissions[6]								
Phase 1 Emissions	8.3	2.0	2.3	0.44	46	11	13	2.4
Phase 2 Emissions	8.8	2.9	4.7	0.88	48	16	26	4.8
Phase 3 Emissions	0.63	0.063	0.0020	0.0020	3.5	0.34	0.011	0.011
Net Emissions[7]								
Net Full Buildout Emissions	**8.3**	**-19**	**3.3**	**-0.60**	**46**	**-106**	**18**	**-3.3**
BAAQMD Threshold Values	**10**	**10**	**15**	**10**	**54**	**54**	**82**	**54**

Notes:

[1] Mitigated emissions assume all electric landscaping emissions and super compliant architectural coatings, as discussed in Table 36V and Table 38V.

[2] Emissions estimated using methods consistent with CalEEMod® version 2022.1.

[3] Operational emissions shown represent activity and emissions across 365 days per year.

[4] Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use types provided by the Project Applicant and CalEEMod defaults. The baseline conditions change as a result of the Project Variant since the Church located at 201 Ravenswood would be removed. However, it was conservatively assumed that the baseline emissions are equivalent to the Project's baseline emissions shown in Table 42 of the Air Quality Technical Report.

[5] Existing and full buildout operational CAP emissions are based on Table 20V through Table 40V.

[6] Partial mitigated buildout emissions were calculated from full buildout using scaling factors by land use type and phase, presented in Table 15V. The sum of these emissions are slightly different than full buildout due to using different year-dependent emission factors for each phases's buildout year for mobile emissions calculations.

[7] Net emissions were calculated as the difference between mitigated full buildout emissions and existing condition emissions.

[8] Emissions from natural gas consumption for all non-cogen related activities on the exisiting project site.

[9] Emissions from natural gas consumption for the cogeneration plant.

[10] Electricity usage for Buildings P, S, and T after removal of the cogeneration plant was accounted for by multiplying the electricity generated at the cogeneration plant for the campus by the ratio of the square footage of Buildings P,S, and T to the total existing site square footage. The electricity generated at the cogeneration plant for the campus was obtained from utility information provided by SRI International on October 13, 2022.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District	NO_X - nitrogen oxides
CalEEMod® - California Emissions Estimator Model	$PM_{2.5}$ - PM less than 2.5 microns in diameter
CAP - Criteria Air Pollutant	PM_{10} - PM less than 10 microns in diameter
lb - pounds	ROG - reactive organic gases

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 43V
Summary of Operational GHG Emissions for Project Variant
Parkline
Menlo Park, California

Emissions Source	GHG Emissions[1,2] (MT/yr) CO_2e Existing Conditions	GHG Emissions[1,2] (MT/yr) CO_2e Full Buildout Conditions
Mobile	624	11,072
Laboratory	--	--
Emergency Generators	32	254
Replaced Exported Electricity Generation[4]	-359	--
Electricity Use from PG&E[4]	28	--
Natural Gas Use - PG&E[5]	13	--
Natural Gas Use - Cogen[6]	24232	--
Natural Gas Use - P, S, & T[7]	-364	--
Water Use	65	147
Waste Disposed	92	1,028
Refrigerants	4.6	5.4
Landscaping	23	58
Total Emissions	**24,390**	**12,564**
Net Full Buildout Emissions[3]		**-11,826**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1.0.
2. Existing operational GHG emissions are shown in Table 43 of the Air Quality Technical Report. Full buildout operational GHG emissions are based on Table 20V through Table 40V.
3. Net emissions were calculated as the difference between full buildout emissions and the existing condition emissions. Net full buildout emissions are negative, which means the Project Variant reduces GHG emissions compared to the existing conditions.
4. The replaced exported electricity generation emissions are associated with the removal of the cogeneration plant. Electricity use from PG&E refer to building electricity use.
5. Emissions from natural gas consumption for all non-cogen related activities on the exisiting project site.
6. GHG emissions from natural gas consumption from the cogeneration plant.
7. Electricity usage for Buildings P, S, and T after removal of the cogeneration plant was accounted for by multiplying the electricity generated at the cogeneration plant for the campus by the ratio of the square footage of Buildings P,S, and T to the total existing site square footage. The electricity generated at the cogeneration plant for the campus was obtained from utility information provided by SRI International on October 13, 2022.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CO_2e - carbon dioxide equivalent
GHG - greenhouse gas
MT - metric ton
yr - year

References:

CalEEMod® Version 2020.4.0 Available Online at: http://www.caleemod.com

Table 44V
Construction and Unmitigated Net New Operational CAP Emissions by Year for Project Variant
Parkline
Menlo Park, California

Project Variant

Year	Annual CAP Emissions[1,2]											
	ton/yr											
	Construction Emissions Only				Net Operational Emissions[3]				Construction and Net Operational Emissions[3]			
	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$
2025	0.048	0.52	0.019	0.012	-8.1	-23	-1.7	-1.6	-8.1	-22	-1.7	-1.5
2026	0.24	2.6	0.12	0.061	-8.1	-23	-1.7	-1.6	-7.9	-20	-1.6	-1.5
2027	0.26	1.4	0.068	0.036	-8.1	-23	-1.7	-1.6	-7.9	-22	-1.7	-1.5
2028	0.25	1.3	0.065	0.034	-8.1	-23	-1.7	-1.6	-7.9	-22	-1.7	-1.5
2029	3.0	0.84	0.042	0.022	-8.1	-23	-1.7	-1.6	-5.2	-22	-1.7	-1.5
2030	6.0	0.29	0.012	0.0062	-8.1	-23	-1.7	-1.6	-2.1	-23	-1.7	-1.5
2031	0.29	0.75	0.035	0.018	0.63	-21	0.19	-1.2	0.92	-20	0.23	-1.2
2032	4.0	0.53	0.023	0.012	2.4	-21	0.58	-1.1	6.4	-20	0.60	-1.1
2033	1.0	0.14	0.0070	0.0036	10	-19	3.7	-0.50	11	-19	3.8	-0.50
Full Buildout	--	--	--	--	12	-19	3.3	-0.57	12	-19	3.3	-0.57

Year	Average Daily CAP Emissions[1,2]											
	lb/day											
	Construction Emissions Only[4]				Net Operational Emissions[4]				Construction and Net Operational Emissions			
	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$
2025	0.26	2.9	0.10	0.067	-44	-126	-10	-8.5	-44	-123	-9.5	-8.4
2026	1.3	14	0.67	0.34	-44	-126	-10	-8.5	-43	-112	-8.9	-8.2
2027	1.4	7.5	0.37	0.20	-44	-126	-10	-8.5	-43	-118	-9.2	-8.3
2028	1.4	7.0	0.35	0.19	-44	-126	-10	-8.5	-43	-119	-9.2	-8.3
2029	16	4.6	0.23	0.12	-44	-126	-10	-8.5	-28	-121	-9.3	-8.4
2030	33	1.6	0.068	0.034	-44	-126	-10	-8.5	-11	-124	-9.5	-8.5
2031	1.6	4.1	0.19	0.10	3.5	-116	1.1	-6.4	5.0	-112	1.2	-6.3
2032	22	2.9	0.13	0.064	13	-114	3.2	-6.0	35	-112	3.3	-6.0
2033	5.4	0.77	0.039	0.020	53	-103	21	-2.8	58	-103	21	-2.7
Full Buildout	--	--	--	--	68	-105	18	-3.1	68	-105	18	-3.1

Notes:

[1] Emissions estimated using methods consistent with CalEEMod® version 2022.1.

[2] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.

[3] Construction emissions can be found in Table 14V. Net unmitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the Project Variant emissions, as reported in Table 41V.

[4] To calculate average daily emissions, annual total emissions from both construction sources and operational sources were divided by 365 days.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO$_x$ - nitrogen oxides
PM - particulate matter
PM$_{2.5}$ - PM less than 2.5 microns in diameter
PM$_{10}$ - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 45V
Construction and Mitigated Net New Operational CAP Emissions by Year for Project Variant
Parkline
Menlo Park, California

Project Variant

Year	Annual CAP Emissions[1,2]											
	ton/yr											
	Construction Emissions Only				Net Operational Emissions[3]				Construction and Net Operational Emissions[3]			
	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$
2025	0.048	0.52	0.019	0.012	-8.1	-23	-1.7	-1.6	-8.1	-22	-1.7	-1.5
2026	0.24	2.6	0.12	0.061	-8.1	-23	-1.7	-1.6	-7.9	-20	-1.6	-1.5
2027	0.26	1.4	0.068	0.036	-8.1	-23	-1.7	-1.6	-7.9	-22	-1.7	-1.5
2028	0.25	1.3	0.065	0.034	-8.1	-23	-1.7	-1.6	-7.9	-22	-1.7	-1.5
2029	3.0	0.84	0.042	0.022	-8.1	-23	-1.7	-1.6	-5.2	-22	-1.7	-1.5
2030	6.0	0.29	0.012	0.0062	-8.1	-23	-1.7	-1.6	-2.1	-23	-1.7	-1.5
2031	0.29	0.75	0.035	0.018	-1.2	-21	0.18	-1.2	-0.89	-21	0.21	-1.2
2032	4.0	0.53	0.023	0.012	0.21	-21	0.56	-1.1	4.2	-20	0.59	-1.1
2033	1.0	0.14	0.0070	0.0036	6.2	-19	3.7	-0.53	7.2	-19	3.7	-0.52
Full Buildout	--	--	--	--	8.3	-19	3.3	-0.60	8.3	-19	3.3	-0.60

Year	Average Daily CAP Emissions[1,2]											
	lb/day											
	Construction Emissions Only[4]				Net Operational Emissions[4]				Construction and Net Operational Emissions			
	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$	ROG	NO$_x$	PM$_{10}$	PM$_{2.5}$
2025	0.26	2.9	0.10	0.067	-44	-126	-10	-8.5	-44	-123	-9.5	-8.4
2026	1.3	14	0.67	0.34	-44	-126	-10	-8.5	-43	-112	-8.9	-8.2
2027	1.4	7.5	0.37	0.20	-44	-126	-10	-8.5	-43	-118	-9.2	-8.3
2028	1.4	7.0	0.35	0.19	-44	-126	-10	-8.5	-43	-119	-9.2	-8.3
2029	16	4.6	0.23	0.12	-44	-126	-10	-8.5	-28	-121	-9.3	-8.4
2030	33	1.6	0.068	0.034	-44	-126	-10	-8.5	-11	-124	-9.5	-8.5
2031	1.6	4.1	0.19	0.10	-6.4	-117	1.0	-6.5	-4.9	-113	1.2	-6.4
2032	22	2.9	0.13	0.064	1.2	-115	3.1	-6.1	23	-112	3.2	-6.0
2033	5.4	0.77	0.039	0.020	34	-104	20	-2.9	40	-103	20	-2.9
Full Buildout	--	--	--	--	46	-106	18	-3.3	46	-106	18	-3.3

Notes:

[1] Emissions estimated using methods consistent with CalEEMod® version 2022.1.

[2] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.

[3] Construction emissions can be found in Table 14V. Net mitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the Project Variant emissions, as reported in Table 42V.

[4] To calculate average daily emissions, annual total emissions from both construction sources and operational sources were divided by 365 days.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO$_x$ - nitrogen oxides
PM - particulate matter
PM$_{2.5}$ - PM less than 2.5 microns in diameter
PM$_{10}$ - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 47V
Roadway Traffic Volumes and Modeled Distances for Project Variant
Parkline
Menlo Park, CA

	Traffic Volume[1,2] (vehicles/day)	Modeled Roadway Distance (miles)
Middlefield Road	3,544	0.73
Ravenswood Avenue	1,608	0.61
Laurel Street	637	0.72
Loop Road[2]	5,716	1.0

Notes

1. Trip volumes provided by the Hexagon transportation engineer.
2. The traffic volumes for onsite Loop Road was determined by applying the total project variant weekday trip rate, provided by the transportation engineer, and dividing in half assuming a typical trip will only travel on half of the loop.

Table 49V
Operational On-Road Emission Factors for Project Variant
Parkline Menlo Park
Menlo Park, CA

On-Road Emission Factors for Project Variant Induced Traffic[1,2]

Fleet Type	Fuel	Fleet Percentages[3]	Emission Factor Units	TOG (exhaust)	TOG (evaporation)	PM_{10}[4] (exhaust)	$PM_{2.5}$[4]	$PM_{2.5}$ (fugitive)
ALL	Gasoline	90%	g/mile	0.011	0.036	--	--	--
	Diesel	3%	g/mile	--	--	0.015	--	--
	ALL	100%	g/mile	--	--	--	0.0072	0.015

Notes:

[1] Emission factors were estimated using EMFAC2021 for San Mateo County. EMFAC2021 was run in Emission Rates mode for calendar year 2033 in the annual season. The following processes have units of g/mile: PMBW, PMTW, and RUNEX. The RUNLOSS process has units of g/trip which were converted to g/mile based on EMFAC outputs for total trips and total VMT. Note that IDLEX, STREX, DIURN, HOTSOAK processes are excluded from the emission factors presented above.

[2] Health impacts from gasoline are estimated by speciating TOG emissions. Health impacts from diesel fueled vehicles are estimated using DPM as PM_{10}. $PM_{2.5}$ concentration is estimated from all vehicles.

[3] The remaining 7% of the fleet is composed of electric vehicles, which only emit emissions from PMTW and PMBW and are considered under the "ALL" category. The gasoline vehicles include plug-in hybrid vehicles.

[4] PM_{10} emission factors only include RUNLOSS. $PM_{2.5}$ emission factors include RUNLOSS, PMTW, and PMBW.

Abbreviations:

CAP - criteria air pollutants
DIURN - diurnal evaporative hydrocarbon emissions
DPM - diesel particulate matter
EMFAC - California Air Resource Board EMission FACtor model
g - grams
HOTSOAK - hot soak evaporative hydrocarbon emissions
IDLEX - idle exhaust emissions
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PMTW - tire wear particulate matter emissions
PMBW - brake wear particulate matter emissions
RUNEX - running exhaust emissions
RUNLOSS - running loss evaporative hydrocarbon emissions
STREX - start exhaust tailpipe emissions
TOG - toxic organic gases
VMT - Vehicle miles traveled

References:

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 52Va
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Exposure to Construction and Operation for Project Variant Scenario 1
Parkline
Menlo Park, California

Year^{1}	Resident					Worker		High school			Daycare			Pre-school		Recreational				
	Fraction of Year in Age Bin^{2}				Age Sensitivity Weighted Intake Factor by Year, Inhalation^{3,4}	Fraction of Year in Age Bin^{2}	Age Sensitivity Weighted Intake Factor by Year, Inhalation^{3,4}	Fraction of Year in Age Bin^{2}		Age Sensitivity Weighted Intake Factor by Year, Inhalation^{3,4}	Fraction of Year in Age Bin^{2}		Age Sensitivity Weighted Intake Factor by Year, Inhalation^{3,4}	Fraction of Year in Age Bin^{2}	Age Sensitivity Weighted Intake Factor by Year, Inhalation^{3,4}	Fraction of Year in Age Bin^{2}				Age Sensitivity Weighted Intake Factor by Year, Inhalation^{3,4}
	3rd T	0-2	2-16	16-30	(m^3/kg-day)	16-70	(m^3/kg-day)	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	0-2	2-9	2-16	16-30	(m^3/kg-day)
2025	0.44	0.56			0.11	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2026		1			0.15	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2027		0.69	0.31		0.110	1	0.0023	0.44	0.56	0.0057	0.44	0.56	0.055	1	0.015	0.44	0.56			0.011
2028			1		0.024	1	0.0023		1	0.0016		1	0.015	1	0.015		1			0.0034
2029			1		0.024	1	0.0023		0.44	7.1E-04		1	0.015	0.44	0.0066		1			0.0034
2030			1		0.024	1	0.0023					1	0.015				1			0.0034
2031			1		0.024	1	0.0023					0.44	0.0066				1			0.0034
2032			1		0.024	1	0.0023										1			0.0034
2033			1		0.024	1	0.0023										1			0.0034
2034			1		0.024	1	0.0023										0.44	0.56		0.0030
2035			1		0.024	1	0.0023											1		0.0027
2036			1		0.024	1	0.0023											1		0.0027
2037			1		0.024	1	0.0023											1		0.0027
2038			1		0.024	1	0.0023											1		0.0027
2039			1		0.024	1	0.0023											1		0.0027
2040			1		0.024	1	0.0023											1		0.0027
2041			0.69	0.31	0.017	1	0.0023											0.44	0.56	0.0014
2042				1	0.0026	1	0.0023												1	4.2E-04
2043				1	0.0026	1	0.0023												1	4.2E-04
2044				1	0.0026	1	0.0023												1	4.2E-04
2045				1	0.0026	1	0.0023												1	4.2E-04
2046				1	0.0026	1	0.0023												1	4.2E-04
2047				1	0.0026	1	0.0023												1	4.2E-04
2048				1	0.0026	1	0.0023												1	4.2E-04
2049				1	0.0026	1	0.0023												1	4.2E-04
2050				1	0.0026														1	4.2E-04
2051				1	0.0026														1	4.2E-04
2052				1	0.0026														1	4.2E-04
2053				1	0.0026														1	4.2E-04
2054				1	0.0026														1	4.2E-04
2055				0.69	0.0018														0.44	1.8E-04

Notes:

[1] Exposure Scenario 1 begins at the start of construction. Only offsite receptors are evaluated in this scenario.

[2] The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.

[3] The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.

[4] Intake Factors are based on exposure assumptions in AQTR Table 51.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

kg - kilogram	T - trimester
m^3 - cubic meter	

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 52Vb
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Exposure to Construction and Operation for Project Variant Scenario 2
Parkline
Menlo Park, California

Year[1]	Resident					Worker		High school			Daycare			Pre-school		Recreational				
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd T	0-2	2-16	16-30	(m^3/kg-day)	16-70	(m^3/kg-day)	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	0-2	2-9	2-16	16-30	(m^3/kg-day)
2031	0.31	0.69			0.12	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2032		1			0.15	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2033		0.44	0.56		0.078	1	0.0023	0.19	0.81	0.0034	0.19	0.81	0.032	1	0.015	0.19	0.81			0.0067
2034			1		0.024	1	0.0023		1	0.0016		1	0.015	1	0.015		1			0.0034
2035			1		0.024	1	0.0023		0.19	3.0E-04		1	0.015	0.19	0.0028		1			0.0034
2036			1		0.024	1	0.0023					1	0.015				1			0.0034
2037			1		0.024	1	0.0023					0.19	0.0028				1			0.0034
2038			1		0.024	1	0.0023										1			0.0034
2039			1		0.024	1	0.0023										1			0.0034
2040			1		0.024	1	0.0023										0.19	0.81		0.0029
2041			1		0.024	1	0.0023											1		0.0027
2042			1		0.024	1	0.0023											1		0.0027
2043			1		0.024	1	0.0023											1		0.0027
2044			1		0.024	1	0.0023											1		0.0027
2045			1		0.024	1	0.0023											1		0.0027
2046			1		0.024	1	0.0023											1		0.0027
2047			0.44	0.56	0.012	1	0.0023											0.19	0.81	0.0009
2048				1	0.0026	1	0.0023												1	4.2E-04
2049				1	0.0026	1	0.0023												1	4.2E-04
2050				1	0.0026	1	0.0023												1	4.2E-04
2051				1	0.0026	1	0.0023												1	4.2E-04
2052				1	0.0026	1	0.0023												1	4.2E-04
2053				1	0.0026	1	0.0023												1	4.2E-04
2054				1	0.0026	1	0.0023												1	4.2E-04
2055				1	0.0026	1	0.0023												1	4.2E-04
2056				1	0.0026														1	4.2E-04
2057				1	0.0026														1	4.2E-04
2058				1	0.0026														1	4.2E-04
2059				1	0.0026														1	4.2E-04
2060				1	0.0026														1	4.2E-04
2061				0.44	0.0011														0.19	7.9E-05

Notes:

[1] Exposure Scenario 2 begins at the start of Phase 2 construction. Both onsite and offsite receptors are evaluated in this scenario.

[2] The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.

[3] The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.

[4] Intake Factors are based on exposure assumptions in AQTR Table 51.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

kg - kilogram	T - trimester
m^3 - cubic meter	

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 52Vc
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Exposure to Construction and Operation for Project Variant Scenario 3
Parkline
Menlo Park, California

Year[1]	Resident					Worker		High school			Daycare			Pre-school		Recreational				
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd T	0-2	2-16	16-30	(m^3/kg-day)	16-70	(m^3/kg-day)	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	0-2	2-9	2-16	16-30	(m^3/kg-day)
2031	1				0.049	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2032	0.17	0.83			0.13	1	0.0023	1		0.011	1		0.11	1	0.015	1				0.021
2033		1			0.149	1	0.0023	0.92	0.079	0.010	0.92	0.079	0.10	1	0.015	0.92	0.079			0.020
2034		0.17	0.83		0.045	1	0.0023		1	0.0016		1	0.015	1	0.015		1			0.0034
2035			1		0.024	1	0.0023		0.92	0.0015		1	0.015	0.92	0.014		1			0.0034
2036			1		0.024	1	0.0023					1	0.015				1			0.0034
2037			1		0.024	1	0.0023					0.92	0.014				1			0.0034
2038			1		0.024	1	0.0023										1			0.0034
2039			1		0.024	1	0.0023										1			0.0034
2040			1		0.024	1	0.0023										0.92	0.079		0.0033
2041			1		0.024	1	0.0023											1		0.0027
2042			1		0.024	1	0.0023											1		0.0027
2043			1		0.024	1	0.0023											1		0.0027
2044			1		0.024	1	0.0023											1		0.0027
2045			1		0.024	1	0.0023											1		0.0027
2046			1		0.024	1	0.0023											1		0.0027
2047			1		0.024	1	0.0023											0.92	0.079	0.0026
2048			0.17	0.83	0.0062	1	0.0023												1	4.2E-04
2049				1	0.0026	1	0.0023												1	4.2E-04
2050				1	0.0026	1	0.0023												1	4.2E-04
2051				1	0.0026	1	0.0023												1	4.2E-04
2052				1	0.0026	1	0.0023												1	4.2E-04
2053				1	0.0026	1	0.0023												1	4.2E-04
2054				1	0.0026	1	0.0023												1	4.2E-04
2055				1	0.0026	1	0.0023												1	4.2E-04
2056				1	0.0026														1	4.2E-04
2057				1	0.0026														1	4.2E-04
2058				1	0.0026														1	4.2E-04
2059				1	0.0026														1	4.2E-04
2060				1	0.0026														1	4.2E-04
2061				1	0.0026														0.92	3.9E-04
2062				0.17	4.5E-04															

Notes:

1. Exposure Scenario 3 begins at the start of Phase 3 construction. Both onsite and offsite receptors are evaluated in this scenario.
2. The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.
3. The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.
4. Intake Factors are based on exposure assumptions in AQTR Table 51.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

kg - kilogram
T - trimester
m^3 - cubic meter

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 52Vd
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Operation-Only Exposure for Project Variant Scenario 4
Parkline
Menlo Park, California

Year[1]	Resident					Worker		High school			Daycare			Pre-school		Recreational				
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd T	0-2	2-16	16-30	(m^3/kg-day)	16-70	(m^3/kg-day)	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	0-2	2-9	2-16	16-30	(m^3/kg-day)
2033	0.91	0.087			0.058	1	0.0023	1		0.011	1		0.107	1	0.015	1				0.021
2034		1			0.15	1	0.0023	1		0.011	1		0.107	1	0.015	1				0.021
2035		0.91	0.087		0.14	1	0.0023	0.73	0.27	0.0084	0.73	0.27	0.082	1	0.015	0.73	0.27			0.016
2036			1		0.024	1	0.0023		1	0.0016		1	0.015	1	0.015		1			0.0034
2037			1		0.024	1	0.0023		0.73	0.0012		1	0.015	0.73	0.011		1			0.0034
2038			1		0.024	1	0.0023					1	0.015				1			0.0034
2039			1		0.024	1	0.0023					0.73	0.0111				1			0.0034
2040			1		0.024	1	0.0023										1			0.0034
2041			1		0.024	1	0.0023										1			0.0034
2042			1		0.024	1	0.0023										0.73	0.27		0.0032
2043			1		0.024	1	0.0023											1		0.0027
2044			1		0.024	1	0.0023											1		0.0027
2045			1		0.024	1	0.0023											1		0.0027
2046			1		0.024	1	0.0023											1		0.0027
2047			1		0.024	1	0.0023											1		0.0027
2048			1		0.024	1	0.0023											1		0.0027
2049			0.91	0.088	0.022	1	0.0023											0.73	0.27	0.0021
2050				1	0.0026	1	0.0023												1	4.2E-04
2051				1	0.0026	1	0.0023												1	4.2E-04
2052				1	0.0026	1	0.0023												1	4.2E-04
2053				1	0.0026	1	0.0023												1	4.2E-04
2054				1	0.0026	1	0.0023												1	4.2E-04
2055				1	0.0026	1	0.0023												1	4.2E-04
2056				1	0.0026	1	0.0023												1	4.2E-04
2057				1	0.0026	1	0.0023												1	4.2E-04
2058				1	0.0026														1	4.2E-04
2059				1	0.0026														1	4.2E-04
2060				1	0.0026														1	4.2E-04
2061				1	0.0026														1	4.2E-04
2062				1	0.0026														1	4.2E-04
2063				0.91	0.0024														0.73	3.1E-04

Notes:

1. Exposure assumes to begin following the full buildout of the Project Variant. Both onsite and offsite receptors are evaluated in this scenario.
2. The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.
3. The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.
4. Intake Factors are based on exposure assumptions in AQTR Table 51.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

kg - kilogram	T - trimester
m^3 - cubic meter	

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April.

