MENLO UPTOWN PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE NO. 2019110498

MENLO PARK, CALIFORNIA

LSA

December 2020

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NOTICE OF AVAILABILITY
ENVIRONMENTAL IMPACT REPORT
MENLO UPTOWN PROJECT
SCH NO. 2019110498
CITY OF MENLO PARK

CITY OF
MENLO PARK

Date: December 4, 2020

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

From: Tom Smith
Senior Planner
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

Subject: **Notice of Availability (NOA) of a Draft Environmental Impact Report for the Menlo Uptown Project**

Lead Agency: City of Menlo Park, Planning Division

Project Title: Menlo Uptown Project

Project Area: Bayfront Area, City of Menlo Park

Notice is hereby given that the City of Menlo Park (City), as the lead agency under the California Environmental Quality Act, has prepared a Draft Environmental Impact Report (EIR) for the proposed Menlo Uptown Project (proposed project). In accordance with Section 15087 of the CEQA Guidelines, the City has prepared this Notice of Availability (NOA) to invite agencies, organizations, and interested parties to provide comments on the Draft EIR.

PUBLIC REVIEW PERIOD: December 4, 2020 – February 2, 2021

Comments on the Draft EIR will accepted as part of the Planning Commission meeting on **January 11, 2021,** at **7:00 p.m.** In response to the ongoing COVID-19 pandemic, the Planning Commission meeting will be held remotely via GoToWebinar or Zoom, which can be accessed at menlopark.org/PlanningCommission.

Written comments on the Draft EIR may also be sent to:

Tom Smith
City of Menlo Park
Community Development Department, Planning Division
701 Laurel Street
Menlo Park, CA 94025
tasmith@menlopark.org
Phone: 650.330.6730

Comments on the Draft EIR are due no later than the close of the Draft EIR review period (5:00 p.m. on **Tuesday, February 2, 2021**). However, we would appreciate your response at the earliest possible date. Please send your written comments to Tom Smith at the address shown above or by email to tasmith@menlopark.org with “Menlo Uptown Project EIR” as the subject. Public agencies that provide comments are asked to include a contact person for the agency.

The Draft EIR is available online at: https://www.menlopark.org/1576/Menlo-Uptown. A hard copy is also available for a curbside pickup at the Menlo Park Main Library. Please visit menlopark.org/library for more information on how to reserve this document.. If you require additional assistance, please contact Tom Smith at tasmith@menlopark.org.

PROJECT LOCATION AND EXISTING CONDITIONS: The project site is located north of US Highway 101 (US 101) in the City of Menlo Park. The site is bounded by Constitution Drive to the north, the two-story Synergy Badminton Club and a single-story office building to the east, Jefferson Drive to the south, and office uses and Chrysler Drive to the west.

The project site is designated Mixed Use Residential within the Bayfront Area on the City’s General Plan Land Use Designations Map and is within the Residential-Mixed Use-Bonus (R-MU-B) zoning district. The generally-level site is currently developed with two single-story commercial office buildings and a single-story industrial building totaling 110,356 square feet. The existing buildings on the project site were constructed between 1963 and 1964 and are currently occupied by commercial and industrial tenants. A total of 221 parking spaces are provided across all three parcels. Vegetation on the project site consists of a small landscaped area along the southern border of the project site and trees along both the southern and northern borders. A total of 33 trees, including 3 street trees and 10 heritage-sized trees are located on the project site.

PROJECT DESCRIPTION: The proposed project would include the demolition of approximately 110,356 square feet of existing office and industrial space and redevelopment of the project site with a maximum of 441 multi-family rental units (Buildings A and B) and 42 for-sale townhome units (Building Site TH1) totaling approximately 471,986 square feet of gross floor area, and approximately 2,940 square feet of office space, as well as associated open space, circulation and parking, and infrastructure improvements. The project sponsor is currently proposing that 15 percent of the units (or 73 units) would be provided to below market rate (BMR) households in compliance with the City’s BMR Housing Program Ordinance, Menlo Park Municipal Code, Chapter 16.96, and the City’s BMR Housing Program Guidelines.

The ground floor of each building would be raised three to five feet above grade to accommodate flood plain design requirements. The average building height for all proposed buildings on the site would be approximately 62.5 feet, and a maximum height of approximately 84 feet, 10 inches at the tallest point of the roofline for the multi-family buildings.

Buildings A and B would both include at-grade, two-level, up to approximately 68,500-square-foot, 242-space parking garages with automated lifts, for a total of 484 parking spaces. Of the 42 units in Building Site TH1, 18 would include a one-car garage, and 24 would include a two-car garage, for a total of 66 residential parking spaces. Three additional parking spaces would be provided on the internal roadway, which would result in a total of 69 parking spaces.

A total of approximately 52,439 square feet of a mix of publicly accessible, common, and private open space would be provided with Buildings A and B, including a plaza on the ground floor, amenity decks on the third floors, and roof terraces on the seventh floors. A ground-floor pedestrian paseo would separate Buildings A and B from Building Site TH1 and provide a connection between Constitution Drive and Jefferson Drive. Building Site TH1 would include a total of 34,513 square feet of open space, including private balconies within each townhome unit and a common open space near the center of Building Site TH1.

PROJECT APPROVALS: The following City discretionary approvals would be required prior to development at the project site:

- EIR Certification
- Adoption of Findings
- Use Permit
- Architectural Control
- Lot Line Adjustment
- Major Subdivision
- Heritage Tree Removal Permits
- Below Market Rate Housing Agreement

In order to qualify for bonus-level development within the R-MU-B zoning district, the proposed project will also be required to complete an appraisal process to identify the value of the community amenities to be provided in exchange for the opportunity to develop at the bonus level. The project sponsor's community amenity proposal is subject to review and approval by the Planning Commission and/or City Council. There will be a fiscal impact analysis conducted regarding the proposed project.

RESPONSIBLE AGENCIES: The City requests the following agencies review the analysis within the Draft EIR regarding information relevant to your agency's statutory responsibilities in connection with the proposed project, pursuant to CEQA Guidelines Section 15086. Your agency may need to use the EIR prepared by the City when considering any permits or other approvals that your agency must issue for the proposed project.

- Pacific Gas & Electric
- California Department of Transportation
- California Department of Toxic Substance Control
- California Regional Water Quality Control Board
- City/County Association of Governments
- Bay Area Air Quality Management District
- San Mateo County Transportation Authority
- San Mateo County Environmental Health Division
- Menlo Park Fire Protection District
- West Bay Sanitary District

INTRODUCTION TO EIR: The project site is within the ConnectMenlo study area. ConnectMenlo, which updated the City's General Plan Land Use and Circulation Elements and rezoned the land in the M-2 Area (now referred to as the Bayfront Area), was approved on November 29, 2016. Because the City's General Plan is a long-range planning document, the ConnectMenlo Final EIR was prepared as a program EIR, pursuant to CEQA Guidelines Section 15168. Section 15168(d) of the CEQA Guidelines provides information for simplifying the preparation of subsequent environmental documents by incorporating by reference analyses and discussions. CEQA Guidelines Section 15162(d) states that where an EIR has been prepared and certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to the effects that were not analyzed as significant in the prior EIR or susceptible to substantial reduction or avoidance.

An Initial Study for the project, which is also available for review online at https://www.menlopark.org/DocumentCenter/View/23536/Menlo-Uptown-Initial-Study, was prepared to evaluate the potential environmental impacts of the proposed project and determine what level of additional environmental review would be appropriate, and was released on November 25, 2019, with a public review period from November 25, 2019, through January 10, 2020. In accordance with the requirements outlined in Section 15168 of the CEQA Guidelines, the project-level Initial Study was prepared to disclose the relevant impacts and mitigation measures addressed in the certified program-level ConnectMenlo EIR and discuss whether the project is within the parameters of the ConnectMenlo EIR or additional analysis would be necessary. In addition, as a result of the settlement agreement between the City of Menlo Park and the City of East Palo Alto, housing and transportation are required to be analyzed. Based on the findings of the Initial Study, a Draft EIR was prepared to address potential physical environmental effects of the proposed project for the following topics: Population and Housing; Transportation; Air Quality; Greenhouse Gas Emissions; and Noise (Operation Period Traffic and Stationary Noise).

SIGNIFICANT ENVIRONMENTAL EFFECTS: The Draft EIR does not identify any significant and unavoidable environmental impacts from the proposed project. The proposed project would result in potentially significant impacts related to Air Quality and Noise, but these impacts would be reduced to a less than significant level with implementation of identified mitigation measures. Impacts related to Population and Housing, Transportation, and Greenhouse Gas Emissions would be less than significant.

HAZARDS MATERIALS AND HAZARDOUS WASTE SITES: The project site is not located on any list of hazardous materials waste sites compiled pursuant to Section 65962.5 of the Government Code.

EIR PROCESS: In accordance with CEQA Guidelines Section 15105(a), the Draft EIR will be available for public review and comment for a 45-day review period, which has been extended to 60 days to account for the winter holidays and the closure of City facilities from December 24, 2020, until January 4, 2021. Following the close of the public review period on February 2, 2021, the City will prepare a Final EIR, which will include responses to all substantive comments received on the Draft EIR. The Draft EIR and Final EIR will be considered by the City Council in making the decision to certify the EIR and final action on the project.

Thomas Smith

Tom Smith
City of Menlo Park

December 4, 2020

MENLO UPTOWN PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE NO. 2019110498

MENLO PARK, CALIFORNIA

Submitted to:

City of Menlo Park
Community Development Department
Planning Division
701 Laurel Street
Menlo Park, California 94025

Prepared by:

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Project No. CMK1902

LSA

December 2020

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APPENDICES

(Printed separately and included on a CD on the inside back cover of the printed EIR)

FIGURES AND TABLES

FIGURES

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LIST OF ABBREVIATIONS AND ACRONYMS

°C	Celsius
°F	Fahrenheit
µg /m^3	micrograms per cubic meter
AADT	annual average daily traffic
AB 1493	Assembly Bill 1493, California Vehicular Emissions: Greenhouse Gases (2002)
AB 197	Assembly Bill 197
AB 32	Assembly Bill 32, California Global Warming Solutions Act (2006)
ABAG	Association of Bay Area Governments
AC	air conditioning
AC Transit	Alameda-Contra Costa County Transit District
ACR	American Carbon Registry
AMI	average median income
APS	Alternative Planning Strategy
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Bay Area	San Francisco Bay Area
BMPs	best management practices
BMR	below market rate
C/CAG	City/County Association of Governments of San Mateo County
C_2F_6	Hexafluoromethane
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency

CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CAR	Climate Action Reserve
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation
CAT	Climate Action Team
CBIA	California Building Industry Association
CCAA	California Clean Air Act
Census	United States Census Bureau
CEQA	California Environmental Quality Act
CF_4	Tetrafluoromethane
CH_4	Methane
chloroethene	vinyl chloride
City	City of Menlo Park (incorporated municipality)
city	geographical area
Class I	bike path, multi-use pathway
Class II	bike lane
Class III	bike route
Class IV	protected bike lane
Clean Air Plan	Bay Area Clean Air Plan
CLUP	Comprehensive Land Use Plan
CMP	Congestion Management Plan
CNEL	community noise equivalent level

CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalents
ConnectMenlo	City of Menlo Park General Plan: ConnectMenlo, Menlo Park Land Use and Mobility Update
ConnectMenlo EIR	ConnectMenlo Final Environmental Impact Report
dB	decibel
DB, DB1	Dumbarton Express
dBA	A-weighted decibels
DOF	Department of Finance
DPR	Department of Parks and Recreation
EIR	Environmental Impact Report
EPP	Environmental Preferable Purchasing Policy
ESA	Environmental Site Assessment
EV	electric vehicle
EVA	emergency vehicle access
FAR	floor area ratio
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
GHG	greenhouse gas(es)/emissions
GSP	Gross State Product
GWP	Global Warming Potential
HAA	Housing Accountability Act

HARP2	Hotspots Analysis Reporting Program
HCA	Housing Crisis Act
HCD	Housing and Community Development
HFCs	Hydrofluorocarbons
HNA	Housing Needs Assessment
HOV	high occupancy vehicle
HRA	Health Risk Assessment
HVAC	air conditioning
I-280	Interstate 280
IC	internal combustion
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
L_{dn}	noise level
LEED	Leadership in Energy and Environmental Design
L_{eq}	sound level
L_{max}	maximum noise level
LOS	level of service
LTS	less-than-significant impact
LTS/M	less than significant with mitigation
MEI	maximally exposed individual
MERV	minimum efficiency reporting value
mg/m^3	milligrams per cubic meter
MLD	most likely descendant
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons

MPFPD	Menlo Park Fire Protection District
mph	miles per hour
MPOs	Metropolitan Planning Organizations
MPPD	Menlo Park Police Department
MTC	Metropolitan Transportation Commission
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NB	northbound
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
O	Office
O_3	ozone
OPR	Governor's Office of Planning and Research
Pb	lead
PFCs	Perfluorocarbons
PG&E	Pacific Gas & Electric
PM	particulate matter
PM_{10}	Particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in size
POTWs	publicly owned treatment works
ppb	parts per billion

ppm	parts per million
proposed project	Menlo Uptown Project
PS	potentially significant impact
PSA	Permit Streamlining Act
RHNA	Regional Housing Needs Allocation
R-MU	Residential Mixed Use
R-MU-B	Residential Mixed Use Bonus
ROG	reactive organic gases
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SamTrans	San Mateo County Transit District
SB 32	Senate Bill 32, California Global Warming Solutions Act (2016)
SB 100	Senate Bill 100, California Renewable Portfolio Standard (2018)
SB 330	Senate Bill 330, Housing Crisis Act (2019)
SB 350	Senate Bill 350, Clean Energy and Pollution Reduction Act (2015)
SB 743	Senate Bill 743, Modernizing Transportation Analysis (2013)
SCS	Sustainable Community Strategies
SF_6	Sulfur Hexafluoride
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SO_2	sulfur dioxide
SOV	single-occupancy vehicle
SO_x	sulfur oxides
SR 82	State Route 82 (El Camino Real)

SR 84	State Route 84 (Bayfront Expressway)
SR 109	State Route 109 (University Avenue)
SR 114	State Route 114 (Willow Road)
SU	significant unavoidable impact
TACs	toxic air contaminants
TAFH	time away from home
TAZ	transportation analysis zones
TDM	Transportation Demand Management
TIA	Transportation Impact Analysis
TIF	Transportation Impact Fee
TMA	Transportation Management Association
UNFCCC	United Nations Framework Convention on Climate Change
UPRR	Union Pacific Railroad
US 101	US Highway 101 (Bayshore Freeway)
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
WHO	World Health Organization

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1.0 INTRODUCTION

1.1 PURPOSE OF THIS EIR

In compliance with the California Environmental Quality Act (CEQA), this Environmental Impact Report (EIR) describes the potential environmental impacts of the proposed Menlo Uptown Project (project) submitted by Uptown Menlo Park Venture, LLC (the project sponsor). The City of Menlo Park (City) is the CEQA Lead Agency for environmental review.

The purpose of this EIR is to inform City decision-makers, responsible agencies, and the general public about the proposed project and the potential physical environmental consequences of project implementation. This EIR also examines alternatives to the proposed project and recommends mitigation measures to reduce or avoid potentially significant physical environmental impacts, to the extent feasible. This EIR will be used as an informational document by the City's Planning Commission and/or City Council, responsible agencies, and the public in their review of the proposed project and associated approvals described below and in more detail in Chapter 3.0, Project Description.

1.2 PROPOSED PROJECT

The approximately 4.83-acre project site is located at 141 Jefferson Drive, 180 Constitution Drive, and 186 Constitution Drive within the Bayfront Area of the City of Menlo Park, San Mateo County. The project site is currently bounded by Constitution Drive and office and manufacturing uses to the north, the two-story Synergy Badminton Club and a single-story office building[1] to the east, Jefferson Drive and the TIDE Academy to the south, and office uses and Chrysler Drive to the west. The project site is currently developed with two single-story commercial office buildings and a single-story industrial building totaling approximately 110,356 square feet.

The proposed project would result in redevelopment of the project site with a maximum of 441 multi-family rental units within two buildings (Buildings A and B) and 42 for-sale townhomes (Building Site TH1), totaling approximately 471,986 square feet of residential use, as well as approximately 2,940 square feet of office space, associated open space, circulation and parking, and infrastructure improvements. The project sponsor is currently proposing that 15 percent or a minimum of 73 of the total number of units across the entire project, with a mix of apartments and townhomes, would comply with the City's Below Market Rate Housing Program Ordinance, Chapter 16.96, and the City's Below Market Rate Housing Program Guidelines.

Discretionary actions by the City that would be necessary for development of the proposed project include certification of the EIR and adoption of Findings, a Use Permit, Architectural Control, a Lot Line Adjustment, Major Subdivision, Heritage Tree Removal Permit, and Below Market Rate Housing Agreement.

1 The City has received a development application, which is currently proposed to result in the construction of an eight-story, approximately 158-unit mixed-use building with approximately 14,442 square feet of ground floor commercial space, for the neighboring property at 165 Jefferson Drive (known as the Menlo Flats Project).

1.3 EIR SCOPE

The City circulated a Notice of Preparation (NOP) notifying responsible agencies and interested parties that an EIR would be prepared for the proposed project and indicated the environmental topics anticipated to be addressed in the EIR. An Initial Study was circulated with the NOP. The NOP was published on November 25, 2019, and was mailed to public agencies, organizations, and individuals likely to be interested in the potential impacts of the proposed project. A scoping session was held as a public meeting before the Planning Commission on December 16, 2019, to solicit feedback regarding the scope and content of the EIR. Both verbal comments during the scoping session and eight written comments on the NOP were received by the City and considered during preparation of this EIR. Copies of the NOP, comment letters, and a transcription of the verbal comments received are included in Appendix A.

Based on the preliminary analysis provided in the Initial Study (Appendix B), consultation with City staff, and review of the comments received during the scoping process, the following environmental topics are addressed in Chapter 4.0, Setting, Impacts, and Mitigation Measures, of this EIR:

- 4.1 Population and Housing
- 4.2 Transportation
- 4.3 Air Quality
- 4.4 Greenhouse Gas Emissions
- 4.5 Noise (Operation Period Traffic and Stationary Noise)

It has been determined that the following potential environmental effects of the proposed project would be less than significant or have no impact; and therefore, these topics are not further studied in detail in this EIR: aesthetics, agriculture and forestry resources, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise (construction-period and aircraft-related noise), public services, recreation, utilities and service systems, and wildfire. Each of these topic areas is addressed in the Initial Study (Appendix B). Although the Initial Study identified tribal cultural resources as a potential topic to be analyzed in the EIR, further evaluation determined that impacts to tribal cultural resources would be less than significant; therefore, this topic is not included as a separate section of the EIR. Chapter 5.0, Other CEQA Considerations, of this EIR provides a summary of the analysis and conclusions for each environmental topic evaluated in the Initial Study and not further addressed in Chapter 4.0. Given that many topic areas were scoped out and only five topic areas will be evaluated in detail in this EIR, the document may also be referred to as a focused EIR. The analysis provided in this EIR and the Initial Study tier from the certified ConnectMenlo Final Environmental Impact Report (ConnectMenlo Final EIR)[2,3] as appropriate and as further described in each topical section.

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2 Menlo Park, City of. 2016. *ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Area Zoning Update, Public Review Draft Environmental Impact Report*, SCH#2015062054. June 1.

3 Menlo Park, City of. 2016. *ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Area Zoning Update, Response to Comments Document*, SCH#2015062054. October 10.

1.4 REPORT ORGANIZATION

This EIR is organized into the following chapters:

- **Chapter 1.0 – Introduction:** Discusses the overall EIR purpose, provides a summary of the proposed project, describes the EIR scope, and summarizes the organization of the EIR.

- **Chapter 2.0 – Summary:** Provides a summary of the impacts that would result from implementation of the proposed project, describes mitigation measures recommended to reduce or avoid significant environmental impacts, and describes the alternatives to the proposed project.

- **Chapter 3.0 – Project Description:** Provides a description of the project site, project background, project objectives, proposed project, and uses of this EIR.

- **Chapter 4.0 – Setting, Impacts, and Mitigation Measures:** Describes the following for each technical environmental topic: existing conditions (setting), summary of ConnectMenlo Final EIR impacts and required mitigation measures, potential environmental impacts of the proposed project and their level of significance, and mitigation measures recommended to reduce or avoid identified potential impacts. Potential cumulative impacts are also addressed in each topical section. Potential adverse impacts are identified by levels of significance, as follows: less-than-significant impact (LTS), potentially significant impact (PS), less-than-significant with mitigation (LTS/M), and significant and unavoidable impact (SU). The significance of each potential impact is categorized before and after implementation of any recommended mitigation measure(s).

- **Chapter 5.0 – Other CEQA Considerations:** Provides an analysis of effects found not to be significant, including the Initial Study findings; growth-inducing impacts; unavoidable significant environmental impacts; and significant irreversible changes.

- **Chapter 6.0 – Alternatives:** Provides an evaluation of two alternative(s) to the proposed project in addition to the CEQA-required No Project alternative.

- **Chapter 7.0 – Report Preparation:** Identifies preparers of the EIR and references used.

- **Appendices:** The appendices contain the NOP and comment letters (Appendix A); the Initial Study (Appendix B); an Addendum to the Initial Study to address revisions made after its publication (Appendix C); a Housing Needs Assessment (Appendix D); a Transportation Impact Analysis (Appendix E); Air Quality and Greenhouse Gas Emissions Data (Appendix F); Health Risk Assessment Data (Appendix G); and Noise Data (Appendix H). All appendices are included on a compact disc on the inside back cover of the printed EIR.

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2.0 SUMMARY

This chapter provides an overview of the proposed project and findings identified in this EIR, prepared pursuant to CEQA, including a discussion of alternatives and cumulative project impacts.

2.1 PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the potential environmental consequences of implementation (i.e., construction and operation) of the proposed Menlo Uptown Project (project) submitted by Uptown Menlo Park Venture, LLC (project sponsor). The approximately 4.83-acre project site is located at 141 Jefferson Drive, 180 Constitution Drive, and 186 Constitution Drive within the City of Menlo Park, San Mateo County. The project site is currently bounded by Constitution Drive to the north, the two-story Synergy Badminton Club and a single-story office building[1] to the east, Jefferson Drive and the TIDE Academy to the south, and office and industrial uses and Chrysler Drive to the west. The project site is currently developed with two single-story commercial office buildings and a single-story industrial building totaling approximately 110,356 square feet.

The proposed project would result in the redevelopment of the project site with a maximum of 441 multi-family residential units across two buildings and 42 townhome units totaling approximately 471,986 square feet of gross floor area, including approximately 2,940 square feet of ground floor office space, as well as associated open space, circulation and parking, and infrastructure improvements. As described in Section 3.0, Project Description, the City's Below Market Rate Housing Program, Menlo Park Municipal Code, Chapter 16.96 (BMR Housing Program) requires residential development projects to provide 15 percent affordable units. The proposed project includes 73 below market rate (BMR) units, which is 15 percent of 483 units. Affordable units would consist of a mix of low income apartment units and moderate income townhome units.[2]

The ground floor of each building would be raised three to five feet above grade to accommodate flood plain design requirements. The multi-family residential buildings would be seven stories in height and contain rental units (Buildings A and B) and the townhome units would be three stories in height and contain for-sale units (Building Site TH1). The average building height for all proposed buildings on the site would be approximately 62.5 feet, and a maximum height of approximately 84 feet, 10 inches at the tallest point of the multi-family buildings. A ground-floor pedestrian paseo would separate Buildings A and B from the townhome units and provide a connection between Constitution Drive and Jefferson Drive.

A total of approximately 86,953 square feet of private residential, common, and publicly accessible open space would be provided throughout the project site, including a plaza on the ground floor

[1] The City has received a development application, which is currently proposed to result in the construction of an eight-story, approximately 158-unit mixed-use building with approximately 14,442 square feet of ground floor commercial space, for the neighboring property at 165 Jefferson Drive (known as the Menlo Flats Project).

[2] Low-income households are those earning between 51 and 80 percent of the area median income and moderate-income households are those earning up to 120 percent of the area median income.

between buildings A and B, private balconies, amenity decks, roof terraces, landscaped areas, and the pedestrian paseo.

Buildings A and B would both include at-grade, two-level, up to approximately 68,500-square-foot, 242-space parking garages with automated lifts. A total of 484 parking spaces would be provided between the two buildings, 441 of which would be unbundled and available for residents (or others) to rent, and 43 of which would be designated as visitor parking. Building Site TH1 would include a total of 69 parking spaces, including 66 spaces within private garages and 3 spaces along the internal roadway. Approximately 799 bicycle parking spaces would be provided throughout the project site with a mix of long-term and short-term spaces.

Discretionary actions by the City that would be necessary for project approval include certification of the EIR and adoption of Findings, a Use Permit, Architectural Control, Lot Line Adjustment, Major Subdivision, Heritage Tree Removal Permit, and Below Market Rate Housing Agreement. Refer to Chapter 3.0, Project Description for a complete description of the project's location, context, background, and objectives, details of the proposed project itself, and a summary of required approvals and entitlements.

2.2 REGULATORY CONTEXT AND BACKGROUND

The project site is designated Mixed Use Residential on the City's General Plan Land Use Designations Map, which was updated as part of the General Plan Land Use and Circulation Elements Update (referred to herein as ConnectMenlo). The project site is located within the Residential Mixed Use Bonus (R-MU-B) zoning district.[3] The certified ConnectMenlo Final Environmental Impact Report (ConnectMenlo Final EIR)[4,5] provided a program-level analysis of the development potential envisioned for the entire city, including the increased development potential in the Bayfront Area. The Land Use Element specifically identifies new development potential in the Bayfront Area of up to 2.3 million square feet of non-residential space, 400 hotel rooms, and 4,500 residential units.[6]

This EIR and the Initial Study (Appendix B) were prepared in accordance with the terms of the settlement agreement between the cities of Menlo Park and East Palo Alto, which allows simplification in accordance with CEQA Guidelines Section 15168 for all topic areas except housing and transportation. The analysis provided in this EIR and the Initial Study tier from the ConnectMenlo Final EIR, as appropriate and as further described in each topical section. Refer to Section 3.2 in Chapter 3.0, Project Description, for a complete description of the relevant project background, including the ConnectMenlo Final EIR and settlement agreement.

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3 Menlo Park, City of. 2019. City of Menlo Park GIS Viewer. Available online at: menlopark.maps.arcgis.com/apps/View/index.html?appid=0798b044d1b541f9b0498d94f5c804e0 (accessed July 30, 2020).

4 Menlo Park, City of. 2016. *ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Area Zoning Update, Public Review Draft Environmental Impact Report*, SCH#2015062054. Prepared by Placeworks. June 1.

5 Menlo Park, City of. 2016. *ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Area Zoning Update, Response to Comments Document*, SCH#2015062054. Prepared by Placeworks October 10.

6 The ConnectMenlo Final EIR included an evaluation of both multi-family and dormitory style units, consisting of 3,000 unrestricted residential units and 1,500 corporate housing units, in the Bayfront Area.

2.3 POTENTIAL AREAS OF CONTROVERSY

A total of eight commenters submitted written responses to the Notice of Preparation (NOP), in addition to the verbal comments received at the public scoping session held on December 16, 2019. The NOP, comments received, and transcript from the scoping session are included in Appendix A. Comments in response to the NOP generally identified the following areas of potential concern:

- Tiering from the programmatic level of analysis provided in the ConnectMenlo Final EIR and use of current regulatory guidelines and thresholds for the analysis of each topical section;
- Traffic, transportation, circulation and related pedestrian and bicycle safety impacts within the project area, including effects on nearby residential neighborhoods and schools, the inclusion of transportation demand management (TDM) measures, and the methodology and modeling assumptions for the transportation analysis;
- Vehicle miles traveled (VMT) analysis and mitigation;
- Generation of air quality and greenhouse gas emissions and energy use;
- Construction and operation period noise;
- Native American tribal consultation pursuant to Assembly Bill 52 (AB 52);
- Impacts of sea level rise and flooding related to raising the site elevation;
- Existing and proposed utility capacity; and
- Impacts of population growth on schools.

A description of why tiering from the ConnectMenlo Final EIR is appropriate is provided throughout this EIR, including in Section 2.2, above and in Section 3.2 in Chapter 3.0, Project Description, as well as in each topical section of Chapter 4.0, Setting, Impacts and Mitigation Measures and in the Initial Study (Appendix B). The analyses included in the EIR and the Initial Study are based on current regulatory requirements, including the current CEQA Guidelines, which were most recently updated by the State of California Office of Planning and Research in December 2018.

Comments related to traffic, transportation, and circulation were considered and are addressed in Section 4.2, Transportation, of this EIR. Similarly, impacts related to operation-period air quality and greenhouse gas emissions and noise are addressed in Sections 4.3, Air Quality; 4.4, Greenhouse Gas Emissions; and 4.5, Noise of this EIR, respectively. Construction-period impacts related to these topics are addressed in the Initial Study.

Consultation pursuant to AB 52 is addressed in Section 5.0, Other CEQA Considerations, of this EIR. Commenters also suggested a few alternatives that should be considered in the EIR. These comments were considered and alternatives are addressed in Section 6.0, Alternatives, of this EIR.

Comments related to the impacts of sea level rise and existing and proposed utility capacity are addressed in Sections 3.10, Hydrology and Water Quality, and 3.19, Utilities and Service Systems, of the Initial Study (Appendix B). Comments related to the impacts of population growth on schools are addressed in Section 3.14, Population and Housing, of the Initial Study.

2.4 SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in the Initial Study Appendix B) and Chapter 4.0, Setting, Impacts, and Mitigation Measures of this EIR.

2.4.1 Findings of the Initial Study

The Initial Study for the proposed project is included in Appendix B to this EIR. The Initial Study identified: 1) no impacts; 2) less-than-significant impacts; or 3) less-than-significant impacts with implementation of mitigation measures identified in the ConnectMenlo Final EIR related to the following environmental issues:

- Aesthetics
- Agriculture and Forestry Resources
- Biological Resources
- Cultural Resources
- Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise (Construction Period and Aircraft Noise)
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

The proposed project would be required to comply with all applicable mitigation measures identified in the ConnectMenlo Mitigation Monitoring and Reporting Program (MMRP), which is an existing enforceable MMRP prepared for the ConnectMenlo Final EIR and a requirement of any proposed development project in the city. Applicable mitigation measures identified in the Initial Study are provided in Table 2.A, at the end of this chapter. For a complete description of potential impacts identified in the Initial Study, please refer to the specific discussion within each topical section of the Initial Study (Appendix B). Chapter 5.0, Other CEQA Considerations, also includes a summary of the findings for each topic not discussed in the EIR.

The Initial Study identified potential impacts requiring more detailed evaluation related to the following environmental issues, which are further evaluated in Chapter 4.0 of this EIR:

- Air Quality
- Greenhouse Gas Emissions

- Noise (Operation Period Traffic and Stationary Noise)[7]
- Population and Housing
- Transportation

Although the Initial Study identified tribal cultural resources as a potential topic to be analyzed in the EIR, further evaluation determined that impacts to tribal cultural resources would be less than significant; therefore, this topic is not included as a separate section of the EIR and is instead addressed in Chapter 5.0.

2.4.2 Significant Impacts

Under CEQA, a significant impact on the environment is defined as "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." As discussed in more detail in Chapter 4.0 of this EIR, impacts in the following areas would be potentially significant without the implementation of mitigation measures, but would be reduced to a less-than-significant level if the mitigation measures recommended in this report are implemented:

- Air quality (construction and operation period air pollutant emissions)
- Noise (interior and exterior exposure to transportation-related noise)

Impacts related to greenhouse gas emissions, population and housing, and transportation would be less than significant and no mitigation measures would be required.

2.4.3 Significant Unavoidable Impacts

The proposed project would not result in any significant unavoidable impacts. All potentially significant project impacts would either be less than significant or would be reduced to a less-than-significant level with implementation of identified mitigation measures as discussed throughout Chapter 4.0 of this EIR.

2.4.4 Cumulative Impacts

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts that are individually limited, but cumulatively significant. These impacts can result from the proposed project when combined with other past, present, or reasonably foreseeable future

[7] As discussed in Section 3.13, Noise, of the Initial Study prepared for the proposed project (Appendix B), with implementation of ConnectMenlo Final EIR mitigation measures, the proposed project would result in less-than-significant construction-period noise and vibration impacts. The Initial Study also found that the proposed project would not expose people residing or working in the project area to excessive noise levels associated with aircraft activity. Therefore, potential impacts related to construction-period noise, groundborne vibration, and proximity of public and private airports are not further addressed in this EIR.

projects. As described in Section 4.0 of this EIR the cumulative impacts analysis in this EIR is based on information provided by the City on currently planned, approved, or proposed projects and regional projections for the area. All identified impacts of the proposed project would be individually limited and would not be cumulatively considerable. Cumulative impacts would be less than significant.

2.4.5 Alternatives to the Project

In accordance with CEQA and the CEQA Guidelines (Section 15126.6), an EIR must describe a reasonable range of alternatives to the project, or to the location of the project, that could attain most of the project's basic objectives, while avoiding or substantially lessening any of the significantly adverse environmental effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative."

The three alternatives to the proposed project that are discussed and analyzed in Chapter 6.0 of this EIR are:

- **No Project Alternative.** Under the No Project alternative, the project site would continue to be occupied by the three existing single-story office and industrial buildings totaling approximately 110,356 square feet with designated surface parking for approximately 221 vehicles. No modifications to existing site access or infrastructure would occur.

- **Base Level Alternative.** Under the Base Level alternative, the proposed project would be developed at the base level of development allowed under the R-MU-B zoning district. The Base Level alternative would include approximately 144 residential units (21 of which would be affordable units), which would include 102 multifamily units and 42 townhomes and up to 31,539 square feet of nonresidential space, which would include approximately 21,539 square feet of office space and up to 10,000 square feet of child care center space. The building's maximum height would be 45 feet with a maximum gross floor area of 220,776 square feet. The multifamily and office buildings would include a ground floor parking garage with a combined total of 210 vehicle parking spaces and similar site access and infrastructure improvements as those identified for the proposed project. The total square footage of open space would be reduced compared to the proposed project.

- **Maximum Buildout Alternative.** Under the Maximum Buildout alternative, the proposed project would be developed at the maximum bonus level of development allowed in the R-MU-B zoning district. The Maximum Buildout alternative would include approximately 483 residential units (73 of which would be affordable units) within two residential buildings (approximately 473,091 gross residential floor area) and up to 52,565 square feet of nonresidential space, which would include approximately 42,565 square feet of office space and up to 10,000 square feet of child care center space within a single building. The buildings would have a maximum height of approximately 85 feet. Each building would include a ground floor parking garage with a combined total of 505 vehicle parking spaces and similar site access and infrastructure improvements as those identified for the proposed project. The total square footage of open space would be reduced compared to the proposed project.

Each alternative is compared to the proposed project and discussed in terms of its various mitigating or adverse effects on the environment. Analysis of the alternatives focuses on those topics for which significant adverse impacts would result from the proposed project and on policy considerations designed to provide information regarding maximum base and bonus level development. Because the Base Level and Maximum Buildout alternatives would result in new significant and unavoidable impacts that would not result from the proposed project, the proposed project is considered to be the environmentally superior alternative.

2.5 SUMMARY TABLES

Information in Table 2.A, Summary of Impacts and Mitigation Measures from the Initial Study summarizes the recommended mitigation measures from the ConnectMenlo Final EIR as they relate to each environmental topic in the Initial Study. Information in Table 2.B, Summary of Impacts and Mitigation Measures from the EIR, has been organized to correspond with environmental issues discussed in Chapter 4.0 of this EIR. Tables 2.A and 2.B are arranged in four columns: 1) impacts; 2) level of significance without mitigation; 3) mitigation measures; and 4) level of significance with mitigation. Levels of significance are categorized as follows:

LTS	Less Than Significant
PS	Potentially Significant
LTS/M	Less Than Significant with Mitigation
SU	Significant Unavoidable

For a complete description of potential impacts and recommended mitigation measures, please refer to the specific topical discussions in Chapter 4.0 and the Initial Study (Appendix B).

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Table 2.A: Summary of Impacts and Mitigation Measures from the Initial Study

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
3.1 AESTHETICS			
There are no significant impacts to aesthetics.			
3.2 AGRICULTURE AND FORESTRY RESOURCES			
There are no significant impacts to agriculture and forestry resources.			
3.4 BIOLOGICAL RESOURCES			
There are no significant impacts to biological resources.			
3.5 CULTURAL RESOURCES			
Project construction activities could cause a substantial adverse change in the significance of an archaeological resource.	PS	**ConnectMenlo Final EIR Mitigation Measure CULT-2a**: If a potentially significant subsurface cultural resource is encountered during ground disturbing activities, all construction activities within a 100-foot radius of the find shall cease until a qualified archeologist determines whether the resource requires further study. All developers in the study area shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of the CEQA criteria by a qualified archaeologist. If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant. The archaeologist shall also perform appropriate technical analyses; prepare a comprehensive report complete with methods, results, and recommendations; and provide for the permanent curation of the recovered resources. The report shall be submitted to the City of Menlo Park, Northwest Information Center (NWIC), and State Historic Preservation Office (SHPO), if required.	LTS/M

Table 2.A: Summary of Impacts and Mitigation Measures from the Initial Study

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Project construction activities could disturb human remains, including those interred outside of formal cemeteries.	PS	**ConnectMenlo Final EIR Mitigation Measure CULT-4**: Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (CEQA). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The San Mateo County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.	LTS/M
3.6 ENERGY			
There are no significant impacts to energy.			
3.7 GEOLOGY AND SOILS			
Project construction activities could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	PS	**ConnectMenlo Final EIR Mitigation Measure CULT-3**: In the event that fossils or fossil bearing deposits are discovered during ground disturbing activities, excavations within a 50-foot radius of the find shall be temporarily halted or diverted. Ground disturbance work shall cease until a City-approved qualified paleontologist determines whether the resource requires further study. The paleontologist shall document the discovery as needed in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction activities are allowed to resume at the location of the find. If avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of construction activities on the discovery. The excavation plan shall be submitted to the City of Menlo Park for review and approval prior to implementation, and all construction activity shall adhere to the recommendations in the excavation plan.	LTS/M

Table 2.A: Summary of Impacts and Mitigation Measures from the Initial Study

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
3.9 HAZARDS AND HAZARDOUS MATERIALS			
Project construction activities could result in the release of hazardous materials into the environment.	PS	**ConnectMenlo Final EIR Mitigation Measure HAZ-4a:** Construction at any site in the City with known contamination shall be conducted under a project-specific Environmental Site Management Plan (ESMP) that is prepared in consultation with the Regional Water Quality Control Board (RWQCB) or the Department of Toxic Substances Control (DTSC), as appropriate. The purpose of the ESMP is to protect construction workers, the general public, the environment, and future site occupants from subsurface hazardous materials previously identified at the site and to address the possibility of encountering unknown contamination or hazards in the subsurface. The ESMP shall summarize soil and groundwater analytical data collected on the project site during past investigations; identify management options for excavated soil and groundwater, if contaminated media are encountered during deep excavations; and identify monitoring, irrigation, or other wells requiring proper abandonment in compliance with local, State, and federal laws, policies, and regulations. The ESMP shall include measures for identifying, testing, and managing soil and groundwater suspected of or known to contain hazardous materials. The ESMP shall: 1) provide procedures for evaluating, handling, storing, testing, and disposing of soil and groundwater during project excavation and dewatering activities, respectively; 2) describe required worker health and safety provisions for all workers potentially exposed to hazardous materials in accordance with State and federal worker safety regulations; and 3) designate personnel responsible for implementation of the ESMP.	LTS/M
Project construction activities could result in the release of hazardous materials into the environment.	PS	**ConnectMenlo Final EIR Mitigation Measure HAZ-4b:** For those sites throughout the city with potential residual contamination in soil, gas, or groundwater that are planned for redevelopment with an overlying occupied building, a vapor intrusion assessment shall be performed by a licensed environmental professional. If the results of the vapor intrusion assessment indicate the potential for significant vapor intrusion into an occupied building, project design shall include vapor controls or source removal, as appropriate, in accordance with regulatory agency requirements. Soil vapor mitigations or controls could include vapor barriers, passive venting, and/or active venting. The vapor intrusion assessment and associated vapor controls or source removal can be incorporated into the ESMP (Mitigation Measure HAZ-4a).	LTS/M
3.10 HYDROLOGY AND WATER QUALITY			
There are no significant impacts to hydrology and water quality.			

Table 2.A: Summary of Impacts and Mitigation Measures from the Initial Study

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
3.11 LAND USE AND PLANNING			
There are no significant impacts to land use and planning.			
3.12 MINERAL RESOURCES			
There are no significant impacts to mineral resources.			
3.13 NOISE[8]			
Project construction activities could generate a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of established standards.	PS	**ConnectMenlo Final EIR Mitigation Measure NOISE-1c:** Project applicants for all development projects in the city shall 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. Prior to issuance of demolition, grading, and/or building permits for development projects, a note shall be provided on development plans indicating that during on-going grading, demolition, and construction, the property owner/developer shall be responsible for requiring contractors to implement the following measures to limit construction-related noise: ● Construction activity is limited to the daytime hours between 8:00 a.m. to 6:00 p.m. on Monday through Friday, as prescribed in the City's municipal code. ● All internal combustion engines on construction equipment and trucks are fitted with properly maintained mufflers, air intake silencers, and/or engine shrouds that are no less effective than as originally equipped by the manufacturer. ● Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses. ● Stockpiling is located as far as feasible from nearby noise-sensitive receptors. ● Limit unnecessary engine idling to the extent feasible. ● Limit the use of public address systems. ● Construction traffic shall be limited to the haul routes established by the City of Menlo Park.	LTS/M

[8] As noted above, potential impacts related to construction-period noise and vibration and proximity of public and private airports are further addressed in Section 4.5, Noise of this EIR.

Table 2.A: Summary of Impacts and Mitigation Measures from the Initial Study

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Project construction activities could generate excessive groundborne vibration or groundborne noise levels.	PS	**ConnectMenlo Final EIR Mitigation Measure NOISE-2a**: To prevent architectural damage citywide as a result of construction-generated vibration: ● Prior to issuance of a building permit for any development project requiring pile driving or blasting, the project applicant/developer shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. The maximum levels shall not exceed 0.2 inch/second, which is the level that can cause architectural damage for typical residential construction. If maximum levels would exceed these thresholds, alternative methods such static rollers, non-explosive blasting, and drilling piles as opposed to pile driving shall be used. To prevent vibration-induced annoyance as a result of construction-generated vibration: ● Individual projects that involve vibration-intensive construction activities, such as blasting, pile drivers, jack hammers, and vibratory rollers, within 200 feet of sensitive receptors shall be evaluated for potential vibration impacts. A vibration study shall be conducted for individual projects where vibration-intensive impacts may occur. The study shall be prepared by an acoustical or vibration engineer holding a degree in engineering, physics, or allied discipline and who is able to demonstrate a minimum of two years of experience in preparing technical assessments in acoustics and/or groundborne vibrations. The study is subject to review and approval of the Community Development Department. Vibration impacts to nearby receptors shall not exceed the vibration annoyance levels (in RMS inches/second) as follows: ● Workshop = 0.126 ● Office = 0.063 ● Residential Daytime (7:00 AM – 10:00 PM) = 0.032 ● Residential Nighttime (10:00 PM – 7:00 AM) = 0.016 If construction-related vibration is determined to be perceptible at vibration-sensitive uses, additional requirements, such as use of less-vibration-intensive equipment or construction techniques, shall be implemented during construction (e.g., nonexplosive blasting methods, drilled piles as opposed to pile driving, preclusion for using vibratory rollers, use of small- or medium-sized bulldozers, etc.). Vibration reduction measures shall be incorporated into the site development plan as a component of the project and applicable building plans, subject to the review and approval of the Community Development Department.	LTS/M

Table 2.A: Summary of Impacts and Mitigation Measures from the Initial Study

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
3.15 PUBLIC SERVICES			
There are no significant impacts to public services.			
3.16 RECREATION			
There are no significant impacts to recreation.			
3.19 UTILITIES AND SERVICE SYSTEMS			
There are no significant impacts to utilities and service systems.			
3.20 WILDFIRE			
There are no significant impacts to wildfire.			

Note: Sections 3.14, Population and Housing; 3.17, Transportation; and 3.18, Tribal Cultural Resources are addressed in the EIR and summarized in Table 2.B.
Source: LSA (2020).

Table 2.B: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
4.1 POPULATION AND HOUSING			
There are no significant impacts to population and housing.			
4.2 TRANSPORTATION			
There are no significant impacts to transportation.			
4.3 AIR QUALITY			
AIR-1: Construction of the proposed project would generate air pollutant emissions that could violate air quality standards.	PS	**Project Mitigation Measure AIR-1:** Consistent with Connect Menlo Final EIR Mitigation Measure AQ-2b1, the proposed project would be required to comply with BAAQMD basic control measures for reducing construction emissions of PM10 (Table 8-2, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the BAAQMD 2017 CEQA Guidelines), as follows: ● All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. ● All haul trucks transporting soil, sand, or other loose material off-site shall be covered. ● 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. ● All vehicle speeds on unpaved roads shall be limited to 15 mph. ● All roadways, 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. ● Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. ● All construction equipment shall be maintained and properly tuned in accordance with manufacturer specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. ● Post a publicly visible sign with the telephone number and person to contact at the City of Menlo Park regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number for BAAQMD shall also be visible to ensure compliance with applicable regulations.	LTS/M

Table 2.B: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AIR-2: Construction of the proposed project would expose nearby sensitive receptors to toxic air contaminants.	PS	**Project Mitigation Measure AIR-2:** During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board Tier 4 emissions standards or equivalent. In the event that some specialty equipment (e.g., geotechnical, vibratory compaction, or soil mixing equipment), is not Tier 4 compliant due to lack of availability, then Tier 3 equipment shall be used.	LTS/M
4.4 GREENHOUSE GAS EMISSIONS			
There are no significant impacts to greenhouse gas emissions.			
4.5 NOISE			
NOI-1: The proposed project would locate residential land uses in an area that is considered a conditionally acceptable noise environment based on the City's Noise and Land Use Compatibility Guidelines for multi-family residential land uses.	PS	**Project Mitigation Measure NOI-1:** Consistent with ConnectMenlo Final EIR Mitigation Measure NOISE-1a, the proposed project shall implement the following building design measures to the satisfaction of the City in order to reduce interior noise impacts in compliance with City noise standards: ● In order for windows and doors to remain closed, mechanical ventilation such as air conditioning shall be provided for all units. ● All windows and glass doors shall be rated STC 28 or higher such that the noise reduction provided will satisfy the interior noise standard of 45 dBA CNEL. ● All vent ducts connecting interior spaces to the exterior (i.e., bathroom exhaust, etc.) shall have at least two 90 degree turns in the duct.	LTS/M
5.0 CEQA-REQUIRED ASSESSMENT CONCLUSIONS, TRIBAL CULTURAL RESOURCES			
There are no significant impacts to tribal cultural resources.			

Source: LSA (2020).

3.0 PROJECT DESCRIPTION

This chapter describes the proposed Menlo Uptown Project (project) submitted by Uptown Menlo Park Venture, LLC (the project sponsor) and evaluated in this EIR. A description of the proposed project's location, context, background, and objectives is followed by details of the proposed project itself and a summary of required approvals and entitlements.

3.1 PROJECT SITE

The following describes the geographic context of the site for the proposed project and provides a brief overview of the existing land uses within and in the vicinity of the site.

3.1.1 Regional Location and Access

The approximately 4.83-acre project site is comprised of three parcels located at 141 Jefferson Drive, 180 Constitution Drive, and 186 Constitution Drive within the City of Menlo Park, San Mateo County. Menlo Park is located approximately 30 miles south of San Francisco, at the southern end of San Francisco Bay.

Regional vehicular access to the project site is provided by US Highway 101 (US 101), via the Marsh Road on- and off-ramps located to the west and State Route 84 (SR 84 or the Bayfront Expressway) located to the north.[1] Direct local access to the project site is via Jefferson Drive and Constitution Drive, which border the site to the north and south.

The nearest bus stop to the project site is served by the San Mateo County Transit District (SamTrans) Route 270 and is located approximately 0.5 miles to the west on Haven Avenue. The Menlo Park and Palo Alto Caltrain stations are located within 3 miles of the project site to the south, providing weekday service from San Francisco to Gilroy and weekend service from San Francisco to San Jose. The M3 Menlo Park Shuttle stop is also located at 150 Jefferson Drive, less than 100 feet from the project site.

Figure 3-1 depicts the regional and local context of the project site, and Figure 3-2 shows an aerial photograph of the project site and the surrounding land uses.

3.1.2 Site Characteristics and Current Site Conditions

The generally-level project site is currently developed with two single-story commercial office buildings and a single-story industrial building totaling approximately 110,356 square feet. Table 3.A provides a summary of the existing conditions on the project site. Ingress and egress to the project

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1 The street grid in the immediate vicinity of the project site generally extends northeast-southwest and northwest-southeast. To simplify the direction descriptions used in this document, roadways progressing parallel to US 101 are designated eastbound-westbound roadways and roadways parallel to Marsh Road are designated northbound-southbound. The directional descriptions throughout this document use this geographic convention. However, with respect to transportation and circulation (refer to Section 4.2, Transportation), US 101 is considered to be a northbound-southbound roadway and SR 84 is considered to be an eastbound-westbound roadway.

site is provided by four driveways along Jefferson Drive and three driveways along Constitution Drive.

The existing buildings on the project site were constructed between 1963 and 1964 and are currently occupied by commercial and industrial tenants. A total of 221 parking spaces are provided across all three parcels.

Table 3.A: Existing Conditions Summary

Address	APN	Parcel Size (acres)	Building Size (square feet)	Current Use	Parking Spaces
141 Jefferson	055-242-140	2.76	68,488	Office	149
180 Constitution	055-242-030	1.38	30,179	Industrial	50
186 Constitution	055-242-040	0.69	11,689	Office	22

Source: City of Menlo Park (2019).

Vegetation on the project site consists of a small landscaped area along the southern border of the project site and trees along both the southern and northern borders. A total of 33 trees, including 3 street trees and 10 heritage-sized trees are located on the project site.

Figure 3-3 depicts current site conditions, Figure 3-4 depicts an aerial view of the project site and photo viewpoint locations, and Figure 3-5 includes photos of the existing buildings on the project site (Photos 1 and 2).

3.1.3 Regulatory Setting

The project site is designated Mixed Use Residential on the City's General Plan Land Use Designations Map, which was updated as part of the City's General Plan Land Use and Circulation Elements Update (referred to herein as ConnectMenlo). One purpose of ConnectMenlo was to encourage office, research and development, residential, commercial uses, and hotels, all in close proximity or integrated with one another in the Bayfront Area, which is generally located north of US 101. The Mixed Use Residential designation provides for higher density housing to meet the needs of all income levels and is intended to promote live/work/play environments oriented towards pedestrians, transit, and bicycle use, especially for commuting to nearby jobs.[2]

[2] Menlo Park, City of. 2016a. *General Plan: ConnectMenlo, Menlo Park Land Use and Mobility Update*. November 29.

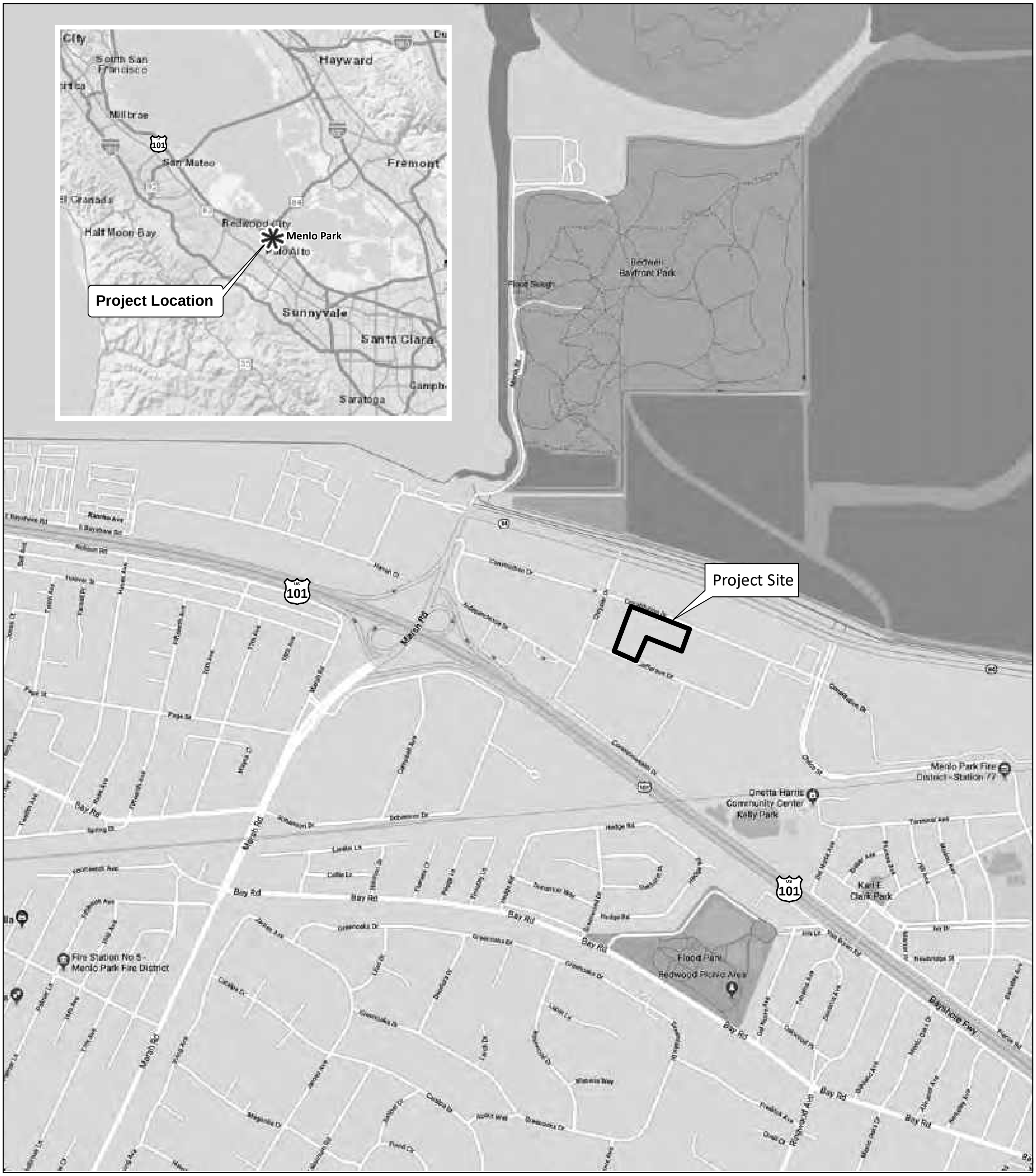
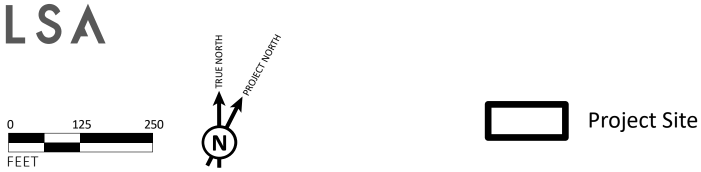


FIGURE 3-1



Menlo Uptown Project EIR

Project Location and Regional Vicinity Map

SOURCES: GOOGLE EARTH 8/9/18; LSA, 2019.

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FIGURE 3-2

LSA

0 300 600
FEET

TRUE NORTH
PROJECT NORTH
N

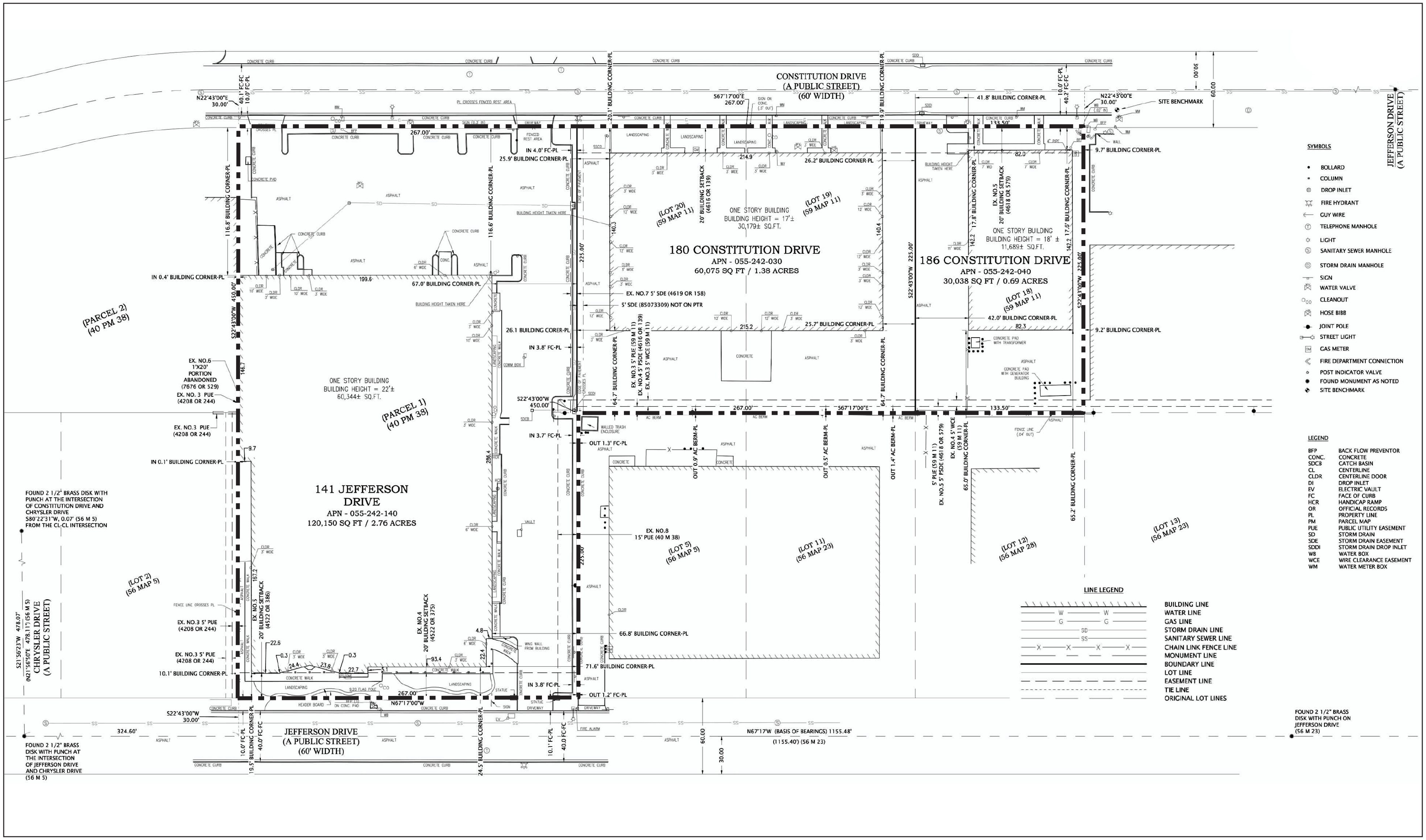
Project Site

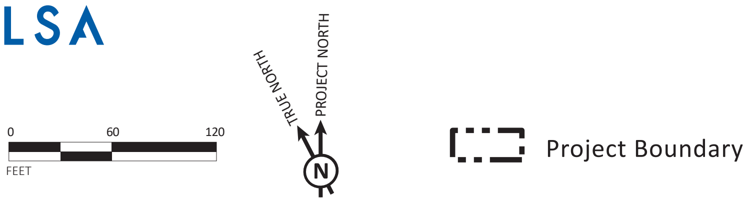
Menlo Uptown Project EIR

Aerial Photograph of the Project Site and Surrounding Land Uses

SOURCES: GOOGLE EARTH 8/9/18; LSA, 2019,

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-2.ai (7/7/2020)





LSA

FIGURE 3-3

Menlo Uptown Project EIR

Existing Site Conditions

SOURCE: BKF, JULY 2019.