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 54V
Project Variant Excess Lifetime Cancer Risk at MEIR
Parkline
Menlo Park, CA

MEIR Risk and Location	Excess Lifetime Cancer Risk[1] in a million	
	On-site Receptor	**Off-site Receptor**
Baseline	-0.60	-0.29
Construction	3.3	5.1
Generator Operations	0.22	0.0038
Laboratories	0.66	0.010
Traffic	0.13	0.0020
Total Project Contribution	**3.7**	**4.8**
Receptor Type	Phase 1 Resident	Offsite Daycare
UTMx (m)	572962	572658
UTMy (m)	4146134	4145648
Modeling Scenario	Scenario 2	Scenario 1
BAAQMD Threshold of Significance	10	10
Exceed?	No	No

Notes:

[1] The Project Variant construction cancer risks were estimated using the following equation:

Riskinh = Ci x CF x IFinh x CPFi x ASF
Where:
Riskinh = Cancer Risk for the Inhalation Pathway (unitless)
Ci = Annual Average Air Concentration for Chemical "i" (μg/m^3)
CF = Conversion Factor (mg/μg)
IFinh = Intake Factor for Inhalation (m^3/kg-day)
CPFi = Cancer Potency Factor for Chemical "i" (mg/kg-day)-1
ASF = Age Sensitivity Factor (unitless)

Abbreviations:

g - gram	MEIR - maximally exposed individual receptor
kg - kilogram	μg - microgram
m - meter	UTMx - x coordinate in the Universal Transverse Mercator system
m^3 - cubic meter	UTMy - y coordinate in the Universal Transverse Mercator system
mg - miligram	BAAQMD - Bay Area Air Quality Management District

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 55V
Project Variant Chronic Hazard Index at MEIR
Parkline
Menlo Park, CA

MEIR Risk and Location	**Chronic Hazard Index[1]**	
	unitless	
	On-site Receptor	**Off-site Receptor**
Baseline	-4.0E-04	-8.9E-04
Construction	3.7E-04	0.0023
Generator Operations	7.9E-05	3.3E-05
Laboratories	0.015	0.0073
Traffic	7.0E-04	5.0E-04
Total Project Contribution	**0.016**	**0.0093**
Receptor Type	Phase 2 Worker	Offsite Worker
UTMx (m)	573118	573158
UTMy (m)	4145868	4145748
Modeling Scenario	Scenario 3	Scenario 1
Year	2033	2031
BAAQMD Threshold of Significance	1	1
Exceed?	No	No

Notes:

[1] The potential for exposure to result in adverse chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) from operations to the non-cancer chronic REL for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient or HQ. To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index or HI.

The chronic HI for each receptor was estimated using the following equation:

HIinh =Ci / cREL
Where:
HIinh = Chronic HI for the Inhalation Pathway (unitless)
Ci = Annual Average Air Concentration for Chemical "i" (μg/m^3)
cREL = Chronic Reference Exposure Level (μg/m^3)

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

g - gram	MEIR - maximally exposed individual receptor
kg - kilogram	UTMx - x coordinate in the Universal Transverse Mercator system
m^3 - cubic meter	UTMy - y coordinate in the Universal Transverse Mercator system
m - meter	REL - relative exposure level
μg - microgram	BAAQMD - Bay Area Air Quality Management District

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 56V
Project Variant Acute Hazard Index at MEIR
Parkline
Menlo Park, CA

MEIR Risk and Location[2]	Acute Hazard Index[1] unitless	
	On-site Receptor	**Off-site Receptor**
Laboratories	0.078	0.061
Total Project Contribution	**0.078**	**0.061**
Receptor Type	Phase 2 Worker	Offsite Worker
UTMx (m)	573138	573058
UTMy (m)	4145848	4146068
Modeling Scenario	Scenario 3	Scenario 4
Year	2033+	2033+
BAAQMD Threshold of Significance	1	1
Exceed?	No	No

Notes:

[1] The potential for exposure to result in adverse acute non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the 1-hour max air concentration) from operations to the non-cancer acute REL for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient or HQ. To evaluate the potential for adverse acute non-cancer health effects from simultaneous exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index or HI.

The acute HI for each receptor was estimated using the following equation:

$HI_{inh} = C_i / aREL$

Where:

HIinh = Chronic HI for the Inhalation Pathway (unitless)
Ci = 1-hour Max Concentration "i" ($\mu g/m^3$)
aREL = Acute Reference Exposure Level ($\mu g/m^3$)

[2] Diesel particulate matter (DPM) does not have an acute non-cancer toxicity value, and BAAQMD does not estimate acute HI from roadways in its Roadway Screening Analysis Calculator since impacts from all roadways were well below thresholds. Therefore, an acute HI was only estimated from the laboratory sources as the emitted chemicals include TACs with acute reference exposure levels.

Abbreviations:

g - gram	MEIR - maximally exposed individual receptor
kg - kilogram	UTMx - x coordinate in the Universal Transverse Mercator system
m^3 - cubic meter	UTMy - y coordinate in the Universal Transverse Mercator system
m - meter	REL - relative exposure level
µg - microgram	BAAQMD - Bay Area Air Quality Management District

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 57V
Project Variant $PM_{2.5}$ Concentration at MEIR
Parkline
Menlo Park, CA

MEIR Risk and Location	$PM_{2.5}$ Concentration[1] µg/m³			
	On-site Receptor		Off-site Receptor	
	Unmitigated	Mitigated	Unmitigated	Mitigated
Baseline	-0.0083	-0.0083	-0.024	-0.0064
Construction	0.0012	0.0011	0.25	7.8E-04
Generator Operations	1.6E-04	1.6E-04	0	1.7E-04
Laboratories	0	0	0	0
Traffic	0.12	0.12	0	0.13
Total Project Contribution	**0.11**	**0.11**	**0.22**	**0.12**
Receptor Type	Phase 1 Resident	Phase 1 Resident	Offsite Worker	Offsite Worker
UTMx (m)	572902	572902	573118	572838
UTMy (m)	4145654	4145654	4145648	4145828
Modeling Scenario	Scenarios 2	Scenarios 2	Scenario 1	Scenario 2
Year	2031	2031	2025	2032
BAAQMD Threshold of Significance	0.3	0.3	0.3	0.3
Exceed?	No	No	No	No

Notes:

[1] The $PM_{2.5}$ concentration due to Project Variant construction at each receptor was estimated using the following equation:

Ci =E x Di

Where:

C = Concentration of $PM_{2.5}$ at receptor "i" (µg/m3)

Di = Dispersion factor associated with unit emissions at receptor "i" (µg/m3)/(g/s)

E = Emission Rate (g/s)

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

g - gram	MEIR - maximally exposed individual receptor
kg - kilogram	UTMx - x coordinate in the Universal Transverse Mercator system
m^3 - cubic meter	UTMy - y coordinate in the Universal Transverse Mercator system
m - meter	$PM_{2.5}$ - particulate matter less than 2.5 microns
µg - microgram	BAAQMD - Bay Area Air Quality Management District
s - second	

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 58V
Health Risk Impacts from Stationary Sources for Cumulative Analysis
Parkline
San Mateo, CA

Location of MEIR	BAAQMD Facility Number[1]	Facility Name[1]	Facility Address	Source type (used for distance multiplier)[1]	Location[1,2]		Health Risk Screening Values Adjusted by BAAQMD Screening Tool[3]		
					Latitude	Longitude	Lifetime Excess Cancer Risk	Noncancer Chronic HI	$PM_{2.5}$ Concentration
					(degrees)		(in a million)		($\mu g/m^3$)
On-Site MEIR	598	SRI International - Buildings P, S, and T	333 Ravenswood Ave	Generators	37.455	-122.178	0.014	3.5E-06	5.5E-05
	18909	City of Menlo Park	333 Burgess Dr	Generators	37.454	-122.174	0.20	3.6E-04	6.3E-04
	19243	General Service Administration	345 Middlefield Rd	No detail	37.456	-122.171	15	0.0093	0.020
	21224	West Bay Sanitary District	500 Laurel St	Generators	37.453	-122.174	0.18	4.0E-05	3.0E-04
	106921	City of Menlo Park Attn: Fleet Supervision	333 Burgess Dr	Gas Dispensing Facility	37.455	-122.173	0.20	0.0013	0
	200608	City of Menlo Park	701 Laurel St	Generators	37.453	-122.178	0.11	4.0E-05	2.8E-04
Off-Site MEIR	598	SRI International - Buildings P, S, and T	333 Ravenswood Ave	Generators	37.455	-122.178	0.10	3.5E-06	3.9E-05
	18909	City of Menlo Park	333 Burgess Dr	Generators	37.454	-122.174	0.20	6.3E-04	2.8E-04
	19243	General Service Administration	345 Middlefield Rd	No detail	37.456	-122.171	15	0.010	0.020
	21224	West Bay Sanitary District	500 Laurel St	Generators	37.453	-122.174	0.18	4.0E-05	2.4E-04
	106921	City of Menlo Park Attn: Fleet Supervision	333 Burgess Dr	Gas Dispensing Facility	37.455	-122.173	0.20	0.0029	0
	200608	City of Menlo Park	701 Laurel St	Generators	37.453	-122.178	0.28	4.0E-05	1.6E-04

Notes:

[1] Health impacts from Stationary Sources are estimated using BAAQMD Stationary Source Screening Analysis Tool based on sources within 1,000 feet of the MEIRs.

[2] Locations are approximate for preliminary assessment of risk.

[3] Health risk values listed are maximum values, not expected values. Results have been adjusted by the BAAQMD-recommended distance multiplier, where relevant. MEIR locations are summarized in Table 59V.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

µg - microgram
BAAQMD - Bay Area Air Quality Management District
ft - feet
HI - hazard index
m - meter
m^3 - cubic meter
MEIR - maximum exposed individual receptor
$PM_{2.5}$ - fine particulate matter

Table 59V
Cumulative Risks and Hazards
Parkline
Menlo Park, CA

Cumulative Risks and Hazards for On-Site MEIR

Source	Lifetime Excess Cancer Risk	Noncancer Chronic HI	$PM_{2.5}$ Concentration
	(in a million)	**(unitless)**	**($\mu g/m^3$)**
Stationary Sources[1]	1.5	0.011	0.0012
SRI Continued Operations	0.014	3.5E-06	5.5E-05
Roadways[2]	18	0.015	0.14
Railways[2]	6.6	0.0025	0.026
Foreseeable Future Cumulative Development Projects[3]	0	0	0
Net Project	3.7	0.016	0.11
Total	**30**	**0.044**	**0.28**
Exceeds Threshold?	**NO**	**NO**	**NO**
Year	--	2033	2031
UTMx	572962	573118	572902
UTMy	4146134	4145868	4145654
Receptor Type	Phase 1 Resident	Phase 2 Worker	Phase 1 Resident
Threshold	**100**	**10**	**0.8**

Cumulative Risks and Hazards for Off-Site MEIR

Source	Lifetime Excess Cancer Risk	Noncancer Chronic HI	$PM_{2.5}$ Concentration
	(in a million)	**(unitless)**	**($\mu g/m^3$)**
Stationary Sources[1]	0.28	0.014	0
SRI Continued Operations	0.10	3.5E-06	3.9E-05
Roadways[2]	11	0.016	0.13
Railways[2]	32	0.0031	0.019
Foreseeable Future Cumulative Development Projects[3]	0	0	0
Net Project	4.8	0.0093	0.12
Total	**48**	**0.042**	**0.27**
Exceeds Threshold?	**NO**	**NO**	**NO**
Year	--	2031	2032
UTMx	572658	573158	572838
UTMy	4145648	4145748	4145828
Receptor Type	Offsite Daycare	Offsite Worker	Offsite Worker
Threshold	**100**	**10**	**0.8**

Notes:

[1] Health impacts from Stationary Sources estimated using BAAQMD Stationary Source Screening Analysis Tool. Risk values listed are maximum values, not expected values. Results, shown in Table 58V, have been adjusted by the BAAQMD-recommended distance multiplier, where relevant.

[2] Health risks from roadways and railways were determined using BAAQMD screening tools and are based on the maximum impact of a raster cell located on the identified sensitive receptors.

[3] A list of foreseeable future development was provided by the City of Menlo Park. No foreseeable future developments were located within a 1000ft buffer from the Project Variant site; therefore there are no health risk impacts from future development.

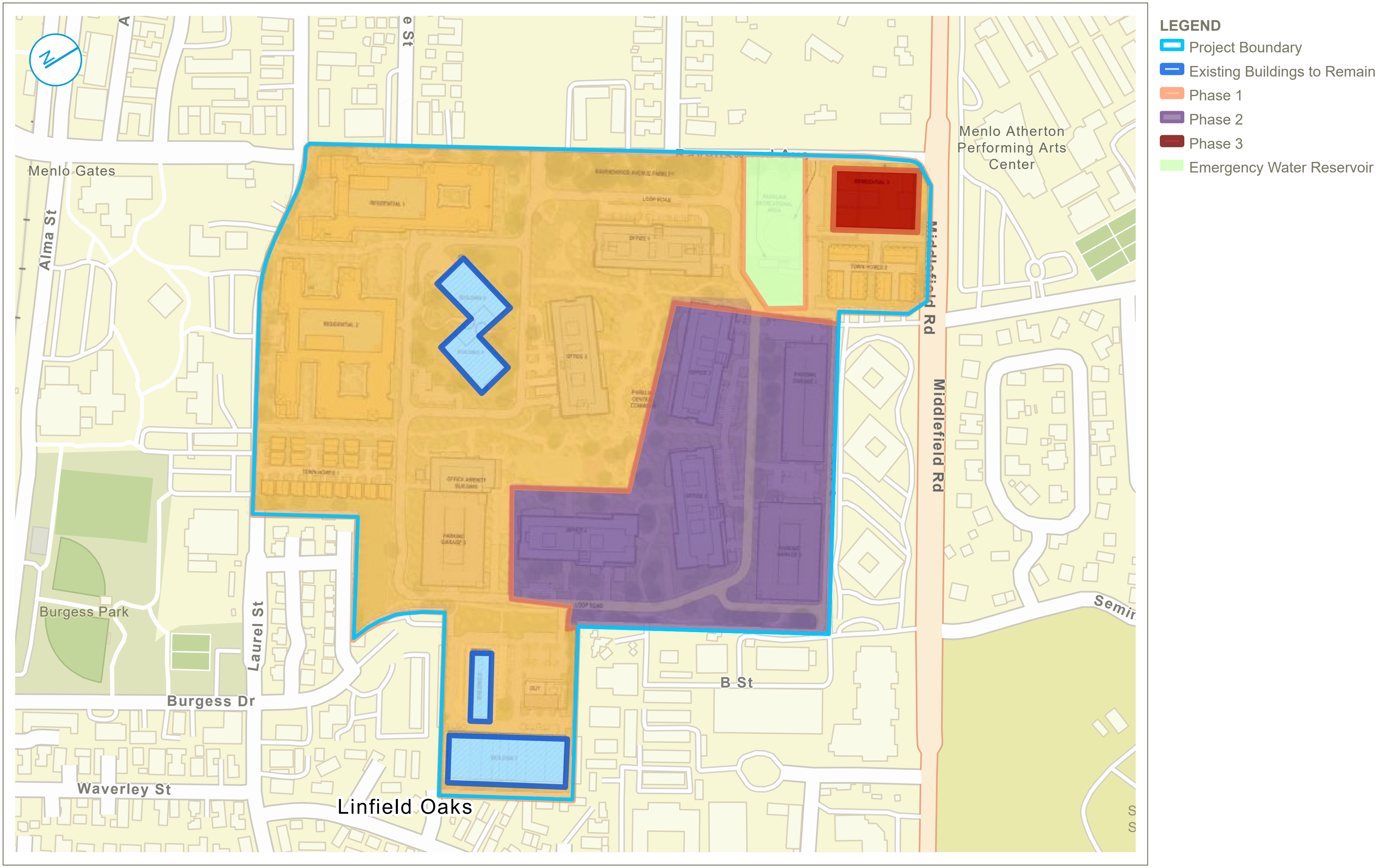
[4] The continued use of the generators at Buildings P, S, and T were modeled using default parameters. Emissions were based on the size of the generator, as provided by the Project Applicant, and 50 hours of annual opperations. Health impacts were estimated at the MEIR locations based on exposure for the entire exposure duration.

General Note: This table uses scientific notation to present numbers that are too large or too small to be conveniently written in decimal form. It involves writing a number between 1 and 10 multiplied by an appropriate power of 10. For example, 1.5E-04 is scientific notation for 0.00015.

Abbreviations:

HI - hazard index
MEIR - maximum exposed individual receptor
$PM_{2.5}$ - particulate matter less than 2.5 microns
$\mu g/m^3$ - microgram per cubic meter
UTMx UTMy - Universal Transverse Mercator coordinates

FIGURES



PROJECT BOUNDARY AND VICINITY FOR PROJECT VARIANT

0 500 1,000 Feet

Parkline Menlo Park
333 Ravenswood Ave
Menlo Park, CA 94025

FIGURE 01V

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

Project Variant Construction

Phase	Subphase	Construction Schedule Start	Construction Schedule End	Number of Work Days	Operational Year
Project Preparation	Demolition	06/09/25	02/24/26	178	--
	Site Preparation	08/26/25	03/12/26	135	
	Grading	03/13/26	08/03/26	100	
Phase 1	Building Construction	05/22/26	07/26/29	799	2031
	Architectural Coating	07/27/29	12/03/30	353	
	Paving	12/04/30	02/07/31	48	
Phase 2	Demolition	03/10/31	04/08/31	22	2033
	Building Construction	04/09/31	12/16/31	180	
	Architectural Coating	12/17/31	01/04/33	275	
	Paving	01/05/33	04/19/33	75	
Phase 3	Demolition	12/03/31	01/01/32	22	2033
	Building Construction	01/02/32	10/07/32	200	
	Architectural Coating	10/08/32	08/11/33	220	
	Paving	08/12/33	09/22/33	30	
Water Reservoir	Demolition	02/11/26	02/11/26	1	2027
	Site Preparation	02/11/26	02/11/26	1	
	Excavation	02/24/26	07/27/26	63	
	Building Construction	03/09/26	04/23/27	285	
	Architectural Coating	01/29/27	04/23/27	60	
	Paving	03/01/27	04/23/27	40	

Key:

🟦 Active Construction Period

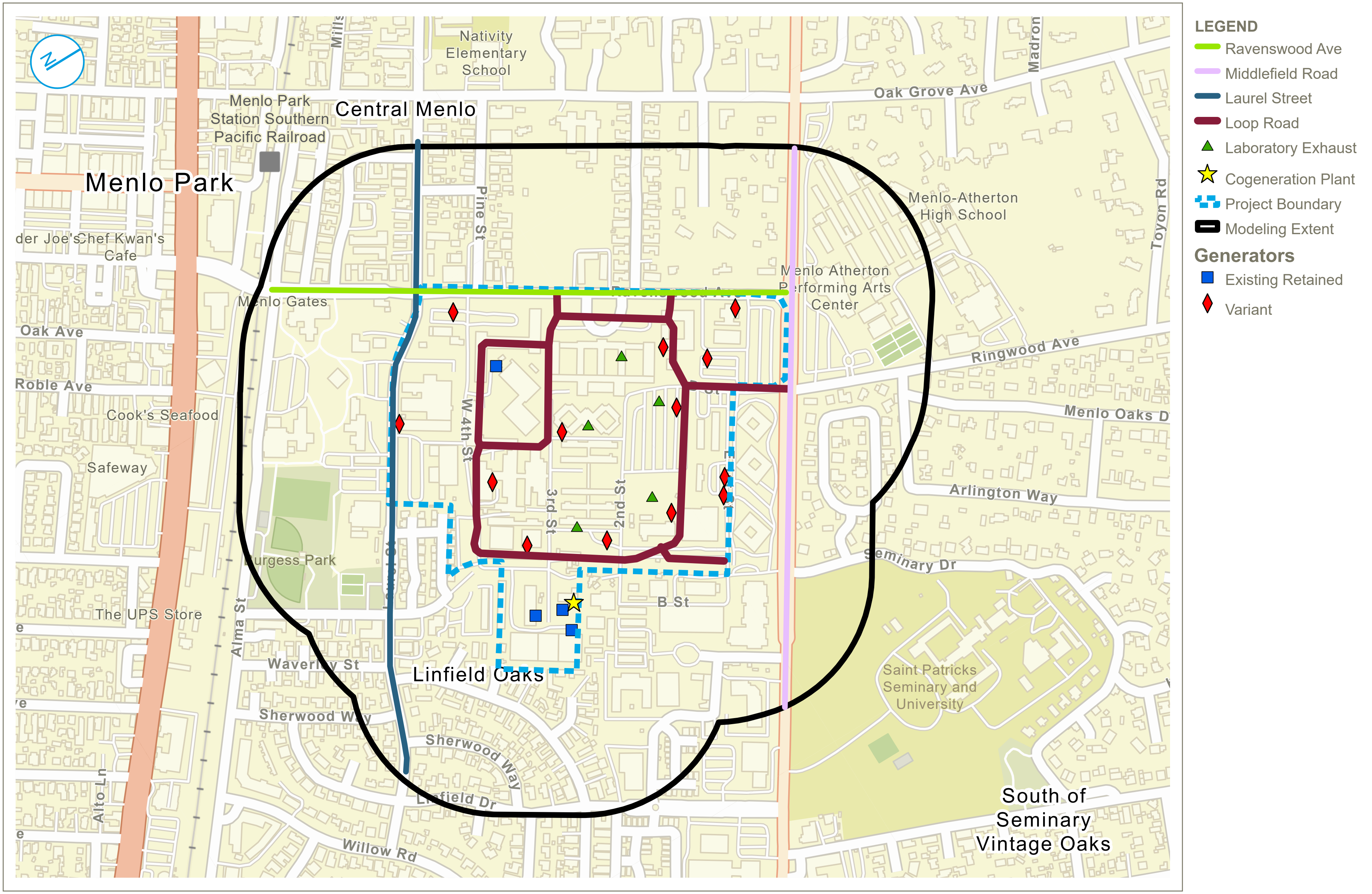
🟨 Phase is Operational

PROJECT VARIANT PHASING SCHEDULE

Parkline Menlo Park
333 Ravenswood Ave.
Menlo Park, CA

FIGURE 02V

RAMBOLL US CORPORATION
A RAMBOLL COMPANY



MODELED SOURCES OF TOXIC CONTAMINANTS FOR PROJECT VARIANT

0 500 1,000 Feet

Parkline Menlo Park
333 Ravenswood Ave
Menlo Park, CA 94025

FIGURE 03V

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

APPENDIX B
Construction Emission Rates

Appendix B.1
Project Variant Construction Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	CONTROL SCENARIO	PHASE	SUBPHASE	EQUIPMENT	EMISSIONS (G/S)
PAREA1	PM25	2029	ALL	Phase 1	Architectural Coating	Aerial Lifts	3.1E-05
PAREA1	PM25	2029	ALL	Phase 1	Architectural Coating	Concrete/Industrial Saws	0
PAREA1	PM25	2029	ALL	Phase 1	Architectural Coating	Off-Highway Trucks	4.2E-05
PAREA1	PM25	2030	ALL	Phase 1	Architectural Coating	Aerial Lifts	6.5E-05
PAREA1	PM25	2030	ALL	Phase 1	Architectural Coating	Concrete/Industrial Saws	0
PAREA1	PM25	2030	ALL	Phase 1	Architectural Coating	Off-Highway Trucks	8.1E-05
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Bore/Drill Rigs	4.2E-05
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Cranes	3.8E-04
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Forklifts	2.0E-05
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Generator Sets	2.0E-05
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Off-Highway Trucks	6.1E-05
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	4.6E-05
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Welders	3.2E-05
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Bore/Drill Rigs	6.9E-05
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Cranes	6.1E-04
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Forklifts	3.2E-05
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Generator Sets	3.2E-05
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Off-Highway Trucks	9.5E-05
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	7.6E-05
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Welders	5.2E-05
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Bore/Drill Rigs	6.9E-05
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Cranes	6.2E-04
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Forklifts	3.2E-05
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Generator Sets	3.3E-05
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Off-Highway Trucks	9.3E-05
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	7.6E-05
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Welders	5.2E-05
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Bore/Drill Rigs	3.9E-05
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Cranes	3.5E-04
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Forklifts	1.8E-05
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Generator Sets	1.8E-05
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Off-Highway Trucks	5.2E-05
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	4.3E-05
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Welders	2.9E-05
PAREA1	PM25	2030	ALL	Phase 1	Paving	Off-Highway Trucks	6.7E-06
PAREA1	PM25	2030	ALL	Phase 1	Paving	Pavers	6.4E-06
PAREA1	PM25	2030	ALL	Phase 1	Paving	Paving Equipment	6.0E-06
PAREA1	PM25	2030	ALL	Phase 1	Paving	Rollers	6.1E-07
PAREA1	PM25	2031	ALL	Phase 1	Paving	Off-Highway Trucks	8.9E-06
PAREA1	PM25	2031	ALL	Phase 1	Paving	Pavers	9.0E-06
PAREA1	PM25	2031	ALL	Phase 1	Paving	Paving Equipment	8.4E-06
PAREA1	PM25	2031	ALL	Phase 1	Paving	Rollers	8.5E-07
PAREA2	PM25	2031	ALL	Phase 2	Architectural Coating	Aerial Lifts	2.2E-06
PAREA2	PM25	2031	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	PM25	2031	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	3.5E-06
PAREA2	PM25	2032	ALL	Phase 2	Architectural Coating	Aerial Lifts	5.3E-05
PAREA2	PM25	2032	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	PM25	2032	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	7.5E-05
PAREA2	PM25	2033	ALL	Phase 2	Architectural Coating	Aerial Lifts	6.1E-07
PAREA2	PM25	2033	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	PM25	2033	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	8.0E-07
PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Cranes	2.6E-04
PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Forklifts	2.3E-05
PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Generator Sets	2.3E-05
PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Off-Highway Trucks	5.7E-05
PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Tractors/Loaders/Backhoes	6.8E-05
PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Welders	4.6E-05
PAREA2	PM25	2031	ALL	Phase 2	Demolition	Excavators	1.5E-06
PAREA2	PM25	2031	ALL	Phase 2	Demolition	Off-Highway Trucks	7.0E-06
PAREA2	PM25	2031	ALL	Phase 2	Demolition	Rubber Tired Dozers	1.6E-05
PAREA2	PM25	2033	ALL	Phase 2	Paving	Off-Highway Trucks	2.0E-05
PAREA2	PM25	2033	ALL	Phase 2	Paving	Pavers	2.4E-05
PAREA2	PM25	2033	ALL	Phase 2	Paving	Paving Equipment	2.3E-05
PAREA2	PM25	2033	ALL	Phase 2	Paving	Rollers	2.3E-06
PAREA3	PM25	2032	ALL	Phase 3	Architectural Coating	Aerial Lifts	8.3E-06
PAREA3	PM25	2032	ALL	Phase 3	Architectural Coating	Concrete/Industrial Saws	0
PAREA3	PM25	2033	ALL	Phase 3	Architectural Coating	Aerial Lifts	2.2E-05
PAREA3	PM25	2033	ALL	Phase 3	Architectural Coating	Concrete/Industrial Saws	0
PAREA3	PM25	2032	ALL	Phase 3	Building Construction	Cranes	9.8E-05
PAREA3	PM25	2032	ALL	Phase 3	Building Construction	Forklifts	1.3E-05
PAREA3	PM25	2032	ALL	Phase 3	Building Construction	Generator Sets	1.0E-05
PAREA3	PM25	2032	ALL	Phase 3	Building Construction	Tractors/Loaders/Backhoes	4.5E-05
PAREA3	PM25	2032	ALL	Phase 3	Building Construction	Welders	2.1E-05
PAREA3	PM25	2031	ALL	Phase 3	Demolition	Excavators	1.4E-06
PAREA3	PM25	2031	ALL	Phase 3	Demolition	Rubber Tired Dozers	1.5E-05
PAREA3	PM25	2032	ALL	Phase 3	Demolition	Excavators	6.8E-08
PAREA3	PM25	2032	ALL	Phase 3	Demolition	Rubber Tired Dozers	7.3E-07
PAREA3	PM25	2033	ALL	Phase 3	Paving	Pavers	4.8E-06
PAREA3	PM25	2033	ALL	Phase 3	Paving	Paving Equipment	4.5E-06
PAREA3	PM25	2033	ALL	Phase 3	Paving	Rollers	4.5E-07
DEMOALL	PM25	2025	ALL	Project Preparation	Demolition	Excavators	2.9E-05
DEMOALL	PM25	2025	ALL	Project Preparation	Demolition	Off-Highway Trucks	6.0E-05
DEMOALL	PM25	2025	ALL	Project Preparation	Demolition	Rubber Tired Dozers	2.0E-04
DEMOALL	PM25	2026	ALL	Project Preparation	Demolition	Excavators	7.8E-06
DEMOALL	PM25	2026	ALL	Project Preparation	Demolition	Off-Highway Trucks	1.5E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Demolition	Rubber Tired Dozers	5.6E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Excavators	1.1E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Graders	2.5E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Off-Highway Trucks	3.9E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Rubber Tired Dozers	2.0E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Scrapers	1.0E-04
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Tractors/Loaders/Backhoes	2.1E-05
DEMOALL	PM25	2025	ALL	Project Preparation	Site Preparation	Off-Highway Trucks	3.7E-05
DEMOALL	PM25	2025	ALL	Project Preparation	Site Preparation	Rubber Tired Dozers	7.8E-05
DEMOALL	PM25	2025	ALL	Project Preparation	Site Preparation	Tractors/Loaders/Backhoes	6.3E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Site Preparation	Off-Highway Trucks	1.9E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Site Preparation	Rubber Tired Dozers	4.3E-05
DEMOALL	PM25	2026	ALL	Project Preparation	Site Preparation	Tractors/Loaders/Backhoes	3.5E-05
WATER	PM25	2027	ALL	Water Reservoir	Architectural Coating	Aerial Lifts	4.1E-06
WATER	PM25	2027	ALL	Water Reservoir	Architectural Coating	Concrete/Industrial Saws	0
WATER	PM25	2026	ALL	Water Reservoir	Building Construction	Cranes	1.6E-05
WATER	PM25	2026	ALL	Water Reservoir	Building Construction	Forklifts	6.6E-06
WATER	PM25	2026	ALL	Water Reservoir	Building Construction	Generator Sets	5.3E-06
WATER	PM25	2026	ALL	Water Reservoir	Building Construction	Tractors/Loaders/Backhoes	1.1E-05
WATER	PM25	2027	ALL	Water Reservoir	Building Construction	Cranes	6.0E-06
WATER	PM25	2027	ALL	Water Reservoir	Building Construction	Forklifts	2.5E-06
WATER	PM25	2027	ALL	Water Reservoir	Building Construction	Generator Sets	2.0E-06

WATER	PM25	2027	ALL	Water Reservoir	Building Construction	Tractors/Loaders/Backhoes	4.1E-06
WATER	PM25	2026	ALL	Water Reservoir	Demolition	Excavators	6.8E-08
WATER	PM25	2026	ALL	Water Reservoir	Demolition	Rubber Tired Dozers	7.3E-07
WATER	PM25	2026	ALL	Water Reservoir	Excavation	Bore/Drill Rigs	5.4E-05
WATER	PM25	2026	ALL	Water Reservoir	Excavation	Excavators	8.1E-06
WATER	PM25	2026	ALL	Water Reservoir	Excavation	Graders	5.3E-06
WATER	PM25	2026	ALL	Water Reservoir	Excavation	Rubber Tired Dozers	5.1E-06
WATER	PM25	2027	ALL	Water Reservoir	Paving	Pavers	6.4E-06
WATER	PM25	2027	ALL	Water Reservoir	Paving	Paving Equipment	6.0E-06
WATER	PM25	2027	ALL	Water Reservoir	Paving	Rollers	6.1E-07
WATER	PM25	2026	ALL	Water Reservoir	Site Preparation	Rubber Tired Dozers	4.5E-07
WATER	PM25	2026	ALL	Water Reservoir	Site Preparation	Tractors/Loaders/Backhoes	1.2E-07
HAUL_MID	PM25	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL_RAV	PM25	2029	ALL	Phase 1	Architectural Coating	Hauling	0
PAREA1	PM25	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL_MID	PM25	2029	ALL	Phase 1	Architectural Coating	Vendor	6.2E-07
HAUL_RAV	PM25	2029	ALL	Phase 1	Architectural Coating	Vendor	1.6E-07
PAREA1	PM25	2029	ALL	Phase 1	Architectural Coating	Vendor	3.2E-07
HAUL_MID	PM25	2029	ALL	Phase 1	Architectural Coating	Worker	4.0E-07
HAUL_RAV	PM25	2029	ALL	Phase 1	Architectural Coating	Worker	1.0E-07
PAREA1	PM25	2029	ALL	Phase 1	Architectural Coating	Worker	3.2E-06
HAUL_MID	PM25	2030	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL_RAV	PM25	2030	ALL	Phase 1	Architectural Coating	Hauling	0
PAREA1	PM25	2030	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL_MID	PM25	2030	ALL	Phase 1	Architectural Coating	Vendor	1.3E-06
HAUL_RAV	PM25	2030	ALL	Phase 1	Architectural Coating	Vendor	3.3E-07
PAREA1	PM25	2030	ALL	Phase 1	Architectural Coating	Vendor	5.9E-07
HAUL_MID	PM25	2030	ALL	Phase 1	Architectural Coating	Worker	7.9E-07
HAUL_RAV	PM25	2030	ALL	Phase 1	Architectural Coating	Worker	2.1E-07
PAREA1	PM25	2030	ALL	Phase 1	Architectural Coating	Worker	6.4E-06
HAUL_MID	PM25	2026	ALL	Phase 1	Building Construction	Hauling	2.1E-06
HAUL_RAV	PM25	2026	ALL	Phase 1	Building Construction	Hauling	5.6E-07
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Hauling	1.2E-06
HAUL_MID	PM25	2026	ALL	Phase 1	Building Construction	Vendor	2.3E-06
HAUL_RAV	PM25	2026	ALL	Phase 1	Building Construction	Vendor	6.0E-07
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Vendor	1.4E-06
HAUL_MID	PM25	2026	ALL	Phase 1	Building Construction	Worker	2.6E-06
HAUL_RAV	PM25	2026	ALL	Phase 1	Building Construction	Worker	6.7E-07
PAREA1	PM25	2026	ALL	Phase 1	Building Construction	Worker	2.0E-05
HAUL_MID	PM25	2027	ALL	Phase 1	Building Construction	Hauling	3.4E-06
HAUL_RAV	PM25	2027	ALL	Phase 1	Building Construction	Hauling	9.0E-07
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Hauling	1.8E-06
HAUL_MID	PM25	2027	ALL	Phase 1	Building Construction	Vendor	3.5E-06
HAUL_RAV	PM25	2027	ALL	Phase 1	Building Construction	Vendor	9.2E-07
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Vendor	2.0E-06
HAUL_MID	PM25	2027	ALL	Phase 1	Building Construction	Worker	3.9E-06
HAUL_RAV	PM25	2027	ALL	Phase 1	Building Construction	Worker	1.0E-06
PAREA1	PM25	2027	ALL	Phase 1	Building Construction	Worker	3.1E-05
HAUL_MID	PM25	2028	ALL	Phase 1	Building Construction	Hauling	3.4E-06
HAUL_RAV	PM25	2028	ALL	Phase 1	Building Construction	Hauling	8.9E-07
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Hauling	1.7E-06
HAUL_MID	PM25	2028	ALL	Phase 1	Building Construction	Vendor	3.4E-06
HAUL_RAV	PM25	2028	ALL	Phase 1	Building Construction	Vendor	8.8E-07
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Vendor	1.8E-06
HAUL_MID	PM25	2028	ALL	Phase 1	Building Construction	Worker	3.6E-06
HAUL_RAV	PM25	2028	ALL	Phase 1	Building Construction	Worker	9.5E-07
PAREA1	PM25	2028	ALL	Phase 1	Building Construction	Worker	2.9E-05
HAUL_MID	PM25	2029	ALL	Phase 1	Building Construction	Hauling	1.9E-06
HAUL_RAV	PM25	2029	ALL	Phase 1	Building Construction	Hauling	5.0E-07
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Hauling	9.0E-07
HAUL_MID	PM25	2029	ALL	Phase 1	Building Construction	Vendor	1.8E-06
HAUL_RAV	PM25	2029	ALL	Phase 1	Building Construction	Vendor	4.8E-07
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Vendor	9.3E-07
HAUL_MID	PM25	2029	ALL	Phase 1	Building Construction	Worker	1.9E-06
HAUL_RAV	PM25	2029	ALL	Phase 1	Building Construction	Worker	5.0E-07
PAREA1	PM25	2029	ALL	Phase 1	Building Construction	Worker	1.5E-05
HAUL_MID	PM25	2030	ALL	Phase 1	Paving	Hauling	0
HAUL_RAV	PM25	2030	ALL	Phase 1	Paving	Hauling	0
PAREA1	PM25	2030	ALL	Phase 1	Paving	Hauling	0
HAUL_MID	PM25	2030	ALL	Phase 1	Paving	Vendor	1.1E-07
HAUL_RAV	PM25	2030	ALL	Phase 1	Paving	Vendor	2.8E-08
PAREA1	PM25	2030	ALL	Phase 1	Paving	Vendor	4.9E-08
HAUL_MID	PM25	2030	ALL	Phase 1	Paving	Worker	7.9E-09
HAUL_RAV	PM25	2030	ALL	Phase 1	Paving	Worker	2.1E-09
PAREA1	PM25	2030	ALL	Phase 1	Paving	Worker	6.4E-08
HAUL_MID	PM25	2031	ALL	Phase 1	Paving	Hauling	0
HAUL_RAV	PM25	2031	ALL	Phase 1	Paving	Hauling	0
PAREA1	PM25	2031	ALL	Phase 1	Paving	Hauling	0
HAUL_MID	PM25	2031	ALL	Phase 1	Paving	Vendor	1.4E-07
HAUL_RAV	PM25	2031	ALL	Phase 1	Paving	Vendor	3.7E-08
PAREA1	PM25	2031	ALL	Phase 1	Paving	Vendor	6.3E-08
HAUL_MID	PM25	2031	ALL	Phase 1	Paving	Worker	1.0E-08
HAUL_RAV	PM25	2031	ALL	Phase 1	Paving	Worker	2.7E-09
PAREA1	PM25	2031	ALL	Phase 1	Paving	Worker	8.5E-08
HAUL_MID	PM25	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_RAV	PM25	2031	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	PM25	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_MID	PM25	2031	ALL	Phase 2	Architectural Coating	Vendor	3.3E-08
HAUL_RAV	PM25	2031	ALL	Phase 2	Architectural Coating	Vendor	8.6E-09
PAREA2	PM25	2031	ALL	Phase 2	Architectural Coating	Vendor	1.4E-08
HAUL_MID	PM25	2031	ALL	Phase 2	Architectural Coating	Worker	2.7E-08
HAUL_RAV	PM25	2031	ALL	Phase 2	Architectural Coating	Worker	7.2E-09
PAREA2	PM25	2031	ALL	Phase 2	Architectural Coating	Worker	2.2E-07
HAUL_MID	PM25	2032	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_RAV	PM25	2032	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	PM25	2032	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_MID	PM25	2032	ALL	Phase 2	Architectural Coating	Vendor	7.6E-07
HAUL_RAV	PM25	2032	ALL	Phase 2	Architectural Coating	Vendor	2.0E-07
PAREA2	PM25	2032	ALL	Phase 2	Architectural Coating	Vendor	3.1E-07
HAUL_MID	PM25	2032	ALL	Phase 2	Architectural Coating	Worker	6.1E-07
HAUL_RAV	PM25	2032	ALL	Phase 2	Architectural Coating	Worker	1.6E-07
PAREA2	PM25	2032	ALL	Phase 2	Architectural Coating	Worker	5.0E-06
HAUL_MID	PM25	2033	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_RAV	PM25	2033	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	PM25	2033	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_MID	PM25	2033	ALL	Phase 2	Architectural Coating	Vendor	8.5E-09
HAUL_RAV	PM25	2033	ALL	Phase 2	Architectural Coating	Vendor	2.2E-09
PAREA2	PM25	2033	ALL	Phase 2	Architectural Coating	Vendor	3.4E-09
HAUL_MID	PM25	2033	ALL	Phase 2	Architectural Coating	Worker	6.6E-09
HAUL_RAV	PM25	2033	ALL	Phase 2	Architectural Coating	Worker	1.7E-09
PAREA2	PM25	2033	ALL	Phase 2	Architectural Coating	Worker	5.4E-08
HAUL_MID	PM25	2031	ALL	Phase 2	Building Construction	Hauling	7.7E-07
HAUL_RAV	PM25	2031	ALL	Phase 2	Building Construction	Hauling	2.0E-07
PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Hauling	3.1E-07
HAUL_MID	PM25	2031	ALL	Phase 2	Building Construction	Vendor	1.7E-06
HAUL_RAV	PM25	2031	ALL	Phase 2	Building Construction	Vendor	4.4E-07

PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Vendor	7.4E-07
HAUL_MID	PM25	2031	ALL	Phase 2	Building Construction	Worker	1.7E-06
HAUL_RAV	PM25	2031	ALL	Phase 2	Building Construction	Worker	4.6E-07
PAREA2	PM25	2031	ALL	Phase 2	Building Construction	Worker	1.4E-05
HAUL_MID	PM25	2031	ALL	Phase 2	Demolition	Hauling	3.7E-07
HAUL_RAV	PM25	2031	ALL	Phase 2	Demolition	Hauling	9.7E-08
PAREA2	PM25	2031	ALL	Phase 2	Demolition	Hauling	1.5E-07
HAUL_MID	PM25	2031	ALL	Phase 2	Demolition	Vendor	0
HAUL_RAV	PM25	2031	ALL	Phase 2	Demolition	Vendor	0
PAREA2	PM25	2031	ALL	Phase 2	Demolition	Vendor	0
HAUL_MID	PM25	2031	ALL	Phase 2	Demolition	Worker	2.2E-09
HAUL_RAV	PM25	2031	ALL	Phase 2	Demolition	Worker	5.7E-10
PAREA2	PM25	2031	ALL	Phase 2	Demolition	Worker	1.8E-08
HAUL_MID	PM25	2033	ALL	Phase 2	Paving	Hauling	0
HAUL_RAV	PM25	2033	ALL	Phase 2	Paving	Hauling	0
PAREA2	PM25	2033	ALL	Phase 2	Paving	Hauling	0
HAUL_MID	PM25	2033	ALL	Phase 2	Paving	Vendor	2.7E-07
HAUL_RAV	PM25	2033	ALL	Phase 2	Paving	Vendor	7.1E-08
PAREA2	PM25	2033	ALL	Phase 2	Paving	Vendor	1.1E-07
HAUL_MID	PM25	2033	ALL	Phase 2	Paving	Worker	1.3E-08
HAUL_RAV	PM25	2033	ALL	Phase 2	Paving	Worker	3.4E-09
PAREA2	PM25	2033	ALL	Phase 2	Paving	Worker	1.1E-07
HAUL_MID	PM25	2032	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL_RAV	PM25	2032	ALL	Phase 3	Architectural Coating	Hauling	0
PAREA3	PM25	2032	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL_MID	PM25	2032	ALL	Phase 3	Architectural Coating	Vendor	1.8E-07
HAUL_RAV	PM25	2032	ALL	Phase 3	Architectural Coating	Vendor	4.6E-08
PAREA3	PM25	2032	ALL	Phase 3	Architectural Coating	Vendor	7.4E-08
HAUL_MID	PM25	2032	ALL	Phase 3	Architectural Coating	Worker	1.4E-07
HAUL_RAV	PM25	2032	ALL	Phase 3	Architectural Coating	Worker	3.5E-08
PAREA3	PM25	2032	ALL	Phase 3	Architectural Coating	Worker	1.1E-06
HAUL_MID	PM25	2033	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL_RAV	PM25	2033	ALL	Phase 3	Architectural Coating	Hauling	0
PAREA3	PM25	2033	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL_MID	PM25	2033	ALL	Phase 3	Architectural Coating	Vendor	4.5E-07
HAUL_RAV	PM25	2033	ALL	Phase 3	Architectural Coating	Vendor	1.2E-07
PAREA3	PM25	2033	ALL	Phase 3	Architectural Coating	Vendor	1.8E-07
HAUL_MID	PM25	2033	ALL	Phase 3	Architectural Coating	Worker	3.3E-07
HAUL_RAV	PM25	2033	ALL	Phase 3	Architectural Coating	Worker	8.7E-08
PAREA3	PM25	2033	ALL	Phase 3	Architectural Coating	Worker	2.7E-06
HAUL_MID	PM25	2032	ALL	Phase 3	Building Construction	Hauling	1.7E-07
HAUL_RAV	PM25	2032	ALL	Phase 3	Building Construction	Hauling	4.3E-08
PAREA3	PM25	2032	ALL	Phase 3	Building Construction	Hauling	6.5E-08
HAUL_MID	PM25	2032	ALL	Phase 3	Building Construction	Vendor	1.2E-06
HAUL_RAV	PM25	2032	ALL	Phase 3	Building Construction	Vendor	3.2E-07
PAREA3	PM25	2032	ALL	Phase 3	Building Construction	Vendor	5.2E-07
HAUL_MID	PM25	2032	ALL	Phase 3	Building Construction	Worker	5.6E-07
HAUL_RAV	PM25	2032	ALL	Phase 3	Building Construction	Worker	1.5E-07
PAREA3	PM25	2032	ALL	Phase 3	Building Construction	Worker	4.6E-06
HAUL_MID	PM25	2031	ALL	Phase 3	Demolition	Hauling	6.4E-08
HAUL_RAV	PM25	2031	ALL	Phase 3	Demolition	Hauling	1.7E-08
PAREA3	PM25	2031	ALL	Phase 3	Demolition	Hauling	2.6E-08
HAUL_MID	PM25	2031	ALL	Phase 3	Demolition	Vendor	0
HAUL_RAV	PM25	2031	ALL	Phase 3	Demolition	Vendor	0
PAREA3	PM25	2031	ALL	Phase 3	Demolition	Vendor	0
HAUL_MID	PM25	2031	ALL	Phase 3	Demolition	Worker	2.1E-09
HAUL_RAV	PM25	2031	ALL	Phase 3	Demolition	Worker	5.5E-10
PAREA3	PM25	2031	ALL	Phase 3	Demolition	Worker	1.7E-08
HAUL_MID	PM25	2032	ALL	Phase 3	Demolition	Hauling	2.2E-09
HAUL_RAV	PM25	2032	ALL	Phase 3	Demolition	Hauling	5.7E-10
PAREA3	PM25	2032	ALL	Phase 3	Demolition	Hauling	8.4E-10
HAUL_MID	PM25	2032	ALL	Phase 3	Demolition	Vendor	0
HAUL_RAV	PM25	2032	ALL	Phase 3	Demolition	Vendor	0
PAREA3	PM25	2032	ALL	Phase 3	Demolition	Vendor	0
HAUL_MID	PM25	2032	ALL	Phase 3	Demolition	Worker	9.3E-11
HAUL_RAV	PM25	2032	ALL	Phase 3	Demolition	Worker	2.4E-11
PAREA3	PM25	2032	ALL	Phase 3	Demolition	Worker	7.6E-10
HAUL_MID	PM25	2033	ALL	Phase 3	Paving	Hauling	0
HAUL_RAV	PM25	2033	ALL	Phase 3	Paving	Hauling	0
PAREA3	PM25	2033	ALL	Phase 3	Paving	Hauling	0
HAUL_MID	PM25	2033	ALL	Phase 3	Paving	Vendor	6.0E-08
HAUL_RAV	PM25	2033	ALL	Phase 3	Paving	Vendor	1.6E-08
PAREA3	PM25	2033	ALL	Phase 3	Paving	Vendor	2.4E-08
HAUL_MID	PM25	2033	ALL	Phase 3	Paving	Worker	5.3E-09
HAUL_RAV	PM25	2033	ALL	Phase 3	Paving	Worker	1.4E-09
PAREA3	PM25	2033	ALL	Phase 3	Paving	Worker	4.3E-08
DEMOALL	PM25	2025	ALL	Project Preparation	Demolition	Hauling	1.2E-06
HAUL_MID	PM25	2025	ALL	Project Preparation	Demolition	Hauling	2.1E-06
HAUL_RAV	PM25	2025	ALL	Project Preparation	Demolition	Hauling	5.5E-07
DEMOALL	PM25	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL_MID	PM25	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL_RAV	PM25	2025	ALL	Project Preparation	Demolition	Vendor	0
DEMOALL	PM25	2025	ALL	Project Preparation	Demolition	Worker	4.8E-07
HAUL_MID	PM25	2025	ALL	Project Preparation	Demolition	Worker	6.2E-08
HAUL_RAV	PM25	2025	ALL	Project Preparation	Demolition	Worker	1.6E-08
DEMOALL	PM25	2026	ALL	Project Preparation	Demolition	Hauling	3.1E-07
HAUL_MID	PM25	2026	ALL	Project Preparation	Demolition	Hauling	5.6E-07
HAUL_RAV	PM25	2026	ALL	Project Preparation	Demolition	Hauling	1.5E-07
DEMOALL	PM25	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL_MID	PM25	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL_RAV	PM25	2026	ALL	Project Preparation	Demolition	Vendor	0
DEMOALL	PM25	2026	ALL	Project Preparation	Demolition	Worker	1.2E-07
HAUL_MID	PM25	2026	ALL	Project Preparation	Demolition	Worker	1.6E-08
HAUL_RAV	PM25	2026	ALL	Project Preparation	Demolition	Worker	4.2E-09
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Hauling	6.8E-06
HAUL_MID	PM25	2026	ALL	Project Preparation	Grading	Hauling	1.3E-05
HAUL_RAV	PM25	2026	ALL	Project Preparation	Grading	Hauling	3.3E-06
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Vendor	3.2E-07
HAUL_MID	PM25	2026	ALL	Project Preparation	Grading	Vendor	5.3E-07
HAUL_RAV	PM25	2026	ALL	Project Preparation	Grading	Vendor	1.4E-07
DEMOALL	PM25	2026	ALL	Project Preparation	Grading	Worker	5.5E-07
HAUL_MID	PM25	2026	ALL	Project Preparation	Grading	Worker	7.0E-08
HAUL_RAV	PM25	2026	ALL	Project Preparation	Grading	Worker	1.8E-08
DEMOALL	PM25	2025	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL_MID	PM25	2025	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL_RAV	PM25	2025	ALL	Project Preparation	Site Preparation	Hauling	0
DEMOALL	PM25	2025	ALL	Project Preparation	Site Preparation	Vendor	1.6E-07
HAUL_MID	PM25	2025	ALL	Project Preparation	Site Preparation	Vendor	2.4E-07
HAUL_RAV	PM25	2025	ALL	Project Preparation	Site Preparation	Vendor	6.4E-08
DEMOALL	PM25	2025	ALL	Project Preparation	Site Preparation	Worker	7.3E-07
HAUL_MID	PM25	2025	ALL	Project Preparation	Site Preparation	Worker	9.3E-08
HAUL_RAV	PM25	2025	ALL	Project Preparation	Site Preparation	Worker	2.4E-08
DEMOALL	PM25	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL_MID	PM25	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL_RAV	PM25	2026	ALL	Project Preparation	Site Preparation	Hauling	0
DEMOALL	PM25	2026	ALL	Project Preparation	Site Preparation	Vendor	7.8E-08