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LSA

FIGURE 3-4

Menlo Uptown Project EIR
Photo Locations

SOURCES: GOOGLE EARTH 8/9/18; LSA, 2019,

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-4.ai (7/28/2020)

Photo 1: Existing building at 141 Jefferson Drive, as seen from Jefferson Drive

Photo 2: Existing buildings at 180 and 188 Constitution Drive, as seen from Constitution Drive

LSA

FIGURE 3-5

Menlo Uptown Project EIR
Photos of Existing Site

SOURCE: LSA, 2019.

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3.1.4 Surrounding Land Uses

The project site is located in the northern area of the city, within the Bayfront Area near Bedwell Bayfront Park and San Francisco Bay. The Bayfront Area is generally bounded by US 101, San Francisco Bay, and the limits of San Mateo County, Redwood City, and East Palo Alto. The site is generally surrounded by a mix of uses, including older buildings and new construction, as depicted in Figure 3-4 and further described below. Figure 3-6 and Figure 3-7 include photos of surrounding land uses (refer to Figure 3-4 for photo viewpoint locations).

- **North of the Project Site.** The project site is bordered immediately to the north by Constitution Drive, a two-lane roadway that connects Marsh Road to the Facebook West Campus to the east. Across Constitution Drive are office and industrial uses (Photo 3), as well as SR 84 and the Bedwell Bayfront Park, an approximately 160-acre park managed by the City.

- **East of the Project Site.** The project site is bordered immediately to the east by the two-story Synergy Badminton Club (Photo 4) and a single-story office building.[3] Farther east of the project site are additional commercial and light manufacturing uses. The Facebook campus, consisting of approximately 14 buildings along SR 84, begins approximately 0.1 miles east of the project site. Union Pacific Railroad (UPRR) tracks, commonly referred to as the Dumbarton Rail corridor, are also located just east of the Facebook campus. Across the UPRR tracks and approximately 0.6 miles east of the site is the Belle Haven residential neighborhood, which is generally occupied by single-family residences.

- **South of the Project Site.** The project site is bordered immediately to the south by Jefferson Drive. Across Jefferson Drive is the TIDE Academy (Photo 5), which recently opened in August 2019, commercial and light industrial buildings, and US 101.

- **West of the Project Site.** The project site is bordered to the west by office uses (Photo 6) and Chrysler Drive. Across Chrysler Drive are office and industrial uses, as well as the Menlo Gateway Project (101 to 155 Constitution Drive),[4] which is currently under construction and anticipated to be complete by the end of 2020.

3.2 PROJECT BACKGROUND

On November 29, 2016, the Menlo Park City Council certified the ConnectMenlo Final Environmental Impact Report (ConnectMenlo Final EIR)[5,6] and approved updates to the Land Use and

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3 The City has received a development application, which is currently proposed to result in the construction of an eight-story, approximately 158-unit mixed-use building with approximately 14,442 square feet of ground floor commercial space, for the neighboring property at 165 Jefferson Drive (known as the Menlo Flats Project).

4 The Menlo Gateway Project, approved in 2010, includes three office buildings, three parking structures, a hotel, and a private health club and cafe on 15.9 acres at 100 to 200 Independence Drive (southwest of the project site) and 101 to 155 Constitution Drive (northwest of the project site).

5 Menlo Park, City of. 2016b. *ConnectMenlo: General Plan Land Use & Circulation Elements and M-2 Area Zoning Update, Public Review Draft Environmental Impact Report*, SCH#2015062054. Prepared by Placeworks. June 1.

Circulation Elements of the General Plan.[7] ConnectMenlo also included changes to the City's zoning map and rezoned specific properties to reflect the General Plan updates, including the new land uses within the Bayfront Area of the city. The ConnectMenlo Final EIR provided a program-level analysis of the development potential envisioned for the entire city, including the increased development potential in the Bayfront Area. The Land Use Element specifically identifies new development potential in the Bayfront Area of up to 2.3 million square feet of non-residential space, 400 hotel rooms, and 4,500 residential units.[8] The buildout potential for future development is expected to occur over a 24-year buildout horizon (from approximately 2016 to 2040).[9]

On December 29, 2016, the City of East Palo Alto filed suit challenging the certification of the ConnectMenlo Final EIR. East Palo Alto alleged that the City of Menlo Park did not comply with the California Environmental Quality Act (CEQA) because the ConnectMenlo Final EIR underestimated the amount of new employment and failed to adequately analyze the traffic impacts that would result from development under ConnectMenlo. To resolve the litigation, the City of Menlo Park and the City of East Palo Alto entered into a settlement agreement. The key terms of the settlement agreement are as follows:

1. Reciprocal Environmental Review for Future Development Projects. Menlo Park will prepare an EIR for any project located in the Office (O), Life Science (LS) or Residential Mixed Use (R-MU) district that exceeds 250,000 net new square feet and would require a use permit, that proposes bonus level development, that proposes a master plan project, or that may have a significant environmental impact. Menlo Park may, with the exception of housing and traffic (which were the focus of East Palo Alto's challenge), simplify the environmental review for future development projects by incorporating analysis and discussions from the ConnectMenlo Final EIR pursuant to CEQA Guidelines Section 15168(d). East Palo Alto will prepare an initial study for future development projects to determine the appropriate level of environmental review and will conduct that review, which can be simplified by incorporating by reference analysis and discussions from its General Plan update referred to as Vista 2035.

2. Reciprocal Traffic Studies. Menlo Park and East Palo Alto will work together to ensure that future development projects' potentially significant traffic impacts on the other jurisdiction are analyzed and mitigated.

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6 Menlo Park, City of. 2016c. *ConnectMenlo: General Plan Land Use & Circulation Elements and M-2 Area Zoning Update, Response to Comments Document*, SCH#2015062054. Prepared by Placeworks. October 10.

7 Menlo Park, City of. 2016a, op. cit.

8 The ConnectMenlo Final EIR included an evaluation of 4,500 housing units in the Bayfront Area consisting of 3,000 unrestricted residential units and 1,500 corporate dormitory-style housing units on the Facebook East Campus (also known as the Classic Campus).

9 Although the ConnectMenlo Final EIR assumed a buildout horizon of 2040, the maximum development potential may be reached sooner than anticipated. However, the ConnectMenlo Final EIR evaluated the maximum development potential that could occur at any given time and did not consider the phased buildout of the development potential; therefore, no new or additional impacts are anticipated as a result of the expedited buildout.

Photo 3: Existing building north of the project site, as seen from Constitution Drive

Photo 4: Existing building east of the project site (Synergy Badminton Club), as seen from Jefferson Drive

LSA

FIGURE 3-6

SOURCE: LSA, 2019.

Photo 5: TIDE Academy, south of the project site

Photo 6: Existing building west of the project site, as seen from Jefferson Drive

LSA

FIGURE 3-7

SOURCE: LSA, 2019.

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-7.ai (7/28/2020)

3. Reciprocal Study of Multiplier Effect. When the preparation of an EIR is required as described above, Menlo Park or East Palo Alto, as applicable, will conduct a Housing Needs Assessment, which to the extent possible, will include an analysis of the multiplier effect for indirect and induced employment.[10]

This EIR and the Initial Study (Appendix B) were prepared in accordance with the terms of the settlement agreement, which allows simplification in accordance with CEQA Guidelines Section 15168 for all topic areas except housing and transportation and incorporates by reference the information contained in the ConnectMenlo Final EIR, as applicable. Per CEQA Guidelines Section 15168, later activities occurring under a program EIR may be examined in light of the program EIR and tier from the program EIR as provided for in CEQA Guidelines Section 15152. Per CEQA Guidelines Section 15152, "where an EIR has been prepared and certified for a program […] consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program […] should limit the EIR […] on the later project to effects which: 1) were not examined as significant effects on the environment in the prior EIR; or 2) are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means." The analysis provided in this EIR and the Initial Study tier from the ConnectMenlo Final EIR, as appropriate and as further described in each topical section.

The proposed project would be required to comply with all applicable mitigation measures identified in the ConnectMenlo Mitigation Monitoring and Reporting Program (MMRP), which is a requirement of any proposed development project in the city. The proposed project has been determined to have less-than-significant impacts in a number of topic areas within the Initial Study (refer to Appendix B and Chapter 5.0, Other CEQA Considerations of the EIR) based on compliance with the ConnectMenlo mitigation measures, which are already included in the existing enforceable MMRP prepared for the ConnectMenlo Final EIR. A copy of the ConnectMenlo MMRP is included in Appendix A of the Initial Study. Refer to Chapter 2.0, Summary, of this EIR, which identifies mitigation measures specific to the proposed project.

3.3 PROJECT OBJECTIVES

As provided by the project sponsor, the objectives of the proposed project are to:

- Provide safe, high quality, affordable and market rate housing to members of the community;
- Achieve the ambitious environmental goals established by the City of Menlo Park including 100 percent electrification and Leadership in Energy and Environmental Design (LEED) Gold certification;
- Develop a high-quality-aesthetic project that complements the surrounding neighborhood and promotes connectedness; and
- Provide community amenities to surrounding neighborhoods by creating open space and providing amenities that benefit the Belle Haven neighborhood.

[10] Nothing in the settlement agreement was intended to suggest such an analysis is required by CEQA.

3.4 PROPOSED PROJECT

This section provides a description of the proposed project as identified in the project sponsor's application materials submitted to the City, dated June 26, 2020 and supplemental materials provided on October 14, 2020.[11, 12] The proposed project would result in the demolition of approximately 110,356 square feet of existing office and industrial space and redevelopment of the project site with a maximum of 441 multi-family rental units and 42 for-sale townhome units totaling approximately 471,986 square feet of gross floor area, as well as approximately 2,940 square feet of office space, associated open space, circulation and parking, and infrastructure improvements. The project sponsor is currently proposing that 15 percent or a minimum of 73 of the total number of units across the entire project, with a mix of apartments and townhomes, would be provided to below market rate (BMR) households in compliance with the City's BMR Housing Program Ordinance (BMR Housing Program), Menlo Park Municipal Code, Chapter 16.96, and the City's BMR Housing Program Guidelines (BMR Guidelines). Affordable units would consist of low-income apartment units and moderate-income townhome units.[13]

Individual project components are further described below. Figure 3-8 depicts the overall conceptual site plan for the proposed project.

3.4.1 Building Program

The proposed project would result in demolition of the existing office and industrial buildings and associated improvements and redevelopment of the project site with 441 multi-family residential units across two buildings (Buildings A and B) and 42 townhome units (Building Site TH1). Approximately 2,940 square feet of ground floor office space would be located in Building A. The multi-family residential buildings would be seven stories in height and contain rental units and the for-sale townhome units would be three stories in height, as further described below. The average building height for all proposed buildings on the site would be approximately 62.5 feet, and a maximum height of approximately 84 feet, 10 inches at the tallest point of the roofline for the multi-family buildings. The ground floor of each building would be raised three to five feet above grade to accommodate flood plain design requirements. A ground-floor pedestrian paseo would separate

11 Uptown Menlo Park Venture, LLC. 2020. Menlo Uptown SB 330 Final Application Submittal, June 26. It should be noted that proposed square footages, residential unit mix, and other elements of the project have been refined since publication of the NOP and preparation of the Initial Study included in Appendix B, and that the project plans may be subject to continued refinement prior to consideration of project approval. The analysis in this EIR evaluates the maximum development potential for the proposed project.

12 Greystar. 2020. Updated Community Amenity Proposal. October 14. It should be noted that the original application materials assumed development of an approximately 2,100 square-foot ground floor commercial space to serve as the community amenity; however, the project sponsor's community amenity proposal has since been revised to include approximately 2,940 square feet of ground floor office space to be potentially occupied by a community organization or non-profit. While the quantitative analysis in this EIR is based on the previously proposed commercial use, the analysis is conservative in that the commercial land use would generate more vehicle trips and employment than the increased office square footage, as further detailed in each topical section. Therefore no change to the analysis was necessary as a result of the increase in commercial space.

13 Low-income households are those earning between 51 and 80 percent of the area median income and moderate-income households are those earning between 81 and 120 percent of the area median income.

Buildings A and B from Building Site TH1 and provide a connection between Constitution Drive and Jefferson Drive.

Figure 3-9 through Figure 3-16 depict the currently available conceptual plans for the first through roof levels of proposed Buildings A and B. Figure 3-17 represents typical building sections and Figure 3-18 through Figure 3-21 depict conceptual building elevations. Figure 3-22 through Figure 3-25 depict the currently available conceptual plans for the first through roof level of proposed Building Site TH1. Figure 3-26 represents the typical building section, and Figure 3-27 and Figure 3-28 depict conceptual building elevations.

3.4.1.1 Buildings A and B

Building A would contain 221 rental units and front to Constitution Drive. Building B would include 220 rental units and would front to Jefferson Drive. Both buildings would be a maximum of approximately 84 feet, 10 inches in height at the tallest point of the roofline (excluding projections). The approximately 441 rental units and residential amenity spaces in Buildings A and B would total approximately 389,502 square feet of floor area. The residential units would be located on the second floor and above in Buildings A and B. The ground floor of Building A would include approximately 2,940 square feet of office uses and would be accessed via the pedestrian paseo.

Building A would include 15 residential units on the second floor. Building B would include 14 units on the second floor. Both buildings would include 39 residential units on the third floor, as well as an approximately 7,112-square-foot amenities deck that would include a pool, social area with a fire pit, an outdoor living room, outdoor kitchen, and dining area. The fourth through six floors of both buildings would consist of 43 residential units each, with private porches facing either Jefferson and Constitution Drives or the interior of the building on a portion of the units. The seventh floor of each building would include 38 residential units and two outdoor terraces totaling approximately 1,516 square feet per building.

Residential units would consist of 104 studio units at an average size of 550 square feet, 68 junior one-bedroom units at an average size of 630 square feet, 224 one-bedroom units at an average size of 700 square feet, 33 two-bedroom units at an average size of 900 square feet, and 12 three-bedroom units at an average size of 1,200 square feet. The currently proposed unit mixes and average size are all approximate.

3.4.1.2 Building Site TH1

Building Site TH1 would front to Constitution Drive and would be made of up six townhome buildings that would each contain seven three-story units that would be a maximum of 48 feet in height. The six townhome buildings on Building Site TH1 would have a total of approximately 42 units and 82,484 square feet of residential uses. Units would consist of 30 three-bedroom units and 12 four-bedroom units that would have an average size of approximately 1,774 square feet.

3.4.2 Open Space and Landscaping

A total of approximately 52,439 square feet of open space would be provided with Buildings A and B. Private residential open space would consist of balconies and terraces, totaling approximately

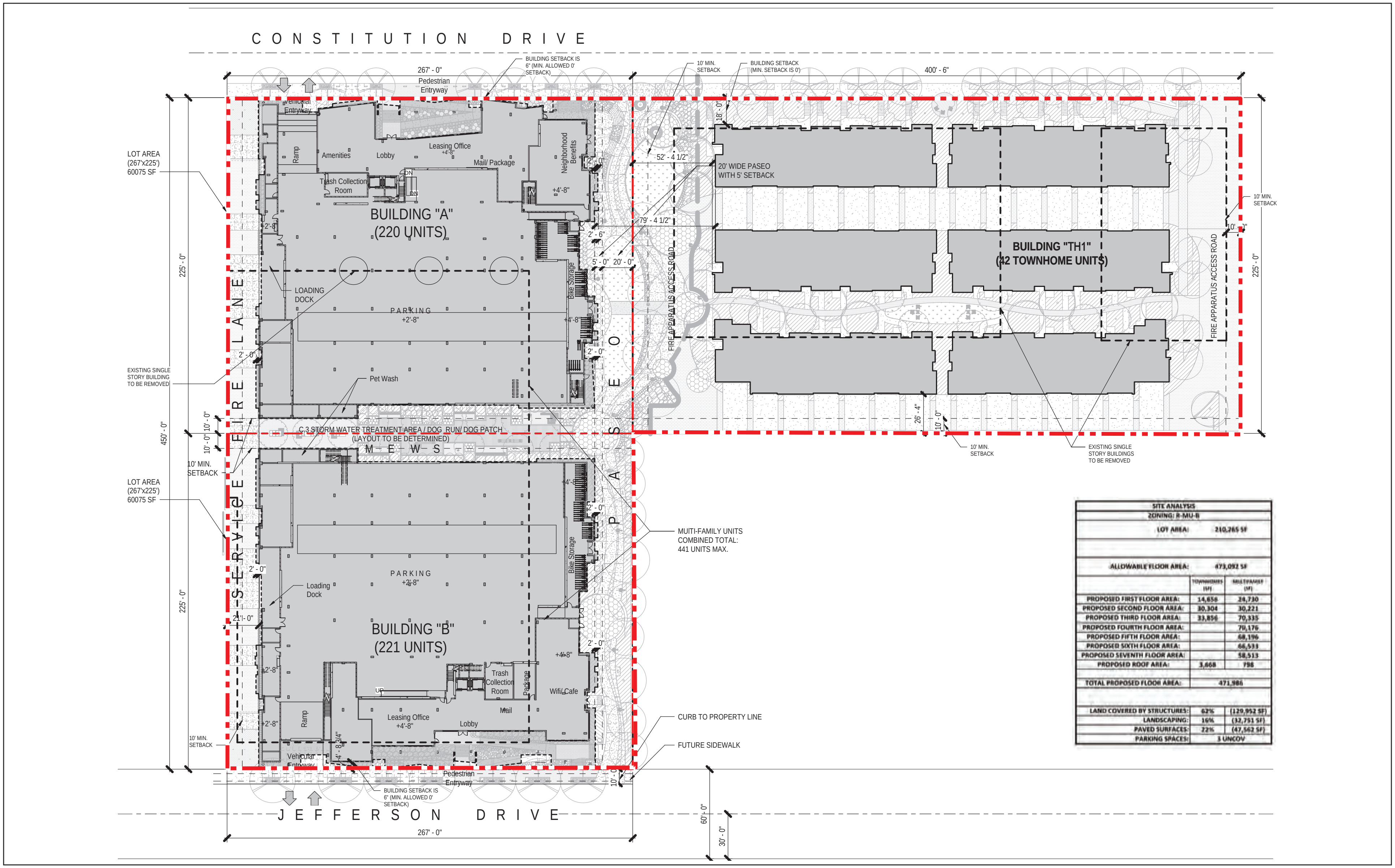
14,832 square feet. Common useable space for residents would consist of an approximately 8,725-square-foot plaza on the ground floor between the two buildings, the combined total of approximately 14,225 square feet of amenity decks on the third floors, and the combined total of approximately 3,032 square feet of roof terraces on the seventh floors, for a total of approximately 25,980 square feet of common open space across Buildings A and B. Publicly accessible open space on the multifamily portion of the development site would consist of an approximately 11,627-square-foot pedestrian paseo on the ground floor that would bisect the site and provide access between Constitution Drive and Jefferson Drive.

Building Site TH1 would include a total of 34,513 square feet of open space. Private residential open space would consist of balconies on the second floor of each unit, which would total approximately 13,428 square feet. Common useable open space would consist of an approximately 2,453-square-foot park area in the center of Building Site TH1. Publicly accessible open space would consist of an approximately 10,075-square-foot extension of the pedestrian paseo, running between the townhome buildings. The remaining approximately 8,557 square feet of open space would consist of landscaped areas located throughout Building Site TH1.

The City's Zoning Ordinance requires a minimum of 6.25 percent (13,142 square feet) of the site to be publicly accessible open space. Approximately 10.3 percent of the project site would consist of publicly accessible open space, including the paseo and paseo extension running between the townhome buildings.

Approximately 20 new trees would be planted on the project site, including between each of the building sites and along Jefferson Drive and Constitution Drive. In addition, landscaping would be provided throughout the project site in the open space areas mentioned above. Figure 3-29 shows the overall conceptual open space plan for Buildings A and B, and Figure 3-30 shows the ground level open space plan for Building Site TH1.

FIGURE 3-8



SITE ANALYSIS		
ZONING: R-MU-B		
LOT AREA:	210,265 SF	
ALLOWABLE FLOOR AREA:	473,092 SF	
	TOWNHOMES (SF)	MULTIFAMILY (SF)
PROPOSED FIRST FLOOR AREA:	14,656	24,730
PROPOSED SECOND FLOOR AREA:	30,304	30,221
PROPOSED THIRD FLOOR AREA:	33,856	70,335
PROPOSED FOURTH FLOOR AREA:		70,176
PROPOSED FIFTH FLOOR AREA:		68,196
PROPOSED SIXTH FLOOR AREA:		66,533
PROPOSED SEVENTH FLOOR AREA:		58,513
PROPOSED ROOF AREA:	3,668	798
TOTAL PROPOSED FLOOR AREA:	471,986	
LAND COVERED BY STRUCTURES:	62%	(129,952 SF)
LANDSCAPING:	16%	(32,751 SF)
PAVED SURFACES:	22%	(47,562 SF)
PARKING SPACES:	3 UNCOV	

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TRUE NORTH
PROJECT NORTH
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Project Boundary

Menlo Uptown Project EIR
Conceptual Site Plan

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020.

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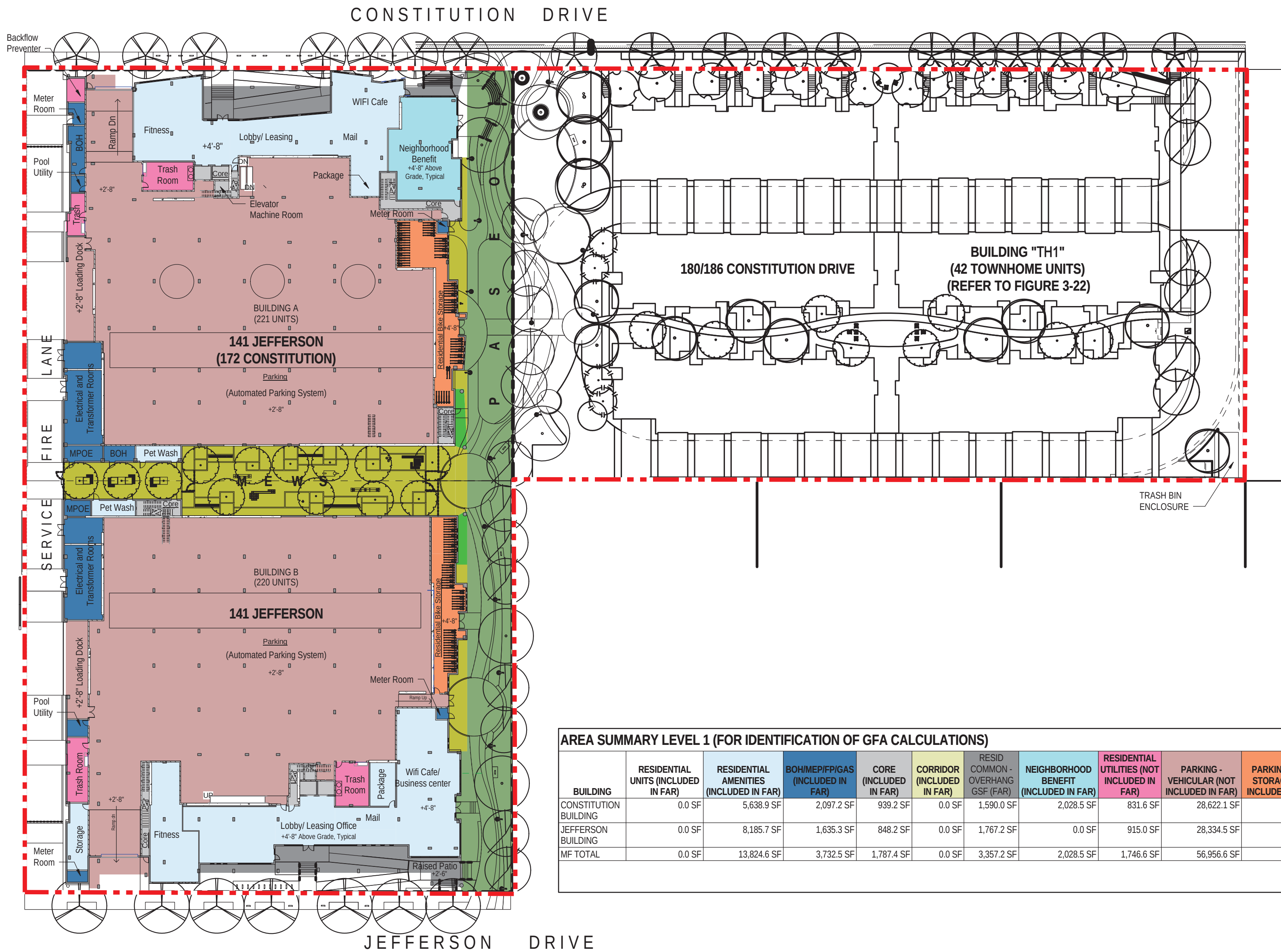

AREA SUMMARY LEVEL 1 (FOR IDENTIFICATION OF GFA CALCULATIONS)

BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	RESIDENTIAL AMENITIES (INCLUDED IN FAR)	BOH/MEP/FP/GAS (INCLUDED IN FAR)	CORE (INCLUDED IN FAR)	CORRIDOR (INCLUDED IN FAR)	RESID COMMON - OVERHANG GSF (FAR)	NEIGHBORHOOD BENEFIT (INCLUDED IN FAR)	RESIDENTIAL UTILITIES (NOT INCLUDED IN FAR)	PARKING - VEHICULAR (NOT INCLUDED IN FAR)	PARKING - BIKE STORAGE (NOT INCLUDED IN FAR)	OPEN SPACE - PUBLIC / COMMON / PRIVATE (NOT INCLUDED IN FAR)
CONSTITUTION BUILDING	0.0 SF	5,638.9 SF	2,097.2 SF	939.2 SF	0.0 SF	1,590.0 SF	2,028.5 SF	831.6 SF	28,622.1 SF	1,742.9 SF	9,908.0 SF
JEFFERSON BUILDING	0.0 SF	8,185.7 SF	1,635.3 SF	848.2 SF	0.0 SF	1,767.2 SF	0.0 SF	915.0 SF	28,334.5 SF	1,445.3 SF	10,120.0 SF
MF TOTAL	0.0 SF	13,824.6 SF	3,732.5 SF	1,787.4 SF	0.0 SF	3,357.2 SF	2,028.5 SF	1,746.6 SF	56,956.6 SF	3,188.2 SF	20,028.0 SF

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FIGURE 3-9

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TRUE NORTH
PROJECT NORTH
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Project Boundary

Menlo Uptown Project EIR

Conceptual Multi-Family Building Ground Level Plan

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020

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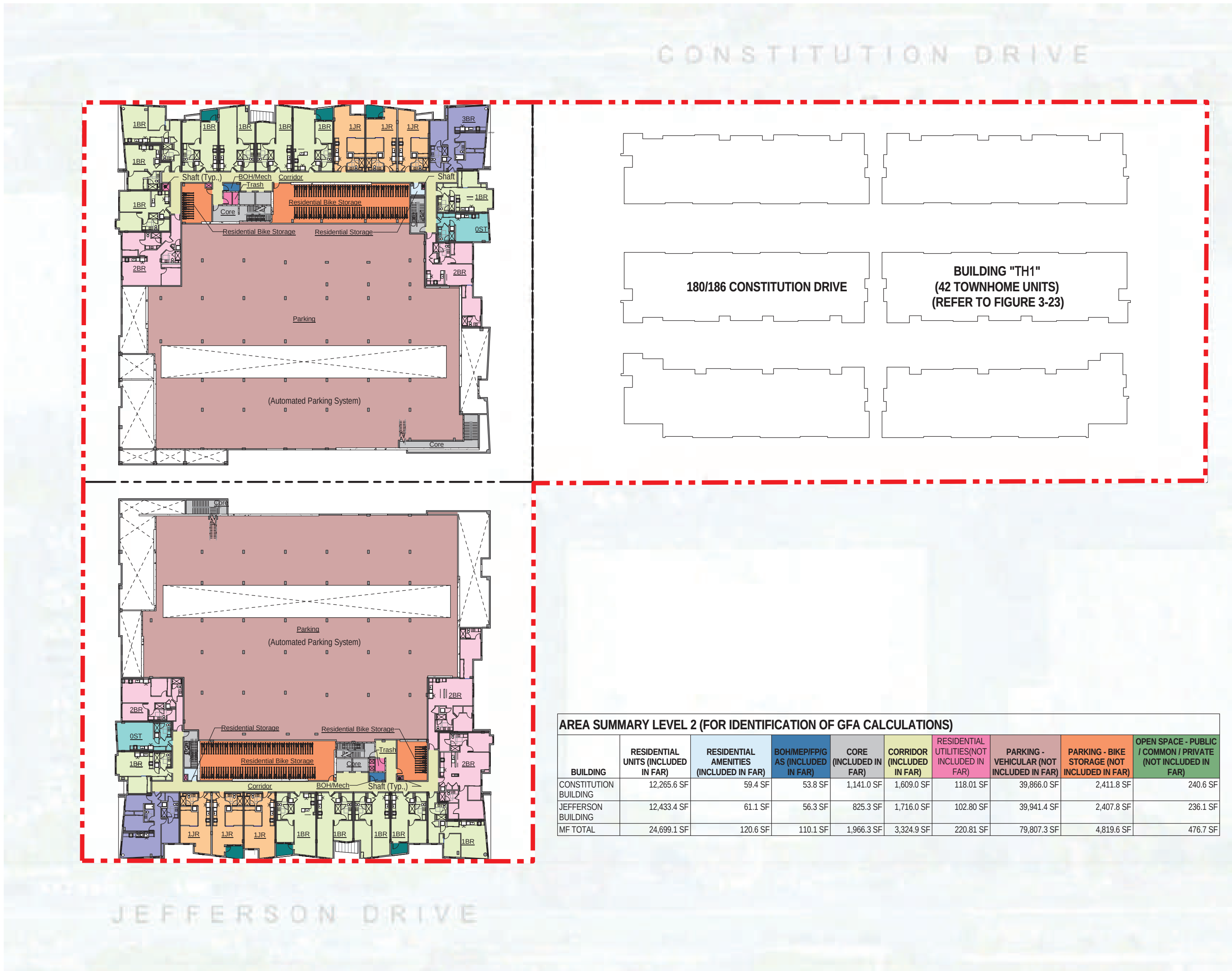

BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	RESIDENTIAL AMENITIES (INCLUDED IN FAR)	BOH/MEP/FP/GAS (INCLUDED IN FAR)	CORE (INCLUDED IN FAR)	CORRIDOR (INCLUDED IN FAR)	RESIDENTIAL UTILITIES(NOT INCLUDED IN FAR)	PARKING - VEHICULAR (NOT INCLUDED IN FAR)	PARKING - BIKE STORAGE (NOT INCLUDED IN FAR)	OPEN SPACE - PUBLIC / COMMON / PRIVATE (NOT INCLUDED IN FAR)
CONSTITUTION BUILDING	12,265.6 SF	59.4 SF	53.8 SF	1,141.0 SF	1,609.0 SF	118.01 SF	39,866.0 SF	2,411.8 SF	240.6 SF
JEFFERSON BUILDING	12,433.4 SF	61.1 SF	56.3 SF	825.3 SF	1,716.0 SF	102.80 SF	39,941.4 SF	2,407.8 SF	236.1 SF
MF TOTAL	24,699.1 SF	120.6 SF	110.1 SF	1,966.3 SF	3,324.9 SF	220.81 SF	79,807.3 SF	4,819.6 SF	476.7 SF

AREA SUMMARY LEVEL 2 (FOR IDENTIFICATION OF GFA CALCULATIONS)

UNIT TYPES - PLAN LEGEND

- 0 Studio (FAR)
- 1 Junior Bedroom (FAR)
- 1 Bedroom (FAR)
- 2 Bedroom (FAR)
- 3 Bedroom (FAR)

LSA

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TRUE NORTH
PROJECT NORTH
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Project Boundary

FIGURE 3-10

Menlo Uptown Project EIR

Conceptual Multi-Family Building Second Level Plan

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020

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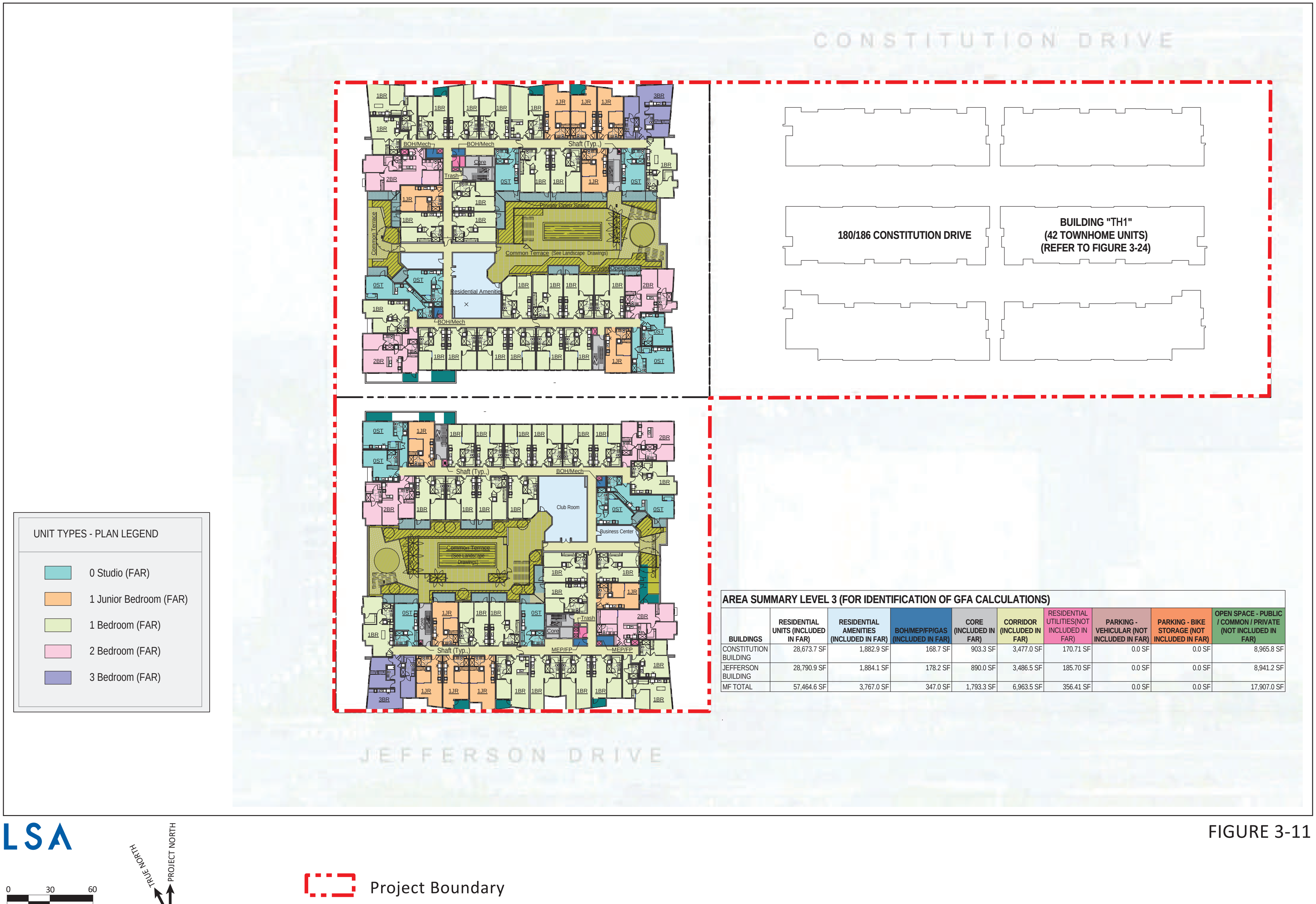

AREA SUMMARY LEVEL 3 (FOR IDENTIFICATION OF GFA CALCULATIONS)

BUILDINGS	RESIDENTIAL UNITS (INCLUDED IN FAR)	RESIDENTIAL AMENITIES (INCLUDED IN FAR)	BOH/MEP/FP/GAS (INCLUDED IN FAR)	CORE (INCLUDED IN FAR)	CORRIDOR (INCLUDED IN FAR)	RESIDENTIAL UTILITIES(NOT INCLUDED IN FAR)	PARKING - VEHICULAR (NOT INCLUDED IN FAR)	PARKING - BIKE STORAGE (NOT INCLUDED IN FAR)	OPEN SPACE - PUBLIC / COMMON / PRIVATE (NOT INCLUDED IN FAR)
CONSTITUTION BUILDING	28,673.7 SF	1,882.9 SF	168.7 SF	903.3 SF	3,477.0 SF	170.71 SF	0.0 SF	0.0 SF	8,965.8 SF
JEFFERSON BUILDING	28,790.9 SF	1,884.1 SF	178.2 SF	890.0 SF	3,486.5 SF	185.70 SF	0.0 SF	0.0 SF	8,941.2 SF
MF TOTAL	57,464.6 SF	3,767.0 SF	347.0 SF	1,793.3 SF	6,963.5 SF	356.41 SF	0.0 SF	0.0 SF	17,907.0 SF

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FIGURE 3-11

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020

Menlo Uptown Project EIR

Conceptual Multi-Family Building Third (Podium) Level Plan

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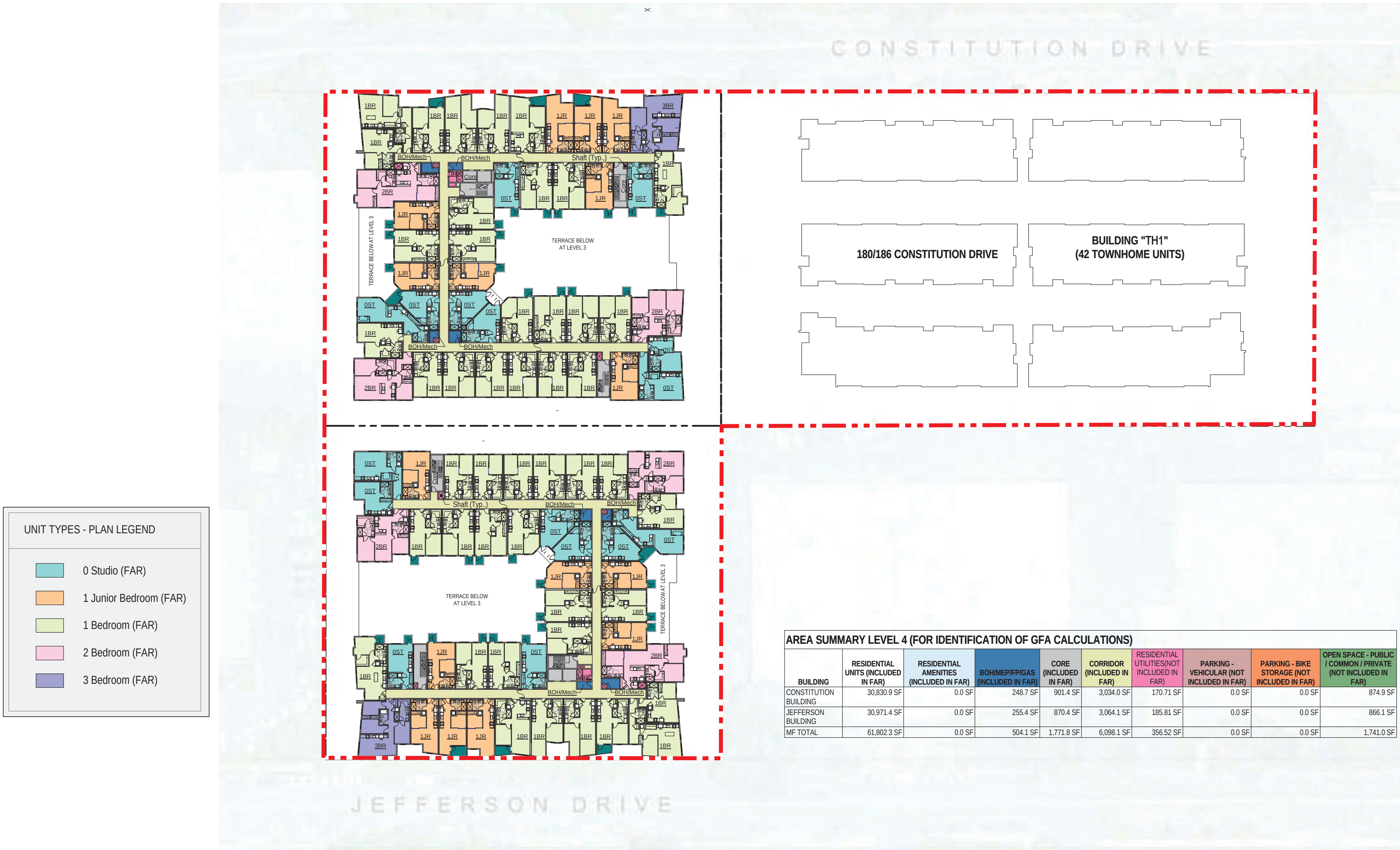

AREA SUMMARY LEVEL 4 (FOR IDENTIFICATION OF GFA CALCULATIONS)

BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	RESIDENTIAL AMENITIES (INCLUDED IN FAR)	BOH/MEP/FP/GAS (INCLUDED IN FAR)	CORE (INCLUDED IN FAR)	CORRIDOR (INCLUDED IN FAR)	RESIDENTIAL UTILITIES(NOT INCLUDED IN FAR)	PARKING - VEHICULAR (NOT INCLUDED IN FAR)	PARKING - BIKE STORAGE (NOT INCLUDED IN FAR)	OPEN SPACE - PUBLIC / COMMON / PRIVATE (NOT INCLUDED IN FAR)
CONSTITUTION BUILDING	30,830.9 SF	0.0 SF	248.7 SF	901.4 SF	3,034.0 SF	170.71 SF	0.0 SF	0.0 SF	874.9 SF
JEFFERSON BUILDING	30,971.4 SF	0.0 SF	255.4 SF	870.4 SF	3,064.1 SF	185.81 SF	0.0 SF	0.0 SF	866.1 SF
MF TOTAL	61,802.3 SF	0.0 SF	504.1 SF	1,771.8 SF	6,098.1 SF	356.52 SF	0.0 SF	0.0 SF	1,741.0 SF

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FIGURE 3-12

Menlo Uptown Project EIR

Conceptual Multi-Family Building Fourth Level Plan

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020

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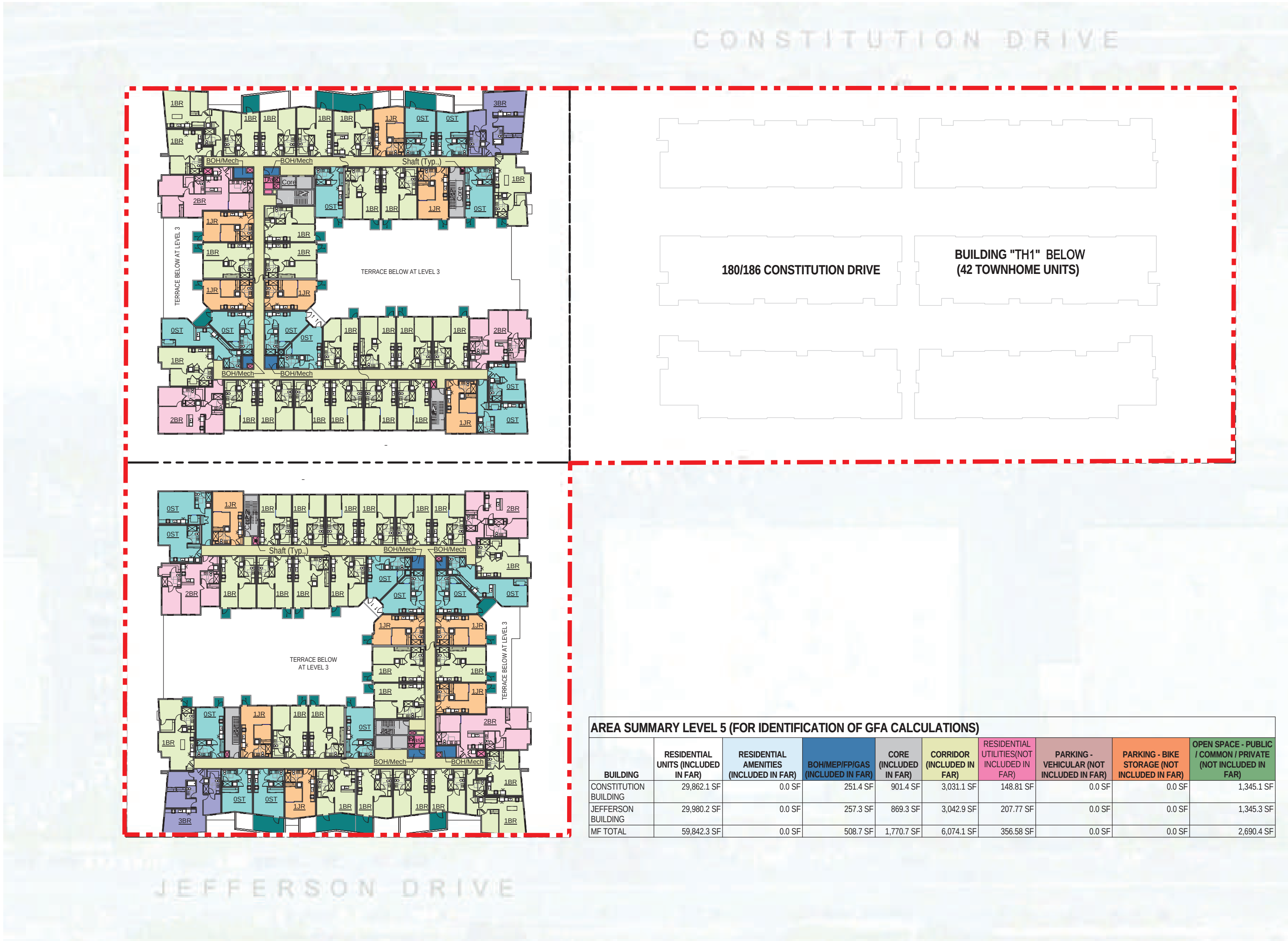

AREA SUMMARY LEVEL 5 (FOR IDENTIFICATION OF GFA CALCULATIONS)

BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	RESIDENTIAL AMENITIES (INCLUDED IN FAR)	BOH/MEP/FP/GAS (INCLUDED IN FAR)	CORE (INCLUDED IN FAR)	CORRIDOR (INCLUDED IN FAR)	RESIDENTIAL UTILITIES(NOT INCLUDED IN FAR)	PARKING - VEHICULAR (NOT INCLUDED IN FAR)	PARKING - BIKE STORAGE (NOT INCLUDED IN FAR)	OPEN SPACE - PUBLIC / COMMON / PRIVATE (NOT INCLUDED IN FAR)
CONSTITUTION BUILDING	29,862.1 SF	0.0 SF	251.4 SF	901.4 SF	3,031.1 SF	148.81 SF	0.0 SF	0.0 SF	1,345.1 SF
JEFFERSON BUILDING	29,980.2 SF	0.0 SF	257.3 SF	869.3 SF	3,042.9 SF	207.77 SF	0.0 SF	0.0 SF	1,345.3 SF
MF TOTAL	59,842.3 SF	0.0 SF	508.7 SF	1,770.7 SF	6,074.1 SF	356.58 SF	0.0 SF	0.0 SF	2,690.4 SF

UNIT TYPES - PLAN LEGEND

- 0 Studio (FAR)
- 1 Junior Bedroom (FAR)
- 1 Bedroom (FAR)
- 2 Bedroom (FAR)
- 3 Bedroom (FAR)

LSA

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FEET

TRUE NORTH
PROJECT NORTH
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Project Boundary

FIGURE 3-13

Menlo Uptown Project EIR

Conceptual Multi-Family Building Fifth Level Plan

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020

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AREA SUMMARY LEVEL 6 (FOR IDENTIFICATION OF GFA CALCULATIONS)

BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	RESIDENTIAL AMENITIES (INCLUDED IN FAR)	BOH/MEP/FP/GAS (INCLUDED IN FAR)	CORE (INCLUDED IN FAR)	CORRIDOR (INCLUDED IN FAR)	RESIDENTIAL UTILITIES(NOT INCLUDED IN FAR)	PARKING - VEHICULAR (NOT INCLUDED IN FAR)	PARKING - BIKE STORAGE (NOT INCLUDED IN FAR)	OPEN SPACE - PUBLIC / COMMON / PRIVATE (NOT INCLUDED IN FAR)
CONSTITUTION BUILDING	29,066.2 SF	0.0 SF	248.3 SF	850.5 SF	3,030.8 SF	196.91 SF	0.0 SF	0.0 SF	1,592.9 SF
JEFFERSON BUILDING	29,223.3 SF	0.0 SF	253.6 SF	813.5 SF	3,046.6 SF	159.57 SF	0.0 SF	0.0 SF	1,593.5 SF
MF TOTAL	58,289.6 SF	0.0 SF	501.8 SF	1,664.0 SF	6,077.4 SF	356.47 SF	0.0 SF	0.0 SF	3,186.3 SF

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TRUE NORTH
PROJECT NORTH
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Project Boundary

FIGURE 3-14

Menlo Uptown Project EIR
Conceptual Multi-Family Building Sixth Level Plan

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020

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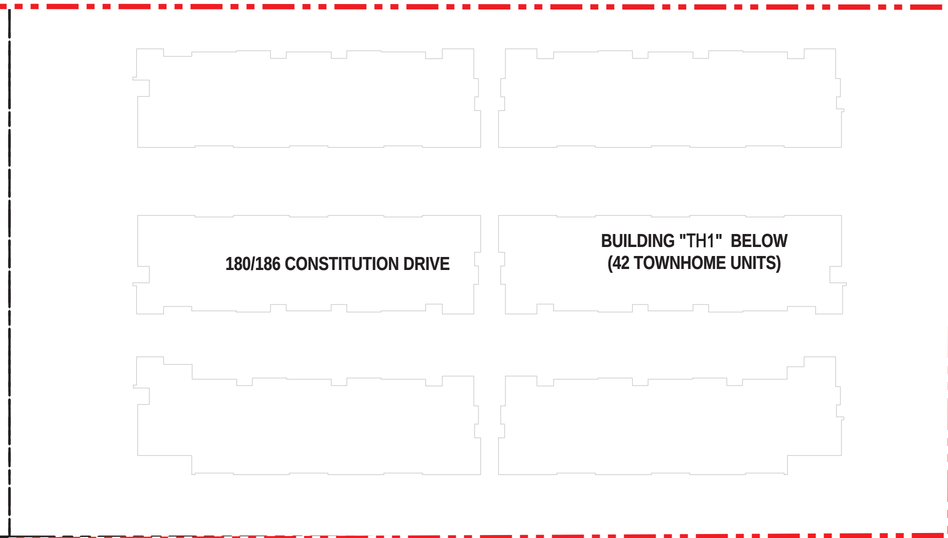
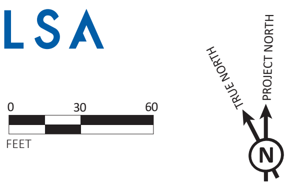


AREA SUMMARY LEVEL 7 (FOR IDENTIFICATION OF GFA CALCULATIONS)

BUILDINGS	RESIDENTIAL UNITS (INCLUDED IN FAR)	BOH/MEP/FP/GAS (INCLUDED IN FAR)	CORE (INCLUDED IN FAR)	CORRIDOR (INCLUDED IN FAR)	RESIDENTIAL UTILITIES (NOT IN FAR)	PARKING - VEHICULAR (NOT INCLUDED IN FAR)	PARKING - BIKE STORAGE (NOT INCLUDED IN FAR)	RESIDENTIAL AMENITIES (INCLUDED IN FAR)	OPEN SPACE - PUBLIC / COMMON / PRIVATE (NOT INCLUDED IN FAR)
CONSTITUTION BUILDING	25,025.4 SF	251.9 SF	851.6 SF	3,133.1 SF	170.73 SF	0.0 SF	0.0 SF	0.0 SF	3,320.8 SF
JEFFERSON BUILDING	25,025.9 SF	256.8 SF	843.7 SF	3,124.4 SF	185.68 SF	0.0 SF	0.0 SF	0.0 SF	2,765.7 SF
MF TOTAL	50,051.3 SF	508.7 SF	1,695.3 SF	6,257.6 SF	356.41 SF	0.0 SF	0.0 SF	0.0 SF	6,086.6 SF

LSA



Project Boundary

FIGURE 3-15

Menlo Uptown Project EIR

Conceptual Multi-Family Building Seventh Level Plan

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020

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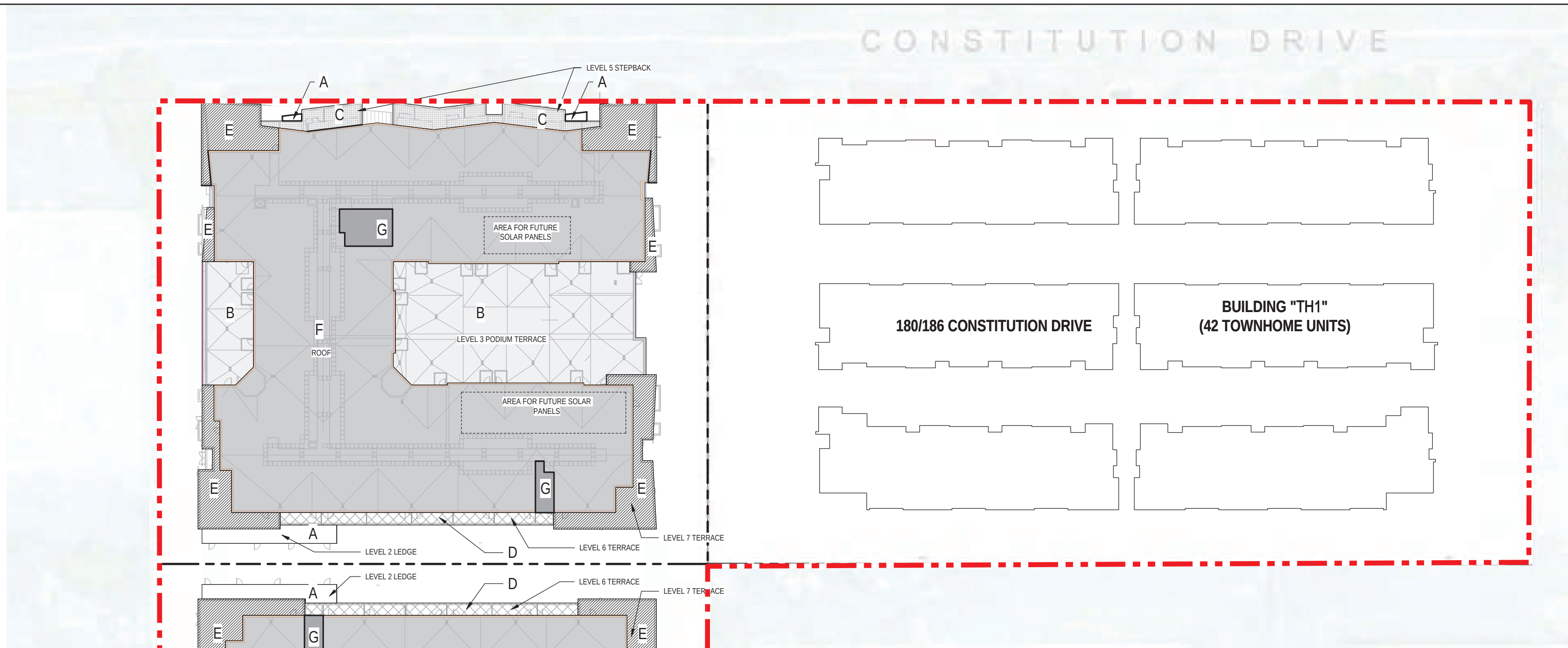
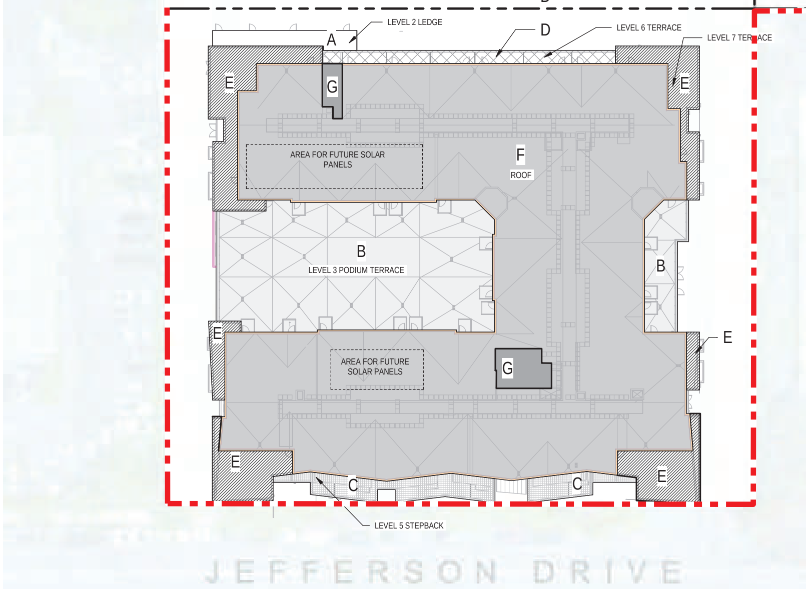




BUILDING HEIGHT CALCULATIONS SUMMARY (Average Building Height 62.06' < 62.5' Max.)

MULTI-FAMILY HOUSING UNITS AND TOWNHOMES	Area	Height	Area * Height	Average Height (FT)
A. Multi-Family Housing Project - Ledge at Level 2	1,069.44	19.67	21,036	
B. Multi-Family Housing Project - Podium Terrace at Level 3	16,516.17	32	528,517	
C. Multi-Family Housing Project - Level 5 Stepback Terrace	2,556.95	52.5	134,240	
D. Multi-Family Housing Project - Ledge at Level 6 (facing the Mews)	1,596.97	62.75	100,210	
E. Multi-Family Housing Project - Common and Private Terraces at Level 7	8,344.37	73.5	613,311	
F. Multi-Family Housing Project - Building Roof (excludes Building Core Area)	58,113.23	84.83	4,929,745	
G. Multi-Family Housing Project - Building Roof - Building Core Area	1,278.75	95	121,481	
Townhomes - Roof 1	261.00	14.5	3,785	
Townhomes - Roof 2	612.00	15	9,180	
Townhomes - Roof 3	1,638.00	26	42,588	
Townhomes - Roof 4	13,896.00	38.25	531,522	
Townhomes - Roof 5	9,114.00	38.67	352,438	
Townhomes - Roof 6	5,352.00	40.5	216,756	
Townhomes - Roof 7	4,110.00	41.5	170,565	
Townhomes - Roof 8	3,660.00	48	175,680	
TOTAL	128,118.88		7,951,055	62.06

LSA

0 30 60
FEET

TRUE NORTH
PROJECT NORTH
N

Project Boundary

FIGURE 3-16

Menlo Uptown Project EIR
Conceptual Multi-Family Building Roof Plan

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-16.ai (7/28/2020)

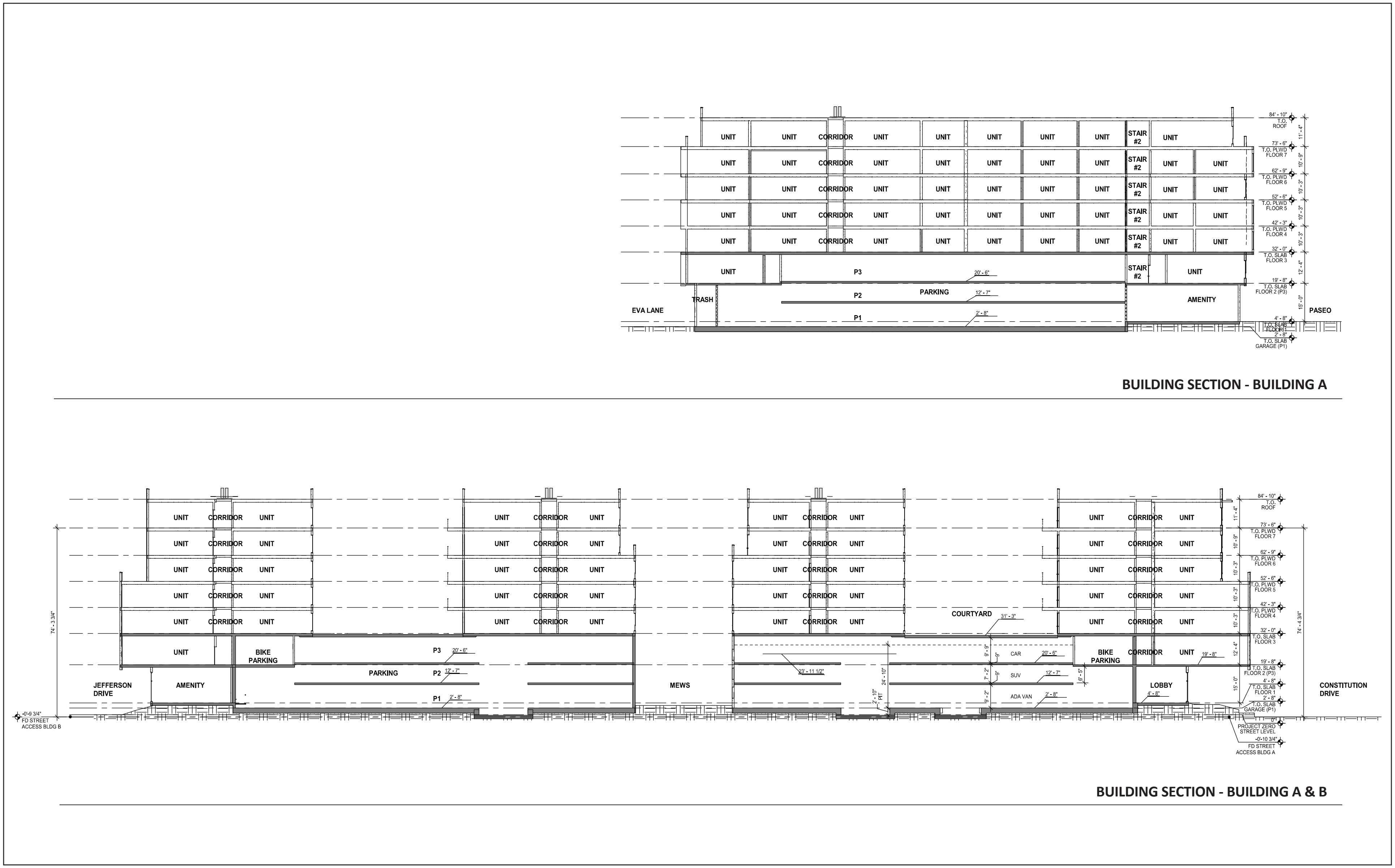


FIGURE 3-17

Menlo Uptown Project EIR
Typical Conceptual Multi-Family Building Sections

SOURCE: CITY OF MENLO PARK, JUNE 26, 2020.

ELEVATION MATERIAL - NORTH BUILDING A

ELEVATION MATERIAL - EAST BUILDING A

LSA

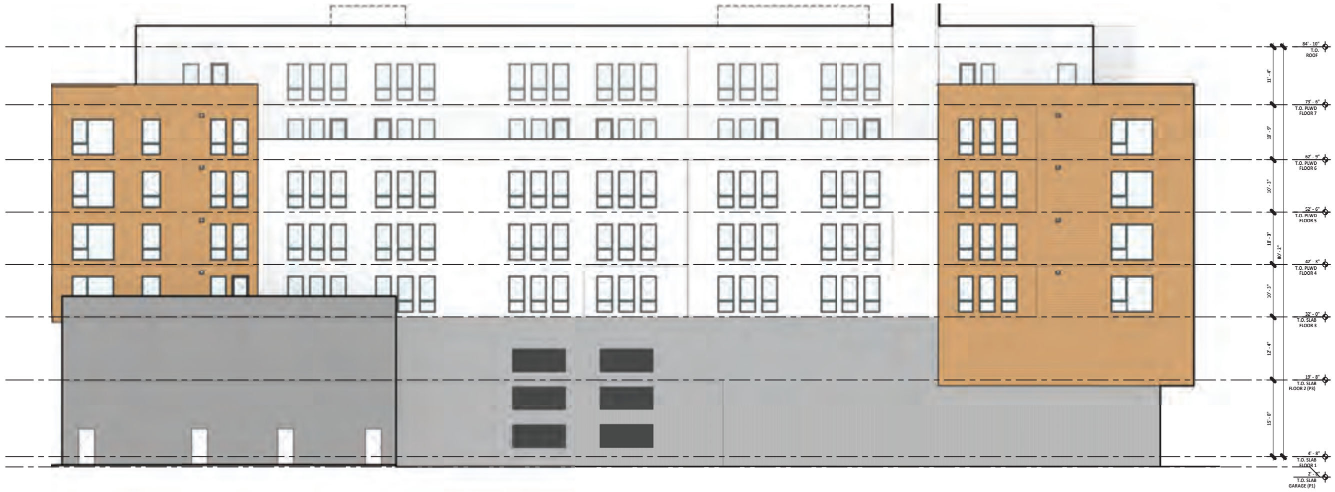
FIGURE 3-18

Menlo Uptown Project EIR

Conceptual Multi-Family Building A Elevations (North and East)

SOURCE: CITY OF MENLO PARK, 2020

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-18.ai (7/29/2020)



ELEVATION MATERIAL - SOUTH BUILDING A

ELEVATION MATERIAL - WEST BUILDING A

LSA

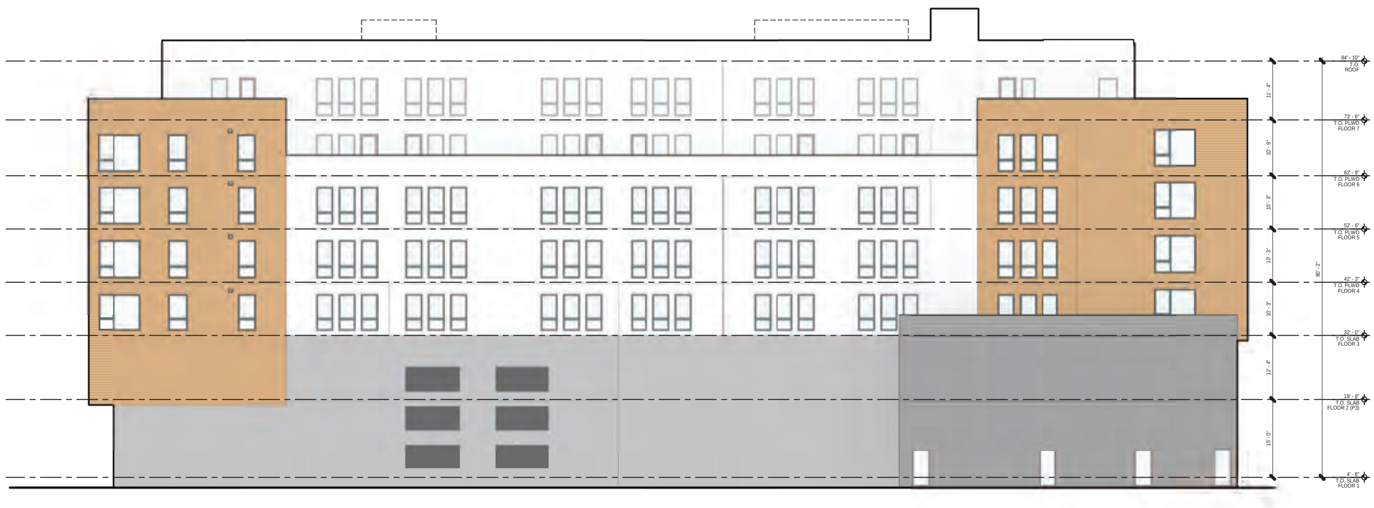
FIGURE 3-19

SOURCE: CITY OF MENLO PARK, 2020

Menlo Uptown Project EIR

Conceptual Multi-Family Building A Elevations (South and West)

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-19.ai (7/29/2020)



ELEVATION MATERIAL - NORTH BUILDING B

ELEVATION MATERIAL - EAST BUILDING B

LSA

FIGURE 3-20

Menlo Uptown Project EIR

Conceptual Multi-Family Building B Elevations (North and East)

SOURCE: CITY OF MENLO PARK, 2020

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-20.ai (7/29/2020)

ELEVATION MATERIAL - SOUTH BUILDING B

ELEVATION MATERIAL - WEST BUILDING B

LSA

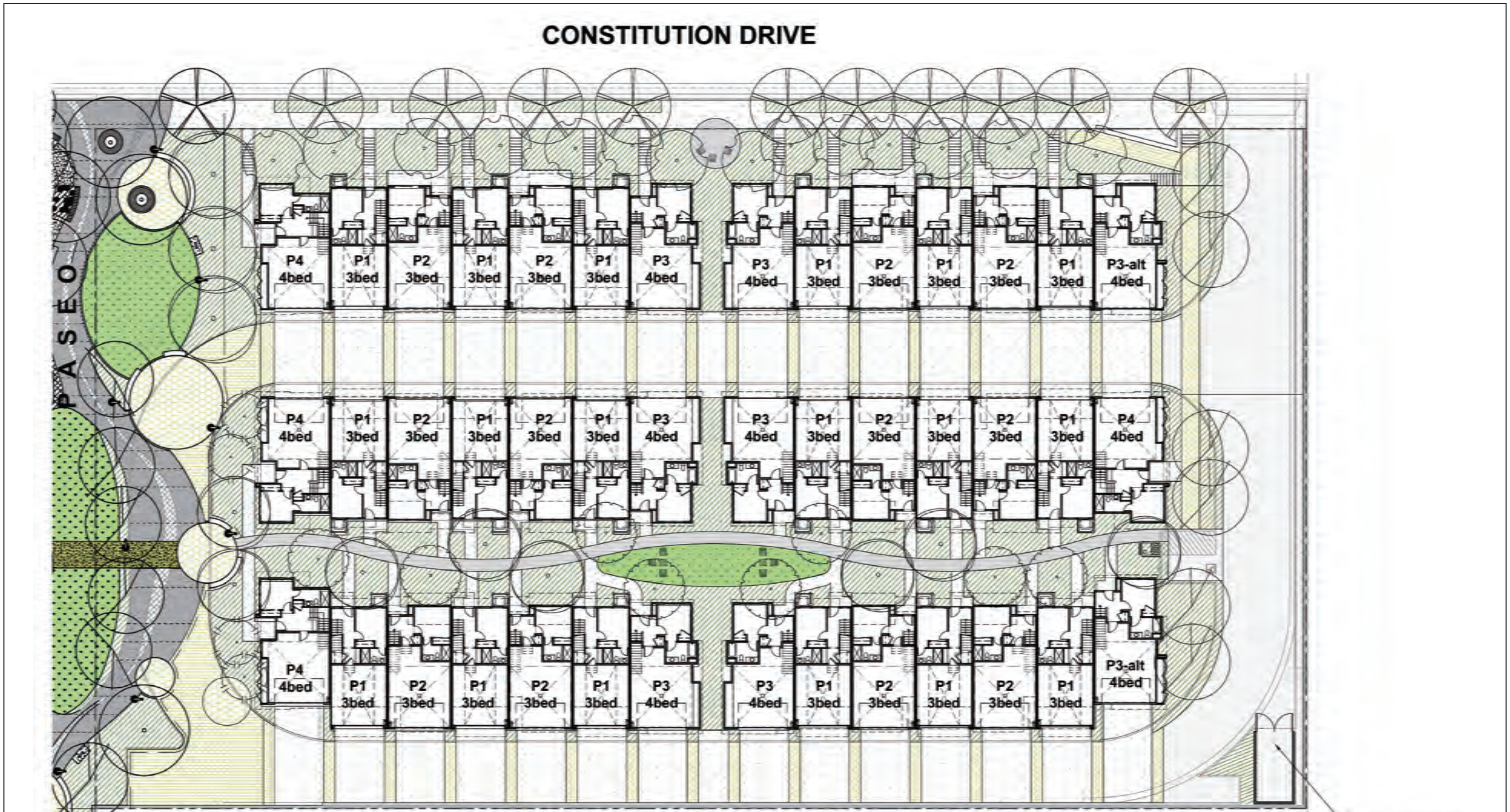
FIGURE 3-21

Menlo Uptown Project EIR

Conceptual Multi-Family Building B Elevations (South and West)

SOURCE: CITY OF MENLO PARK, 2020

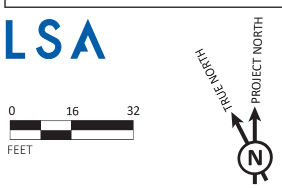
P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-21.ai (7/29/2020)



AREA SUMMARY LEVEL 1 (FOR IDENTIFICATION OF GFA CALCULATIONS)					
BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	ELEC.METER (INCLUDED IN FAR)	PRIVATE GARAGE (NOT INCLUDED IN FAR)	TRASH AREA (NOT INCLUDED IN FAR)	OPEN SPACE -PUBLIC/ COMMON/ PRIVATE/LANDSCAPE ARA (NOT INCLUDED IN FAR)
TOWNHOMES	14,416 SF	240 SF	19,886 SF	323 SF	21,085 SF

LSA

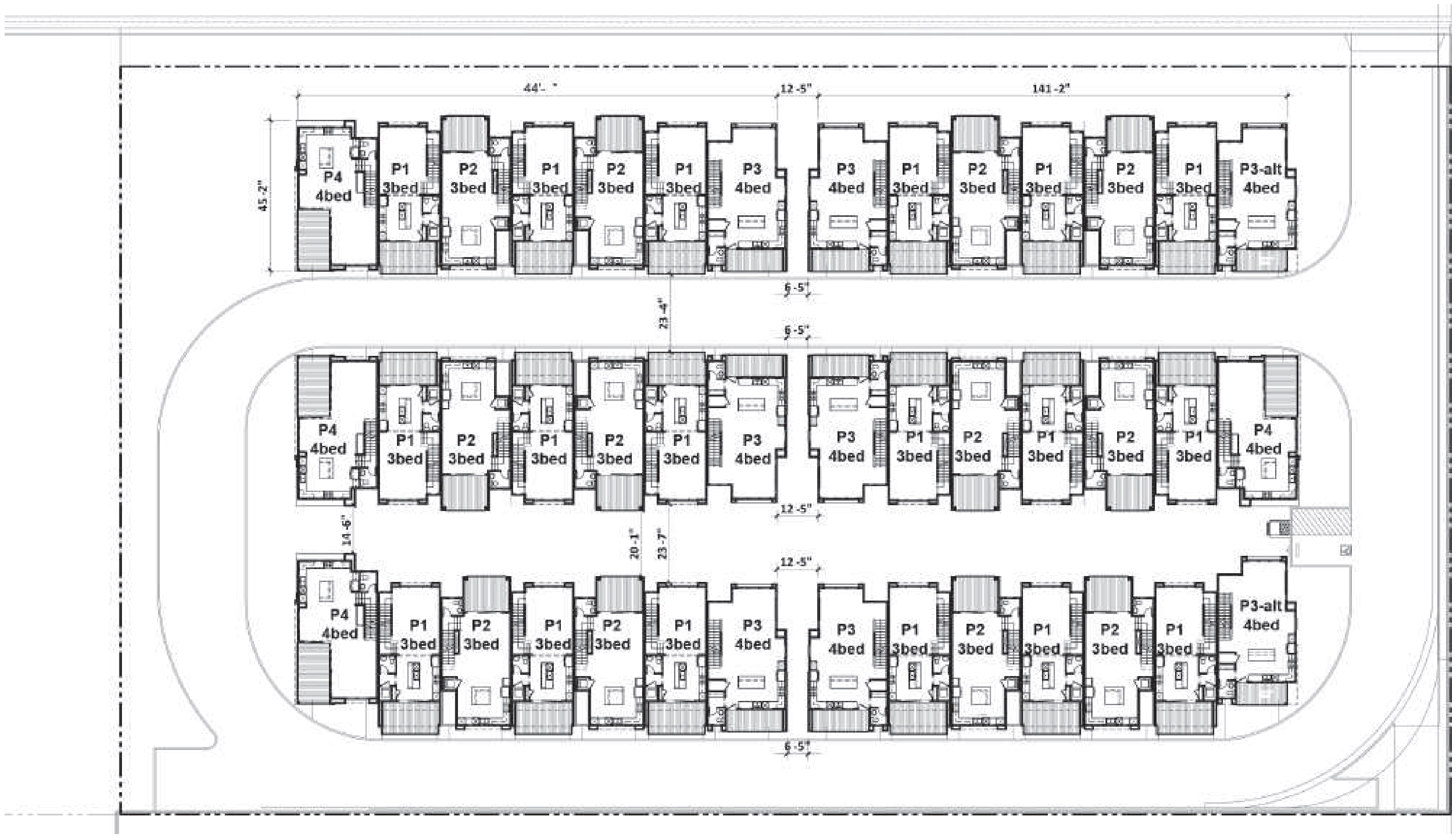
FIGURE 3-22



Menlo Uptown Project EIR

Conceptual Townhome Buildings Ground Level Plan

SOURCE: CITY OF MENLO PARK, 2020



AREA SUMMARY LEVEL 2 (FOR IDENTIFICATION OF GFA CALCULATIONS)					
BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	ELEC.METER (INCLUDED IN FAR)	PRIVATE GARAGE (NOT INCLUDED IN FAR)	TRASH AREA (NOT INCLUDED IN FAR)	OPEN SPACE -PUBLIC/ COMMON/ PRIVATE/LANDSCAPE ARA (NOT INCLUDED IN FAR)
TOWNHOMES	30,304 SF	0 SF	0 SF	0 SF	6,168 SF

LSA

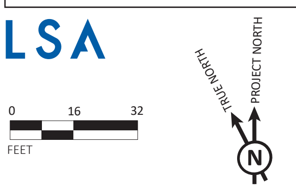


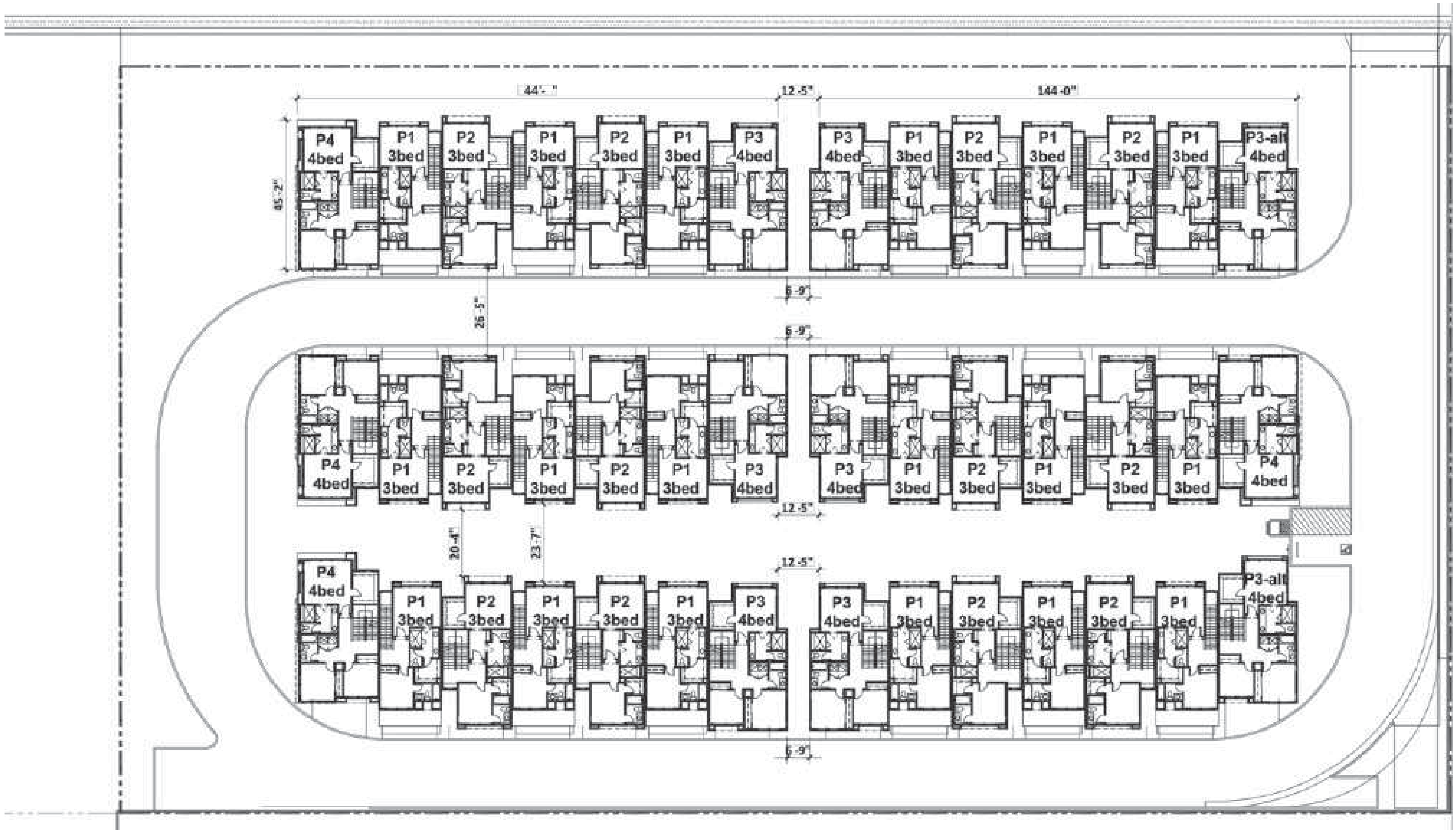
FIGURE 3-23

Menlo Uptown Project EIR

Conceptual Townhome Buildings Second Level Plan

SOURCE: CITY OF MENLO PARK, 2020

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-23.ai (7/29/2020)



AREA SUMMARY LEVEL 3 (FOR IDENTIFICATION OF GFA CALCULATIONS)					
BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	ELEC.METER (INCLUDED IN FAR)	PRIVATE GARAGE (NOT INCLUDED IN FAR)	TRASH AREA (NOT INCLUDED IN FAR)	OPEN SPACE -PUBLIC/ COMMON/ PRIVATE/LANDSCAPE ARA (NOT INCLUDED IN FAR)
TOWNHOMES	33,856 SF	0 SF	0 SF	0 SF	0 SF

LSA

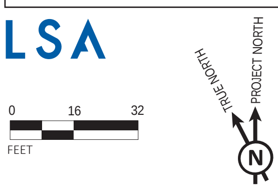
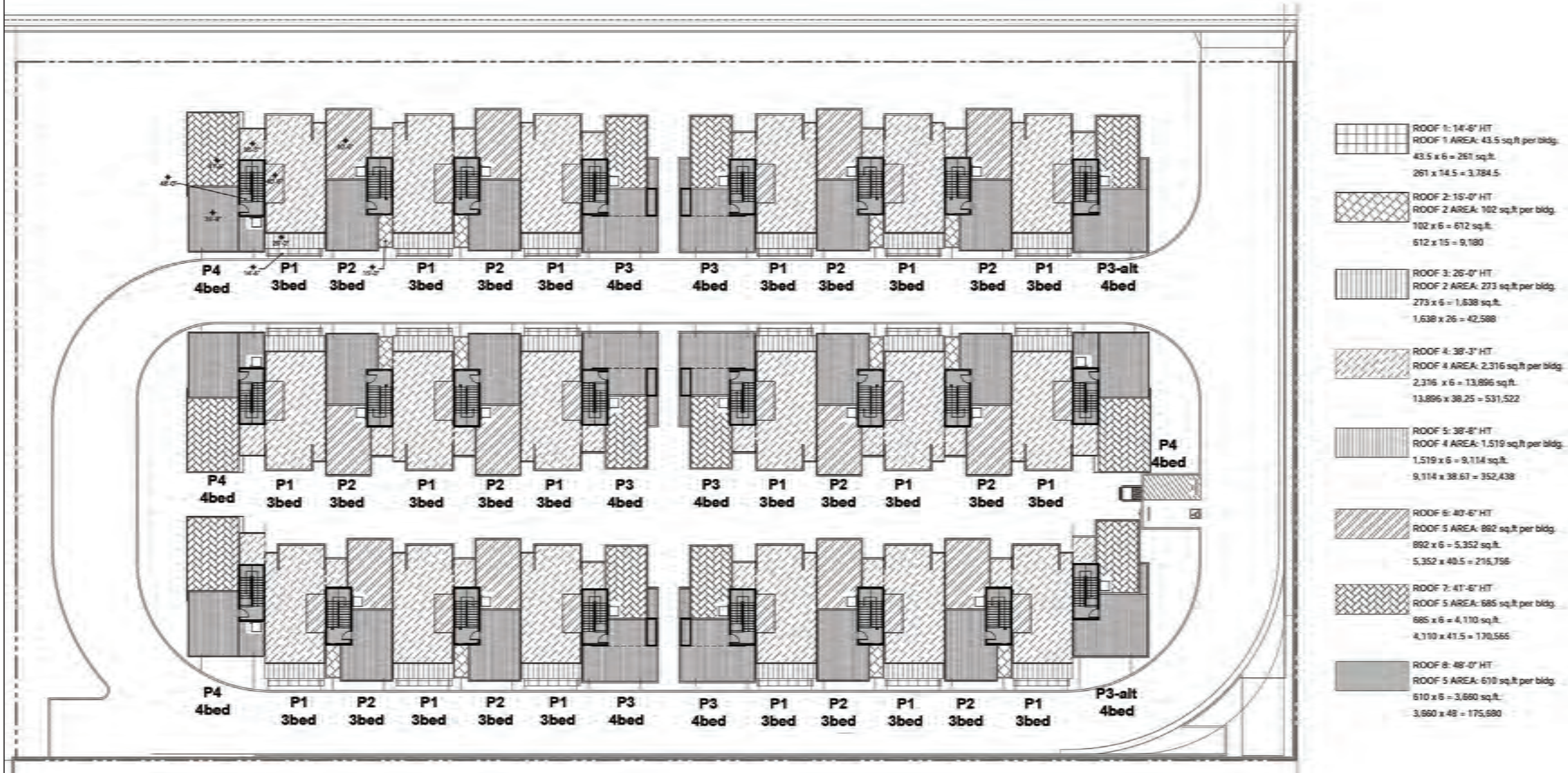


FIGURE 3-24

Menlo Uptown Project EIR

Conceptual Townhome Buildings Third Level Plan

SOURCE: CITY OF MENLO PARK, 2020



AREA SUMMARY ROOF (FOR IDENTIFICATION OF GFA CALCULATIONS)

BUILDING	RESIDENTIAL UNITS (INCLUDED IN FAR)	ELEC.METER (INCLUDED IN FAR)	PRIVATE GARAGE (NOT INCLUDED IN FAR)	TRASH AREA (NOT INCLUDED IN FAR)	OPEN SPACE -PUBLIC/ COMMON/ PRIVATE/LANDSCAPE ARA (NOT INCLUDED IN FAR)
TOWNHOMES	3,668 SF	0 SF	0 SF	0 SF	7,260 SF

LSA

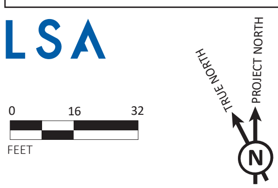
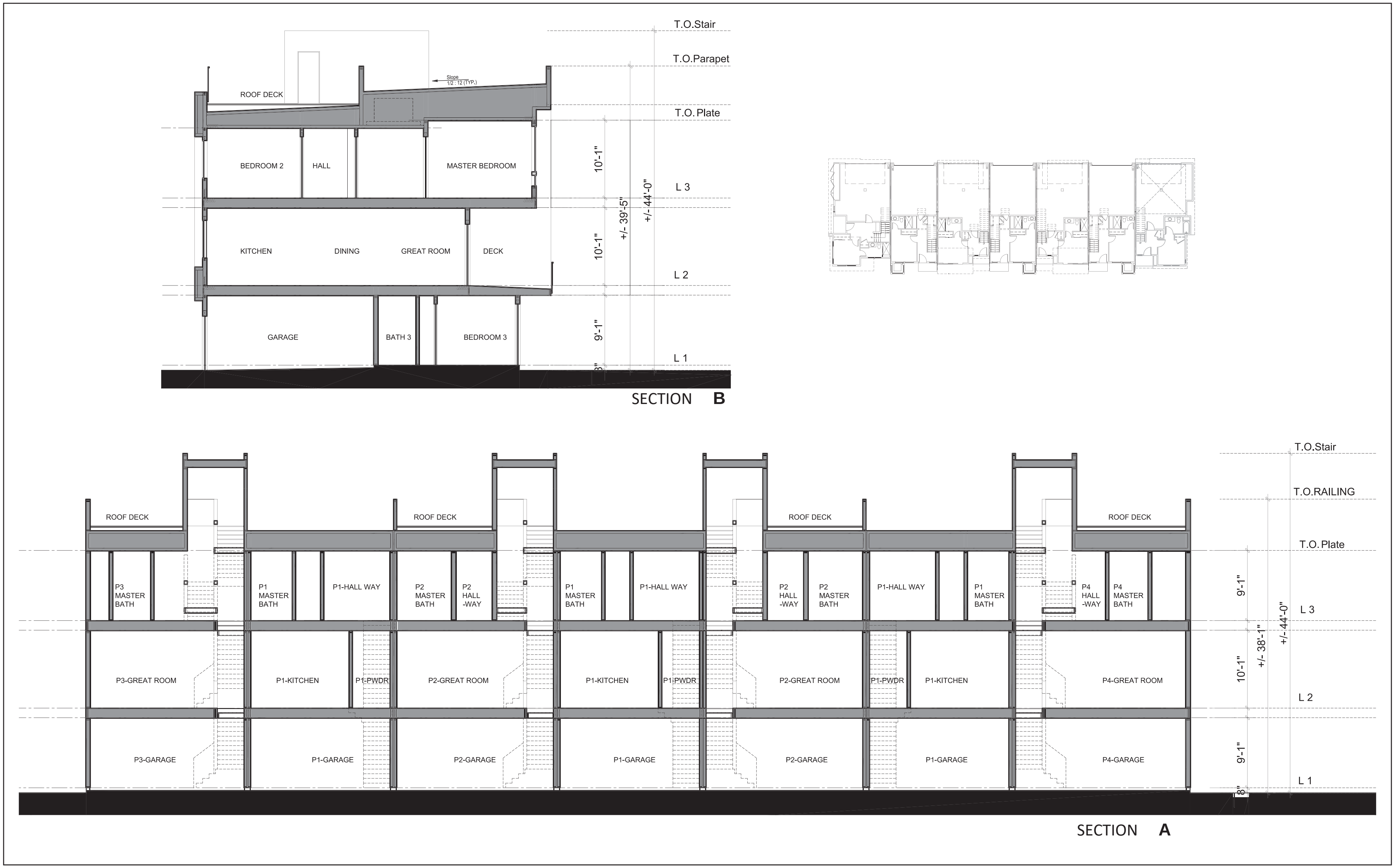