HAUL_MID	PM25	2026	ALL	Project Preparation	Site Preparation	Vendor	1.3E-07
HAUL_RAV	PM25	2026	ALL	Project Preparation	Site Preparation	Vendor	3.3E-08
DEMOALL	PM25	2026	ALL	Project Preparation	Site Preparation	Worker	3.8E-07
HAUL_MID	PM25	2026	ALL	Project Preparation	Site Preparation	Worker	4.9E-08
HAUL_RAV	PM25	2026	ALL	Project Preparation	Site Preparation	Worker	1.3E-08
HAUL_MID	PM25	2027	ALL	Water Reservoir	Architectural Coating	Hauling	0
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Architectural Coating	Hauling	0
WATER	PM25	2027	ALL	Water Reservoir	Architectural Coating	Hauling	0
HAUL_MID	PM25	2027	ALL	Water Reservoir	Architectural Coating	Vendor	2.4E-07
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Architectural Coating	Vendor	6.3E-08
WATER	PM25	2027	ALL	Water Reservoir	Architectural Coating	Vendor	1.4E-07
HAUL_MID	PM25	2027	ALL	Water Reservoir	Architectural Coating	Worker	3.9E-08
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Architectural Coating	Worker	1.0E-08
WATER	PM25	2027	ALL	Water Reservoir	Architectural Coating	Worker	3.1E-07
HAUL_MID	PM25	2026	ALL	Water Reservoir	Building Construction	Hauling	3.1E-07
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Building Construction	Hauling	8.2E-08
WATER	PM25	2026	ALL	Water Reservoir	Building Construction	Hauling	1.7E-07
HAUL_MID	PM25	2026	ALL	Water Reservoir	Building Construction	Vendor	7.6E-07
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Building Construction	Vendor	2.0E-07
WATER	PM25	2026	ALL	Water Reservoir	Building Construction	Vendor	4.7E-07
HAUL_MID	PM25	2026	ALL	Water Reservoir	Building Construction	Worker	1.8E-07
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Building Construction	Worker	4.7E-08
WATER	PM25	2026	ALL	Water Reservoir	Building Construction	Worker	1.4E-06
HAUL_MID	PM25	2027	ALL	Water Reservoir	Building Construction	Hauling	1.2E-07
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Building Construction	Hauling	3.1E-08
WATER	PM25	2027	ALL	Water Reservoir	Building Construction	Hauling	6.1E-08
HAUL_MID	PM25	2027	ALL	Water Reservoir	Building Construction	Vendor	2.7E-07
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Building Construction	Vendor	7.2E-08
WATER	PM25	2027	ALL	Water Reservoir	Building Construction	Vendor	1.6E-07
HAUL_MID	PM25	2027	ALL	Water Reservoir	Building Construction	Worker	6.4E-08
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Building Construction	Worker	1.7E-08
WATER	PM25	2027	ALL	Water Reservoir	Building Construction	Worker	5.0E-07
HAUL_MID	PM25	2026	ALL	Water Reservoir	Demolition	Hauling	1.4E-09
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Demolition	Hauling	3.7E-10
WATER	PM25	2026	ALL	Water Reservoir	Demolition	Hauling	7.7E-10
HAUL_MID	PM25	2026	ALL	Water Reservoir	Demolition	Vendor	0
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Demolition	Vendor	0
WATER	PM25	2026	ALL	Water Reservoir	Demolition	Vendor	0
HAUL_MID	PM25	2026	ALL	Water Reservoir	Demolition	Worker	1.7E-10
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Demolition	Worker	4.6E-11
WATER	PM25	2026	ALL	Water Reservoir	Demolition	Worker	1.4E-09
HAUL_MID	PM25	2026	ALL	Water Reservoir	Excavation	Hauling	1.8E-06
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Excavation	Hauling	4.8E-07
WATER	PM25	2026	ALL	Water Reservoir	Excavation	Hauling	1.0E-06
HAUL_MID	PM25	2026	ALL	Water Reservoir	Excavation	Vendor	1.0E-07
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Excavation	Vendor	2.6E-08
WATER	PM25	2026	ALL	Water Reservoir	Excavation	Vendor	6.1E-08
HAUL_MID	PM25	2026	ALL	Water Reservoir	Excavation	Worker	2.2E-08
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Excavation	Worker	5.8E-09
WATER	PM25	2026	ALL	Water Reservoir	Excavation	Worker	1.7E-07
HAUL_MID	PM25	2027	ALL	Water Reservoir	Paving	Hauling	0
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Paving	Hauling	0
WATER	PM25	2027	ALL	Water Reservoir	Paving	Hauling	0
HAUL_MID	PM25	2027	ALL	Water Reservoir	Paving	Vendor	1.0E-07
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Paving	Vendor	2.6E-08
WATER	PM25	2027	ALL	Water Reservoir	Paving	Vendor	5.8E-08
HAUL_MID	PM25	2027	ALL	Water Reservoir	Paving	Worker	6.5E-09
HAUL_RAV	PM25	2027	ALL	Water Reservoir	Paving	Worker	1.7E-09
WATER	PM25	2027	ALL	Water Reservoir	Paving	Worker	5.2E-08
HAUL_MID	PM25	2026	ALL	Water Reservoir	Site Preparation	Hauling	0
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Site Preparation	Hauling	0
WATER	PM25	2026	ALL	Water Reservoir	Site Preparation	Hauling	0
HAUL_MID	PM25	2026	ALL	Water Reservoir	Site Preparation	Vendor	2.6E-09
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Site Preparation	Vendor	6.9E-10
WATER	PM25	2026	ALL	Water Reservoir	Site Preparation	Vendor	1.6E-09
HAUL_MID	PM25	2026	ALL	Water Reservoir	Site Preparation	Worker	1.7E-10
HAUL_RAV	PM25	2026	ALL	Water Reservoir	Site Preparation	Worker	4.6E-11
WATER	PM25	2026	ALL	Water Reservoir	Site Preparation	Worker	1.4E-09
PAREA1	DPM	2029	ALL	Phase 1	Architectural Coating	Aerial Lifts	3.1E-05
PAREA1	DPM	2029	ALL	Phase 1	Architectural Coating	Concrete/Industrial Saws	0
PAREA1	DPM	2029	ALL	Phase 1	Architectural Coating	Off-Highway Trucks	4.5E-05
PAREA1	DPM	2030	ALL	Phase 1	Architectural Coating	Aerial Lifts	6.5E-05
PAREA1	DPM	2030	ALL	Phase 1	Architectural Coating	Concrete/Industrial Saws	0
PAREA1	DPM	2030	ALL	Phase 1	Architectural Coating	Off-Highway Trucks	8.8E-05
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Bore/Drill Rigs	4.2E-05
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Cranes	3.8E-04
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Forklifts	2.0E-05
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Generator Sets	2.0E-05
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Off-Highway Trucks	6.6E-05
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	4.6E-05
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Welders	3.2E-05
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Bore/Drill Rigs	6.9E-05
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Cranes	6.1E-04
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Forklifts	3.2E-05
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Generator Sets	3.2E-05
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Off-Highway Trucks	1.0E-04
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	7.6E-05
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Welders	5.2E-05
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Bore/Drill Rigs	6.9E-05
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Cranes	6.2E-04
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Forklifts	3.2E-05
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Generator Sets	3.3E-05
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Off-Highway Trucks	1.0E-04
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	7.6E-05
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Welders	5.2E-05
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Bore/Drill Rigs	3.9E-05
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Cranes	3.5E-04
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Forklifts	1.8E-05
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Generator Sets	1.8E-05
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Off-Highway Trucks	5.7E-05
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Tractors/Loaders/Backhoes	4.3E-05
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Welders	2.9E-05
PAREA1	DPM	2030	ALL	Phase 1	Paving	Off-Highway Trucks	7.3E-06
PAREA1	DPM	2030	ALL	Phase 1	Paving	Pavers	6.4E-06
PAREA1	DPM	2030	ALL	Phase 1	Paving	Paving Equipment	6.0E-06
PAREA1	DPM	2030	ALL	Phase 1	Paving	Rollers	6.1E-07
PAREA1	DPM	2031	ALL	Phase 1	Paving	Off-Highway Trucks	9.7E-06
PAREA1	DPM	2031	ALL	Phase 1	Paving	Pavers	9.0E-06
PAREA1	DPM	2031	ALL	Phase 1	Paving	Paving Equipment	8.4E-06
PAREA1	DPM	2031	ALL	Phase 1	Paving	Rollers	8.5E-07
PAREA2	DPM	2031	ALL	Phase 2	Architectural Coating	Aerial Lifts	2.2E-06
PAREA2	DPM	2031	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	DPM	2031	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	3.8E-06
PAREA2	DPM	2032	ALL	Phase 2	Architectural Coating	Aerial Lifts	5.3E-05
PAREA2	DPM	2032	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	DPM	2032	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	8.1E-05

PAREA2	DPM	2033	ALL	Phase 2	Architectural Coating	Aerial Lifts	6.1E-07
PAREA2	DPM	2033	ALL	Phase 2	Architectural Coating	Concrete/Industrial Saws	0
PAREA2	DPM	2033	ALL	Phase 2	Architectural Coating	Off-Highway Trucks	8.7E-07
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Cranes	2.6E-04
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Forklifts	2.3E-05
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Generator Sets	2.3E-05
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Off-Highway Trucks	6.2E-05
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Tractors/Loaders/Backhoes	6.8E-05
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Welders	4.6E-05
PAREA2	DPM	2031	ALL	Phase 2	Demolition	Excavators	1.5E-06
PAREA2	DPM	2031	ALL	Phase 2	Demolition	Off-Highway Trucks	7.6E-06
PAREA2	DPM	2031	ALL	Phase 2	Demolition	Rubber Tired Dozers	1.6E-05
PAREA2	DPM	2033	ALL	Phase 2	Paving	Off-Highway Trucks	2.2E-05
PAREA2	DPM	2033	ALL	Phase 2	Paving	Pavers	2.4E-05
PAREA2	DPM	2033	ALL	Phase 2	Paving	Paving Equipment	2.3E-05
PAREA2	DPM	2033	ALL	Phase 2	Paving	Rollers	2.3E-06
PAREA3	DPM	2032	ALL	Phase 3	Architectural Coating	Aerial Lifts	8.3E-06
PAREA3	DPM	2032	ALL	Phase 3	Architectural Coating	Concrete/Industrial Saws	0
PAREA3	DPM	2033	ALL	Phase 3	Architectural Coating	Aerial Lifts	2.2E-05
PAREA3	DPM	2033	ALL	Phase 3	Architectural Coating	Concrete/Industrial Saws	0
PAREA3	DPM	2032	ALL	Phase 3	Building Construction	Cranes	9.8E-05
PAREA3	DPM	2032	ALL	Phase 3	Building Construction	Forklifts	1.3E-05
PAREA3	DPM	2032	ALL	Phase 3	Building Construction	Generator Sets	1.0E-05
PAREA3	DPM	2032	ALL	Phase 3	Building Construction	Tractors/Loaders/Backhoes	4.5E-05
PAREA3	DPM	2032	ALL	Phase 3	Building Construction	Welders	2.1E-05
PAREA3	DPM	2031	ALL	Phase 3	Demolition	Excavators	1.4E-06
PAREA3	DPM	2031	ALL	Phase 3	Demolition	Rubber Tired Dozers	1.5E-05
PAREA3	DPM	2032	ALL	Phase 3	Demolition	Excavators	6.8E-08
PAREA3	DPM	2032	ALL	Phase 3	Demolition	Rubber Tired Dozers	7.3E-07
PAREA3	DPM	2033	ALL	Phase 3	Paving	Pavers	4.8E-06
PAREA3	DPM	2033	ALL	Phase 3	Paving	Paving Equipment	4.5E-06
PAREA3	DPM	2033	ALL	Phase 3	Paving	Rollers	4.5E-07
DEMOALL	DPM	2025	ALL	Project Preparation	Demolition	Excavators	2.9E-05
DEMOALL	DPM	2025	ALL	Project Preparation	Demolition	Off-Highway Trucks	6.5E-05
DEMOALL	DPM	2025	ALL	Project Preparation	Demolition	Rubber Tired Dozers	2.0E-04
DEMOALL	DPM	2026	ALL	Project Preparation	Demolition	Excavators	7.8E-06
DEMOALL	DPM	2026	ALL	Project Preparation	Demolition	Off-Highway Trucks	1.6E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Demolition	Rubber Tired Dozers	5.6E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Excavators	1.1E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Graders	2.5E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Off-Highway Trucks	4.3E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Rubber Tired Dozers	2.0E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Scrapers	1.0E-04
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Tractors/Loaders/Backhoes	2.1E-05
DEMOALL	DPM	2025	ALL	Project Preparation	Site Preparation	Off-Highway Trucks	4.0E-05
DEMOALL	DPM	2025	ALL	Project Preparation	Site Preparation	Rubber Tired Dozers	7.8E-05
DEMOALL	DPM	2025	ALL	Project Preparation	Site Preparation	Tractors/Loaders/Backhoes	6.3E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Site Preparation	Off-Highway Trucks	2.1E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Site Preparation	Rubber Tired Dozers	4.3E-05
DEMOALL	DPM	2026	ALL	Project Preparation	Site Preparation	Tractors/Loaders/Backhoes	3.5E-05
WATER	DPM	2027	ALL	Water Reservoir	Architectural Coating	Aerial Lifts	4.1E-06
WATER	DPM	2027	ALL	Water Reservoir	Architectural Coating	Concrete/Industrial Saws	0
WATER	DPM	2026	ALL	Water Reservoir	Building Construction	Cranes	1.6E-05
WATER	DPM	2026	ALL	Water Reservoir	Building Construction	Forklifts	6.6E-06
WATER	DPM	2026	ALL	Water Reservoir	Building Construction	Generator Sets	5.3E-06
WATER	DPM	2026	ALL	Water Reservoir	Building Construction	Tractors/Loaders/Backhoes	1.1E-05
WATER	DPM	2027	ALL	Water Reservoir	Building Construction	Cranes	6.0E-06
WATER	DPM	2027	ALL	Water Reservoir	Building Construction	Forklifts	2.5E-06
WATER	DPM	2027	ALL	Water Reservoir	Building Construction	Generator Sets	2.0E-06
WATER	DPM	2027	ALL	Water Reservoir	Building Construction	Tractors/Loaders/Backhoes	4.1E-06
WATER	DPM	2026	ALL	Water Reservoir	Demolition	Excavators	6.8E-08
WATER	DPM	2026	ALL	Water Reservoir	Demolition	Rubber Tired Dozers	7.3E-07
WATER	DPM	2026	ALL	Water Reservoir	Excavation	Bore/Drill Rigs	5.4E-05
WATER	DPM	2026	ALL	Water Reservoir	Excavation	Excavators	8.1E-06
WATER	DPM	2026	ALL	Water Reservoir	Excavation	Graders	5.3E-06
WATER	DPM	2026	ALL	Water Reservoir	Excavation	Rubber Tired Dozers	5.1E-06
WATER	DPM	2027	ALL	Water Reservoir	Paving	Pavers	6.4E-06
WATER	DPM	2027	ALL	Water Reservoir	Paving	Paving Equipment	6.0E-06
WATER	DPM	2027	ALL	Water Reservoir	Paving	Rollers	6.1E-07
WATER	DPM	2026	ALL	Water Reservoir	Site Preparation	Rubber Tired Dozers	4.5E-07
WATER	DPM	2026	ALL	Water Reservoir	Site Preparation	Tractors/Loaders/Backhoes	1.2E-07
HAUL_MID	DPM	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL_RAV	DPM	2029	ALL	Phase 1	Architectural Coating	Hauling	0
PAREA1	DPM	2029	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL_MID	DPM	2029	ALL	Phase 1	Architectural Coating	Vendor	6.5E-07
HAUL_RAV	DPM	2029	ALL	Phase 1	Architectural Coating	Vendor	1.7E-07
PAREA1	DPM	2029	ALL	Phase 1	Architectural Coating	Vendor	3.3E-07
HAUL_MID	DPM	2029	ALL	Phase 1	Architectural Coating	Worker	0
HAUL_RAV	DPM	2029	ALL	Phase 1	Architectural Coating	Worker	0
PAREA1	DPM	2029	ALL	Phase 1	Architectural Coating	Worker	0
HAUL_MID	DPM	2030	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL_RAV	DPM	2030	ALL	Phase 1	Architectural Coating	Hauling	0
PAREA1	DPM	2030	ALL	Phase 1	Architectural Coating	Hauling	0
HAUL_MID	DPM	2030	ALL	Phase 1	Architectural Coating	Vendor	1.3E-06
HAUL_RAV	DPM	2030	ALL	Phase 1	Architectural Coating	Vendor	3.5E-07
PAREA1	DPM	2030	ALL	Phase 1	Architectural Coating	Vendor	6.2E-07
HAUL_MID	DPM	2030	ALL	Phase 1	Architectural Coating	Worker	0
HAUL_RAV	DPM	2030	ALL	Phase 1	Architectural Coating	Worker	0
PAREA1	DPM	2030	ALL	Phase 1	Architectural Coating	Worker	0
HAUL_MID	DPM	2026	ALL	Phase 1	Building Construction	Hauling	2.2E-06
HAUL_RAV	DPM	2026	ALL	Phase 1	Building Construction	Hauling	5.8E-07
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Hauling	1.2E-06
HAUL_MID	DPM	2026	ALL	Phase 1	Building Construction	Vendor	2.4E-06
HAUL_RAV	DPM	2026	ALL	Phase 1	Building Construction	Vendor	6.2E-07
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Vendor	1.5E-06
HAUL_MID	DPM	2026	ALL	Phase 1	Building Construction	Worker	0
HAUL_RAV	DPM	2026	ALL	Phase 1	Building Construction	Worker	0
PAREA1	DPM	2026	ALL	Phase 1	Building Construction	Worker	0
HAUL_MID	DPM	2027	ALL	Phase 1	Building Construction	Hauling	3.6E-06
HAUL_RAV	DPM	2027	ALL	Phase 1	Building Construction	Hauling	9.4E-07
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Hauling	1.9E-06
HAUL_MID	DPM	2027	ALL	Phase 1	Building Construction	Vendor	3.7E-06
HAUL_RAV	DPM	2027	ALL	Phase 1	Building Construction	Vendor	9.6E-07
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Vendor	2.1E-06
HAUL_MID	DPM	2027	ALL	Phase 1	Building Construction	Worker	0
HAUL_RAV	DPM	2027	ALL	Phase 1	Building Construction	Worker	0
PAREA1	DPM	2027	ALL	Phase 1	Building Construction	Worker	0
HAUL_MID	DPM	2028	ALL	Phase 1	Building Construction	Hauling	3.6E-06
HAUL_RAV	DPM	2028	ALL	Phase 1	Building Construction	Hauling	9.3E-07
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Hauling	1.8E-06
HAUL_MID	DPM	2028	ALL	Phase 1	Building Construction	Vendor	3.5E-06
HAUL_RAV	DPM	2028	ALL	Phase 1	Building Construction	Vendor	9.2E-07
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Vendor	1.9E-06
HAUL_MID	DPM	2028	ALL	Phase 1	Building Construction	Worker	0
HAUL_RAV	DPM	2028	ALL	Phase 1	Building Construction	Worker	0
PAREA1	DPM	2028	ALL	Phase 1	Building Construction	Worker	0