FIGURE 3-25

SOURCE: CITY OF MENLO PARK, 2020

Menlo Uptown Project EIR
Conceptual Townhome Buildings Roof Plan

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-25.ai (7/29/2020)



LSA

FIGURE 3-26

0 16 32
FEET

SOURCE: CITY OF MENLO PARK, 2020

Menlo Uptown Project EIR
Typical Conceptual Townhome Building Section

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-26.ai (7/30/2020)

FIGURE 3-27

LSA

0 8 16
FEET

SOURCE: CITY OF MENLO PARK, 2020

Menlo Uptown Project EIR
Typical Conceptual Townhome Building Elevations (Front and Rear)

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-27.ai (7/30/2020)

Left Elevation

Right Elevation

LSA

FIGURE 3-28

Menlo Uptown Project EIR

Typical Conceptual Townhome Building Elevations (Left and Right)

SOURCE: CITY OF MENLO PARK, 2020

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-28.ai (7/30/2020)

LSA

FIGURE 3-29

NOT TO SCALE

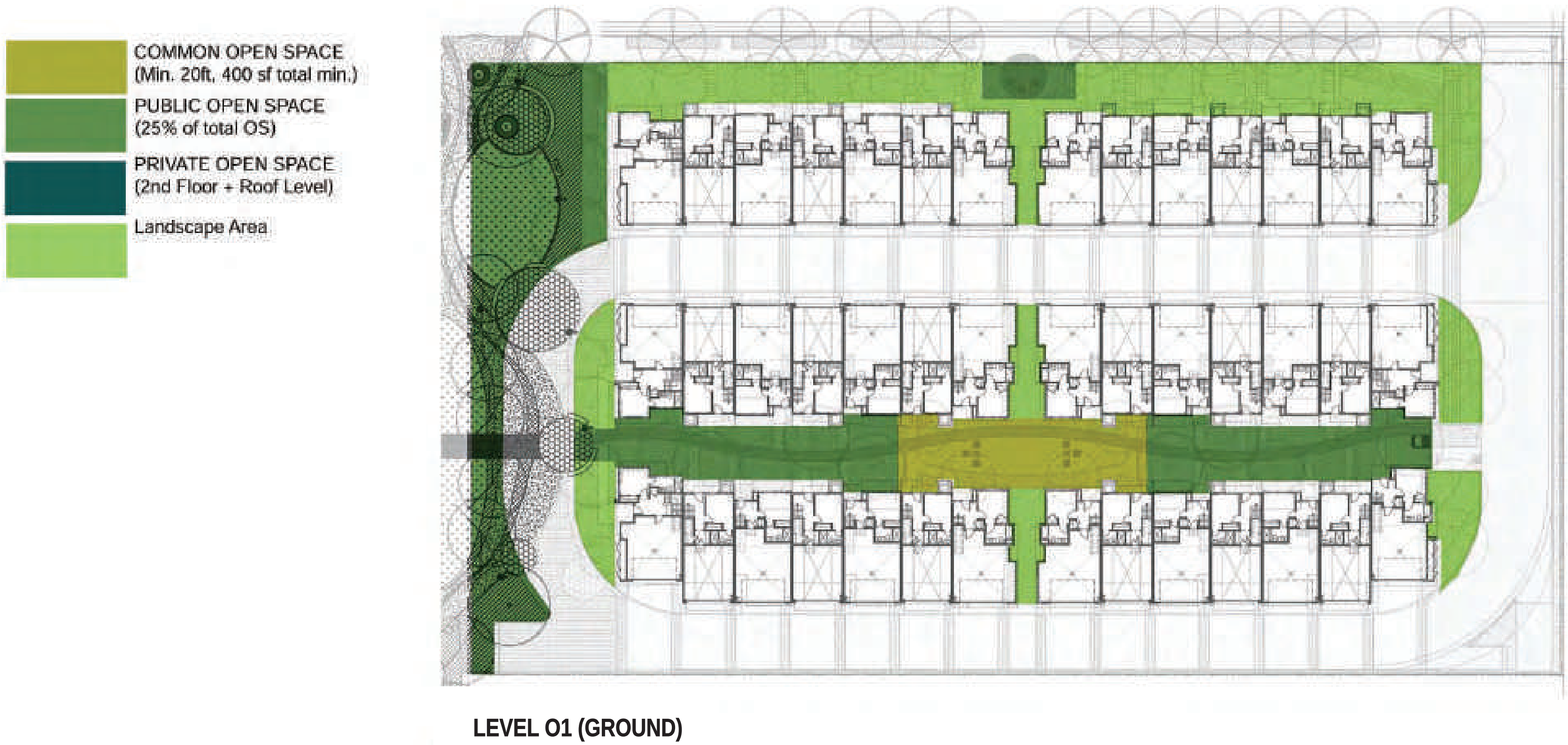
TRUE NORTH
PROJECT NORTH
N

Menlo Uptown Project EIR

Conceptual Multi-Family Buildings Ground and Third Level Open Space Plan

SOURCE: CITY OF MENLO PARK, 2020

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-29.ai (7/31/2020)



LSA

NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

FIGURE 3-30

SOURCE: CITY OF MENLO PARK, 2020

Menlo Uptown Project EIR
Conceptual Townhome Building Ground Level Open Space Plan

P:\CMK1902 141 Jefferson\PRODUCTS\DEIR\Figures\Figure 3-30.ai (7/31/2020)

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3.4.3 Access, Circulation, and Parking

Pedestrian access to the proposed buildings would be provided by Constitution Drive and Jefferson Drive and from within the site interior. As described above, Buildings A and B would include residential lobbies on the ground floor, and the residential units would be accessed via a stairwell and two elevators within the lobby, or stairwells located adjacent to the plaza between the two buildings. The pedestrian paseo would provide access to each of the proposed buildings.

Buildings A and B would both include at-grade, two-level, up to approximately 68,500-square-foot, 242-space parking garages with automated lifts. A total of 484 parking spaces would be provided between the two buildings, 441 of which would be unbundled and available for residents (or others) to rent, and 43 of which would be designated as visitor parking. The parking garage for Building A would be accessed via a ramp located along Constitution Drive in the northern corner of the building. The parking garage for Building B would be accessed via a ramp located along Jefferson Drive in the western corner of the building. A total of 729 bicycle parking spaces would be provided throughout Buildings A and B, consisting of 662 long-term spaces located in a dedicated bicycle storage room on the first and second floors of these buildings and 67 short-term parking spaces located along Constitution Drive and Jefferson Drive.

A driveway from Constitution Drive at the eastern corner of the project site would connect to an internal roadway that would provide access to each of the units in Building Site TH1. Of the 42 units, 18 would include a one-car garage, and 24 would include a two-car garage, for a total of 66 residential parking spaces. Three additional parking spaces would be provided on the internal roadway, which would result in a total of 69 parking spaces. A total of 63 long-term indoor and seven short-term outdoor bicycle parking spaces would be provided throughout Building Site TH1, for a total of 70 spaces.

3.4.4 Utilities and Infrastructure

The project site is located in an urban area with existing utilities and infrastructure. The proposed project would be required to install the following utility connections to the satisfaction of the applicable utility providers: water, wastewater, stormwater drainage, power, and telecommunications services. The proposed buildings would be required to be all electric and no natural gas connections would be installed. Connections to existing infrastructure would occur within the adjacent public right-of-way. A 100 kilowatt (134 horsepower) back-up generator would also be installed at the ground-level perimeter within the interior of each of the multi-family buildings, for emergency use only. The City would approve a hazardous materials use permit for operation of this equipment.

The proposed project would incorporate drought-tolerant, non-invasive plants, efficient irrigation, and low-flow fixtures. The existing project site includes approximately 194,456 square feet of impervious surfaces and approximately 15,809 square feet of pervious surfaces. The proposed project would result in a net decrease in impervious surface coverage of approximately 16,942 square feet compared to existing conditions for a total of 177,514 square feet of impervious surfaces and 32,751 square feet of pervious surfaces.

The on-site stormwater would be collected, treated pursuant to Provision C.3 of the Municipal Regional Permit issued by the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) pursuant to the National Pollutant Discharge Elimination System (NPDES) permit, and conveyed to the city's storm drain main within Constitution Drive.

3.4.5 Demolition, Grading, and Construction

The proposed project would include demolition of the approximately 118,944 square feet of existing buildings and surface parking lots on the project site. Construction debris, such as old foundations, pavements, and structures, would be collected and hauled off site for disposal. Approximately 25,000 cubic yards of demolition waste would be generated by the proposed project.

Grading of existing site soils would be balanced on the site and no site soils are anticipated to be off-hauled. A total of approximately 16,500 cubic yards of soils would be imported to the project site to raise the grade to meet FEMA requirements. Foundation footings may extend up to four feet below grade.

If approved, construction of the proposed project is anticipated to begin in May 2021. The proposed project would include phased construction, which would consist of an approximately two-month demolition phase, a three-month grading phase and approximately 32 months of building construction. Up to 90 residential units would be constructed in Building A and could be granted temporary occupancy by approximately May 2023, subject to approval by the City of partial temporary occupancy for the building. Overall, construction of the proposed project is anticipated to last approximately 37 months and is anticipated to be fully operational and occupied by summer 2024.

3.5 PERMITS AND APPROVALS

A number of permits and approvals would be required to allow development of the proposed project. As lead agency for consideration of the proposed project, the City of Menlo Park would be responsible for the majority of the approvals required for project development. Other agencies also may have some authority related the proposed project and its approvals. A list of required permits and approvals, including the discretionary actions described above, which may be required by the City and other agencies, is provided in Table 3.B.

Table 3.B: Anticipated Permits and Approvals for Project Implementation

Lead Agency	Permit/Approval
City of Menlo Park	• EIR Certification • Adoption of Findings • Use Permit • Architectural Control • Lot Line Adjustment • Major Subdivision • Heritage Tree Removal Permit • Below Market Rate Housing Agreement
Responsible Agencies/Entities	
Pacific Gas & Electric (PG&E)	• Approval of electrical improvements and connection permits • Undergrounding of electrical infrastructure
California Department of Transportation (Caltrans)	• Review of traffic circulation effects and consultation on potential traffic improvements that may affect state highway facilities, ramps, and intersections
California Department of Toxic Substance Control	• Approval of Environmental Site Management Plan
California Regional Water Quality Control Board/San Mateo Countywide Water Pollution Prevention Program	• Approval of NPDES permit for stormwater discharge
City/County Association of Governments	• Review of potential effects on Routes of Regional Significance
Bay Area Air Quality Management District (BAAQMD)	• Permits for onsite generators, boilers, and other utility equipment
San Mateo County Transportation Authority	• Review of potential effect on public transit
San Mateo County Environmental Health Division	• Review of onsite generators
Menlo Park Fire Protection District	• Review of Residential Site Plan onsite generators
West Bay Sanitary District	• Approval of wastewater hookups and onsite generators

Source: LSA (2020).

In order to qualify for bonus-level development within the R-MU-B zoning district, the proposed project will also be required to complete an appraisal process to identify the value of the community amenities to be provided in exchange for the opportunity to develop at the bonus level. The project sponsor's community amenity proposal is subject to review and approval by the Planning Commission and/or City Council. In addition, there will be a fiscal impact analysis conducted regarding the project.

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4.0 SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter contains an analysis of each potentially significant environmental impact that has been identified for the proposed Menlo Uptown Project. The following: 1) identifies how a determination of significance is made; 2) identifies the environmental issues addressed in this chapter; 3) describes the context for the evaluation of cumulative effects; 4) lists the format of the topical issue section; and 5) provides an evaluation of each potentially significant impact in Sections 4.1 through 4.5.

DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.[1] The "environment" means the physical conditions which exist in the area including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant. These criteria of significance are based on the CEQA Guidelines and applicable City policies. In determining whether a project's impacts are significant, an EIR ordinarily compares those impacts with existing environmental conditions which are referred to as the "baseline" for the impact analysis. This EIR compares the potential environmental impacts of the proposed project with the baseline environmental conditions in existence at the time the Notice of Preparation (NOP) was published, on November 25, 2019.

ISSUES ADDRESSED IN THE DRAFT EIR

Sections 4.1 through 4.5 of this chapter describe the environmental setting of the project as evaluated in the EIR and the impacts that are expected to result from implementation of the proposed project. Mitigation measures are proposed to reduce potential impacts, where appropriate. The following environmental issues are addressed in this chapter:

- 4.1 Population and Housing
- 4.2 Transportation
- 4.3 Air Quality
- 4.4 Greenhouse Gas Emissions
- 4.5 Noise (Operation Period Traffic and Stationary Noise)

Preliminary analysis provided in the Initial Study (Appendix B) determined that development of the proposed project would not result in significant impacts to the following environmental topics: aesthetics, agriculture and forestry resources, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise (construction-period and aircraft-related noise) public services, recreation, tribal cultural resources, utilities and service systems, and wildfire. Consequently, these issues are not examined in this EIR (but are discussed briefly in Chapter 6.0, Other CEQA Considerations).

1 Public Resources Code Section 21068.

Consistency with the City's land use and planning policies, including the General Plan and the Zoning Ordinance, are discussed in Section 4.11, Land Use and Planning, of the Initial Study (Appendix B). It should be noted that, according to CEQA, policy conflicts do not, in and of themselves, constitute a significant environmental impact. Policy conflicts are considered to be environmental impacts only when they would result in direct physical impacts or where those conflicts relate to avoiding or mitigating environmental impacts. Any such associated physical environmental impacts are discussed in the Initial Study or appropriate sections of this EIR. Zoning compliance and other policy considerations will be further evaluated by City decision-makers when considering approval of the proposed project.

As previously discussed in Chapter 3.0, Project Description, the proposed project would be required to comply with all applicable mitigation measures identified in the ConnectMenlo Mitigation Monitoring and Reporting Program (MMRP), which is a requirement of any proposed development project in the city. The proposed project has been determined to have less-than-significant impacts in a number of topic areas within the Initial Study (refer to Appendix B and Chapter 5.0, Other CEQA Considerations, of the EIR) based on compliance with the ConnectMenlo mitigation measures, which are already included in the existing enforceable MMRP prepared for the ConnectMenlo Final EIR. These impacts and mitigation measures are not addressed in this EIR, but are identified in Chapter 2.0, Summary, and will also be included in the Mitigation Monitoring and Reporting Program that would be adopted by the City if the EIR is certified.

CUMULATIVE ANALYSIS CONTEXT

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound to increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. These impacts can result from a combination of the proposed project together with other projects causing related impacts. 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.

The methodology used for assessing cumulative impacts typically varies depending on the specific topic being analyzed. CEQA requires that cumulative impacts be discussed using either a list of past, present, and probable future projects producing related or cumulative impacts, or 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 project-specific analysis employs both the list-based and projections-based approaches, depending on which approach best suits the resource topic being analyzed.

The cumulative land use assumptions include projections for year 2040 by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) with refinements to reflect development projects under construction, approved, and pending in Menlo

Park. The cumulative land use assumptions also include ConnectMenlo, which included changes to the City's zoning map and rezoned specific properties to reflect the General Plan updates, including the new land uses within the Bayfront Area of the city. ConnectMenlo specifically identifies new development potential in the Bayfront Area of up to 2.3 million square feet of non-residential space, 400 hotel rooms, 4,500 residential units, 11,570 residents, and 5,500 employees.[2] The buildout potential for future development is expected to occur over a 24-year buildout horizon (from approximately 2016 to 2040).[3]

The cumulative context for land use development project effects is typically localized, within the immediate vicinity of the project site, or at the neighborhood level. Cumulative development includes the projects listed in Table 4.A. These projects are either projects for which the City has a project application on file or projects that have been entitled but have not yet begun construction at the time that the EIR analysis was initiated (December 2019).[4] As shown, these projects include new residential and mixed-use projects. Refer to the appropriate discussion in each topical section for further discussion of the cumulative assumptions relevant to each issue topic.

Table 4.A: Cumulative Projects in the Vicinity of the Project Site

Address	Project Description	Project Status
1010-1026 Alma Street	Removal of 10,272 square feet of retail space; construction of 25,156 square feet of office space and 324 square feet of retail space	Completed
150 Jefferson Drive	Removal of 43,986 square feet of light industrial uses; construction of a 40,000-square-foot school with a 400-student capacity	Completed (9th Grade Only)
133 Encinal Avenue	Removal of 6,166 square feet of retail space; construction of 24 residential units	Completed/Occupied
1430 O'Brien Drive	Construction of 66,583 square feet of research and development space	Partially Occupied
1285 El Camino Real	Removal of 6,471 square feet of office/retail/service space; construction of 15 residential units and 1,997 square feet of office/retail/service space	Under Construction
650-660 Live Oak Avenue	Removal of 2 residential units and 5,996 square feet of office space; construction of 17 residential units and 16,854 square feet of office space	Under Construction
1275 El Camino Real	Construction of 3 residential units, 9,334 square feet of office space, and 603 square feet of retail space	Under Construction

2 The ConnectMenlo Final EIR included an evaluation of 4,500 residential units in the Bayfront Area, consisting of 3,000 unrestricted residential units and 1,500 corporate dormitory-style housing units on the Facebook East Campus (also known as the Classic Campus).

3 Although the ConnectMenlo Final EIR assumed a buildout horizon of 2040, the maximum development potential may be reached sooner than anticipated. However, the ConnectMenlo Final EIR evaluated the maximum development potential that could occur at any given time and did not consider the phased buildout of the development potential; therefore, no new or additional impacts are anticipated as a result of the expedited buildout.

4 This EIR uses the City's December 2019 list of cumulative projects in order to be consistent with the transportation studies for other proposed development projects in the immediate vicinity of the project site. Each of these studies was generally initiated at this time.

Table 4.A: Cumulative Projects in the Vicinity of the Project Site

Address	Project Description	Project Status
Facebook Expansion Project 301-309 Constitution Drive[a]	Removal of 308,142 square feet of manufacturing space, 76,533 square feet of research and development space, and 127,012 square feet of office space; construction of 450,400 square feet of office space and a 200-room hotel	Under Construction
Stanford 500 El Camino Real	Removal of 35,275 square feet of temporary art gallery space and a 35,270-square-foot vacant auto dealer; construction of 215 residential units, 142,840 square feet of office space, and 10,286 square feet of retail/restaurant space	Under Construction
Greenheart 1300 El Camino Real	Removal of a 3,800-square-foot dance studio, 1,200-square-foot fast food restaurant, and 5,000-square-foot hardware storage space; construction of 183 residential units, 203,000 square feet of office space, and 18,600 square feet of retail/personal service space	Under Construction
Guild Theatre 949 El Camino Real	Renovation of a 4,172-square-foot cinema; construction of a 10,854-sqaure-foot live entertainment venue	Under Construction
1540 El Camino Real	Removal of 23,536 square feet of retail space; construction of 27 residential units and 40,759 square feet of office space	Under Construction
506-556 Santa Cruz Avenue	Removal of 7 residential units and 12,359 square feet of commercial space; construction of 7 residential units, 4,901 square feet of retail/café space, and 17,877 square feet of office space	Under Construction
1125 Merrill Street	Removal of 1 residential unit and 1,887 square feet of commercial space; construction of 2 residential units and 4,366 square feet of office space	Under Construction
Menlo Gateway 105-155 Constitution Drive	Removal of 133,690 square feet of office use; construction of 495,052 square feet of office space	Under Construction
40 Middlefield Road	Construction of 3,584 square feet of office space	Approved
1345 Willow Road	Removal of 82 residential units; construction of 140 residential units	Approved
409 Glenwood Avenue	Removal of 3 residential units; construction of 7 residential units	Pending
1021 Evelyn Street	Construction of 3 residential units and 6,610 square-feet of office space	Pending
Stanford 2111-2121 Sand Hill Road	Addition of 39,010 square feet of office space	Pending
115 El Camino Real	Removal of a 13-room hotel; construction of 4 residential units and 1,543 square feet of retail/personal service space	Pending
1350 Adams Court (1315 O'Brien Drive)	Construction of 260,400 square feet of research and development space	Pending
Facebook Willow Village 1350 Willow Road	Removal of 390,663 square feet of office/lab space, 446,483 square feet of warehouse space, and 137,819 square feet of warehouse/office space; construction of 1,735 residential units, 1.75 million square feet of office space, 200,000 square feet of retail space, a 193-room hotel, and 10,000 square feet of community serving space	Pending
1125 O'Brien Drive	Removal of 38,688 square feet of office/warehouse space; construction of 115,218 square feet of research and development space, 13,870 square feet of fitness space, and 2,394 square feet of retail space	Pending
162-164 Jefferson Drive	Construction of 249,500 square feet of office space	Pending

Table 4.A: Cumulative Projects in the Vicinity of the Project Site

Address	Project Description	Project Status
555 Willow Road	Removal of 1,400 square feet of office space; construction of a 16-room boarding house	Pending
1704 El Camino Real	Removal of a 28-room hotel; construction of a 70-room hotel	Pending
706-716 Santa Cruz Avenue	Removal of 15,175 square feet of retail/restaurant/bank space; construction of 4 residential units, 23,454 square feet of office space, and 12,049 square feet of retail space	Pending
201 El Camino Real	Removal of 4 residential units and 5,949 square feet of commercial space; construction of 14 residential units, 6,067 square feet of retail space, and 1,239 square feet of restaurant space	Pending
111 Independence Drive	Removal of 15,000 square feet of office space; construction of 105 residential units and 746 square feet of commercial space	Pending
1162 El Camino Real	Removal of 11,062 square feet of commercial space; construction of 9 residential units	Pending
Hotel Moxy 3723 Haven Avenue	Removal of 13,700 square feet of office/warehouse space; construction of a 167-room hotel	Pending
Menlo Portal 110 Constitution Drive, 115 Independence Drive	Removal of 64,832 square feet of office/industrial space; construction of 335 residential units, 33,260 square feet of office space, and 1,608 square feet of retail space	Pending
CitizenM Hotel 301 Constitution Drive	Construction of 40 additional hotel rooms at the Facebook Campus Expansion Project site	Pending
1075 O'Brien Drive, 20 Kelly Court	Removal of 14,523 square feet of warehouse space and 12,192 square feet of research and development space; construction of 52,235 square feet of research and development space, 36,956 square feet of office space, and 9,869 square feet of restaurant space	Pending
1550 El Camino Real	Construction of 8 residential units	Pending
Menlo Flats 165 Jefferson Drive	Removal of 24,300 square feet of office space; construction of 158 residential units and 14,000 square feet of commercial space	Pending

Source: City of Menlo Park (December 2019).

[a] Building 21 was not included as it was occupied at the time that existing traffic counts were taken (March 2019) and therefore is included in existing conditions.

Note: Projects identified in the December 2019 cumulative projects list provided by the City that were occupied as of March 2019 were included in existing traffic counts, and therefore are excluded from this table.

FORMAT OF ISSUE SECTIONS

The environmental topical section is comprised of two primary parts: 1) Setting; and 2) Impacts and Mitigation Measures. An overview of the general organization and the information provided in the two parts is provided below:

- **Setting**. The Setting section for the environmental topic generally provides a description of the applicable physical setting (e.g., existing land uses, existing traffic conditions) for the project site and its surroundings in Menlo Park. An overview of regulatory considerations that are applicable to each specific environmental topic is also provided.

- **Impacts and Mitigation Measures**. The Impacts and Mitigation Measures section for the environmental topic presents a discussion of the potential impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, which are the thresholds used to determine whether an impact is potentially significant. The latter part of this section presents the potential impacts from the proposed project and mitigation measures, if necessary. The potential impacts of the proposed project are organized into separate categories based on the criteria listed in each topical section. Cumulative impacts are also addressed.

Impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively and begin with an acronymic or abbreviated reference to the impact section (e.g., TRA). The following symbol is used for individual topics:

POP Population and Housing
TRA Transportation
AQ Air Quality
GHG Greenhouse Gas Emissions
NOI Noise

Impacts are also categorized by type of impact, as follows: Less Than Significant (LTS), Potentially Significant (PS), Less Than Significant with Mitigation (LTS/M), and Significant Unavoidable (SU). Significance determinations are also indicated in ***bold, italicized*** text.

4.1 POPULATION AND HOUSING

This section provides background information on existing and projected population, employment, and housing conditions in Menlo Park and estimates changes to the city's demographics that could result from the proposed project. The analysis is based on population, employment, and housing data published by the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC),[1] which incorporates the buildout assumed under ConnectMenlo, and other demographic information from the Demographic Research Unit of the California Department of Finance (DOF), the United States Census Bureau (Census), the 2015-2023 Housing Element of the City's General Plan, and the Housing Needs Assessment (HNA) prepared for the proposed project and included as Appendix D of this EIR.[2] Although not required by CEQA, the HNA was prepared pursuant to the terms of the settlement agreement between the cities of Menlo Park and East Palo Alto (refer to Chapter 3.0, Project Description for additional discussion). The information in the HNA is used to provide context for the evaluation of potential impacts of the proposed project related to population and housing issues, as well as to provide information to decision makers during the entitlement process. Additionally, this analysis is informed by the housing inventory and local supply study prepared for the Facebook campus expansion project (Local Supply Study).[3]

4.1.1 Setting

The following setting information provides a basic foundation of existing conditions with respect to population and housing within Menlo Park, as well as for the region. The information presented in this section is based on data, research, and growth projections drawn mainly from Census data, the HNA prepared for the proposed project, the Local Supply Study, and ABAG's Projections 2040.

4.1.1.1 Population

Menlo Park is located in the southern portion of San Mateo County and is bounded by San Francisco Bay to the north, the cities of East Palo Alto and Palo Alto to the east, the cities of Redwood City and Woodside to the south, and the cities of Atherton and Redwood City to the west. Menlo Park encompasses approximately 19 square miles, including nearly 12 square miles of the San Francisco Bay and wetlands. Table 4.1.A provides a summary of the population trends and projections for the San Francisco Bay Area, San Mateo County, and the City of Menlo Park from 2010 to 2040. San Mateo County is one of the nine counties that make up the Bay Area. The population of the Bay Area is estimated to be 7.9 million in 2020, and Projections 2040 estimates that the region's population will grow to 8.7 million in 2030 and exceed 9.6 million by 2040. San Mateo County's total population in 2020 is estimated to be 796,925, with anticipated increases to 853,260 by 2030 and 916,590 by 2040.[4]

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1 Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2018. *Plan Bay Area Projections 2040*. November.

2 Keyser Marston Associates. 2020. *Housing Needs Assessment, Menlo Uptown Project.* October.

3 Center for Community Innovation (CCI). 2020. Investment and Disinvestment as Neighbors: *A Study of Baseline Housing Conditions in the Bay Area Peninsula*. January 17.

4 ABAG and MTC. 2018, op. cit.

Of the 20 cities within San Mateo County, Menlo Park has the fifth highest estimated population in 2020, with a total of 44,530 residents, representing approximately five percent of the County's total population. ABAG predicts that Menlo Park's total population will increase to approximately 52,865 in 2030 and increase to 54,920 by 2040. The data in Table 4.1.A indicate that the population growth from 2020 to 2040 in Menlo Park (23 percent) would be greater than the population growth of San Mateo County (15 percent), but similar to the Bay Area as a whole (22 percent).

Table 4.1.A: Population and Household Trends and Projections: 2020 to 2040

Area	2020		2030		2040	
	Population	Households	Population	Households	Population	Households
Bay Area	7,920,230	2,881,965	8,689,440	3,142,015	9,652,950	3,426,700
San Mateo County	796,925	284,260	853,260	302,520	916,590	317,965
City of Menlo Park	44,530	15,390	52,865	17,265	54,920	17,680

Source: *Projections 2040* (ABAG and MTC, November 2018).

4.1.1.2 Housing

According to the California DOF, the estimated number of housing units in the city as of January 1, 2019, was 14,063, with an average household size of 2.64 persons and a vacancy rate of 5.6 percent, and the estimated number of housing units in the San Mateo County and the Bay Area was 279,248 and 2,904,234, respectively.[5] The Belle Haven neighborhood has a substantially higher average household size of 3.82 persons and a vacancy rate of approximately 1.7 percent.[6] Table 4.1.A also presents ABAG and MTC projections for households in the Bay Area, San Mateo County, and Menlo Park between 2020 and 2040. According to ABAG and MTC, the number of households in the county is projected to grow from approximately 284,260 units in 2020 to 317,965 units by 2040, an increase of approximately 12 percent. The number of households in the city is projected to grow to approximately 17,680 units by 2040, an increase of approximately 26 percent based on the California DOF's 2019 estimate. Overall, the household growth rate in the city is expected to be higher than the household growth rate for the Bay Area (18 percent).

Housing prices in the Bay Area are among the highest in the country, and the county has several of the most expensive residential communities in the Bay Area. Menlo Park is one of the more desirable communities within the county, and as a result, home prices exceed the county levels. The median priced home in Menlo Park is $2.2 million based on home sales from August 1, 2018, to July 31, 2019. This represents an approximately 50 percent increase from 2012, when the median single-family home price in Menlo Park was $1.468 million. For the Belle Haven neighborhood, the median price

[5] California Department of Finance. 2019. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2020 with 2010 Census Benchmark*. Table 2. Website: www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5 (accessed July 30, 2020).

[6] CCI. 2020, op. cit. Belle Haven has a total of 1,440 housing units, and only about two percent of the units are currently vacant.

for a home is $668,000,[7] which represents an approximately 51 percent increase in home values since 2012.[8]

4.1.1.3 Employment

The employment profile for an area provides an indication of the composition of an area's economy and the present and future demand for employees. The county is a productive economic area, which is led by technology-driven, bioscience, and service industries. According to the HNA, the county averages approximately 1.88 employed persons per household.[9] The Belle Haven neighborhood averages a similar number of employed persons per household, 1.92 employed persons per household.[10] Approximately 66 percent of Menlo Park residents over the age of 16 are estimated to be in the workforce in 2020, slightly lower than the county rate (69 percent), but higher than the state rate (63 percent). Most of the residents who are in the workforce (69 percent) are in management, business, science, or arts-related occupations, which is significantly higher than the county rate (47 percent) and the State rate (38 percent). The next most common employment categories for the City are sales and office occupations (14 percent) and service occupations (11 percent).[11]

The county was negatively affected by the housing/mortgage financial crisis of the late 2000s. However, steady job growth is expected between 2020 and 2040 for the City, County, and the Bay Area as a whole.[12] Table 4.1.B presents ABAG and MTC projections for total jobs in the city compared to the county and Bay Area.

Table 4.1.B: Employment Trends in Menlo Park, San Mateo County, and the Bay Area, 2020-2040 (Total Number of Jobs)

Jurisdiction	2020	2030	2040	Growth (2020-2040)
Menlo Park	36,410	37,195	42,475	6,065 (16.6%)
San Mateo County	399,275	423,005	472,045	72,770 (18.2%)
Bay Area	4,136,190	4,405,125	4,698,375	562,185 (13.6%)

Source: *Projections 2040* (ABAG and MTC, November 2018).
Note: Projections 2040 incorporates full buildout of ConnectMenlo and the Facebook campus expansion.

As shown in Table 4.1.B, ABAG and MTC projections from 2020 to 2040 show a steady increase in employment in the Bay Area (13.6 percent). Both the County (18.2 percent) and City (16.6 percent) show higher projected employment rates than the Bay Area generally.

7 Ibid.
8 Ibid.
9 Keyser Marston Associates. 2020, op. cit.
10 United States Census Bureau. 2018. American Community Survey.
11 ABAG and MTC. 2018, op. cit.
12 Shelter-in-place and public health orders related to the COVID-19 pandemic may have resulted in a temporary decrease in the total number of jobs available in the city, county, and Bay Area at the time of the preparation of this EIR. However, to ensure that potential impacts related to employment are not understated, this EIR does not account for this temporary decrease and the data included in this analysis reflects normal conditions.

Table 4.1.C compares the projected total number of jobs available in the city to the projected number of employed residents in the city. According to ABAG and MTC projections, the number of employed residents in the city is currently 62.4 percent of the available number of jobs in the city. In the next 20 years, the number of jobs to employed residents is expected to remain relatively constant, decreasing only slightly to 61.7 percent.

Table 4.1.C: Comparison of Number of Jobs to Employed Residents in Menlo Park, 2020-2040

Jobs/Residents	2020	2040
Jobs	36,410	42,475
Employed Residents	22,735	26,205
Percent of Employed Residents to Total Number of Jobs	62.4	61.7

Source: *Projections 2040* (ABAG and MTC, November 2018).

At the time this report was prepared, the most recent data available on the average median income (AMI) was for 2019 in which the AMI for a family of four for the City as a whole was $136,800,[13] whereas the median household income in the Belle Haven neighborhood was approximately $58,000.[14] Because the city's housing prices are high, many people who work in the city cannot afford to live in the city. Consequently, people who work in the community often must commute long distances. To afford the median priced home of $2.2 million in the city, a family would need to earn an income of 263 percent of AMI ($359,784) annually, and to afford a two-bedroom apartment that rents for $4,250, a family would need to earn more than 143 percent of the AMI ($195,624) annually. The difference between what the workforce and the community can pay for housing based on household income and what the prices are for homes in the community is referred to as an affordability gap.

4.1.1.4 Regulatory Framework

The following section provides brief discussions of the State, regional, and local regulatory framework related to population and housing.

State Regulations. State regulations applicable to the proposed project include California Housing Element Law and recently-adopted legislation, as described below.

California Housing Element Law. The Regional Housing Needs Allocation (RHNA) is a process established under the State Housing Element law that requires cities in California to plan for the future development of new housing units to meet their share of their regional housing needs. Housing needs for each region in the State are determined by the State Department of Housing and Community Development (HCD) and submitted to Councils of Government for local jurisdictions. ABAG is ultimately responsible for determining the share of regional housing needs to be met by each city in the Bay Area. State housing law has established three housing affordability categories. The categories are based on the region's median income, taking into account

13 Keyser Marston Associates. 2020, op. cit.

14 CCI. 2020, op. cit.

households ranging in size from one to six people. These three affordability categories are used by ABAG in allocating regional housing needs.

- Very-Low: 0 to 50 percent of the area's median income
- Low: 51 to 80 percent of the area's median income
- Moderate: 81 to 120 percent of the area's median income

Currently, the existing RHNA identifies allocated housing units for the 2014 to 2022 period. As shown in Table 4.1.D, ABAG identified 655 units (defined by income category) as the City's fair share of the regional housing need for the 2014 to 2022 period. The City updated its Housing Element in April 2014. The City is compliant with its allocated housing units for the 2014 to 2022 reporting period.

Table 4.1.D: ABAG Regional Housing Need Allocation for 2014-2022

Income Level	Menlo Park Need	San Mateo County Need	Regional Need
Very-Low	233	4,595	46,680
Low	129	2,507	28,940
Moderate	143	2,830	33,420
Subtotal of Affordable Units	**505**	**9,932**	**109,040**
Above Moderate	150	6,486	78,950
Total	**655**	**16,418**	**187,990**

Source: ABAG (2013).

Sustainable Communities Strategy and Senate Bill 375. Senate Bill (SB) 375, adopted in 2008, requires preparation of a Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan (RTP) for the Bay Area. Plan Bay Area 2040, the SCS for the region, was jointly approved in July 2017 by ABAG and MTC. Plan Bay Area 2040 was the strategic update to the original Plan Bay Area, approved in 2013, which represented a transportation and land use/housing strategy for how the Bay Area will address its transportation mobility and accessibility needs, land development, and greenhouse gas emissions reduction requirements through 2040. Plan Bay Area 2040 builds on earlier work to develop an efficient transportation network, provide more housing choices, and grow in a financially and environmentally responsible way. SB 375 requires that the RHNA be consistent with the SCS and establishes an 8-year cycle for the RHNA. The 2014-2022 RHNA has been incorporated into Plan Bay Area and Plan Bay Area 2040.

Housing Accountability Act, Permit Streamlining Act, and Senate Bill 330. SB 330, adopted in 2019, made numerous changes to both the Housing Accountability Act (HAA) and Permit Streamlining Act (PSA), and established the Housing Crisis Act (HCA). SB 330 established a two-step process by which project sponsors can "lock in" applicable fees and development regulations by submitting a Preliminary Application. The HAA was amended to prohibit more than five hearings for projects that comply with the general plan and zoning code objective standards when deemed complete. SB 330 also shortens the timeframe for approval of housing projects under the PSA, requiring local agencies to approve a project within 90 days of certification of an EIR. However, a local agency can disapprove a project that would have a specific adverse effect on public health and safety if there are no feasible mitigation measures to reduce the impact. Finally, the HCA restricts local agencies' ability to adopt housing moratoria and from changing a land use designation to remove housing as a permitted use or to reduce residential density unless corresponding zoning amendments are made elsewhere to compensate for the reduced housing units.

Regional Regulations. ABAG and MTC are the regional planning and transportation agencies that consider regional population growth in the Bay Area. The applicable regulatory framework is described below.

Jobs Housing Connection Strategy Methodology for 2013-2040 Plan Bay Area. The Jobs Housing Connection Strategy was adopted by ABAG and MTC as part of Plan Bay Area in July 2013. The Jobs Housing Connection Strategy reflects the preferred land use pattern, which was selected from a series of land use alternatives and based on input from the public, cities and counties, and transportation agencies. The preferred scenario aims to concentrate growth near transit-served employment centers in the inner Bay Area. For the SCS, the methodology used for assigning household growth to local jurisdictions incorporates multiple factors, including housing development capacity, base housing unit growth, vehicle miles traveled/transit service adjustment, and additional growth factors.

City of Menlo Park. The City addresses population and housing through the General Plan, including ConnectMenlo, and the Below Market Rate Housing Program, as described below.

General Plan. Applicable policies of the City's General Plan Housing and Land Use Elements are discussed below.

<u>Housing Element.</u>All California cities and counties are required to include a Housing Element in their general plans that establishes housing objectives, policies, and programs in response to community housing conditions and needs. The City updated and adopted its Housing Element on April 1, 2014, to respond to then current and near-term future housing needs in Menlo Park. The Housing Element also provides a framework for the community's longer-term approach to addressing its housing needs. The Housing Element contains goals, updated information, and strategic decisions (policies and implementing actions) that the City is committed to undertaking.[15]

As described above, the State Housing Element Law requires a city's general plan to have an updated Housing Element that provides for a specified number of housing units, based on an allocation of regional housing needs. The allocation process is now set to occur every eight years, as discussed above, and the next allocation will be for 2023-2031. ABAG is responsible for the allocation in the Bay Area. The City will begin the process of updating the Housing Element in 2021 for the upcoming RHNA cycle.[16] While the City has used the "sub-regional" allocation process in the past, the County and all the cities in the County do not

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[15] Menlo Park, City of. 2014. *Housing Element.* April 1.

[16] Menlo Park, City of. 2020. *Staff Report Number 20-169-CC.* August 18.

intend to use it for the 2023-2031 cycle due to changes in the process, which made the "sub-regional" allocation process infeasible.

As shown in Table 4.1.D, ABAG identified 655 units (defined by income category) as the City's fair share of the regional housing need for the 2014 to 2022 period. As of December 31, 2019, the City has permitted a total of 1,160 residential units consisting of 947 above moderate income units, 11 moderate income units, 54 low income units, and 148 very-low income units.[17] Therefore, the City's total remaining RHNA allocation is 132 moderate-income units, 75 low-income units, and 85 very-low income units.

The following policies within the Housing Element of the City's General Plan are relevant to the proposed project:

- **Policy H1.7: Local Funding for Affordable Housing.** Seek ways to reduce housing costs for lower-income workers and people with special needs by developing ongoing local funding resources and continuing to utilize other local, State, and federal assistance to the fullest extent possible. The City will also maintain the Below Market Rate (BMR) housing program requirements for residential and nonresidential developments.

- **Policy H4.2: Housing to Address Local Housing Needs.** Strive to provide opportunities for new housing development to meet the City's share of its RHNA. In doing so, it is the City's intent to provide an adequate supply and variety of housing opportunities to meet the needs of Menlo Park's workforce and special needs populations, striving to match housing types, affordability and location, with household income, and addressing the housing needs of extremely low-income persons, lower income families with children and lower income seniors.

- **Policy H4.3: Housing Design.** Review proposed new housing in order to achieve excellence in development design through an efficient process and will encourage infill development on vacant and underutilized sites that is harmonious with the character of Menlo Park residential neighborhoods. New construction in existing neighborhoods shall be designed to emphasize the preservation and improvement of the stability and character of the individual neighborhood.

  The City will also encourage innovative design that creates housing opportunities that are complementary to the location of the development. It is the City's intent to enhance neighborhood identity and sense of community by ensuring that all new housing will: 1) have a sensitive transition with the surrounding area; 2) avoid unreasonably affecting the privacy of neighboring properties; or 3) avoid impairing access to light and air of structures on neighboring properties.

- **Policy H4.8: Retention and Expansion of Multi-Family Sites at Medium and Higher Density.** Strive to protect and expand the supply and availability of multi-family and

[17] Menlo Park, City of. 2020. *City of Menlo Park 2019 Housing Element Annual Progress Report and Housing Successor Report*. March 31.

mixed-use infill housing sites for housing. When possible, the City will avoid re-designating or rezoning multi-family residential land for other uses or to lower densities without re-designating equivalent land for multi-family development and will ensure that adequate sites remain at all times to meet the City's share of the region's housing needs.

- **Policy H4.10: Inclusionary Housing Approach.** Require residential developments involving five or more units to provide units or an in-lieu fee equivalent for very-low, low and moderate-income housing. The units provided through this policy are intended for permanent occupancy and must be deed restricted, including but not limited to single-family housing, multi-family housing, condominiums, townhouses or land subdivisions. In addition, the City will require larger nonresidential developments, as job generators, to participate in addressing housing needs in the community through the City's commercial in-lieu fee requirements.

- **Policy H4.12: Fair Share Distribution of Housing throughout Menlo Park.** Promote the distribution of new, higher density residential developments throughout the city, taking into consideration compatibility with surrounding existing residential uses, particularly near public transit and major transportation corridors in the city.

- **Policy H4.13: Preferences for Affordable Housing.** Implement BMR housing preferences for people who live or work in Menlo Park to the extent consistent with Fair Housing laws.

Land Use Element. The following policies within the Land Use Element of the City's General Plan are relevant to the proposed project:

- **Policy LU-2.5: Below-Market Rate Housing.** Require residential developments of five or more units to comply with the provisions of the City's Below-Market Rate (BMR) Housing Program, including eligibility for increased density above the number of market rate dwellings otherwise permitted by the applicable zoning and other exceptions and incentives.

- **Policy LU-2.9: Compatible Uses.** Promote residential uses in mixed-use arrangements and the clustering of compatible uses such as employment centers, shopping areas, open space and parks, within easy walking and bicycling distance of each other and transit stops.

Below Market Rate Housing Program. The City's BMR Housing Program (Menlo Park Municipal Code Chapter 16.96) is intended to increase the supply of affordable housing in Menlo Park. As part of the program, qualifying residential and other developers are required to contribute BMR housing units and/or BMR housing in-lieu fees. These units may be available for rent at low-income levels (or an equivalent alternative) or purchase to very-low-, low- or moderate-income households. The BMR Housing Program is administered under the BMR Housing Program Guidelines (BMR Guidelines). Residential developments of five or more units are subject to the requirements of the BMR Housing Program and must submit a BMR Housing Agreement and comply with the program before a building permit or land use authorization can be issued. For developments of five to 19 units, the developer shall provide not less than 10 percent of the units at below market rates to very-low-, low-, and moderate-income households. For 20 or more units, no fewer than 15 percent of the units shall be provided at below market rates to very-low, low, and moderate income households in compliance with the BMR Guidelines.

4.1.2 Impacts and Mitigation Measures

This section provides an assessment of the potential adverse impacts related to population and housing associated with the proposed project. It begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. A summary of the ConnectMenlo Final EIR impacts and mitigation measures is then provided. As previously discussed in Chapter 3.0, Project Description, the analysis below makes reference to, and tiers from, the ConnectMenlo Final EIR, where appropriate. Finally, this section identifies potential impacts of the proposed project and, if necessary, any mitigation measures.

4.1.2.1 Significance Criteria

The proposed project would have a potentially significant effect on population and housing if it would:

1) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or

2) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

4.1.2.2 ConnectMenlo Final EIR Impacts

As described in Chapter 3.0, Project Description, the ConnectMenlo Final EIR provided a program-level analysis of the development potential envisioned for the entire city, including the increased development potential in the Bayfront Area. The Land Use Element specifically identifies new development potential in the Bayfront Area of up to 2.3 million square feet of non-residential space, 400 hotel rooms, and 4,500 residential units.[18] The ConnectMenlo Final EIR determined that at full buildout, implementation of ConnectMenlo would result in an additional population of 11,570, for a total citywide population of 50,350. The ConnectMenlo EIR found that buildout of ConnectMenlo would not result in the displacement of substantial numbers of housing units or people, requiring the construction of replacement housing elsewhere.

The ConnectMenlo EIR found that buildout of ConnectMenlo would result in a significant and unavoidable cumulative impact related to the direct, previously unplanned population growth in the area. Buildout of ConnectMenlo would result in population and housing levels that are not in alignment with the ABAG Projections 2013, which were not in place at the time of certification of the

[18] The ConnectMenlo Final EIR included an evaluation of 4,500 residential units in the Bayfront Area, consisting of 3,000 unrestricted residential units and 1,500 corporate dormitory-style housing units on the Facebook East Campus (also known as the Classic Campus).

ConnectMenlo EIR. However, the City identified that future ABAG projections would take into account the buildout of ConnectMenlo and Menlo Park's growth would no longer contribute to a cumulative exceedance of regional projections. Since certification of the ConnectMenlo EIR, ABAG updated its population growth projections and the most recent regional projections (Projections 2040)[19] incorporates the full buildout of ConnectMenlo.

4.1.2.3 Project Impacts

The following section discusses potential impacts related to population and housing associated with development of the proposed project.

1) Induce substantial unplanned population growth in an area, either directly or indirectly

As further described below, the proposed project represents a small percentage of the population and housing growth assumed under ConnectMenlo and is within the existing city, county and regional housing need. As a primarily housing project, the proposed project would add to available housing supply and would not substantially increase worker demand for housing.[20] For these reasons, the proposed project would not directly, or indirectly, induce substantial unplanned population growth and this impact would be ***less than significant*** **(LTS)**.

The proposed project is located in the R-MU-B zoning district, the purpose and intent of which is to provide high density housing to complement nearby employment, encourage mixed-use development with a quality living environment and neighborhood-serving retail and services on the ground floor that are oriented to the public, blend with and complement existing neighborhoods through site regulations and design standards that minimize impacts to adjacent uses, and promote a live/work/play environment with pedestrian activity. Consistent with this purpose, the proposed project would provide 441 multi-family residential units and 42 townhome units (of which 73 would be BMR units) and approximately 2,940 square feet of office space.

The proposed project's contribution to the number of residential units planned for and anticipated by ConnectMenlo would be approximately 10.7 percent (483 units of the 4,500 total units studied or 16.1 percent of the 3,000 unrestricted residential units). The proposed project would result in a population increase of 1,242 people, or approximately 10.7 percent of the 11,570-person population increase assumed under full buildout of ConnectMenlo.[21] Therefore, the proposed project would be consistent with the mix and intensity of development contemplated by ConnectMenlo, and would not result in population growth beyond that already analyzed in the ConnectMenlo Final EIR.

As described in the HNA and shown in Table 4.1.E, below, the proposed project would increase the number of available housing units within the City by an estimated 498 units. This estimate reflects

19 ABAG and MTC. 2018, op. cit.

20 Keyser Marston Associates. 2020, op. cit.

21 Consistent with the ConnectMenlo Final EIR, this analysis assumes 2.57 persons per household for the proposed project. However, the HNA prepared for the proposed project estimates an average household size of approximately two persons, based on the mix of studio, one-bedroom, and two-bedroom units. Therefore, the analysis in this section is conservative and likely overestimates the population growth that would occur with development of the proposed project.

the combined effect of constructing 483 new residential units, removal of the 110 units of housing demand from existing office workers and adding 95 units of housing demand from new workers in off-site service to new residents. Even accounting for the changes in worker demand for housing, the proposed project is within the amount of residential units and population contemplated in the ConnectMenlo Final EIR. Thus, the proposed project would not induce substantial unplanned population growth, directly or indirectly.

Furthermore, the proposed project would contribute to the projected housing supply needs for the city, the county, and the region and would not induce unplanned population growth. As previously discussed and outlined in Table 4.1.A, the number of households in the city is projected to grow by approximately 26 percent by 2040 (from 15,390 to 17,680 housing units), of which the proposed project's contribution would be approximately 21 percent (483 units of the 2,209 increase). Similarly, the proposed project's contribution to the increase in housing supply for the county and the region (from 284,260 to 317,965 and 2,881,965 to 3,426,700 housing units, respectively) would be less than 2 percent, or approximately 1.4 percent and 0.08 percent, respectively (483 units of the respective 33,705 and 544,735 increase). Population growth associated with the increase in housing supply would be approximately 11.9 percent of the projected increase in the City's population by 2040 (1,242 persons of the 10,390 person increase from 44,560 to 54,920 persons) and equal to or less than one percent of the growth projected for the county and region by 2040, or 1.0 percent and 0.07 percent, respectively (1,242 of the 119,665 person county increase from 796,925 to 916,590 and the 1,736,720 person regional increase from 7,920,230 to 9,652,950).

As shown in Table 4.1.D and discussed above, approximately 223 very-low, 129 low, and 143 moderate income housing units (a total of 655 units including 150 above moderate-income units) are needed in Menlo Park to meet the fair share regional housing need through 2022. As of December 31, 2019, the City has approved 363 very-low, low, and moderate-income residential units, and therefore 292 are currently remaining. The proposed project would contribute 67 low- and 6 moderate-income units, or approximately 90 percent (67 of the 75 remaining units), and approximately 5 percent (6 of the 132 remaining units) of the City's remaining RHNA for low and moderate income BMR units, respectively.

While the City's very-low, low, and moderate income residential unit obligations from the 2014-2020 RHNA allocation have not been met, the City has permitted more than the 655 total units for this cycle. The BMR units provided as part of the proposed project would contribute to the low- and moderate-income unit goals; however, the market rate units would not contribute to the City's 2014-2022 RHNA obligation as the total unit obligation has been met. As identified previously, the proposed 483 units are within the planned housing units under ConnectMenlo and the full buildout of ConnectMenlo was incorporated in ABAG's Projections 2040 for the region. The proposed project would not result in substantial population growth beyond that planned for the city, county, or region, and instead would contribute to the needed and planned for supply of housing, including affordable housing. Therefore, the proposed project would not directly induce substantial unplanned population growth.

Construction of new housing could contribute toward increasing the number of workers that live in local housing and thus, could indirectly induce population growth by increasing the demand for more housing. A project would have indirect growth-inducement potential if it would establish substantial new permanent employment opportunities, or if it would involve a substantial construction effort with substantial short-term employment opportunities and indirectly stimulate the need for additional housing and services, or if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. As noted above, the amount of permanent employment on the project site would decrease with the proposed project. Due to the 483-unit size of the proposed project, it is not anticipated that the proposed project would result in substantial short-term employment that would increase the demand for local housing. The construction labor for the proposed project is anticipated to come from the existing workforce in the Bay Area. Therefore, an increase in the demand for housing is not expected. The proposed project would not remove any barriers to additional growth and development. Therefore, the proposed project would not indirectly induce substantial unplanned population growth.

Based on all of the foregoing, the proposed project would not result in substantial population growth, direct or indirect, beyond that planned for the city, county, or region, and instead would contribute to the needed and planned for supply of housing, including affordable housing. Therefore, this impact would be ***less than significant*** **(LTS)**.

2) Displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere

The proposed project itself would not directly displace people or housing by demolishing units. Instead, the proposed project would add to the supply of market rate and affordable housing. Furthermore, the proposed project would reduce the level of demand for housing by eliminating existing employment uses. Therefore, the proposed project is not anticipated to contribute to displacement either in the Belle Haven neighborhood of Menlo Park or in East Palo Alto. Increasing the availability of market rate and affordable housing would instead tend to moderate or counteract displacement pressures to some degree by relieving market pressures on existing housing stock. Therefore, the proposed project would not indirectly result in the displacement of housing or people necessitating the construction elsewhere, and this impact would be ***less than significant*** **(LTS).**

The proposed project would include the construction of 483 new residential units. The project site does not include any existing residential uses and is currently developed with two single-story commercial office buildings and a single-story industrial building that provide approximately 221 jobs. Therefore, implementation of the proposed project would not directly displace any housing units due to redevelopment of the project site.

Displacement also 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.[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*

[22] Keyser Marston Associates, 2020, op. cit.

Peninsula, provided an assessment of the baseline housing conditions in the Belle Haven neighborhood and East Palo Alto, along with the North Fair Oaks neighborhood (unincorporated San Mateo County). The Local Supply Study was focused on identifying an inventory of anti-displacement policies that cities could legislatively enact to reduce the disproportionate pressures on the housing market in these communities. The Local Supply Study determined that the City of Menlo Park had seven existing anti-displacement policies, such as tenant relocation assistance, a housing trust fund, and the BMR Housing Program, and that the City of East Palo Alto had 13.

While the Local Supply Study is policy focused, the HNA is focused on the potential effects of the proposed project. The HNA analyzes the economic drivers of displacement, specifically the potential for the proposed project to affect the local housing market and contribute to increasing housing costs. As described in the HNA and shown in Table 4.1.E, the proposed project would increase the number of available housing units within Menlo Park by an estimated 498 units. This estimate reflects the combined effect of constructing 483 new residential units, removal of 110 units of housing demand from existing office workers, and adding 95 units of housing demand from new workers in off-site services to new residents. The HNA concludes that increasing the availability of market rate and affordable housing would tend to moderate or counteract displacement pressures to some degree by relieving market pressures on existing housing stock. Therefore, the proposed project is not anticipated to contribute to displacement in the Belle Haven neighborhood or East Palo Alto.

Table 4.1.E: Estimated Net Impact of Project on Housing Availability

Factor	Change in Available Housing
Increase in available housing from construction of new units	483 units
Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	110 units
Decrease in available housing due to increase in housing demand by off-site workers in services to new residents	(95 units)
Net Increase in Available Housing	**498 units**

Source: *Housing Needs Assessment, Menlo Uptown Project* (Keyser Marston Associates, October 2020).

The project sponsor is proposing that a total of 73 residential units (15 percent) be affordable to moderate and low-income households. Low income households are those earning between 51 and 80 percent of the area median income. Moderate income households are those earning between 81 and 120 percent of the area median income. As described above, the proposed project would include 67 low-income rental units and six moderate-income for-sale units, which would meet the City's BMR requirements.

The following outlines factors considered in the HNA to evaluate whether the proposed project could have an influence on displacement in the Belle Haven neighborhood and East Palo Alto:

- The proposed project adds 483 new units to the housing supply, including 73 BMR units, which would make additional housing opportunities available in a very competitive housing market.

- The proposed project is estimated to reduce worker-housing demand by 15 units based on an estimated net reduction of 28 jobs. The net reduction of 28 jobs represents the removal of 208 on-site jobs and addition of an estimated 180 off-site jobs in sectors like retail and restaurants that would serve residents. Overall, with the addition of 483 units and removal of 208 on-site jobs, this increases housing availability by 498 units.[23]

- The 483 new units proposed by the project equate to a 3.1 percent increase in the existing 12,760-unit Menlo Park housing stock and a 0.14 percent increase in the 275,109-unit housing stock of San Mateo County.[24]

- Two recent studies referenced in the HNA analysis have found moderating effects of new rental housing on rents and displacement pressures at the local level. New residential developments were found to decrease rents in the area surrounding the new housing relative to market trends.[25,26]

This conclusion is supported by the Local Supply Study which identifies the shortage of supply as a driver of the severity of the housing crisis in the area. Because the proposed project adds to the supply of market rate and affordable housing and reduces the level of demand for housing by eliminating existing employment uses, the proposed project is not anticipated to contribute to displacement in the Belle Haven neighborhood or East Palo Alto. Increasing the availability of market rate and affordable housing would instead tend to moderate or counteract displacement pressures to some degree by relieving market pressures on existing housing stock. Therefore, the proposed project would not indirectly result in the displacement of housing or people necessitating the construction elsewhere, and this impact would be ***less than significant*** **(LTS).**

4.1.2.4 Cumulative Impacts

As discussed in Section 4.0, Setting, Impacts and Mitigation Measures, this EIR takes into account growth within the Menlo Park city boundary, including pending or recently approved projects in the

23 Subsequent to completion of the HNA, the proposed project was modified to increase the office space from 2,029 square feet to 2,940 square feet. With this change, the reduction in on-site employment would be reduced from 208 to 202 jobs removed. The corresponding reduction in employee housing demand associated with the removal of on-site jobs would be slightly lowered from 110 units to 107 units.

24 The housing stock totals presented in this section are from the HNA, which utilizes data from the 2013-2017 American Community Survey published by the United States Census Bureau. These values are different than those presented in Table 4.1.A, which utilizes data from the Association of Bay Area Governments projections for 2020, which were developed in 2018. However, the rate of increase is similar under either total.

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*. Kalamazoo, MI: W. E. Upjohn Institute for Employment Research. Website: doi.org/10.17848/wp19-316 (accessed August 2020).

26 Li, Xiaodi. 2019. Do New Housing Units in Your Backyard Raise Your Rents? Available online at: blocksandlots.com/wp-content/uploads/2020/02/Do-New-Housing-Units-in-Your-Backyard-Raise-Your-Rents-Xiaodi-Li.pdffc36f4606599.filesusr.com/ugd/7fc2bf_2fc84967cfb945a69a4df7baf8a4c387.pdf (accessed October 2020). December 16.

vicinity of the project site, in combination with impacts from projected growth in the rest of San Mateo County and the surrounding region, as forecast by ABAG and MTC.

As discussed above, the project site does not contain any residential uses and the proposed project would result in an increase in the available housing stock within the city. The proposed project would not displace housing or people necessitating the construction of replacement housing elsewhere. Accordingly, under the cumulative conditions, implementation of the proposed project would also not displace housing or substantial numbers of people necessitating the construction of replacement housing elsewhere.

The proposed project would be consistent with the mix and intensity of development contemplated by ConnectMenlo. The ConnectMenlo Final EIR identified a significant and unavoidable impact and adopted a Statement of Overriding Considerations related to population growth under the cumulative condition because the planning documents for regional growth did not yet include the new development potential of ConnectMenlo. However, subsequent to certification of the ConnectMenlo EIR, ABAG updated its growth projections (Projections 2040) that included the full buildout of ConnectMenlo. Therefore, the proposed project would result in a less than significant impact for cumulative population growth. ABAG is currently preparing the allocations for the 2022-2030 RHNA cycle, which are anticipated to be available either in late 2021 or early 2022 and these would also account for ConnectMenlo's development potential.[27] Further, if approved, the proposed project would count toward satisfying the City's current 2014-2022 regional housing allocation for low- and moderate-income units as it would be approved prior to the 2022-2030 allocations. Therefore, the proposed project would not result in any new or more significant impacts related to population growth under the cumulative condition than those that were previously identified in the ConnectMenlo Final EIR, and this impact would be ***less than significant*** **(LTS)**.

[27] ABAG. 2020. RHNA – Regional Housing Needs Allocation. July 29. Website: abag.ca.gov/our-work/housing/rhna-regional-housing-needs-allocation (accessed July 2020).

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4.2 TRANSPORTATION

This section discusses the results of the transportation impact analysis (TIA) conducted for the proposed project. Specifically, this section describes existing and future transportation and circulation within the study area, describes the analysis methodology and regulatory framework, identifies potential transportation-related impacts of the proposed project, and identifies the recommended mitigation measures for identified significant impacts.