HAUL_MID	DPM	2029	ALL	Phase 1	Building Construction	Hauling	2.0E-06
HAUL_RAV	DPM	2029	ALL	Phase 1	Building Construction	Hauling	5.2E-07
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Hauling	9.4E-07
HAUL_MID	DPM	2029	ALL	Phase 1	Building Construction	Vendor	1.9E-06
HAUL_RAV	DPM	2029	ALL	Phase 1	Building Construction	Vendor	5.0E-07
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Vendor	9.7E-07
HAUL_MID	DPM	2029	ALL	Phase 1	Building Construction	Worker	0
HAUL_RAV	DPM	2029	ALL	Phase 1	Building Construction	Worker	0
PAREA1	DPM	2029	ALL	Phase 1	Building Construction	Worker	0
HAUL_MID	DPM	2030	ALL	Phase 1	Paving	Hauling	0
HAUL_RAV	DPM	2030	ALL	Phase 1	Paving	Hauling	0
PAREA1	DPM	2030	ALL	Phase 1	Paving	Hauling	0
HAUL_MID	DPM	2030	ALL	Phase 1	Paving	Vendor	1.1E-07
HAUL_RAV	DPM	2030	ALL	Phase 1	Paving	Vendor	2.9E-08
PAREA1	DPM	2030	ALL	Phase 1	Paving	Vendor	5.2E-08
HAUL_MID	DPM	2030	ALL	Phase 1	Paving	Worker	0
HAUL_RAV	DPM	2030	ALL	Phase 1	Paving	Worker	0
PAREA1	DPM	2030	ALL	Phase 1	Paving	Worker	0
HAUL_MID	DPM	2031	ALL	Phase 1	Paving	Hauling	0
HAUL_RAV	DPM	2031	ALL	Phase 1	Paving	Hauling	0
PAREA1	DPM	2031	ALL	Phase 1	Paving	Hauling	0
HAUL_MID	DPM	2031	ALL	Phase 1	Paving	Vendor	1.5E-07
HAUL_RAV	DPM	2031	ALL	Phase 1	Paving	Vendor	3.9E-08
PAREA1	DPM	2031	ALL	Phase 1	Paving	Vendor	6.5E-08
HAUL_MID	DPM	2031	ALL	Phase 1	Paving	Worker	0
HAUL_RAV	DPM	2031	ALL	Phase 1	Paving	Worker	0
PAREA1	DPM	2031	ALL	Phase 1	Paving	Worker	0
HAUL_MID	DPM	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_RAV	DPM	2031	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	DPM	2031	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_MID	DPM	2031	ALL	Phase 2	Architectural Coating	Vendor	3.4E-08
HAUL_RAV	DPM	2031	ALL	Phase 2	Architectural Coating	Vendor	9.0E-09
PAREA2	DPM	2031	ALL	Phase 2	Architectural Coating	Vendor	1.5E-08
HAUL_MID	DPM	2031	ALL	Phase 2	Architectural Coating	Worker	0
HAUL_RAV	DPM	2031	ALL	Phase 2	Architectural Coating	Worker	0
PAREA2	DPM	2031	ALL	Phase 2	Architectural Coating	Worker	0
HAUL_MID	DPM	2032	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_RAV	DPM	2032	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	DPM	2032	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_MID	DPM	2032	ALL	Phase 2	Architectural Coating	Vendor	7.9E-07
HAUL_RAV	DPM	2032	ALL	Phase 2	Architectural Coating	Vendor	2.1E-07
PAREA2	DPM	2032	ALL	Phase 2	Architectural Coating	Vendor	3.3E-07
HAUL_MID	DPM	2032	ALL	Phase 2	Architectural Coating	Worker	0
HAUL_RAV	DPM	2032	ALL	Phase 2	Architectural Coating	Worker	0
PAREA2	DPM	2032	ALL	Phase 2	Architectural Coating	Worker	0
HAUL_MID	DPM	2033	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_RAV	DPM	2033	ALL	Phase 2	Architectural Coating	Hauling	0
PAREA2	DPM	2033	ALL	Phase 2	Architectural Coating	Hauling	0
HAUL_MID	DPM	2033	ALL	Phase 2	Architectural Coating	Vendor	8.8E-09
HAUL_RAV	DPM	2033	ALL	Phase 2	Architectural Coating	Vendor	2.3E-09
PAREA2	DPM	2033	ALL	Phase 2	Architectural Coating	Vendor	3.5E-09
HAUL_MID	DPM	2033	ALL	Phase 2	Architectural Coating	Worker	0
HAUL_RAV	DPM	2033	ALL	Phase 2	Architectural Coating	Worker	0
PAREA2	DPM	2033	ALL	Phase 2	Architectural Coating	Worker	0
HAUL_MID	DPM	2031	ALL	Phase 2	Building Construction	Hauling	8.1E-07
HAUL_RAV	DPM	2031	ALL	Phase 2	Building Construction	Hauling	2.1E-07
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Hauling	3.3E-07
HAUL_MID	DPM	2031	ALL	Phase 2	Building Construction	Vendor	1.8E-06
HAUL_RAV	DPM	2031	ALL	Phase 2	Building Construction	Vendor	4.6E-07
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Vendor	7.7E-07
HAUL_MID	DPM	2031	ALL	Phase 2	Building Construction	Worker	0
HAUL_RAV	DPM	2031	ALL	Phase 2	Building Construction	Worker	0
PAREA2	DPM	2031	ALL	Phase 2	Building Construction	Worker	0
HAUL_MID	DPM	2031	ALL	Phase 2	Demolition	Hauling	3.9E-07
HAUL_RAV	DPM	2031	ALL	Phase 2	Demolition	Hauling	1.0E-07
PAREA2	DPM	2031	ALL	Phase 2	Demolition	Hauling	1.6E-07
HAUL_MID	DPM	2031	ALL	Phase 2	Demolition	Vendor	0
HAUL_RAV	DPM	2031	ALL	Phase 2	Demolition	Vendor	0
PAREA2	DPM	2031	ALL	Phase 2	Demolition	Vendor	0
HAUL_MID	DPM	2031	ALL	Phase 2	Demolition	Worker	0
HAUL_RAV	DPM	2031	ALL	Phase 2	Demolition	Worker	0
PAREA2	DPM	2031	ALL	Phase 2	Demolition	Worker	0
HAUL_MID	DPM	2033	ALL	Phase 2	Paving	Hauling	0
HAUL_RAV	DPM	2033	ALL	Phase 2	Paving	Hauling	0
PAREA2	DPM	2033	ALL	Phase 2	Paving	Hauling	0
HAUL_MID	DPM	2033	ALL	Phase 2	Paving	Vendor	2.8E-07
HAUL_RAV	DPM	2033	ALL	Phase 2	Paving	Vendor	7.4E-08
PAREA2	DPM	2033	ALL	Phase 2	Paving	Vendor	1.1E-07
HAUL_MID	DPM	2033	ALL	Phase 2	Paving	Worker	0
HAUL_RAV	DPM	2033	ALL	Phase 2	Paving	Worker	0
PAREA2	DPM	2033	ALL	Phase 2	Paving	Worker	0
HAUL_MID	DPM	2032	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL_RAV	DPM	2032	ALL	Phase 3	Architectural Coating	Hauling	0
PAREA3	DPM	2032	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL_MID	DPM	2032	ALL	Phase 3	Architectural Coating	Vendor	1.8E-07
HAUL_RAV	DPM	2032	ALL	Phase 3	Architectural Coating	Vendor	4.8E-08
PAREA3	DPM	2032	ALL	Phase 3	Architectural Coating	Vendor	7.7E-08
HAUL_MID	DPM	2032	ALL	Phase 3	Architectural Coating	Worker	0
HAUL_RAV	DPM	2032	ALL	Phase 3	Architectural Coating	Worker	0
PAREA3	DPM	2032	ALL	Phase 3	Architectural Coating	Worker	0
HAUL_MID	DPM	2033	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL_RAV	DPM	2033	ALL	Phase 3	Architectural Coating	Hauling	0
PAREA3	DPM	2033	ALL	Phase 3	Architectural Coating	Hauling	0
HAUL_MID	DPM	2033	ALL	Phase 3	Architectural Coating	Vendor	4.7E-07
HAUL_RAV	DPM	2033	ALL	Phase 3	Architectural Coating	Vendor	1.2E-07
PAREA3	DPM	2033	ALL	Phase 3	Architectural Coating	Vendor	1.9E-07
HAUL_MID	DPM	2033	ALL	Phase 3	Architectural Coating	Worker	0
HAUL_RAV	DPM	2033	ALL	Phase 3	Architectural Coating	Worker	0
PAREA3	DPM	2033	ALL	Phase 3	Architectural Coating	Worker	0
HAUL_MID	DPM	2032	ALL	Phase 3	Building Construction	Hauling	1.7E-07
HAUL_RAV	DPM	2032	ALL	Phase 3	Building Construction	Hauling	4.5E-08
PAREA3	DPM	2032	ALL	Phase 3	Building Construction	Hauling	6.8E-08
HAUL_MID	DPM	2032	ALL	Phase 3	Building Construction	Vendor	1.3E-06
HAUL_RAV	DPM	2032	ALL	Phase 3	Building Construction	Vendor	3.4E-07
PAREA3	DPM	2032	ALL	Phase 3	Building Construction	Vendor	5.4E-07
HAUL_MID	DPM	2032	ALL	Phase 3	Building Construction	Worker	0
HAUL_RAV	DPM	2032	ALL	Phase 3	Building Construction	Worker	0
PAREA3	DPM	2032	ALL	Phase 3	Building Construction	Worker	0
HAUL_MID	DPM	2031	ALL	Phase 3	Demolition	Hauling	6.6E-08
HAUL_RAV	DPM	2031	ALL	Phase 3	Demolition	Hauling	1.7E-08
PAREA3	DPM	2031	ALL	Phase 3	Demolition	Hauling	2.7E-08
HAUL_MID	DPM	2031	ALL	Phase 3	Demolition	Vendor	0
HAUL_RAV	DPM	2031	ALL	Phase 3	Demolition	Vendor	0
PAREA3	DPM	2031	ALL	Phase 3	Demolition	Vendor	0
HAUL_MID	DPM	2031	ALL	Phase 3	Demolition	Worker	0
HAUL_RAV	DPM	2031	ALL	Phase 3	Demolition	Worker	0

PAREA3	DPM	2031	ALL	Phase 3	Demolition	Worker	0
HAUL_MID	DPM	2032	ALL	Phase 3	Demolition	Hauling	2.3E-09
HAUL_RAV	DPM	2032	ALL	Phase 3	Demolition	Hauling	5.9E-10
PAREA3	DPM	2032	ALL	Phase 3	Demolition	Hauling	8.8E-10
HAUL_MID	DPM	2032	ALL	Phase 3	Demolition	Vendor	0
HAUL_RAV	DPM	2032	ALL	Phase 3	Demolition	Vendor	0
PAREA3	DPM	2032	ALL	Phase 3	Demolition	Vendor	0
HAUL_MID	DPM	2032	ALL	Phase 3	Demolition	Worker	0
HAUL_RAV	DPM	2032	ALL	Phase 3	Demolition	Worker	0
PAREA3	DPM	2032	ALL	Phase 3	Demolition	Worker	0
HAUL_MID	DPM	2033	ALL	Phase 3	Paving	Hauling	0
HAUL_RAV	DPM	2033	ALL	Phase 3	Paving	Hauling	0
PAREA3	DPM	2033	ALL	Phase 3	Paving	Hauling	0
HAUL_MID	DPM	2033	ALL	Phase 3	Paving	Vendor	6.3E-08
HAUL_RAV	DPM	2033	ALL	Phase 3	Paving	Vendor	1.7E-08
PAREA3	DPM	2033	ALL	Phase 3	Paving	Vendor	2.5E-08
HAUL_MID	DPM	2033	ALL	Phase 3	Paving	Worker	0
HAUL_RAV	DPM	2033	ALL	Phase 3	Paving	Worker	0
PAREA3	DPM	2033	ALL	Phase 3	Paving	Worker	0
DEMOALL	DPM	2025	ALL	Project Preparation	Demolition	Hauling	1.3E-06
HAUL_MID	DPM	2025	ALL	Project Preparation	Demolition	Hauling	2.2E-06
HAUL_RAV	DPM	2025	ALL	Project Preparation	Demolition	Hauling	5.8E-07
DEMOALL	DPM	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL_MID	DPM	2025	ALL	Project Preparation	Demolition	Vendor	0
HAUL_RAV	DPM	2025	ALL	Project Preparation	Demolition	Vendor	0
DEMOALL	DPM	2025	ALL	Project Preparation	Demolition	Worker	0
HAUL_MID	DPM	2025	ALL	Project Preparation	Demolition	Worker	0
HAUL_RAV	DPM	2025	ALL	Project Preparation	Demolition	Worker	0
DEMOALL	DPM	2026	ALL	Project Preparation	Demolition	Hauling	3.2E-07
HAUL_MID	DPM	2026	ALL	Project Preparation	Demolition	Hauling	5.8E-07
HAUL_RAV	DPM	2026	ALL	Project Preparation	Demolition	Hauling	1.5E-07
DEMOALL	DPM	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL_MID	DPM	2026	ALL	Project Preparation	Demolition	Vendor	0
HAUL_RAV	DPM	2026	ALL	Project Preparation	Demolition	Vendor	0
DEMOALL	DPM	2026	ALL	Project Preparation	Demolition	Worker	0
HAUL_MID	DPM	2026	ALL	Project Preparation	Demolition	Worker	0
HAUL_RAV	DPM	2026	ALL	Project Preparation	Demolition	Worker	0
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Hauling	7.2E-06
HAUL_MID	DPM	2026	ALL	Project Preparation	Grading	Hauling	1.3E-05
HAUL_RAV	DPM	2026	ALL	Project Preparation	Grading	Hauling	3.4E-06
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Vendor	3.4E-07
HAUL_MID	DPM	2026	ALL	Project Preparation	Grading	Vendor	5.5E-07
HAUL_RAV	DPM	2026	ALL	Project Preparation	Grading	Vendor	1.4E-07
DEMOALL	DPM	2026	ALL	Project Preparation	Grading	Worker	0
HAUL_MID	DPM	2026	ALL	Project Preparation	Grading	Worker	0
HAUL_RAV	DPM	2026	ALL	Project Preparation	Grading	Worker	0
DEMOALL	DPM	2025	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL_MID	DPM	2025	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL_RAV	DPM	2025	ALL	Project Preparation	Site Preparation	Hauling	0
DEMOALL	DPM	2025	ALL	Project Preparation	Site Preparation	Vendor	1.7E-07
HAUL_MID	DPM	2025	ALL	Project Preparation	Site Preparation	Vendor	2.5E-07
HAUL_RAV	DPM	2025	ALL	Project Preparation	Site Preparation	Vendor	6.7E-08
DEMOALL	DPM	2025	ALL	Project Preparation	Site Preparation	Worker	0
HAUL_MID	DPM	2025	ALL	Project Preparation	Site Preparation	Worker	0
HAUL_RAV	DPM	2025	ALL	Project Preparation	Site Preparation	Worker	0
DEMOALL	DPM	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL_MID	DPM	2026	ALL	Project Preparation	Site Preparation	Hauling	0
HAUL_RAV	DPM	2026	ALL	Project Preparation	Site Preparation	Hauling	0
DEMOALL	DPM	2026	ALL	Project Preparation	Site Preparation	Vendor	8.1E-08
HAUL_MID	DPM	2026	ALL	Project Preparation	Site Preparation	Vendor	1.3E-07
HAUL_RAV	DPM	2026	ALL	Project Preparation	Site Preparation	Vendor	3.5E-08
DEMOALL	DPM	2026	ALL	Project Preparation	Site Preparation	Worker	0
HAUL_MID	DPM	2026	ALL	Project Preparation	Site Preparation	Worker	0
HAUL_RAV	DPM	2026	ALL	Project Preparation	Site Preparation	Worker	0
HAUL_MID	DPM	2027	ALL	Water Reservoir	Architectural Coating	Hauling	0
HAUL_RAV	DPM	2027	ALL	Water Reservoir	Architectural Coating	Hauling	0
WATER	DPM	2027	ALL	Water Reservoir	Architectural Coating	Hauling	0
HAUL_MID	DPM	2027	ALL	Water Reservoir	Architectural Coating	Vendor	2.5E-07
HAUL_RAV	DPM	2027	ALL	Water Reservoir	Architectural Coating	Vendor	6.6E-08
WATER	DPM	2027	ALL	Water Reservoir	Architectural Coating	Vendor	1.4E-07
HAUL_MID	DPM	2027	ALL	Water Reservoir	Architectural Coating	Worker	0
HAUL_RAV	DPM	2027	ALL	Water Reservoir	Architectural Coating	Worker	0
WATER	DPM	2027	ALL	Water Reservoir	Architectural Coating	Worker	0
HAUL_MID	DPM	2026	ALL	Water Reservoir	Building Construction	Hauling	3.3E-07
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Building Construction	Hauling	8.6E-08
WATER	DPM	2026	ALL	Water Reservoir	Building Construction	Hauling	1.8E-07
HAUL_MID	DPM	2026	ALL	Water Reservoir	Building Construction	Vendor	8.0E-07
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Building Construction	Vendor	2.1E-07
WATER	DPM	2026	ALL	Water Reservoir	Building Construction	Vendor	4.9E-07
HAUL_MID	DPM	2026	ALL	Water Reservoir	Building Construction	Worker	0
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Building Construction	Worker	0
WATER	DPM	2026	ALL	Water Reservoir	Building Construction	Worker	0
HAUL_MID	DPM	2027	ALL	Water Reservoir	Building Construction	Hauling	1.2E-07
HAUL_RAV	DPM	2027	ALL	Water Reservoir	Building Construction	Hauling	3.2E-08
WATER	DPM	2027	ALL	Water Reservoir	Building Construction	Hauling	6.4E-08
HAUL_MID	DPM	2027	ALL	Water Reservoir	Building Construction	Vendor	2.9E-07
HAUL_RAV	DPM	2027	ALL	Water Reservoir	Building Construction	Vendor	7.5E-08
WATER	DPM	2027	ALL	Water Reservoir	Building Construction	Vendor	1.6E-07
HAUL_MID	DPM	2027	ALL	Water Reservoir	Building Construction	Worker	0
HAUL_RAV	DPM	2027	ALL	Water Reservoir	Building Construction	Worker	0
WATER	DPM	2027	ALL	Water Reservoir	Building Construction	Worker	0
HAUL_MID	DPM	2026	ALL	Water Reservoir	Demolition	Hauling	1.5E-09
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Demolition	Hauling	3.9E-10
WATER	DPM	2026	ALL	Water Reservoir	Demolition	Hauling	8.1E-10
HAUL_MID	DPM	2026	ALL	Water Reservoir	Demolition	Vendor	0
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Demolition	Vendor	0
WATER	DPM	2026	ALL	Water Reservoir	Demolition	Vendor	0
HAUL_MID	DPM	2026	ALL	Water Reservoir	Demolition	Worker	0
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Demolition	Worker	0
WATER	DPM	2026	ALL	Water Reservoir	Demolition	Worker	0
HAUL_MID	DPM	2026	ALL	Water Reservoir	Excavation	Hauling	1.9E-06
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Excavation	Hauling	5.1E-07
WATER	DPM	2026	ALL	Water Reservoir	Excavation	Hauling	1.1E-06
HAUL_MID	DPM	2026	ALL	Water Reservoir	Excavation	Vendor	1.0E-07
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Excavation	Vendor	2.7E-08
WATER	DPM	2026	ALL	Water Reservoir	Excavation	Vendor	6.4E-08
HAUL_MID	DPM	2026	ALL	Water Reservoir	Excavation	Worker	0
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Excavation	Worker	0
WATER	DPM	2026	ALL	Water Reservoir	Excavation	Worker	0
HAUL_MID	DPM	2027	ALL	Water Reservoir	Paving	Hauling	0
HAUL_RAV	DPM	2027	ALL	Water Reservoir	Paving	Hauling	0
WATER	DPM	2027	ALL	Water Reservoir	Paving	Hauling	0
HAUL_MID	DPM	2027	ALL	Water Reservoir	Paving	Vendor	1.0E-07
HAUL_RAV	DPM	2027	ALL	Water Reservoir	Paving	Vendor	2.7E-08
WATER	DPM	2027	ALL	Water Reservoir	Paving	Vendor	6.0E-08
HAUL_MID	DPM	2027	ALL	Water Reservoir	Paving	Worker	0

HAUL_RAV	DPM	2027	ALL	Water Reservoir	Paving	Worker	0
WATER	DPM	2027	ALL	Water Reservoir	Paving	Worker	0
HAUL_MID	DPM	2026	ALL	Water Reservoir	Site Preparation	Hauling	0
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Site Preparation	Hauling	0
WATER	DPM	2026	ALL	Water Reservoir	Site Preparation	Hauling	0
HAUL_MID	DPM	2026	ALL	Water Reservoir	Site Preparation	Vendor	2.8E-09
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Site Preparation	Vendor	7.2E-10
WATER	DPM	2026	ALL	Water Reservoir	Site Preparation	Vendor	1.7E-09
HAUL_MID	DPM	2026	ALL	Water Reservoir	Site Preparation	Worker	0
HAUL_RAV	DPM	2026	ALL	Water Reservoir	Site Preparation	Worker	0
WATER	DPM	2026	ALL	Water Reservoir	Site Preparation	Worker	0
DEMOFD	PM25	2025	UNMIT	Project Preparation	Demolition	Building Demolition Waste Fugitive Dust	0.0040
DEMOFD	PM25	2026	UNMIT	Project Preparation	Demolition	Building Demolition Waste Fugitive Dust	0.0011
WATERFD	PM25	2026	UNMIT	Water Reservoir	Demolition	Building Demolition Waste Fugitive Dust	6.9E-05
DEMOFD	PM25	2025	UNMIT	Project Preparation	Site Preparation	Off-Road Grading Fugitive Dust	0.0012
DEMOFD	PM25	2026	UNMIT	Project Preparation	Site Preparation	Off-Road Grading Fugitive Dust	6.9E-04
DEMOFD	PM25	2026	UNMIT	Project Preparation	Grading	Off-Road Grading Fugitive Dust	0.0014
WATERFD	PM25	2026	UNMIT	Water Reservoir	Site Preparation	Off-Road Grading Fugitive Dust	3.6E-06
DEMOFD	PM25	2025	UNMIT	Project Preparation	Demolition	Truck Loading Fugitive Dust	3.3E-05
DEMOFD	PM25	2026	UNMIT	Project Preparation	Demolition	Truck Loading Fugitive Dust	8.8E-06
DEMOFD	PM25	2026	UNMIT	Project Preparation	Grading	Truck Loading Fugitive Dust	2.0E-04
PAREA1FD	PM25	2026	UNMIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	3.4E-05
PAREA1FD	PM25	2027	UNMIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	5.5E-05
PAREA1FD	PM25	2028	UNMIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	5.5E-05
PAREA1FD	PM25	2029	UNMIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	3.1E-05
PAREA2FD	PM25	2031	UNMIT	Phase 2	Demolition	Truck Loading Fugitive Dust	4.7E-06
PAREA2FD	PM25	2031	UNMIT	Phase 2	Building Construction	Truck Loading Fugitive Dust	9.6E-06
PAREA3FD	PM25	2031	UNMIT	Phase 3	Demolition	Truck Loading Fugitive Dust	8.8E-07
PAREA3FD	PM25	2032	UNMIT	Phase 3	Demolition	Truck Loading Fugitive Dust	3.0E-08
PAREA3FD	PM25	2032	UNMIT	Phase 3	Building Construction	Truck Loading Fugitive Dust	2.3E-06
WATERFD	PM25	2026	UNMIT	Water Reservoir	Demolition	Truck Loading Fugitive Dust	1.0E-08
WATERFD	PM25	2026	UNMIT	Water Reservoir	Excavation	Truck Loading Fugitive Dust	1.3E-05
WATERFD	PM25	2026	UNMIT	Water Reservoir	Building Construction	Truck Loading Fugitive Dust	2.2E-06
WATERFD	PM25	2027	UNMIT	Water Reservoir	Building Construction	Truck Loading Fugitive Dust	8.5E-07
DEMOFD	PM25	2025	UNMIT	Project Preparation	Site Preparation	Off-Road Bulldozing Fugitive Dust	0.010
DEMOFD	PM25	2026	UNMIT	Project Preparation	Site Preparation	Off-Road Bulldozing Fugitive Dust	0.0055
DEMOFD	PM25	2026	UNMIT	Project Preparation	Grading	Off-Road Bulldozing Fugitive Dust	0.0026
WATERFD	PM25	2026	UNMIT	Water Reservoir	Site Preparation	Off-Road Bulldozing Fugitive Dust	5.7E-05
WATERFD	PM25	2026	UNMIT	Water Reservoir	Excavation	Off-Road Bulldozing Fugitive Dust	6.5E-04
DEMOFD	PM25	2025	MIT	Project Preparation	Demolition	Building Demolition Waste Fugitive Dust	0.0026
DEMOFD	PM25	2026	MIT	Project Preparation	Demolition	Building Demolition Waste Fugitive Dust	6.8E-04
WATERFD	PM25	2026	MIT	Water Reservoir	Demolition	Building Demolition Waste Fugitive Dust	4.4E-05
DEMOFD	PM25	2025	MIT	Project Preparation	Site Preparation	Off-Road Grading Fugitive Dust	4.9E-04
DEMOFD	PM25	2026	MIT	Project Preparation	Site Preparation	Off-Road Grading Fugitive Dust	2.7E-04
DEMOFD	PM25	2026	MIT	Project Preparation	Grading	Off-Road Grading Fugitive Dust	5.6E-04
WATERFD	PM25	2026	MIT	Water Reservoir	Site Preparation	Off-Road Grading Fugitive Dust	1.4E-06
DEMOFD	PM25	2025	MIT	Project Preparation	Demolition	Truck Loading Fugitive Dust	1.3E-05
DEMOFD	PM25	2026	MIT	Project Preparation	Demolition	Truck Loading Fugitive Dust	3.4E-06
DEMOFD	PM25	2026	MIT	Project Preparation	Grading	Truck Loading Fugitive Dust	7.7E-05
PAREA1FD	PM25	2026	MIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	1.3E-05
PAREA1FD	PM25	2027	MIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	2.1E-05
PAREA1FD	PM25	2028	MIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	2.1E-05
PAREA1FD	PM25	2029	MIT	Phase 1	Building Construction	Truck Loading Fugitive Dust	1.2E-05
PAREA2FD	PM25	2031	MIT	Phase 2	Demolition	Truck Loading Fugitive Dust	1.8E-06
PAREA2FD	PM25	2031	MIT	Phase 2	Building Construction	Truck Loading Fugitive Dust	3.8E-06
PAREA3FD	PM25	2031	MIT	Phase 3	Demolition	Truck Loading Fugitive Dust	3.4E-07
PAREA3FD	PM25	2032	MIT	Phase 3	Demolition	Truck Loading Fugitive Dust	1.2E-08
PAREA3FD	PM25	2032	MIT	Phase 3	Building Construction	Truck Loading Fugitive Dust	9.1E-07
WATERFD	PM25	2026	MIT	Water Reservoir	Demolition	Truck Loading Fugitive Dust	3.9E-09
WATERFD	PM25	2026	MIT	Water Reservoir	Excavation	Truck Loading Fugitive Dust	5.1E-06
WATERFD	PM25	2026	MIT	Water Reservoir	Building Construction	Truck Loading Fugitive Dust	8.7E-07
WATERFD	PM25	2027	MIT	Water Reservoir	Building Construction	Truck Loading Fugitive Dust	3.3E-07
DEMOFD	PM25	2025	MIT	Project Preparation	Site Preparation	Off-Road Bulldozing Fugitive Dust	0.0039
DEMOFD	PM25	2026	MIT	Project Preparation	Site Preparation	Off-Road Bulldozing Fugitive Dust	0.0021
DEMOFD	PM25	2026	MIT	Project Preparation	Grading	Off-Road Bulldozing Fugitive Dust	0.0010
WATERFD	PM25	2026	MIT	Water Reservoir	Site Preparation	Off-Road Bulldozing Fugitive Dust	2.2E-05
WATERFD	PM25	2026	MIT	Water Reservoir	Excavation	Off-Road Bulldozing Fugitive Dust	2.6E-04

Appendix B.2
Project Variant Operational Emission Rates
Parkline
Menlo Park, CA

SOURCE GROUP	POLLUTANT	YEAR	PHASE	SOURCE	EMISSIONS (G/S)
COGEN	1,3-Butadiene	ALL	Existing	Cogeneration Plant	-7.86E-07
COGEN	Acetaldehyde	ALL	Existing	Cogeneration Plant	-3.42E-04
COGEN	Acrolein	ALL	Existing	Cogeneration Plant	-6.92E-05
COGEN	Benzene	ALL	Existing	Cogeneration Plant	-6.44E-05
COGEN	Benzo(a)anthracene	ALL	Existing	Cogeneration Plant	-2.29E-08
COGEN	Benzo(a)pyrene	ALL	Existing	Cogeneration Plant	-1.63E-08
COGEN	Benzo(b)fluoranthene	ALL	Existing	Cogeneration Plant	-1.82E-08
COGEN	Benzo(k)fluoranthene	ALL	Existing	Cogeneration Plant	-1.82E-08
COGEN	Chrysene	ALL	Existing	Cogeneration Plant	-3.17E-08
COGEN	Dibenz(a,h)anthracene	ALL	Existing	Cogeneration Plant	-1.92E-08
COGEN	Ethylbenzene	ALL	Existing	Cogeneration Plant	-6.18E-05
COGEN	Formaldehyde	ALL	Existing	Cogeneration Plant	-7.11E-04
COGEN	Hexane	ALL	Existing	Cogeneration Plant	-1.39E-03
COGEN	Indeno(1,2,3-cd)pyrene	ALL	Existing	Cogeneration Plant	-1.82E-08
COGEN	Naphthalene	ALL	Existing	Cogeneration Plant	-5.87E-06
COGEN	Propylene	ALL	Existing	Cogeneration Plant	-3.62E-03
COGEN	Propylene Oxide	ALL	Existing	Cogeneration Plant	-2.85E-04
COGEN	Pyrene	ALL	Existing	Cogeneration Plant	-7.49E-08
COGEN	Toluene	ALL	Existing	Cogeneration Plant	-3.75E-04
COGEN	Xylenes	ALL	Existing	Cogeneration Plant	-2.71E-04
COGEN	PM25	ALL	Existing	Cogeneration Plant	-3.80E-02
GEN	DPM	ALL	Existing	Generators	-1.30E-04
GEN	PM25	ALL	Existing	Generators	-1.30E-04
GENA	DPM	ALL	Existing	Generators	-7.00E-05
GENA	PM25	ALL	Existing	Generators	-7.00E-05
GENL	DPM	ALL	Existing	Generators	-9.30E-05
GENL	PM25	ALL	Existing	Generators	-9.30E-05
OFFGEN1	DPM	2031	Phase 1	Generators	4.17E-05
OFFGEN2	DPM	2033	Phase 2	Generators	3.27E-05
OFFGEN3	DPM	2033	Phase 2	Generators	3.27E-05
OFFGEN4	DPM	2033	Phase 2	Generators	3.27E-05
OFFGEN5	DPM	2031	Phase 1	Generators	4.17E-05
AMENGEN	DPM	2031	Phase 1	Generators	6.26E-05
PARKGEN1	DPM	2033	Phase 2	Generators	3.27E-05
PARKGEN2	DPM	2033	Phase 2	Generators	3.27E-05
PARKGEN3	DPM	2031	Phase 1	Generators	4.17E-05
RESGEN1	DPM	2031	Phase 1	Generators	8.34E-05
RESGEN2	DPM	2031	Phase 1	Generators	8.34E-05
RESGEN3V	DPM	2031	Phase 3	Generators	0.00E+00
OFFGEN1	PM25	2031	Phase 1	Generators	4.17E-05
OFFGEN2	PM25	2033	Phase 2	Generators	3.27E-05
OFFGEN3	PM25	2033	Phase 2	Generators	3.27E-05
OFFGEN4	PM25	2033	Phase 2	Generators	3.27E-05
OFFGEN5	PM25	2031	Phase 1	Generators	4.17E-05
AMENGEN	PM25	2031	Phase 1	Generators	6.26E-05
PARKGEN1	PM25	2033	Phase 2	Generators	3.27E-05
PARKGEN2	PM25	2033	Phase 2	Generators	3.27E-05
PARKGEN3	PM25	2031	Phase 1	Generators	4.17E-05
RESGEN1	PM25	2031	Phase 1	Generators	8.34E-05
RESGEN2	PM25	2031	Phase 1	Generators	8.34E-05
RESGEN3V	PM25	2031	Phase 3	Generators	0.00E+00
OFFGEN1	DPM	2032	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2034	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2034	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2034	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2032	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2032	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2034	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2034	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2032	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2032	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2032	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2032	Phase 3	Generators	0.00E+00
OFFGEN1	PM25	2032	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2034	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2034	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2034	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2032	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2032	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2034	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2034	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2032	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2032	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2032	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2032	Phase 3	Generators	0.00E+00
OFFGEN1	DPM	2033	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2035	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2035	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2035	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2033	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2033	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2035	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2035	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2033	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2033	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2033	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2033	Phase 3	Generators	1.59E-05

OFFGEN1	PM25	2033	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2035	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2035	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2035	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2033	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2033	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2035	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2035	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2033	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2033	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2033	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2033	Phase 3	Generators	1.59E-05
OFFGEN1	DPM	2034	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2036	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2036	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2036	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2034	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2034	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2036	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2036	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2034	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2034	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2034	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2034	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2034	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2036	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2036	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2036	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2034	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2034	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2036	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2036	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2034	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2034	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2034	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2034	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2035	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2037	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2037	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2037	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2035	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2035	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2037	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2037	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2035	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2035	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2035	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2035	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2035	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2037	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2037	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2037	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2035	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2035	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2037	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2037	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2035	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2035	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2035	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2035	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2036	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2038	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2038	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2038	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2036	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2036	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2038	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2038	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2036	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2036	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2036	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2036	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2036	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2038	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2038	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2038	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2036	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2036	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2038	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2038	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2036	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2036	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2036	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2036	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2037	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2039	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2039	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2039	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2037	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2037	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2039	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2039	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2037	Phase 1	Generators	4.66E-05

RESGEN1	DPM	2037	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2037	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2037	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2037	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2039	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2039	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2039	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2037	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2037	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2039	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2039	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2037	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2037	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2037	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2037	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2038	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2040	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2040	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2040	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2038	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2038	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2040	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2040	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2038	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2038	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2038	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2038	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2038	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2040	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2040	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2040	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2038	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2038	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2040	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2040	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2038	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2038	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2038	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2038	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2039	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2041	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2041	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2041	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2039	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2039	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2041	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2041	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2039	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2039	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2039	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2039	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2039	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2041	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2041	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2041	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2039	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2039	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2041	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2041	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2039	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2039	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2039	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2039	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2040	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2042	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2042	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2042	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2040	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2040	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2042	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2042	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2040	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2040	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2040	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2040	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2040	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2042	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2042	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2042	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2040	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2040	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2042	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2042	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2040	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2040	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2040	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2040	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2041	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2043	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2043	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2043	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2041	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2041	Phase 1	Generators	6.98E-05

PARKGEN1	DPM	2043	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2043	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2041	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2041	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2041	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2041	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2041	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2043	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2043	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2043	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2041	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2041	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2043	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2043	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2041	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2041	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2041	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2041	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2042	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2044	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2044	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2044	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2042	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2042	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2044	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2044	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2042	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2042	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2042	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2042	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2042	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2044	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2044	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2044	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2042	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2042	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2044	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2044	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2042	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2042	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2042	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2042	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2043	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2045	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2045	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2045	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2043	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2043	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2045	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2045	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2043	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2043	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2043	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2043	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2043	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2045	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2045	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2045	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2043	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2043	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2045	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2045	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2043	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2043	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2043	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2043	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2044	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2046	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2046	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2046	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2044	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2044	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2046	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2046	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2044	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2044	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2044	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2044	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2044	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2046	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2046	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2046	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2044	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2044	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2046	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2046	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2044	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2044	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2044	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2044	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2045	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2047	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2047	Phase 2	Generators	4.66E-05

OFFGEN4	DPM	2047	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2045	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2045	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2047	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2047	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2045	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2045	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2045	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2045	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2045	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2047	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2047	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2047	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2045	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2045	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2047	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2047	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2045	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2045	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2045	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2045	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2046	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2048	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2048	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2048	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2046	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2046	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2048	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2048	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2046	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2046	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2046	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2046	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2046	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2048	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2048	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2048	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2046	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2046	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2048	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2048	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2046	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2046	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2046	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2046	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2047	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2049	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2049	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2049	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2047	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2047	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2049	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2049	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2047	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2047	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2047	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2047	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2047	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2049	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2049	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2049	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2047	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2047	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2049	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2049	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2047	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2047	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2047	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2047	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2048	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2050	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2050	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2050	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2048	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2048	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2050	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2050	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2048	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2048	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2048	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2048	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2048	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2050	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2050	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2050	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2048	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2048	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2050	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2050	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2048	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2048	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2048	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2048	Phase 3	Generators	5.82E-05

OFFGEN1	DPM	2049	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2051	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2051	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2051	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2049	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2049	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2051	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2051	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2049	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2049	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2049	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2049	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2049	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2051	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2051	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2051	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2049	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2049	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2051	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2051	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2049	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2049	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2049	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2049	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2050	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2052	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2052	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2052	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2050	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2050	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2052	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2052	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2050	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2050	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2050	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2050	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2050	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2052	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2052	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2052	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2050	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2050	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2052	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2052	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2050	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2050	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2050	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2050	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2051	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2053	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2053	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2053	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2051	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2051	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2053	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2053	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2051	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2051	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2051	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2051	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2051	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2053	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2053	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2053	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2051	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2051	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2053	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2053	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2051	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2051	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2051	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2051	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2052	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2054	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2054	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2054	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2052	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2052	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2054	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2054	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2052	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2052	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2052	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2052	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2052	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2054	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2054	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2054	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2052	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2052	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2054	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2054	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2052	Phase 1	Generators	4.66E-05

RESGEN1	PM25	2052	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2052	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2052	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2053	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2055	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2055	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2055	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2053	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2053	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2055	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2055	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2053	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2053	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2053	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2053	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2053	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2055	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2055	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2055	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2053	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2053	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2055	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2055	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2053	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2053	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2053	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2053	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2054	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2056	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2056	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2056	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2054	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2054	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2056	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2056	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2054	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2054	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2054	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2054	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2054	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2056	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2056	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2056	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2054	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2054	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2056	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2056	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2054	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2054	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2054	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2054	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2055	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2057	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2057	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2057	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2055	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2055	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2057	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2057	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2055	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2055	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2055	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2055	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2055	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2057	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2057	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2057	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2055	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2055	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2057	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2057	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2055	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2055	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2055	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2055	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2056	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2058	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2058	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2058	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2056	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2056	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2058	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2058	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2056	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2056	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2056	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2056	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2056	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2058	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2058	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2058	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2056	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2056	Phase 1	Generators	6.98E-05

PARKGEN1	PM25	2058	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2058	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2056	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2056	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2056	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2056	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2057	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2059	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2059	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2059	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2057	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2057	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2059	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2059	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2057	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2057	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2057	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2057	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2057	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2059	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2059	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2059	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2057	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2057	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2059	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2059	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2057	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2057	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2057	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2057	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2058	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2060	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2060	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2060	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2058	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2058	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2060	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2060	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2058	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2058	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2058	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2058	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2058	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2060	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2060	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2060	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2058	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2058	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2060	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2060	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2058	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2058	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2058	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2058	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2059	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2061	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2061	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2061	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2059	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2059	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2061	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2061	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2059	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2059	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2059	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2059	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2059	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2061	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2061	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2061	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2059	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2059	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2061	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2061	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2059	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2059	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2059	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2059	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2060	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2062	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2062	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2062	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2060	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2060	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2062	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2062	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2060	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2060	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2060	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2060	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2060	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2062	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2062	Phase 2	Generators	4.66E-05

OFFGEN4	PM25	2062	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2060	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2060	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2062	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2062	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2060	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2060	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2060	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2060	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2061	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2063	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2063	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2063	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2061	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2061	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2063	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2063	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2061	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2061	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2061	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2061	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2061	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2063	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2063	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2063	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2061	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2061	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2063	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2063	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2061	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2061	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2061	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2061	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2062	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2064	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2064	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2064	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2062	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2062	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2064	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2064	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2062	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2062	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2062	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2062	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2062	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2064	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2064	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2064	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2062	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2062	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2064	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2064	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2062	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2062	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2062	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2062	Phase 3	Generators	5.82E-05
OFFGEN1	DPM	2063	Phase 1	Generators	4.66E-05
OFFGEN2	DPM	2065	Phase 2	Generators	4.66E-05
OFFGEN3	DPM	2065	Phase 2	Generators	4.66E-05
OFFGEN4	DPM	2065	Phase 2	Generators	4.66E-05
OFFGEN5	DPM	2063	Phase 1	Generators	4.66E-05
AMENGEN	DPM	2063	Phase 1	Generators	6.98E-05
PARKGEN1	DPM	2065	Phase 2	Generators	4.66E-05
PARKGEN2	DPM	2065	Phase 2	Generators	4.66E-05
PARKGEN3	DPM	2063	Phase 1	Generators	4.66E-05
RESGEN1	DPM	2063	Phase 1	Generators	9.31E-05
RESGEN2	DPM	2063	Phase 1	Generators	9.31E-05
RESGEN3V	DPM	2063	Phase 3	Generators	5.82E-05
OFFGEN1	PM25	2063	Phase 1	Generators	4.66E-05
OFFGEN2	PM25	2065	Phase 2	Generators	4.66E-05
OFFGEN3	PM25	2065	Phase 2	Generators	4.66E-05
OFFGEN4	PM25	2065	Phase 2	Generators	4.66E-05
OFFGEN5	PM25	2063	Phase 1	Generators	4.66E-05
AMENGEN	PM25	2063	Phase 1	Generators	6.98E-05
PARKGEN1	PM25	2065	Phase 2	Generators	4.66E-05
PARKGEN2	PM25	2065	Phase 2	Generators	4.66E-05
PARKGEN3	PM25	2063	Phase 1	Generators	4.66E-05
RESGEN1	PM25	2063	Phase 1	Generators	9.31E-05
RESGEN2	PM25	2063	Phase 1	Generators	9.31E-05
RESGEN3V	PM25	2063	Phase 3	Generators	5.82E-05
RECGEN	DPM	2031	Phase 1	Generators	9.39E-05
RECGEN	PM25	2031	Phase 1	Generators	9.39E-05
RECGEN	DPM	2032	Phase 1	Generators	1.05E-04
RECGEN	PM25	2032	Phase 1	Generators	1.05E-04
RECGEN	DPM	2033	Phase 1	Generators	1.05E-04
RECGEN	PM25	2033	Phase 1	Generators	1.05E-04
RECGEN	DPM	2034	Phase 1	Generators	1.05E-04
RECGEN	PM25	2034	Phase 1	Generators	1.05E-04
RECGEN	DPM	2035	Phase 1	Generators	1.05E-04
RECGEN	PM25	2035	Phase 1	Generators	1.05E-04
RECGEN	DPM	2036	Phase 1	Generators	1.05E-04
RECGEN	PM25	2036	Phase 1	Generators	1.05E-04

RECGEN	DPM	2037	Phase 1	Generators	1.05E-04
RECGEN	PM25	2037	Phase 1	Generators	1.05E-04
RECGEN	DPM	2038	Phase 1	Generators	1.05E-04
RECGEN	PM25	2038	Phase 1	Generators	1.05E-04
RECGEN	DPM	2039	Phase 1	Generators	1.05E-04
RECGEN	PM25	2039	Phase 1	Generators	1.05E-04
RECGEN	DPM	2040	Phase 1	Generators	1.05E-04
RECGEN	PM25	2040	Phase 1	Generators	1.05E-04
RECGEN	DPM	2041	Phase 1	Generators	1.05E-04
RECGEN	PM25	2041	Phase 1	Generators	1.05E-04
RECGEN	DPM	2042	Phase 1	Generators	1.05E-04
RECGEN	PM25	2042	Phase 1	Generators	1.05E-04
RECGEN	DPM	2043	Phase 1	Generators	1.05E-04
RECGEN	PM25	2043	Phase 1	Generators	1.05E-04
RECGEN	DPM	2044	Phase 1	Generators	1.05E-04
RECGEN	PM25	2044	Phase 1	Generators	1.05E-04
RECGEN	DPM	2045	Phase 1	Generators	1.05E-04
RECGEN	PM25	2045	Phase 1	Generators	1.05E-04
RECGEN	DPM	2046	Phase 1	Generators	1.05E-04
RECGEN	PM25	2046	Phase 1	Generators	1.05E-04
RECGEN	DPM	2047	Phase 1	Generators	1.05E-04
RECGEN	PM25	2047	Phase 1	Generators	1.05E-04
RECGEN	DPM	2048	Phase 1	Generators	1.05E-04
RECGEN	PM25	2048	Phase 1	Generators	1.05E-04
RECGEN	DPM	2049	Phase 1	Generators	1.05E-04
RECGEN	PM25	2049	Phase 1	Generators	1.05E-04
RECGEN	DPM	2050	Phase 1	Generators	1.05E-04
RECGEN	PM25	2050	Phase 1	Generators	1.05E-04
RECGEN	DPM	2051	Phase 1	Generators	1.05E-04
RECGEN	PM25	2051	Phase 1	Generators	1.05E-04
RECGEN	DPM	2052	Phase 1	Generators	1.05E-04
RECGEN	PM25	2052	Phase 1	Generators	1.05E-04
RECGEN	DPM	2053	Phase 1	Generators	1.05E-04
RECGEN	PM25	2053	Phase 1	Generators	1.05E-04
RECGEN	DPM	2054	Phase 1	Generators	1.05E-04
RECGEN	PM25	2054	Phase 1	Generators	1.05E-04
RECGEN	DPM	2055	Phase 1	Generators	1.05E-04
RECGEN	PM25	2055	Phase 1	Generators	1.05E-04
RECGEN	DPM	2056	Phase 1	Generators	1.05E-04
RECGEN	PM25	2056	Phase 1	Generators	1.05E-04
RECGEN	DPM	2057	Phase 1	Generators	1.05E-04
RECGEN	PM25	2057	Phase 1	Generators	1.05E-04
RECGEN	DPM	2058	Phase 1	Generators	1.05E-04
RECGEN	PM25	2058	Phase 1	Generators	1.05E-04
RECGEN	DPM	2059	Phase 1	Generators	1.05E-04
RECGEN	PM25	2059	Phase 1	Generators	1.05E-04
RECGEN	DPM	2060	Phase 1	Generators	1.05E-04
RECGEN	PM25	2060	Phase 1	Generators	1.05E-04
RECGEN	DPM	2061	Phase 1	Generators	1.05E-04
RECGEN	PM25	2061	Phase 1	Generators	1.05E-04
RECGEN	DPM	2062	Phase 1	Generators	1.05E-04
RECGEN	PM25	2062	Phase 1	Generators	1.05E-04
RECGEN	DPM	2063	Phase 1	Generators	1.05E-04
RECGEN	PM25	2063	Phase 1	Generators	1.05E-04
OFF1EX	1,4-Dioxane	2031+	All	Lab Emissions	2.41E-04
OFF1EX	Acrylamide	2031+	All	Lab Emissions	1.40E-06
OFF1EX	Benzene	2031+	All	Lab Emissions	2.08E-04
OFF1EX	Carbon Tetrachloride	2031+	All	Lab Emissions	1.86E-05
OFF1EX	Chloroform	2031+	All	Lab Emissions	2.52E-03
OFF1EX	Dimethyl Formamide	2031+	All	Lab Emissions	5.08E-05
OFF1EX	Ethylene Dichloride	2031+	All	Lab Emissions	5.61E-06
OFF1EX	Formaldehyde	2031+	All	Lab Emissions	8.63E-06
OFF1EX	Glutaraldehyde	2031+	All	Lab Emissions	3.69E-06
OFF1EX	Hydrochloric Acid	2031+	All	Lab Emissions	8.73E-05
OFF1EX	Hexane	2031+	All	Lab Emissions	1.62E-05
OFF1EX	Hydrogen Fluoride	2031+	All	Lab Emissions	2.95E-07
OFF1EX	Hydrazine	2031+	All	Lab Emissions	1.10E-06
OFF1EX	Isopropyl Alcohol	2031+	All	Lab Emissions	3.40E-04
OFF1EX	Methanol	2031+	All	Lab Emissions	1.07E-02
OFF1EX	Methyl Bromide	2031+	All	Lab Emissions	2.69E-05
OFF1EX	Methylene Chloride	2031+	All	Lab Emissions	9.88E-03
OFF1EX	Perchloroethylene	2031+	All	Lab Emissions	9.08E-06
OFF1EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF1EX	Toluene	2031+	All	Lab Emissions	7.14E-04
OFF1EX	Triethylamine	2031+	All	Lab Emissions	6.04E-05
OFF1EX	Xylenes	2031+	All	Lab Emissions	2.49E-05
OFF2EX	1,4-Dioxane	2031+	All	Lab Emissions	3.02E-04
OFF2EX	Acrylamide	2031+	All	Lab Emissions	1.76E-06
OFF2EX	Benzene	2031+	All	Lab Emissions	2.60E-04
OFF2EX	Carbon Tetrachloride	2031+	All	Lab Emissions	2.33E-05
OFF2EX	Chloroform	2031+	All	Lab Emissions	3.16E-03
OFF2EX	Dimethyl Formamide	2031+	All	Lab Emissions	6.36E-05
OFF2EX	Ethylene Dichloride	2031+	All	Lab Emissions	7.03E-06
OFF2EX	Formaldehyde	2031+	All	Lab Emissions	1.08E-05
OFF2EX	Glutaraldehyde	2031+	All	Lab Emissions	4.63E-06
OFF2EX	Hydrochloric Acid	2031+	All	Lab Emissions	1.09E-04
OFF2EX	Hexane	2031+	All	Lab Emissions	2.02E-05
OFF2EX	Hydrogen Fluoride	2031+	All	Lab Emissions	3.70E-07
OFF2EX	Hydrazine	2031+	All	Lab Emissions	1.38E-06
OFF2EX	Isopropyl Alcohol	2031+	All	Lab Emissions	4.26E-04
OFF2EX	Methanol	2031+	All	Lab Emissions	1.34E-02
OFF2EX	Methyl Bromide	2031+	All	Lab Emissions	3.37E-05
OFF2EX	Methylene Chloride	2031+	All	Lab Emissions	1.24E-02

OFF2EX	Perchloroethylene	2031+	All	Lab Emissions	1.14E-05
OFF2EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF2EX	Toluene	2031+	All	Lab Emissions	8.94E-04
OFF2EX	Triethylamine	2031+	All	Lab Emissions	7.57E-05
OFF2EX	Xylenes	2031+	All	Lab Emissions	3.12E-05
OFF3EX	1,4-Dioxane	2031+	All	Lab Emissions	3.07E-04
OFF3EX	Acrylamide	2031+	All	Lab Emissions	1.79E-06
OFF3EX	Benzene	2031+	All	Lab Emissions	2.65E-04
OFF3EX	Carbon Tetrachloride	2031+	All	Lab Emissions	2.36E-05
OFF3EX	Chloroform	2031+	All	Lab Emissions	3.21E-03
OFF3EX	Dimethyl Formamide	2031+	All	Lab Emissions	6.47E-05
OFF3EX	Ethylene Dichloride	2031+	All	Lab Emissions	7.15E-06
OFF3EX	Formaldehyde	2031+	All	Lab Emissions	1.10E-05
OFF3EX	Glutaraldehyde	2031+	All	Lab Emissions	4.71E-06
OFF3EX	Hydrochloric Acid	2031+	All	Lab Emissions	1.11E-04
OFF3EX	Hexane	2031+	All	Lab Emissions	2.06E-05
OFF3EX	Hydrogen Fluoride	2031+	All	Lab Emissions	3.76E-07
OFF3EX	Hydrazine	2031+	All	Lab Emissions	1.40E-06
OFF3EX	Isopropyl Alcohol	2031+	All	Lab Emissions	4.33E-04
OFF3EX	Methanol	2031+	All	Lab Emissions	1.36E-02
OFF3EX	Methyl Bromide	2031+	All	Lab Emissions	3.42E-05
OFF3EX	Methylene Chloride	2031+	All	Lab Emissions	1.26E-02
OFF3EX	Perchloroethylene	2031+	All	Lab Emissions	1.16E-05
OFF3EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF3EX	Toluene	2031+	All	Lab Emissions	9.09E-04
OFF3EX	Triethylamine	2031+	All	Lab Emissions	7.69E-05
OFF3EX	Xylenes	2031+	All	Lab Emissions	3.18E-05
OFF4EX	1,4-Dioxane	2031+	All	Lab Emissions	2.84E-04
OFF4EX	Acrylamide	2031+	All	Lab Emissions	1.66E-06
OFF4EX	Benzene	2031+	All	Lab Emissions	2.45E-04
OFF4EX	Carbon Tetrachloride	2031+	All	Lab Emissions	2.19E-05
OFF4EX	Chloroform	2031+	All	Lab Emissions	2.98E-03
OFF4EX	Dimethyl Formamide	2031+	All	Lab Emissions	6.00E-05
OFF4EX	Ethylene Dichloride	2031+	All	Lab Emissions	6.63E-06
OFF4EX	Formaldehyde	2031+	All	Lab Emissions	1.02E-05
OFF4EX	Glutaraldehyde	2031+	All	Lab Emissions	4.36E-06
OFF4EX	Hydrochloric Acid	2031+	All	Lab Emissions	1.03E-04
OFF4EX	Hexane	2031+	All	Lab Emissions	1.91E-05
OFF4EX	Hydrogen Fluoride	2031+	All	Lab Emissions	3.49E-07
OFF4EX	Hydrazine	2031+	All	Lab Emissions	1.30E-06
OFF4EX	Isopropyl Alcohol	2031+	All	Lab Emissions	4.01E-04
OFF4EX	Methanol	2031+	All	Lab Emissions	1.26E-02
OFF4EX	Methyl Bromide	2031+	All	Lab Emissions	3.17E-05
OFF4EX	Methylene Chloride	2031+	All	Lab Emissions	1.17E-02
OFF4EX	Perchloroethylene	2031+	All	Lab Emissions	1.07E-05
OFF4EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF4EX	Toluene	2031+	All	Lab Emissions	8.43E-04
OFF4EX	Triethylamine	2031+	All	Lab Emissions	7.13E-05
OFF4EX	Xylenes	2031+	All	Lab Emissions	2.94E-05
OFF5EX	1,4-Dioxane	2031+	All	Lab Emissions	2.40E-04
OFF5EX	Acrylamide	2031+	All	Lab Emissions	1.40E-06
OFF5EX	Benzene	2031+	All	Lab Emissions	2.07E-04
OFF5EX	Carbon Tetrachloride	2031+	All	Lab Emissions	1.85E-05
OFF5EX	Chloroform	2031+	All	Lab Emissions	2.51E-03
OFF5EX	Dimethyl Formamide	2031+	All	Lab Emissions	5.07E-05
OFF5EX	Ethylene Dichloride	2031+	All	Lab Emissions	5.60E-06
OFF5EX	Formaldehyde	2031+	All	Lab Emissions	8.61E-06
OFF5EX	Glutaraldehyde	2031+	All	Lab Emissions	3.68E-06
OFF5EX	Hydrochloric Acid	2031+	All	Lab Emissions	8.70E-05
OFF5EX	Hexane	2031+	All	Lab Emissions	1.61E-05
OFF5EX	Hydrogen Fluoride	2031+	All	Lab Emissions	2.95E-07
OFF5EX	Hydrazine	2031+	All	Lab Emissions	1.10E-06
OFF5EX	Isopropyl Alcohol	2031+	All	Lab Emissions	3.39E-04
OFF5EX	Methanol	2031+	All	Lab Emissions	1.07E-02
OFF5EX	Methyl Bromide	2031+	All	Lab Emissions	2.68E-05
OFF5EX	Methylene Chloride	2031+	All	Lab Emissions	9.86E-03
OFF5EX	Perchloroethylene	2031+	All	Lab Emissions	9.05E-06
OFF5EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF5EX	Toluene	2031+	All	Lab Emissions	7.12E-04
OFF5EX	Triethylamine	2031+	All	Lab Emissions	6.02E-05
OFF5EX	Xylenes	2031+	All	Lab Emissions	2.49E-05
OFF1EX	1,4-Dioxane	2031+	All	Lab Emissions	1.25E-03
OFF1EX	Acrylamide	2031+	All	Lab Emissions	7.25E-06
OFF1EX	Benzene	2031+	All	Lab Emissions	1.08E-03
OFF1EX	Carbon Tetrachloride	2031+	All	Lab Emissions	9.60E-05
OFF1EX	Chloroform	2031+	All	Lab Emissions	1.30E-02
OFF1EX	Dimethyl Formamide	2031+	All	Lab Emissions	2.63E-04
OFF1EX	Ethylene Dichloride	2031+	All	Lab Emissions	2.91E-05
OFF1EX	Formaldehyde	2031+	All	Lab Emissions	4.47E-05
OFF1EX	Glutaraldehyde	2031+	All	Lab Emissions	1.91E-05
OFF1EX	Hydrochloric Acid	2031+	All	Lab Emissions	4.52E-04
OFF1EX	Hexane	2031+	All	Lab Emissions	8.37E-05
OFF1EX	Hydrogen Fluoride	2031+	All	Lab Emissions	1.53E-06
OFF1EX	Hydrazine	2031+	All	Lab Emissions	5.67E-06
OFF1EX	Isopropyl Alcohol	2031+	All	Lab Emissions	1.76E-03
OFF1EX	Methanol	2031+	All	Lab Emissions	5.52E-02
OFF1EX	Methyl Bromide	2031+	All	Lab Emissions	1.39E-04
OFF1EX	Methylene Chloride	2031+	All	Lab Emissions	5.13E-02
OFF1EX	Perchloroethylene	2031+	All	Lab Emissions	4.70E-05
OFF1EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF1EX	Toluene	2031+	All	Lab Emissions	3.70E-03
OFF1EX	Triethylamine	2031+	All	Lab Emissions	3.13E-04
OFF1EX	Xylenes	2031+	All	Lab Emissions	1.29E-04

OFF2EX	1,4-Dioxane	2031+	All	Lab Emissions	1.56E-03
OFF2EX	Acrylamide	2031+	All	Lab Emissions	9.08E-06
OFF2EX	Benzene	2031+	All	Lab Emissions	1.35E-03
OFF2EX	Carbon Tetrachloride	2031+	All	Lab Emissions	1.20E-04
OFF2EX	Chloroform	2031+	All	Lab Emissions	1.63E-02
OFF2EX	Dimethyl Formamide	2031+	All	Lab Emissions	3.30E-04
OFF2EX	Ethylene Dichloride	2031+	All	Lab Emissions	3.64E-05
OFF2EX	Formaldehyde	2031+	All	Lab Emissions	5.60E-05
OFF2EX	Glutaraldehyde	2031+	All	Lab Emissions	2.39E-05
OFF2EX	Hydrochloric Acid	2031+	All	Lab Emissions	5.67E-04
OFF2EX	Hexane	2031+	All	Lab Emissions	1.05E-04
OFF2EX	Hydrogen Fluoride	2031+	All	Lab Emissions	1.92E-06
OFF2EX	Hydrazine	2031+	All	Lab Emissions	7.10E-06
OFF2EX	Isopropyl Alcohol	2031+	All	Lab Emissions	2.21E-03
OFF2EX	Methanol	2031+	All	Lab Emissions	6.92E-02
OFF2EX	Methyl Bromide	2031+	All	Lab Emissions	1.75E-04
OFF2EX	Methylene Chloride	2031+	All	Lab Emissions	6.43E-02
OFF2EX	Perchloroethylene	2031+	All	Lab Emissions	5.89E-05
OFF2EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF2EX	Toluene	2031+	All	Lab Emissions	4.64E-03
OFF2EX	Triethylamine	2031+	All	Lab Emissions	3.92E-04
OFF2EX	Xylenes	2031+	All	Lab Emissions	1.62E-04
OFF3EX	1,4-Dioxane	2031+	All	Lab Emissions	1.59E-03
OFF3EX	Acrylamide	2031+	All	Lab Emissions	9.24E-06
OFF3EX	Benzene	2031+	All	Lab Emissions	1.38E-03
OFF3EX	Carbon Tetrachloride	2031+	All	Lab Emissions	1.22E-04
OFF3EX	Chloroform	2031+	All	Lab Emissions	1.66E-02
OFF3EX	Dimethyl Formamide	2031+	All	Lab Emissions	3.35E-04
OFF3EX	Ethylene Dichloride	2031+	All	Lab Emissions	3.71E-05
OFF3EX	Formaldehyde	2031+	All	Lab Emissions	5.69E-05
OFF3EX	Glutaraldehyde	2031+	All	Lab Emissions	2.44E-05
OFF3EX	Hydrochloric Acid	2031+	All	Lab Emissions	5.76E-04
OFF3EX	Hexane	2031+	All	Lab Emissions	1.07E-04
OFF3EX	Hydrogen Fluoride	2031+	All	Lab Emissions	1.95E-06
OFF3EX	Hydrazine	2031+	All	Lab Emissions	7.22E-06
OFF3EX	Isopropyl Alcohol	2031+	All	Lab Emissions	2.25E-03
OFF3EX	Methanol	2031+	All	Lab Emissions	7.04E-02
OFF3EX	Methyl Bromide	2031+	All	Lab Emissions	1.78E-04
OFF3EX	Methylene Chloride	2031+	All	Lab Emissions	6.54E-02
OFF3EX	Perchloroethylene	2031+	All	Lab Emissions	5.99E-05
OFF3EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF3EX	Toluene	2031+	All	Lab Emissions	4.72E-03
OFF3EX	Triethylamine	2031+	All	Lab Emissions	3.99E-04
OFF3EX	Xylenes	2031+	All	Lab Emissions	1.65E-04
OFF4EX	1,4-Dioxane	2031+	All	Lab Emissions	1.47E-03
OFF4EX	Acrylamide	2031+	All	Lab Emissions	8.56E-06
OFF4EX	Benzene	2031+	All	Lab Emissions	1.28E-03
OFF4EX	Carbon Tetrachloride	2031+	All	Lab Emissions	1.13E-04
OFF4EX	Chloroform	2031+	All	Lab Emissions	1.54E-02
OFF4EX	Dimethyl Formamide	2031+	All	Lab Emissions	3.11E-04
OFF4EX	Ethylene Dichloride	2031+	All	Lab Emissions	3.43E-05
OFF4EX	Formaldehyde	2031+	All	Lab Emissions	5.28E-05
OFF4EX	Glutaraldehyde	2031+	All	Lab Emissions	2.26E-05
OFF4EX	Hydrochloric Acid	2031+	All	Lab Emissions	5.34E-04
OFF4EX	Hexane	2031+	All	Lab Emissions	9.89E-05
OFF4EX	Hydrogen Fluoride	2031+	All	Lab Emissions	1.81E-06
OFF4EX	Hydrazine	2031+	All	Lab Emissions	6.69E-06
OFF4EX	Isopropyl Alcohol	2031+	All	Lab Emissions	2.08E-03
OFF4EX	Methanol	2031+	All	Lab Emissions	6.52E-02
OFF4EX	Methyl Bromide	2031+	All	Lab Emissions	1.65E-04
OFF4EX	Methylene Chloride	2031+	All	Lab Emissions	6.06E-02
OFF4EX	Perchloroethylene	2031+	All	Lab Emissions	5.55E-05
OFF4EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF4EX	Toluene	2031+	All	Lab Emissions	4.37E-03
OFF4EX	Triethylamine	2031+	All	Lab Emissions	3.70E-04
OFF4EX	Xylenes	2031+	All	Lab Emissions	1.53E-04
OFF5EX	1,4-Dioxane	2031+	All	Lab Emissions	1.24E-03
OFF5EX	Acrylamide	2031+	All	Lab Emissions	7.23E-06
OFF5EX	Benzene	2031+	All	Lab Emissions	1.08E-03
OFF5EX	Carbon Tetrachloride	2031+	All	Lab Emissions	9.58E-05
OFF5EX	Chloroform	2031+	All	Lab Emissions	1.30E-02
OFF5EX	Dimethyl Formamide	2031+	All	Lab Emissions	2.63E-04
OFF5EX	Ethylene Dichloride	2031+	All	Lab Emissions	2.90E-05
OFF5EX	Formaldehyde	2031+	All	Lab Emissions	4.46E-05
OFF5EX	Glutaraldehyde	2031+	All	Lab Emissions	1.91E-05
OFF5EX	Hydrochloric Acid	2031+	All	Lab Emissions	4.51E-04
OFF5EX	Hexane	2031+	All	Lab Emissions	8.35E-05
OFF5EX	Hydrogen Fluoride	2031+	All	Lab Emissions	1.53E-06
OFF5EX	Hydrazine	2031+	All	Lab Emissions	5.66E-06
OFF5EX	Isopropyl Alcohol	2031+	All	Lab Emissions	1.76E-03
OFF5EX	Methanol	2031+	All	Lab Emissions	5.51E-02
OFF5EX	Methyl Bromide	2031+	All	Lab Emissions	1.39E-04
OFF5EX	Methylene Chloride	2031+	All	Lab Emissions	5.12E-02
OFF5EX	Perchloroethylene	2031+	All	Lab Emissions	4.69E-05
OFF5EX	Trichloroethylene	2031+	All	Lab Emissions	0.00E+00
OFF5EX	Toluene	2031+	All	Lab Emissions	3.69E-03
OFF5EX	Triethylamine	2031+	All	Lab Emissions	3.12E-04
OFF5EX	Xylenes	2031+	All	Lab Emissions	1.29E-04
MID1	MOBILE-CANCER	2031+	All	Traffic	7.92E-07
MID2	MOBILE-CANCER	2031+	All	Traffic	3.71E-07
MID3	MOBILE-CANCER	2031+	All	Traffic	7.54E-07
MID4	MOBILE-CANCER	2031+	All	Traffic	9.41E-07
RAV1	MOBILE-CANCER	2031+	All	Traffic	4.16E-07

RAV2	MOBILE-CANCER	2031+	All	Traffic	1.01E-07
RAV3	MOBILE-CANCER	2031+	All	Traffic	1.44E-07
RAV4	MOBILE-CANCER	2031+	All	Traffic	2.02E-07
RAV5	MOBILE-CANCER	2031+	All	Traffic	2.23E-07
RING	MOBILE-CANCER	2031+	All	Traffic	0.00E+00
LAUREL1	MOBILE-CANCER	2031+	All	Traffic	1.37E-07
LAUREL2	MOBILE-CANCER	2031+	All	Traffic	3.68E-07
LOOP	MOBILE-CANCER	2031+	All	Traffic	6.48E-06
MID1	MOBILE-CHRONIC	2031+	All	Traffic	1.80E-06
MID2	MOBILE-CHRONIC	2031+	All	Traffic	8.41E-07
MID3	MOBILE-CHRONIC	2031+	All	Traffic	1.71E-06
MID4	MOBILE-CHRONIC	2031+	All	Traffic	2.13E-06
RAV1	MOBILE-CHRONIC	2031+	All	Traffic	9.44E-07
RAV2	MOBILE-CHRONIC	2031+	All	Traffic	2.29E-07
RAV3	MOBILE-CHRONIC	2031+	All	Traffic	3.27E-07
RAV4	MOBILE-CHRONIC	2031+	All	Traffic	4.58E-07
RAV5	MOBILE-CHRONIC	2031+	All	Traffic	5.04E-07
RING	MOBILE-CHRONIC	2031+	All	Traffic	0.00E+00
LAUREL1	MOBILE-CHRONIC	2031+	All	Traffic	3.11E-07
LAUREL2	MOBILE-CHRONIC	2031+	All	Traffic	8.34E-07
LOOP	MOBILE-CHRONIC	2031+	All	Traffic	1.47E-05
MID1	PM25	2031+	All	Traffic	1.84E-04
MID2	PM25	2031+	All	Traffic	8.64E-05
MID3	PM25	2031+	All	Traffic	1.76E-04
MID4	PM25	2031+	All	Traffic	2.19E-04
RAV1	PM25	2031+	All	Traffic	9.69E-05
RAV2	PM25	2031+	All	Traffic	2.35E-05
RAV3	PM25	2031+	All	Traffic	3.36E-05
RAV4	PM25	2031+	All	Traffic	4.70E-05
RAV5	PM25	2031+	All	Traffic	5.18E-05
RING	PM25	2031+	All	Traffic	0.00E+00
LAUREL1	PM25	2031+	All	Traffic	3.20E-05
LAUREL2	PM25	2031+	All	Traffic	8.56E-05
LOOP	PM25	2031+	All	Traffic	1.51E-03

Notes:
MOBILE-CANCER refers to a weighted cancer risk toxicity value for the speciation of TACs from gasoline.
MOBILE-CANCER refers to a weighted chronic HI risk toxicity value for the speciation of TACs from gasoline.

APPENDIX C
Project Variant Excess Lifetime Cancer Risk, Chronic HI, and Acute HI for all Scenarios

Appendix C
Project Variant Excess Lifetime Cancer Risk, Chronic HI, and Acute HI for all Scenarios
Parkline
Menlo Park, CA

Cancer Risk

Receptor Type	Excess Lifetime Cancer Risk (in a million)			
	S1	S2	S3	S4
Phase 1 Resident	--	3.7	3.5	0.79
Phase 3 Resident	--	--	--	0.69
Phase 1 Recreational	--	1.8	1.9	0.77
Phase 1 Worker	--	1.7	1.7	1.6
Phase 2 Worker	--	--	2.9	2.7
Offsite Resident	3.9	1.0	0.92	1.0
Offsite Worker	1.0	1.3	1.3	1.1
Offsite Recreational	1.4	0.35	0.37	0.41
Offsite High school	0.026	0.060	0.063	0.047
Offsite Pre-school	0.34	0.053	0.061	0.065
Offsite Daycare	4.8	0.40	0.43	1.1

Chronic HI Risk

Receptor Type	Chronic Hazard Index			
	S1	S2	S3	S4
Phase 1 Resident	--	0.0048	0.0048	0.0014
Phase 3 Resident	--	--	--	0.0014
Phase 1 Recreational	--	0.0040	0.0040	0.0027
Phase 1 Worker	--	0.010	0.010	0.0092
Phase 2 Worker	--	--	0.016	0.016
Offsite Resident	0.0034	0.0033	0.0033	0.0028
Offsite Worker	0.0093	0.0092	0.0092	0.0070
Offsite Recreational	0.0027	0.0019	0.0019	0.0017
Offsite High school	9.3E-04	0.0010	0.0010	7.9E-04
Offsite Pre-school	6.2E-04	3.6E-04	3.6E-04	3.4E-04
Offsite Daycare	0.0024	0.0024	0.0024	0.0022

Acute HI Risk

Receptor Type	Acute Hazard Index			
	S1	S2	S3	S4
Phase 1 Resident	--	0.044	0.044	0.044
Phase 3 Resident	--	--	--	0.034
Phase 1 Recreational	--	0.052	0.052	0.052
Phase 1 Worker	--	0.068	0.068	0.068
Phase 2 Worker	--	--	0.078	0.078
Offsite Resident	0.041	0.041	0.041	0.041
Offsite Worker	0.061	0.061	0.061	0.061
Offsite Recreational	0.037	0.037	0.037	0.037
Offsite High school	0.033	0.033	0.033	0.033
Offsite Pre-school	0.031	0.031	0.031	0.031
Offsite Daycare	0.036	0.036	0.036	0.036

Mitigated $PM_{2.5}$ Concentration

Receptor Type	$PM_{2.5}$ Concentration (ug/m^3)			
	S1	S2	S3	S4
Phase 1 Resident	--	0.11	0.11	0.11
Phase 3 Resident	--	--	--	0.055
Phase 1 Recreational	--	0.072	0.072	0.065
Phase 1 Worker	--	0.10	0.10	0.10
Phase 2 Worker	--	--	0.10	0.10
Offsite Resident	-0.19	0.063	0.062	0.061
Offsite Worker	0.091	0.12	0.12	0.12
Offsite Recreational	0.029	0.027	0.027	0.026
Offsite High school	-0.0021	0.020	0.020	0.019
Offsite Pre-school	0.0067	0.012	0.012	0.011
Offsite Daycare	4.6E-04	0.037	0.037	0.035

Unmitigated $PM_{2.5}$ Concentration

Receptor Type	$PM_{2.5}$ Concentration (ug/m^3)			
	S1	S2	S3	S4
Phase 1 Resident	--	0.11	0.11	0.11
Phase 3 Resident	--	--	--	0.055
Phase 1 Recreational	--	0.072	0.072	0.065
Phase 1 Worker	--	0.10	0.10	0.10
Phase 2 Worker	--	--	0.10	0.10
Offsite Resident	-0.078	0.063	0.063	0.061
Offsite Worker	0.22	0.12	0.12	0.12
Offsite Recreational	0.075	0.027	0.027	0.026
Offsite High school	0.0019	0.020	0.020	0.019
Offsite Pre-school	0.017	0.012	0.012	0.011
Offsite Daycare	0.064	0.037	0.037	0.035

Appendix 4.2

Project Variant Assessment of Energy Use Memorandum

ENVIRONMENT
& HEALTH

MEMORANDUM

Date: April 24, 2024

To: Mark Murray, Lane Partners

From: Michael Keinath
Sarah Manzano

Subject: **Assessment of Energy Use for the Increased Development Variant – Parkline Menlo Park**
Menlo Park, CA

Ramboll
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Ramboll conducted an assessment of energy use for the construction and operation of the Increased Development Variant ("Project Variant" or "Variant") for the proposed mixed-use development (the "Project" or "Parkline") located at 333 Ravenswood Avenue in the City of Menlo Park (the "City") for Lane Partners (the "Project Applicant"). Compared to the Project, the Project Variant consists of the following differences:

- The Project Variant site plan would be expanded to include the parcel located at 201 Ravenswood to create a continuous Project frontage area along Ravenswood Avenue and increase the overall Project site area by approximately 43,762 square feet;
- The Project Variant would include up to 250 additional residential rental dwelling units compared to the Proposed Project (an increase from 550 to 800 units, inclusive of an increase from 100 to up to 154 units to be developed by an affordable housing developer);
- The Project Variant would reconfigure the residential areas compared to the Project by moving both the affordable housing and a portion of the townhouses to the northeast corner of the site;
- The Project Variant would reduce the underground parking footprint within the site, both by removing underground parking from the multifamily residential buildings and removing the underground parking connection between Buildings Office/R& 1 and Office/R&D 2. As a result, the parking garages PG1 and PG2 increase in square footage and height as compared to the Proposed Project; and
- The Project Variant would include a two-million-gallon underground emergency water reservoir that would be built and operated by the City of Menlo Park.

The energy use assessment for the Variant is consistent with the scope and methods used for the Project and serves to complement the Project energy use assessment. Refer to Ramboll's memorandum "Assessment of Energy Use Parkline Menlo Park" dated January 26, 2024 ("Project Energy Use Assessment") for details on the Project energy use. This memorandum summarizes energy use of the Variant and only presents energy use where it differs from the analysis for the Project. Table numbers will be consistent with those of the Project analysis for ease of comparison.

This Variant analysis presents the total energy usages for the Variant, rather than the net increase compared to the Project. The Variant results in 101,875 MMBTU per year of energy consumption for construction, and results in a net reduction of 79,113 MMBTU per year in operational energy usage due largely to the decommissioning of the existing cogeneration plant.

1. METHODOLOGY FOR DEVELOPMENT OF ENERGY PROJECTIONS

Energy source types for the Variant are identical to the Project.

1.1 Baseline Energy Use

The only difference between the Project and Variant with respect to the baseline conditions is that the church located at 201 Ravenswood Avenue would be removed. However, since greater baseline energy use results in lower net emissions for the Project, it was conservatively assumed that the baseline does not change with the Variant. Therefore, baseline energy use for purposes of analyzing energy use for the Variant is identical to the Project. For additional details, please see the Project Energy Use Assessment.

1.2 Project Construction Energy Use

The Variant has additional construction activity and durations compared to the Project due to the additional housing units, larger parking garages and emergency water reservoir. Excavation decreased due to the reduction in underground parking.

Energy use calculations associated with off-road construction equipment were calculated using the same methodology as the Project. Information on Variant-specific construction schedule, type and quantity of equipment and hours of operation for each piece of equipment was provided by the Project Applicant. **Table 6V** shows the anticipated fuel usage from off-road equipment for Variant construction.

Energy consumption from on-road construction vehicles, in the form of fuel use, was calculated using the same methodology as the Project using Variant-specific data that incorporates the additional construction activity triggered by the increased residential units, larger parking garages, and incorporation of the emergency water reservoir, as provided by the Project Applicant. Truck trips for hauling decreased due to the reduction in underground parking. **Table 7V** shows the anticipated fuel consumption from on-road construction vehicles for the Variant.

Total construction energy use for the Variant is summarized in **Table 8V**. For comparison purposes, all forms of energy use are converted to units of metric million BTU per year (MMBTU/yr).

1.3 Project Operational Energy Use

Variant operational energy use differs from the Project due to energy consumption from the additional housing units, larger parking garages, and emergency water reservoir.[1], [2] The Variant

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[1] As described in the February 20, 2024, PAE Building Energy Estimate, the emergency water reservoir component of the Variant is assumed to have negligible energy and water use based on equipment being used only during emergencies and preventative system testing. The only significant energy use for the emergency water reservoir comes from the diesel usage for a 450 kW generator that would be used on an as-needed or emergency basis only.

[2] The operational energy use for the Variant parking garage is greater than the underground parking garage for the Project due to the larger square footage of the Variant parking garages.

operational energy uses were calculated using a methodology identical to the Project.

1.3.1 Building Energy Use

The Variant building energy use is calculated using the same methodology as the Project, adjusted to account for the additional development capacity.

Variant building energy use was obtained from the Building Energy Preliminary Estimate Memo dated February 20, 2024. **Table 9V** shows the annual electricity and natural gas use for the Variant buildings.

1.3.2 Water Energy Use

Water usage rates were provided in the Building Energy Preliminary Estimate Memo dated February 20, 2024 for the Variant operations. Energy use associated with water consumption and wastewater treatment was quantified using the same methodology used for the Project. The electricity from water use is summarized in **Table 3V** for the Variant.

1.3.3 Mobile Energy Use

Fuel usage for Variant operations from employees commuting to the Project site was estimated using the same methodology as the Project. Trip generation rates and total VMT for Variant operations were prepared by the Transportation Engineer. **Table 4V** shows detailed vehicle fuel usage estimates for the Variant.

1.3.4 Stationary Source Energy Use

Similar to the Project, the Variant operation includes 13 emergency generators; however there is one fewer residential emergency generator, and the remaining residential emergency generators are larger in size to accommodate the increase in residential units, and there is one 450 kW generator for the emergency water reservoir.[3] Analysis of emergency generator fuel usage is consistent with the methodology used for the Project. **Table 5V** provides details on fuel usage estimates from emergency generators for the Variant.

1.3.5 Summary of Net Project Operational and Construction Energy Consumption

Summary Table A below summarizes the baseline energy use, operational energy use for the Variant, and construction energy use for the Variant. More detail can be found in **Table 10V**, which summarizes baseline conditions and Full Project Variant Buildout operational energy use by source and the change in energy use as compared between the baseline conditions and Full Project Variant Buildout. Construction details can be found in **Table 8V**. Baseline energy use can be found in Ramboll's memorandum "Assessment of Energy Use Parkline Menlo Park."

Energy use is presented in mega-watt hours (MWh) for electricity, metric million British thermal units (MMBtu) for natural gas, and gallons for gasoline and diesel. To compare the total energy use for the Project and Baseline, the total energy use for all energy sources is converted from their respective units to MMBtu, which is also summarized in Summary Table A below. Energy use from electricity, gasoline and diesel were converted to MMBtu using the factors of 3.412 MMBtu/MWh, 0.12 MMBtu/gallon gasoline, and 0.14 MMBtu/gallon diesel, respectively.

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[3] PAE. Summary of Stationary Equipment Memo. February 20, 2024.

Summary Table A. Summary of Net Variant Energy Use

	Electricity	Natural Gas	Gasoline	Diesel	Total Energy Use
Units for Baseline and Project	(MWh/yr)	(MMBtu/yr)	(gallons/yr)	(gallons/yr)	(MMBtu/yr)
Baseline Operations	-3,182	450,956	65,283	9,164	449,206
Variant Operations	61,902	0	1,162,531	139,004	370,094
Variant Net Change	65,086	-450,956	1,097,248	129,840	-79,113
Units for Construction	(MWh)	(MMBtu)	(gallons)	(gallons)	(MMBtu)
Variant Construction	149	0	213,383	551,024	101,875

TABLES

Table 3V
Water Energy Use for Project Variant Operations
Parkline
Menlo Park, California

Water Use Scenario	Location	Water Use[1]	Energy Use[2]
		MGY	MWh/yr
Project Variant	Indoor	86	557
	Outdoor	22	109.8

Electricity Intensity Factor[2]	kWh/Mgal
Supply	1,182
Treat	754
Distribute	2,998
Wastewater Treatment	1,542
Sum	**6,476**

Notes:

[1] Water usage for the proposed Project Variant was obtained from the Building Energy Preliminary Estimate Memo dated February 20, 2024.

[2] Energy use for the Project Variant was calculated by multiplying the Electricity Intensity Factor and the water use. Electricity Intensity Factors by activity are CalEEMod defaults obtained from Appendix G. Indoor water use utilizes Electricitiy Intensity Factors for all activities and outdoor water use utilizies Electricity Intensity Factors for all activities except for wastewater treatment, which is not applicable to outdoor water use.

[3] The analysis presents the total usages for the Variant rather than the net increase compared to the Project.

Abbreviations:

Mgal - million gallons
kWh - kilowatt hour
MGY - Million Gallons per Year
MWh - Megawatt-hour
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model

Table 4V
Variant Operational Mobile Fuel Consumption
Parkline
Menlo Park, California

Year	Fleet Type	Annual VMT[1]	Gasoline		Diesel		Electricity		Plug-in Hybrid				Annual Fuel Consumption[3]		
		VMT/year	Percent Gasoline Vehicle Miles[2]	Gasoline Miles per Gallon[2]	Percent Diesel Vehicle Miles[2]	Diesel Miles per Gallon[2]	Percent Electric Vehicle Miles[2]	Miles per Electric kWh[3,4]	Percent Plug-in Hybrid Electric Vehicle Miles[2]	Plug-in Hybrid Miles per Electric kWh[2,4]	Percent Plug-in Hybrid Gasoline Vehicle Miles[2]	Plug-in Hybrid Gasoline Miles per Gallon[2]	Gallons of Gasoline	Gallons of Diesel	kWh
2033	Full Buildout	37,340,691	86.8%	28	3.4%	11	7.1%	2.2	1.6%	3	1.1%	29	1,162,531	114,250	1,398,828

Notes:

[1] The VMT and fleet mixes are based on data provided by Hexagon, for detailed VMT calculations see Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report. The VMT presented is the total of Project plus Variant VMT

[2] The percent of each fuel type for a given fleet and the fuel efficiency (miles per gallon, diesel miles per gallon) were calculated based on EMFAC2021 for San Mateo County. Plug-in hybrid vehicles are calculated into gasoline and electric fuel percentages by fleet and fuel economy by considering both fuel and energy consumption from plug-in hybrids. Fuel efficiency for electric and gas employees fleets are weighted by the plug-in hybrid electric or combustion VMT against the VMT from all electric or all gasoline vehicles in the employees fleet.

[3] Fuel consumption is calculated by multiplying the VMT by the fuel efficiency and percent of vehicles for each fuel type.

[4] EMFAC is showing advances in technology will allow for penetration of larger vehicles using alternative power sources into the fleet mix, which decreases the average miles per kWh on a fleetwide average basis from 2022 to 2033.

Abbreviations:

VMT - Vehicle miles traveled	kWh - Kilowatt hour

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 5V
Variant Operational Emergency Generator Fuel Consumption
Parkline
Menlo Park, California

Fuel Consumption Parameters for Large Stationary Diesel Generators[1]

Parameter	Value	Unit
Density of Diesel	7.1	lb/gal
HHV of Diesel	19,300	Btu/lb
Brake Specific Fuel Consumption (BSFC)	7,000	Btu/hp-hr

Emergency Generator Parameters[2]

Scenario	Generator Type	Number	Load Factor	Horsepower	Annual Hours of Operation	Fuel Consumption
				hp	hrs/yr	gal/yr
Project Variant	Tier 4	5	0.73	2,012	50	18,753
	Tier 2	1	0.73	603	50	1,125
	Tier 2	2	0.73	536	50	2,000
	Tier 2	1	0.73	402	50	750
	Tier 2	1	0.73	335	50	625
	Tier 2	3	0.73	268	50	1,500

Notes:

1. Density and HHV of diesel and average BSFC for large stationary diesel generators used from USEPA AP-42, Table 3.4-1.

2. Emergency generator parameters such as generator type, load factor, horsepower and annual hours of operation provided by the Project Applicant.
3. The analysis presents the total usages for the Variant rather than the net increase compared to the Project.

Abbreviations:

Btu - British Thermal Unit	hp - horsepower	lb - pound
gal - gallon	hr - hour	yr - year
HHV - high heating value		

References:

USEPA. AP-42, Vol. I, 3.4: Large Stationary Diesel and All Stationary Dual Fuel Engines. Available at: https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s04.pdf

Table 6V
Variant Construction Off-Road Equipment Energy Use
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Equipment Type[1,2]	Fuel	Number[1]	Horsepower	Load Factor	Utilization	Hours/Day[1]	Number of Equipment Days[1]	Gallons of Diesel[3]	Electricity Usage (MWh)[4]
Project Preparation	Demolition	Concrete/Industrial Saws	Electric	2	33	0.73	0.05	8	178	--	2.6
		Excavators	Diesel	3	36	0.38	0.90	8	178	2,687	--
		Rubber Tired Dozers	Diesel	2	367	0.40	0.90	8	178	19,222	--
		Water Truck	Diesel	1	--	1.00	1.00	2	178	3,637	--
	Site Preparation	Rubber Tired Dozers	Diesel	2	367	0.40	0.55	8	135	8,909	--
		Tractors/Loaders/Backhoes	Diesel	6	84	0.37	0.70	8	135	7,202	--
		Water Truck	Diesel	1	--	1.00	1.00	2	135	2,759	--
	Grading	Excavators	Diesel	2	36	0.38	0.70	8	100	783	--
		Graders	Diesel	1	148	0.41	0.75	8	100	1,860	--
		Rubber Tired Dozers	Diesel	1	367	0.40	0.25	8	100	1,500	--
		Scrapers	Diesel	2	423	0.48	0.45	8	100	7,468	--
		Tractors/Loaders/Backhoes	Diesel	2	84	0.37	0.60	8	100	1,524	--
		Water Truck	Diesel	1	--	1.00	1.00	2	100	2,043	--
Phase 1	Building Construction	Cranes	Diesel	5	367	0.29	0.95	7	799	144,439	--
		Forklifts	Diesel	4	82	0.20	0.35	8	799	7,497	--
		Generator Sets	Diesel	5	14	0.74	0.45	8	799	7,611	--
		Tractors/Loaders/Backhoes	Diesel	4	84	0.37	0.50	7	799	17,760	--
		Drill Rigs	Diesel	3	220	0.50	0.15	8	799	16,163	--
		Welders	Diesel	4	46	0.45	0.45	8	799	12,166	--
		Water Truck	Diesel	1	--	1.00	1.00	2	799	16,326	--
	Paving	Pavers	Diesel	2	81	0.42	0.85	8	48	1,134	--
		Paving Equipment	Diesel	2	89	0.36	0.85	8	48	1,068	--
		Rollers	Diesel	2	36	0.38	0.20	8	48	107	--
		Water Truck	Diesel	1	--	1.00	1.00	2	48	981	--
	Architectural Coating	Industrial Saws	Electric	1	81	0.73	0.65	6	353	--	61
		Aerial Lifts	Diesel	4	62	0.31	0.85	6	353	7,070	--
		Water Truck	Diesel	1	--	1.00	1.00	2	353	7,213	--
Phase 2	Demolition	Concrete/Industrial Saws	Electric	1	33	0.73	0.05	8	22	--	0.16
		Excavators	Diesel	1	36	0.38	0.90	8	22	111	--
		Rubber Tired Dozers	Diesel	1	367	0.40	0.90	8	22	1,188	--
		Water Truck	Diesel	1	--	1.00	1.00	2	22	450	--
	Building Construction	Cranes	Diesel	3	367	0.29	0.95	7	180	19,524	--
		Forklifts	Diesel	4	82	0.20	0.35	8	180	1,689	--
		Generator Sets	Diesel	5	14	0.74	0.45	8	180	1,715	--
		Tractors/Loaders/Backhoes	Diesel	5	84	0.37	0.50	7	180	5,001	--

Table 6V
Variant Construction Off-Road Equipment Energy Use
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Equipment Type[1,2]	Fuel	Number[1]	Horsepower	Load Factor	Utilization	Hours/Day[1]	Number of Equipment Days[1]	Gallons of Diesel[3]	Electricity Usage (MWh)[4]
Phase 2	Building Construction	Welders	Diesel	5	46	0.45	0.45	8	180	3,426	--
		Water Truck	Diesel	1	--	1.00	1.00	2	180	3,678	--
	Paving	Pavers	Diesel	2	81	0.42	0.85	8	75	1,773	--
		Paving Equipment	Diesel	2	89	0.36	0.85	8	75	1,669	--
		Rollers	Diesel	2	36	0.38	0.20	8	75	168	--
		Water Truck	Diesel	1	--	1.00	1.00	2	75	1,533	--
	Architectural Coating	Industrial Saws	Electric	1	81	0.73	0.65	6	275	--	47
		Aerial Lifts	Diesel	3	62	0.31	0.85	6	275	4,131	--
		Water Truck	Diesel	1	--	1.00	1.00	2	275	5,619	--
Phase 3	Demolition	Concrete/Industrial Saws	Electric	1	33	0.73	0.05	8	22	--	0.16
		Excavators	Diesel	1	36	0.38	0.90	8	22	111	--
		Rubber Tired Dozers	Diesel	1	367	0.40	0.90	8	22	1188	--
	Building Construction	Cranes	Diesel	1	367	0.29	0.95	7	200	7,231	--
		Forklifts	Diesel	2	82	0.20	0.35	8	200	938	--
		Generator Sets	Diesel	2	14	0.74	0.45	8	200	762	--
		Tractors/Loaders/Backhoes	Diesel	3	84	0.37	0.50	7	200	3,334	--
		Welders	Diesel	2	46	0.45	0.45	8	200	1,523	--
	Paving	Pavers	Diesel	1	81	0.42	0.85	8	30	355	--
		Paving Equipment	Diesel	1	89	0.36	0.85	8	30	334	--
		Rollers	Diesel	1	36	0.50	0.20	8	30	44	--
	Architectural Coating	Industrial Saws	Electric	1	81	0.73	0.65	6	220	--	38
		Aerial Lifts	Diesel	2	62	0.31	0.85	6	220	2,203	--
Water Reservoir	Demolition	Concrete/Industrial Saws	Electric	1	33	0.73	0.05	8	1	--	0.0072
		Excavators	Diesel	1	36	0.38	0.90	8	1	5.0	--
		Rubber Tired Dozers	Diesel	1	367	0.40	0.90	8	1	54	--
	Site Preparation	Rubber Tired Dozers	Diesel	1	367	0.40	0.55	8	1	33	--
		Tractors/Loaders/Backhoes	Diesel	1	84	0.37	0.70	8	1	8.9	--
	Excavation	Excavators	Diesel	2	36	0.38	0.85	8	63	599	--
		Graders	Diesel	1	148	0.41	0.25	8	63	391	--
		Rubber Tired Dozers	Diesel	1	367	0.40	0.10	8	63	378	--
		Drill Rigs	Diesel	2	221	0.50	0.70	8	63	3,983	--
	Building Construction	Cranes	Diesel	1	367	0.29	0.15	7	285	1,627	--
		Forklifts	Diesel	1	82	0.20	0.35	8	285	669	--
		Generator Sets	Diesel	1	14	0.74	0.45	8	285	543	--
		Tractors/Loaders/Backhoes	Diesel	1	84	0.37	0.35	7	285	1,109	--

Table 6V
Variant Construction Off-Road Equipment Energy Use
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Equipment Type[1,2]	Fuel	Number[1]	Horsepower	Load Factor	Utilization	Hours/Day[1]	Number of Equipment Days[1]	Gallons of Diesel[3]	Electricity Usage (MWh)[4]
Water Reservoir	Paving	Pavers	Diesel	1	81	0.42	0.85	8	40	473	--
		Paving Equipment	Diesel	1	89	0.36	0.85	8	40	445	--
		Rollers	Diesel	1	36	0.38	0.20	8	40	45	--
	Architectural Coating	Industrial Saws	Electric	1	81	0.73	0.65	6	60	--	10
		Aerial Lifts	Diesel	1	62	0.31	0.85	6	60	300	--
									Total	**368,826**	**149**

Notes:

[1] All construction equipment information provided by the Project Sponsor.

[2] The water truck is assumed to be a heavy heavy-duty diesel truck (HHDT).

[3] Gasoline usage is calculated by taking the horsepower-hours for each piece of equipment (calculated as horsepower * usage hours * load factor) and multiplying it by the gallons of diesel consumption per horsepower-hour consistent with USEPA AP-42 diesel fuel data in Table 3.4.1, which cites an average brake-specific fuel consumption (BSFC) of 7,000 Btu/hp-hr, a heating value of 19,300 Btu/lb, and density of 7.1 lb/gal.

[4] Electricity usage is calculated by taking the horsepower-hours for each piece of equipment (calculated as horsepower * usage hours * load factor) and converting to megawatt-hours.

[5] The analysis presents the total usages for the Variant rather than the net increase compared to the Project.

Abbreviations:

Btu - British Thermal Units	hp-hr - horsepower-hour
CalEEMod - CALifornia Emissions Estimator Model	lb - pound
gal - gallon	MWh - Megawatt-hour

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

USEPA. AP-42, Vol. I, 3.4: Large Stationary and All Stationary Dual Fuel Engines. Available at: https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s04.pdf

Table 7V
Variant Construction On-Road Vehicle Fuel Use
Parkline
Menlo Park, California

Construction Phase	Construction Subphase	Year	One-Way Trips Per Subphase[1]			Annual VMT[1]			Gallons of Fuel Consumption[2]		
			Worker	Vendor	Hauling	Worker	Vendor	Hauling	Worker (Gasoline)	Vendor (Diesel)	Hauling (Diesel)
Project Preparation	Demolition	2025	1,686	0	3,750	19,725	0	59,195	718	0	10,925
	Demolition	2026	450	0	3,750	5,266	0	15,805	188	0	2,868
	Site Preparation	2025	2,518	434	0	29,463	3,647	0	1,073	552	0
	Site Preparation	2026	1,397	241	0	16,343	2,023	0	583	302	0
	Grading	2026	2,000	1,000	17,692	23,400	8,400	353,840	835	1,255	64,217
Phase 1	Building Construction	2026	73,161	4,313	15,590	855,989	36,226	60,106	30,533	5,414	10,908
	Building Construction	2027	119,214	7,027	15,590	1,394,803	59,030	97,941	48,834	8,710	17,464
	Building Construction	2028	119,541	7,047	15,590	1,398,625	59,191	98,209	48,154	8,618	17,192
	Building Construction	2029	67,609	3,985	15,590	791,025	33,477	55,544	26,823	4,812	9,553
	Architectural Coating	2029	14,084	1,352	0	164,787	11,358	0	5,588	1,633	0
	Architectural Coating	2030	30,041	2,884	0	351,476	24,225	0	11,756	3,438	0
	Paving	2030	305	244	0	3,574	2,053	0	120	291	0
	Paving	2031	415	332	0	4,850	2,786	0	161	390	0
Phase 2	Demolition	2031	88	0	555	1,030	0	11,100	34	0	1,842
	Building Construction	2031	70,200	3,960	1,150	821,340	33,264	23,000	27,188	4,659	3,817
	Architectural Coating	2031	1,071	75	0	12,536	630	0	415	88	0
	Architectural Coating	2032	26,143	1,830	0	305,871	15,372	0	10,013	2,126	0
	Architectural Coating	2033	286	20	0	3,343	168	0	108	23	0
	Paving	2033	600	675	0	7,020	5,670	0	228	774	0
Phase 3	Demolition	2031	85	0	98	995	0	1,895	33	0	314
	Demolition	2032	2.9	0	98	34	0	65	1.1	0	11
	Building Construction	2032	24,000	3,000	250	280,800	25,200	5,000	9,192	3,485	815
	Architectural Coating	2032	5,768	425	0	67,484	3,570	0	2,209	494	0
	Architectural Coating	2033	15,132	1,115	0	177,046	9,366	0	5,738	1,279	0
	Paving	2033	240	150	0	2,808	1,260	0	91	172	0
Water Reservoir	Demolition	2026	5.0	0	2.0	59	0	40	2.1	0	7.3
	Site Preparation	2026	5.0	5.0	0	59	42	0	2.1	6.3	0
	Excavation	2026	630	189	2,610	7,371	1,588	52,200	263	237	9,474
	Building Construction	2026	5,166	1,446	614	60,443	12,151	8,904	2,156	1,816	1,616
	Building Construction	2027	1,959	549	614	22,920	4,607	3,376	802	680	602
	Architectural Coating	2027	1,200	480	0	14,040	4,032	0	492	595	0
	Paving	2027	200	200	0	2,340	1,680	0	82	248	0
								Totals	**213,383**	**43,087**	**139,111**

Notes

[1] Total miles based on trip generation provided by Project Applicant and CalEEMod default trip distance by trip type as calculated in the Air Quality, Greenhouse Gas, and Health Risk Assessment Technical Report.

[2] Fuel usage based on VMT data and fleet-average fuel consumption in gallons per mile from EMFAC2021 for CY 2025 through 2033 in San Mateo County. Consistent with CalEEMod, Hauling assumes 100% HHDT, Vendor assumes 50% HHDT and 50% MHDT, and Worker assumes 25% LDA, 50% LDT1, and 25% LDT2 vehicles. It is assumed that worker vehicles use gasoline while vendor and hauling vehicles use diesel. LDT1 refers to light-duty trucks with a loaded vehicle weight of 3,750 pounds while LDT2 refers to light-duty trucks with a loaded vehicle weight over 3,750 pounds.

[3] The analysis presents the total usages for the Variant rather than the net increase compared to the Project.

Abbreviations:

CalEEMod - California Emissions Estimator Model
EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light duty auto
LDT - light duty truck
MHDT - medium-heavy duty truck
HHDT - heavy-heavy duty truck
VMT - vehicle miles traveled
CY - calendar year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 8V
Summary of Total Variant Construction Energy Use
Parkline
Menlo Park, California

Source		Units	Project Variant Construction Usage	MMBtu[3]
Electricity	Off-Road Construction Equipment[1]	MWh	149	507
Diesel	On-Road Construction Trips[2]	gallons	182,198	25,031
	Off-Road Construction Equipment[1]	gallons	368,826	50,670
Gasoline	On-Road Construction Trips[2]	gallons	213,383	25,667
			Total	**101,875**

Notes:

[1] Off-road equipment diesel fuel usage was calculated using a fuel usage rate of 0.051 gallons of diesel per horsepower (hp)-hour, consistent with diesel conversion factors given in USEPA AP-42 Table 3.4.1. See Table 6V for more details on the methodology.

[2] On-road mobile source fuel use based on vehicle miles traveled (VMT) for all years of construction and fleet-average fuel consumption in gallons per mile from EMFAC2021 for CY 2025 through 2033 in San Mateo County. See Table 7V for more details on the methodology.

[3] MWh of electricity, gallons of diesel, and gallons of gasoline were converted to MMBtu using a factor of 3.412 MMBtu/MWh, 0.14 MMBtu/gallon diesel, 0.12 MMBtu/gallon gasoline respectively.

[4] The analysis presents the total usages for the Variant rather than the net increase compared to the Project.

Abbreviations:

CY - calendar year
EMFAC2021 - California Air Resources Board EMission FACtor model
hp - horsepower
MMBtu - metric million British thermal unit
MWh - megawatt-hour
USEPA - United States Environmental Protection Agency
VMT - vehicle miles traveled

References:

USEPA. 1996. AP 42. Compilation of Air Pollutant Emission Factors, Volume 1. Fifth Edition. Chapter 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines. Available online at: http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s04.pdf. Accessed March 2019.

Table 9V
Variant Operational Energy Use
Parkline
Menlo Park, California

Land Use Type	Electricity Use[2]
	MWh/yr
Commercial - Office/R&D	47,167
Residential Apartments	8,310
Retail	47
Non-Residential Parking Garage[3]	1,824
Residential Parking Garage[3]	2,270
Non-Residential Surface Parking[3]	220
Recreational	0
Full Buildout	59,838
Baseline[4]	20,434

Notes:

[1] The Project Variant would not construct natural gas infrastructure or use natural gas for operations; therefore, no natural gas usage is expected for Project Variant operations

[2] Electricity usages for the proposed Project Variant were obtained from the Building Energy Preliminary Estimate Memo dated February 20, 2024.

[3] Electricity usages for parking land use types account for both building energy use and EV charging, as described in the Building Energy Preliminary Estimate Memo dated February 20, 2024. EV charging accounts for 58.8% of the parking electricity usage, which is subject to change depending on demand.

[4] Baseline electricity usage for the site is shown for reference

[5] The analysis presents the total usages for the Variant rather than the net increase compared to the Project.

Abbreviations:

MWh - Megawatt hours

yr - year

EV - electric vehicle

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 10V
Summary of Baseline and Variant Operational Energy Use
Parkline
Menlo Park, California

Summary Operational Energy Usage

Operational Energy Use	Baseline				Variant				Net Operational Energy Use[1]			
	Electricity	Natural Gas	Gasoline	Diesel	Electricity	Natural Gas	Gasoline	Diesel	Electricity	Natural Gas	Gasoline	Diesel
	MWh	MMBtu	gallon	gallons	MWh	MMBtu	gallons	gallons	MWh	MMBtu	gallons	gallons
Building Energy Use[2]	-3,486	450,956	--	--	59,838	--	--	--	63,324	-450,956	--	--
Water Energy Use[3]	276	--	--	--	667	--	--	--	391	--	--	--
Mobile Energy Use[4]	27	--	65,283	6,006	1,399	--	1,162,531	114,250	1,372	--	1,097,248	108,244
Stationary Source Energy Use[5]	--	--	--	3,158	--	--	--	24,754	--	--	--	21,596
Total	**-3,182**	**450,956**	**65,283**	**9,164**	**61,904**	**0**	**1,162,531**	**139,004**	**65,086**	**-450,956**	**1,097,248**	**129,840**

Summary Operational Energy Usage in MMBtu[6]

Operational Energy Use	Baseline				Variant				Net Operational Energy Use[1]			
	Electricity	Natural Gas	Gasoline	Diesel	Electricity	Natural Gas	Gasoline	Diesel	Electricity	Natural Gas	Gasoline	Diesel
	MMBtu											
Building Energy Use[2]	-11,893	450,956	--	--	204,168	--	--	--	216,061	-450,956	--	--
Water Energy Use[3]	942	--	--	--	2,276	--	--	--	1,334	--	--	--
Mobile Energy Use[4]	92	--	7,849	825	4,773	--	139,780	15,696	4,681	--	131,931	14,871
Stationary Source Energy Use[5]	--	--	--	434	--	--	--	3,401	--	--	--	2,967
All Sources	**449,206**				**370,094**				**-79,113**			

Notes:

1. Net operational energy use is calculated as Variant energy use minus Baseline energy use.
2. Energy use values are obtained from utility bills provided by the Project Applicant for existing use. Natural gas usage for the cogenerator includes electricity that is generated for onsite use and electricity that is exported to PG&E. Existing electricity usage also includes electricity imported from PG&E. Existing electricity and natural gas usage account for energy that buildings P, S, and T would need to import from PG&E after removal of the cogeneration plant. Electricity usages for the proposed Project Variant were obtained from the Building Energy Preliminary Estimate Memo dated February 20, 2024. Baseline energy use is summarized in Table 2 in Ramboll's Assessment of Energy Use for the Parkline Project Memorandum, dated January 26, 2024, and Variant operational energy use is summarized in Table 9V.
3. Energy use from water for both the Baseline and Project Variant conditions were calculated using the Electricity Intensity Factors (kWh/Mgal) from CalEEMod. Baseline water usage (MGY) was calculated using utility statements from Menlo Park Municipal Water provided to Ramboll on October 13, 2022. Variant water usage was obtained from the Building Energy Preliminary Estimate Memo dated February 20, 2024. The energy use in kWh was converted to MWh, as shown in Table 3V.
4. Mobile energy use calculations are summarized in Table 4V.
5. Stationary sources include 3 emergency generators for the baseline that would be removed as part of the Project Variant, and 13 new emergency generators that would be added for the Project Variant. An additional 4 existing emergency generators would continue to operate, and were not analyzed because the Project Variant would not affect their continuing operation. Diesel usage from emergency generators is based on emergency generator hours of operation, horsepower, and USEPA default parameters for large stationary diesel generators, as summarized in Table 5V.
6. MWh of electricity, gallons of diesel, and gallons of gasoline were converted to MMBtu using a factor of 3.412 MMBtu/MWh, 0.14 MMBtu/gallon diesel, 0.12 MMBtu/gallon gasoline respectively.

Abbreviations

CalEEMod - California Emissions Estimator Model	MMBtu - Metric Million British Thermal Units
kWh - kilowatt-hour	MWh - Megawatt-hour
Mgal - million gallons	yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/