For purposes of disclosing potential transportation impacts, projects in the City of Menlo Park use the City's current TIA Guidelines to ensure compliance with both State and local requirements.[1] Up until July 1, 2020, the City's TIA Guidelines used roadway congestion or level of service (LOS) as the primary study metric for planning and environmental review purposes. However, Senate Bill (SB) 743 required the Governor's Office of Planning and Research (OPR) to establish a new metric for identifying and mitigating transportation impacts under CEQA in an effort to meet the State's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. CEQA Section 21099(b)(2) states that upon certification of the revised guidelines for determining transportation impacts pursuant to CEQA section 21099(b)(1), automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. OPR identified vehicle miles traveled (VMT) as the required CEQA transportation metric for determining potentially significant environmental impacts.[2] In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the section implementing SB 743 (CEQA Guidelines Section 15064.3). OPR developed a *Technical Advisory on Evaluating Transportation Impacts in CEQA,* which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.[3] As of July 1, 2020, VMT (not LOS) is the only legally acceptable threshold for transportation-related environmental impacts pursuant to CEQA.

Adoption of a local VMT threshold requires City Council approval and on June 23, 2020, the City Council of Menlo Park approved local VMT thresholds for incorporation into the updated TIA Guidelines. The City Council, however, retained the requirement that the TIA also analyze LOS for local planning purposes. Therefore, the TIA includes both an assessment of VMT impacts using local VMT thresholds included in the updated TIA Guidelines for purposes of determining potentially significant environmental impacts pursuant to CEQA and a summary of the LOS analysis for assessment of local congestion for planning purposes. However, in accordance with SB 743 for purposes of determining potentially significant environmental impacts, this EIR will focus only on VMT as the threshold of significance. Because the City Council approved TIA Guidelines also require

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1 Menlo Park, City of. 2020a. *Transportation Impact Analysis Guidelines*. Website: www.menlopark.org/DocumentCenter/View/302/Transportation-Impact-Analysis-Guidelines?bidId= (accessed July 10, 2020). July.

2 California Office of Planning and Research (OPR). 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013)*. January 20.

3 OPR. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA.* Website: opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf (accessed February 7, 2019). December 18.

an analysis of LOS for local planning purposes, that information is summarized in the Non-CEQA Analysis at the end of this section and Appendix E, Transportation Impact Analysis, of this EIR.

The information in this chapter is based on travel demand modeling, the TIA, and identification of mitigations, if any, developed by Kittelson and Associates, Inc. The analyses were conducted in accordance with the current standards and methodologies required by law and set forth by the City of Menlo Park (in the TIA Guidelines) and the City/County Association of Governments of San Mateo County (C/CAG). The technical appendices are included in Appendix E, Transportation Impact Analysis, of this EIR. The appendices include the level of service analysis summary, turning movement volumes, intersection lane configurations, and intersection and roadway level of service results.

4.2.1 Setting

This section describes the existing transportation conditions, including the roadway network, bicycle facilities, pedestrian facilities, and transit service, within the study area. The study area includes properties and the transportation network within an approximately 0.5-mile radius of the project site. This includes the area extending south to Chilco Street, west to Bay Road, east to Bayfront Expressway, and north to Haven Avenue. The applicable regulatory framework is also described.

4.2.1.1 Existing Transportation and Circulation System

This section describes the existing transportation conditions, including the roadway network, bicycle facilities, pedestrian facilities, and transit service, within the study area.

Roadway Network. Primary arterials, minor arterials, collectors, and local streets run through the project area. Regional access to the project site is provided via US 101 and State Route 84. In this transportation analysis, US 101 and all streets parallel are defined as running north to south. Conversely, Marsh Road and all streets parallel are defined as running east to west. Descriptions of all roadways in the project area are provided below using roadway classifications defined in the Menlo Park General Plan Circulation Element[4] followed by the Federal Highway Administration (FHWA) category.

Bayshore Freeway (US 101) is an eight-lane freeway running west of the project site with a posted 65 miles per hour (mph) speed limit in the vicinity of the project site. US 101 runs north-south through California, Oregon, and Washington and is a major regional freeway on the San Francisco Bay Peninsula connecting Menlo Park with cities in the San Francisco Peninsula from San Jose to San Francisco. There is one high occupancy vehicle lane in both directions within Menlo Park. Two interchanges serve Menlo Park at Willow Road and Marsh Road.

Bayfront Expressway (SR 84) is a six-lane east-west Expressway that connects the San Francisco Peninsula to the east via the Dumbarton Bridge. Within Menlo Park, it connects Marsh Road with the Dumbarton Bridge. On-street parking is not permitted on Bayfront Expressway. From Marsh Road to Chilco Street, the speed limit is 45 mph. South of Chilco Street, the speed limit is 50 mph.

[4] Menlo Park, City of. 2016a. General Plan: ConnectMenlo*, Circulation Element. Table 1*. November 29.

University Avenue (SR 109) is an east-west four-lane boulevard (primary arterial) from Bayfront Expressway to the railroad tracks and a four-lane local road west of the railroad tracks. Between US 101 and Bayfront Expressway, University Avenue is owned by the California Department of Transportation (Caltrans) and has a speed limit of 35 mph east of Purdue Avenue. West of Purdue Avenue, University Avenue (SR 109) has a speed limit of 25 mph. University Avenue serves residential and commercial areas east of US 101 and mainly residential areas west of US 101. On-street parking is not permitted on University Avenue. Bicycle lanes are provided on University Avenue between Bayfront Expressway and Middlefield Road, except for a gap in the bicycle lanes where University Avenue approaches and crosses US 101.

Willow Road (SR 114) is an east-west four-lane boulevard (primary arterial) that connects Bayfront Expressway with US 101 and Middlefield Road. On-street parking is not permitted, and the speed limit is 40 mph with a portion of Willow Road between the US 101 interchange and Newbridge Street limited to 35 mph. Between Middlefield Road and US 101, Willow Road is a two-lane mixed-use avenue (minor arterial) with bicycle lanes, on-street parking permitted in some sections, and a posted speed limit of 25 mph. West of US 101, Willow Road generally serves residential areas.

Local access to the site is provided via Marsh Road, Bayfront Expressway, Chrysler Drive, Constitution Drive, and Jefferson Drive.

Marsh Road extends from Bay Road to Bayfront Expressway. It is a six-lane thoroughfare (primary arterial) from Bayfront Expressway to US 101. From US 101 to Bay Road, Marsh Road is classified as a mixed-use collector (collector). The speed limit is 35 mph throughout the roadway. There are existing sidewalks on both sides of Marsh Road in the project vicinity. There are no existing bicycle facilities on Marsh Road. No on-street parking is permitted between US 101 and Bayfront Expressway.

Chrysler Drive is an east-west two-lane mixed-use collector (collector) that extends from Commonwealth Drive to Bayfront Expressway. The speed limit on Chrysler Drive is 25 mph with one lane of travel in each direction west of Constitution Drive and two eastbound lanes and one westbound lane between Constitution Drive and Bayfront Expressway. There are sidewalks on both sides of Chrysler Drive except on the north side between Jefferson Drive and Bayfront Expressway. In addition, a Class II bike lane is available between Jefferson Drive and Bayfront Expressway.

Constitution Drive is a two-lane north-south mixed-use collector (collector) that provides direct access to the project site. It extends from Marsh Road to Chilco Street. Constitution Drive has a posted speed limit of 35 mph, and on-street parking permitted in some portions of Constitution Drive. Constitution Drive has sidewalks on the east side between Marsh Road and Chrysler Drive and on the west side between Chrysler Drive and Chilco Street. There are existing Class II bike lanes on Constitution Drive between Independence Drive and Chilco Street.

Jefferson Drive is a two-lane mixed-use collector (collector) that provides direct access to the project site. It extends from Chrysler Drive to Constitution Drive. Sidewalks are present on the west side of Jefferson Drive. There is no sidewalk facility on the east side. A Class II bike lane is available on Jefferson Drive and there is a posted speed limit of 25 mph.

Bicycle Facilities. The City's existing bicycle facilities are classified according to the State's system of classification as identified in the Menlo Park General Plan Circulation Element:

- Class I (bike path) – A Class I bicycle facility is completely separated from vehicles on a paved right-of-way and is commonly known as a bike path.
  - Multi-use Pathway – A Multi-use Pathway is a Class I bicycle facility that allows both bicyclists and pedestrians to use the facility.
- Class II (bike lane) – A Class II bicycle facility is a striped and stenciled lane on an existing right-of-way shared with vehicles and is commonly known as a bike lane.
- Class III (bike route) – A Class III bicycle facility is identified through signage and/or pavement markings called "sharrows" indicating that bicyclists and drivers share the same travel lane, and is commonly referred to as a bike route.
- Class IV (protected bike lane) – A Class IV bicycle facility is a striped lane with a vertical and physical separation, such as parking or bollards, from the vehicle travel lane and is commonly referred to as a protected bike lane.

Existing bicycle facilities near the project site are shown on Figure 4.2-1.

The San Francisco Bay Trail, a Class I bike trail, runs parallel to the Bayfront Expressway between Haven Avenue and the Dumbarton Bridge. The path provides connections to the East Bay, East Palo Alto, and Redwood City. A Class I bike path is provided on southern Marsh Road between Constitution Drive and Bayfront Expressway.

Class II facilities (bike lanes) are provided on Chrysler Drive between Bayfront Expressway and Independence Drive; on Constitution Drive between Chilco Street and Independence Drive; on Jefferson Drive between Chrysler Drive and Constitution Drive; on Chilco Street from Bayfront Expressway to Constitution Drive and approximately from the railroad tracks east of Hamilton Avenue to Hamilton Avenue; on Florence Street from Bay Road to Marsh Road; on Willow Road between Bayfront Expressway and Alma Street; on Bay Road between Marsh Road and Van Buren Road; on University Avenue between Donahoe Street and Bayfront Expressway and between Fulton Street and Woodland Avenue; on Middlefield Road between Marsh Road and Willow Road; and on Ringwood Avenue between Middlefield Road and Bay Road connecting to the pedestrian/bicycle bridge across US 101.

Class III facilities (bike routes) are provided on Independence Drive between Chrysler Drive and Constitution Drive.

Class IV facilities (protected bike lanes) are provided on the east and west sides of Chilco Street between Constitution Drive and the railroad tracks that run parallel to Chilco Street.

Pedestrian Facilities. Pedestrian facilities include sidewalks, crosswalks, curb ramps, curb extensions, and various streetscape amenities such as lighting and benches. Figure 4.2-2 presents the sidewalk facilities in the project vicinity.

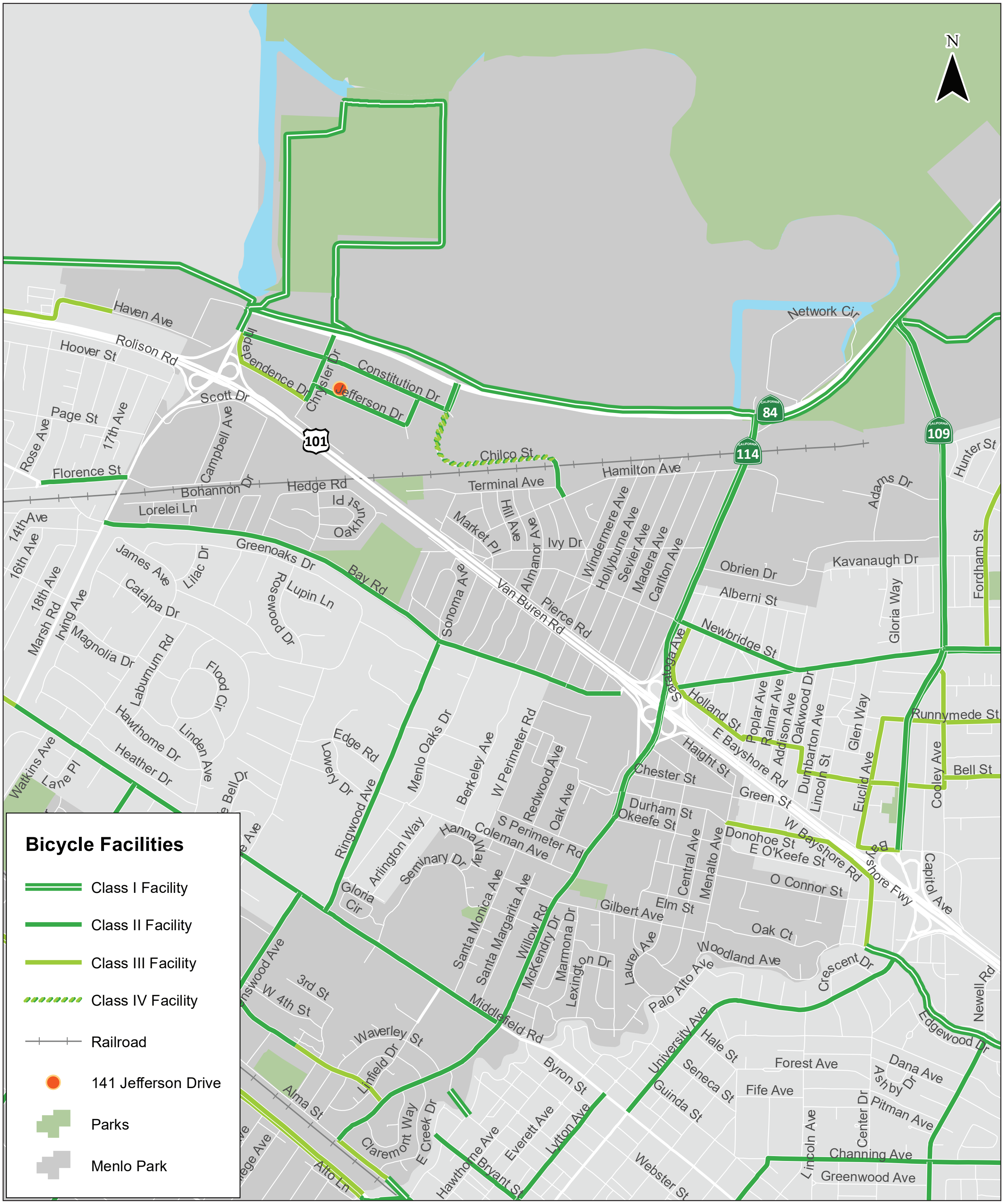

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FIGURE 4.2-1

Menlo Uptown Project EIR
Existing Bicycle Facilities

SOURCE: Kittelson & Associates, 2020

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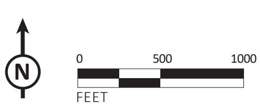
FIGURE 4.2-2



Menlo Uptown Project EIR
Existing Pedestrian Facilities

SOURCE: Kittelson & Associates, 2020

P:\CMK1902 141 Jefferson Drive\PRODUCTS\Graphics\EIR Figures\Figure 4.2-2.ai (10/9/2020)

In general, the network of sidewalks, crosswalks, and curb ramps are limited and discontinuous in the vicinity of the proposed project. The following sidewalk gaps exist in the vicinity of the project:

- East side of Constitution Drive between Chrysler Drive and Chilco Street.
- West side of Constitution Drive between Marsh Road and Chrysler Drive.
- East side of Jefferson Drive between Chrysler Drive and Constitution Drive.
- East side of Independence Drive between Constitution Drive and Chrysler Drive.
- North side of Chrysler Drive between Bayfront Expressway and Jefferson Drive.

In addition to the sidewalk gaps, the surrounding high volume and high-speed roadways (US 101 and Bayfront Expressway) limit pedestrian access to the project site. There are currently no pedestrian facilities on US 101. Marked pedestrian crossings along Bayfront Expressway are limited. There are three pedestrian crossings located at the Marsh Road and Haven Avenue intersection, Chrysler Drive, and Chilco Street, connecting the project area to the Class 1 path parallel to Bayfront Expressway.

Transit Service and Facilities. Bus transit lines in the project area are primarily provided by the San Mateo County Transit District (SamTrans), and Alameda-Contra Costa Transit District (AC Transit). Rail transit service is provided by Caltrain. A free shuttle service connecting to Menlo Park Station is operated by the City. Figure 4.2-3 shows the existing transit and shuttle services in the area based on service and route maps obtained in June 2020.[5]

The City operates three free shuttles on weekdays in the project area to connect the Menlo Park Station with employment centers on the eastern side of the city.[6] Line M3 travels along Marsh Road to the project site, and Lines M2 and M4 run on Willow Road. Line M2 turns from Willow Road onto Ivy Drive and terminates near Chilco Street, and Line M4 runs in a loop onto O'Brien Drive before terminating at the Menlo Park Station. Line M2 runs approximately once per hour from 6:00 a.m. to 4:00 p.m. The schedules for Line M3 and Line M4 are synchronized with the Caltrain schedule and run from approximately 7:00 a.m. to 10:30 a.m. and 3:00 p.m. to 6:30 p.m.

Caltrain Local and Express trains stop at the Menlo Park Station located east of El Camino Real (SR 82) at Santa Cruz Avenue.[7] From Menlo Park Station, the project site can be reached by transferring to SamTrans Routes 296 and 85 or the City of Menlo Park shuttles. Four northbound trains and six southbound trains stop at Menlo Park between 7:00 a.m. and 9:00 a.m. Six northbound trains and three southbound trains stop at Menlo Park between 4:00 p.m. and 6:00 p.m. As a commuter train service, headways vary from 15 minutes to 40 minutes in the peak periods. On Saturdays, a total of 24 trains stop at the Menlo Park Station. On Sundays, 20 trains stop at the Menlo Park Station.

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[5] Routes, timetables, and maps used to inform these sections do not reflect service changes due to COVID-19.

[6] Menlo Park, City of. 2020b. Shuttle Services. Website: www.menlopark.org/156/Shuttle-services (accessed September 28, 2020).

[7] Caltrain. 2020. Schedules. Website: www.caltrain.com/schedules.html (accessed September 28, 2020).

SamTrans operates the following five bus routes within the study area:[8]

- **Route 270** stops at the Redwood City Transit Center and Kaiser Hospital and travels along Bay Road onto Marsh Road before continuing along Haven Avenue/Bayshore Road within the project area. Transfers can be made to SamTrans Routes ECR, 274, 275, 270, 276, 278, 296, and 398 and to Caltrain at the Redwood City Station. Route 270 operates with one-hour headways on weekdays between about 6:00 a.m. and 7:00 p.m.

- **Route 281** connects Menlo Park, East Palo Alto, and Palo Alto and stops at Kelly Park, Onetta Harris Community Center, and Stanford Shopping Center. Transfers can be made to SamTrans Routes ECR, 280, 296, the Dumbarton Express, Caltrain at the Palo Alto Station, Stanford University shuttle Marguerite, and Santa Clara VTA. On weekdays, it operates with 20-minute headways in the AM and PM peak periods and runs every 30 minutes to one hour outside of peak periods. On Saturdays, headways are 30 minutes, and on Sundays, headways are 40 minutes.

- **Route 296** serves Redwood City, Atherton, Menlo Park, and East Palo Alto and stops at the Caltrain Stations in Redwood City, Menlo Park, and Palo Alto. In the project area, Route 296 travels along Middlefield Road, onto Willow Road, and continues on Bay Road. Transfers can be made to SamTrans Routes ECR, 270, 274, 275, 276, 278, 280, 281, 286, and 398 and to Caltrain. On weekdays, the route operates with 20-minute headways, and on weekends the route operates approximately every 30 minutes.

- **Route 397** provides all-nighter service from Downtown San Francisco to Palo Alto every day. In Menlo Park, the route travels along Middlefield Road, and transfers can be made to Caltrain, Amtrak, Santa Clara VTA, BART, AC Transit, Muni, and Golden Gate Transit. Three northbound buses depart Palo Alto once per hour between 12:45 a.m. and 2:45 a.m., and four southbound buses depart San Francisco once per hour between 1:00 a.m. and 4:00 a.m.

- **Route ECR** runs along El Camino Real from Daly City to Palo Alto. During the AM and PM peak periods and in the midday, the route operates with 15-minute headways. During nighttime hours, the route operates with 30-minute headways. On weekends, Route ECR runs every 20 to 30 minutes. Connections are provided to BART and Caltrain, including at the Menlo Park Station.

Seven SamTrans routes provide limited service to schools on weekdays in the study area. Each route runs one bus in the AM drop-off period and the PM pick-up period, with the exception of Route 79 that runs two buses in the AM period and two buses in the PM period and Route 80 that runs only one bus in the PM period. The AM drop-off period is approximately 7:00 a.m. to 9:00 a.m., and the PM pick-up period is approximately 3:00 p.m. to 4:00 p.m. Buses reflect regularly scheduled early release days (on Wednesday, Thursday, or both days) from 1:00 p.m. to 3:00 p.m. These routes are described below.

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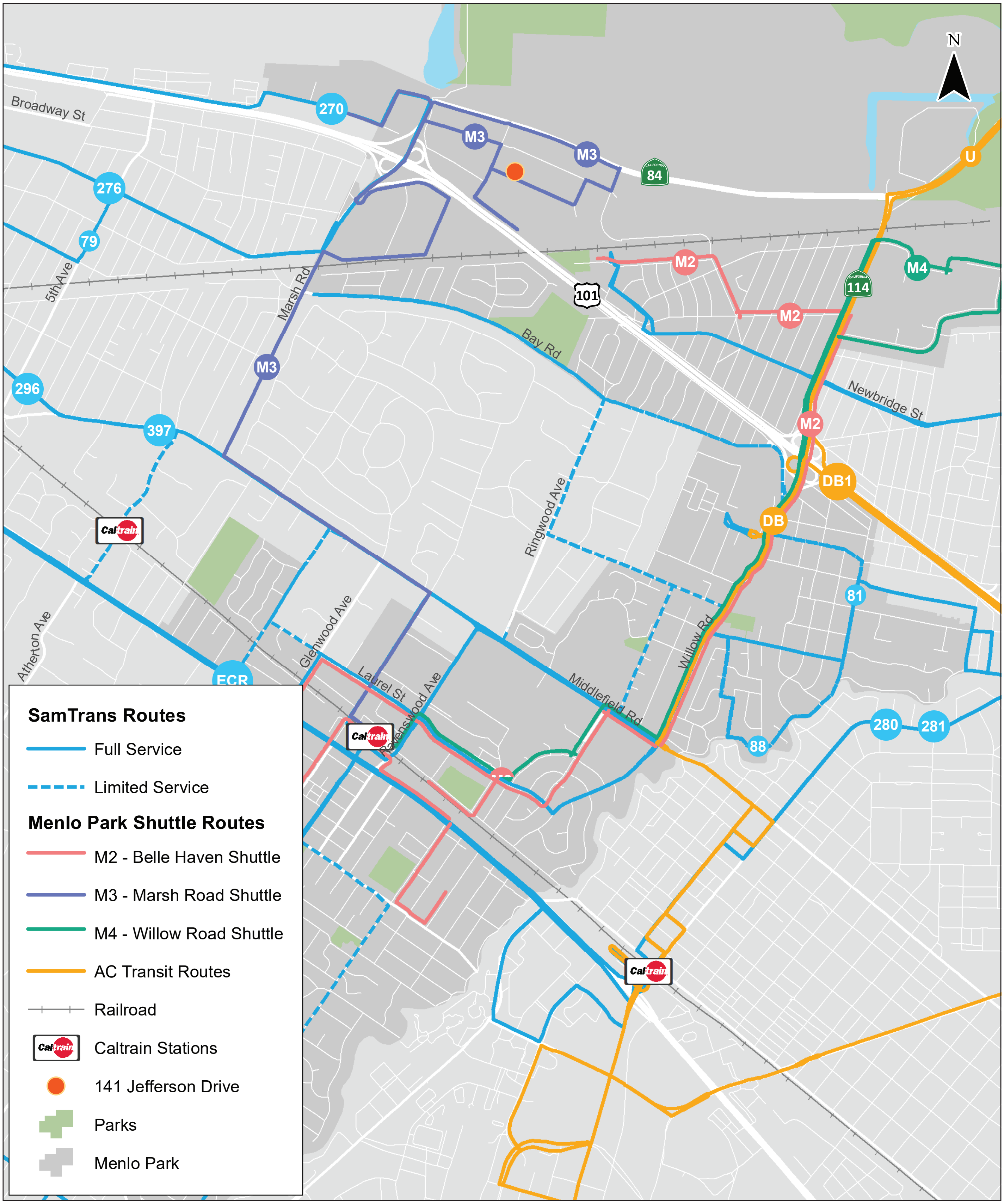
8 San Mateo County Transit District (SamTrans). 2020. Schedules & Maps. Website: www.samtrans.com/schedulesandmaps.html (accessed September 28, 2020). January 5.



LSA

FIGURE 4.2-3

0 .5 1
MILES

Menlo Uptown Project EIR
Existing Transit Facilities

SOURCE: Kittelson & Associates, 2020

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- **Route 79** serves the Kennedy School in Redwood City and terminates at the edge of Menlo Park's city boundaries west of the project site. Transfers can be made to SamTrans Routes ECR, 275, and 276, and buses run to reflect early release day on Thursday.

- **Route 80** serves Oak Knoll School and Hillview Middle School in Menlo Park. Transfers can be made to SamTrans Routes 82, 83, 84, and 286, and buses run to reflect early release day on Thursday.

- **Route 82** and **Route 83** both serve Hillview Middle School. Transfers can be made to Caltrain at the Menlo Park Station and to SamTrans Routes 80, 82, 83, 84, 88, 286, and 296, and buses run to reflect early release day on Wednesday and Thursday.

- **Route 84** serves Hillview Middle School. Transfers can be made to Caltrain at the Atherton (on weekends only) and Menlo Park Stations and to SamTrans Route 296, and buses run to reflect early release day on Wednesday and Thursday.

- **Route 88** serves Encinal Elementary School. Transfers can be made to SamTrans Routes 82, 83, 84, 286, and 296, and buses run to reflect early release day on Thursday.

- **Route 286** operates only during AM and PM peak periods and provides service to Menlo-Atherton High School, Corte Madera School, and the Menlo Park Caltrain Station. Transfers can be made to SamTrans Routes 80, 82, 83, 84, 85, 87, 296, and ECR and to Caltrain at the Menlo Park Station, and buses run to reflect early release day on Wednesday and Thursday.

AC Transit operates two bus transit routes in the study area:.[9]

- **Line "U"** serves Stanford University, Palo Alto, Newark, the Centerville District, and Fremont. Within the project area, the route runs on Willow Road and US 101. The route connects with several other routes in Fremont, Newark, and Palo Alto. The route stops at the Stanford Oval, Ardenwood Park & Ride facility, Fremont/Amtrak Centerville train station, and Fremont BART station. The U line operates about every 30 minutes between 6:00 a.m. and 9:00 a.m., and 3:00 p.m. and 6:00 p.m.

- **Dumbarton Express (DB, DB1)**, which is administered by AC Transit, connects Palo Alto, East Palo Alto, Menlo Park, and Union City in the East Bay. In the project area, the routes travel along University Avenue, US 101, and Willow Road onto SR 84. The stop closest to the project site is at Willow Road and Hamilton Avenue. The Dumbarton Express operates between approximately 5:00 a.m. and 8:00 p.m. in the westbound direction and between approximately 6:00 a.m. and 9:00 p.m. in the eastbound direction. From 5:00 a.m. to 9:00 a.m. and 4:00 p.m. to 8:00 p.m., the bus arrives about every 20 minutes.

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9 Alameda-Contra Costa County Transit District (AC Transit). 2020. Maps & Schedules. Website: www.actransit.org/maps (accessed September 28, 2020).

4.2.1.2 Analysis Scope and Methodology

For purposes of disclosing potential transportation impacts, projects in the City of Menlo Park use the City's current TIA Guidelines to ensure compliance with both State and local requirements.[10] Until July 1, 2020, the City's TIA Guidelines used roadway congestion or LOS as the primary study metric. However, SB 743 required OPR to establish a new metric for identifying and mitigating transportation impacts within CEQA in an effort to meet the State's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. OPR identified VMT as the required transportation metric and beginning July 1, 2020, VMT (not LOS) is the legally required threshold for transportation impacts pursuant to CEQA. Adoption of a local VMT threshold requires City Council approval and on June 23, 2020 the Menlo Park City Council approved the VMT thresholds for incorporation into the updated TIA Guidelines. Therefore, this analysis evaluates VMT impacts using local VMT thresholds included in the updated TIA Guidelines for purposes of determining potentially significant environmental impacts. Consistent with the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA,[11] a project's cumulative impacts are based on an assessment of whether the "incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact.

Vehicle miles traveled per person (or per capita) is a measurement of the amount and distance that a resident, employee, or visitor drives, accounting for the number of passengers within a vehicle. Many interdependent factors affect the amount and distance a person might drive. In particular, the built environment affects how many places a person can access within a given distance, time, and cost, using different ways of travel (e.g., private vehicle, public transit, bicycling, walking, etc.). Typically, low-density development located at great distances from other land uses and in areas with few options for ways of travel provides less access than a location with higher density, a mix of land uses, and numerous ways of travel. Therefore, low-density development without a diverse mix of land uses and transportation options typically generates more VMT compared to a similarly sized development located in an area with a greater mix of uses and transportation options. Additionally, land uses that reflect a more balanced jobs-housing ratio result in lower per capita VMT. The adoption of VMT as the new CEQA transportation metric is intended to encourage more complimentary infill developments in areas traditionally dominated by one single land use (e.g., a residential project in an area dominated by office buildings), which could potentially reduce VMT.

The proposed project is located within the Bayfront Area of Menlo Park. The majority of the Bayfront Area is made up of the city's industrial and business park land uses and includes the city's entire existing M-2 (General Industrial) zoning district along with some high-density residential land uses. The Bayfront Area contains major regional transportation links, including US 101, Bayfront Expressway, Willow Road, and University Avenue, all of which are heavily utilized corridors that are challenging to cross and act as barriers for biking and walking. The 2016 General Plan update to the Land Use and Circulation Elements and corresponding rezoning of land in the Bayfront Area

10 Menlo Park, City of. 2020a, op. cit.

11 OPR. 2018, op. cit.

(referred to as ConnectMenlo) was designed to change the land use and circulation patterns in the Bayfront Area to create a built environment that supports a live/work/play environment with increased density and a diversity of uses, and a street network that supports safe and sustainable travel. VMT estimates are sensitive to changes in land use and in general, land uses that reflect a more balanced jobs-housing ratio result in lower per capita VMT. Therefore, implementation of the land use and transportation changes described in ConnectMenlo would reduce the VMT within the Bayfront Area compared to existing conditions. The expected reduction in VMT per capita identified in the ConnectMenlo EIR[12] is due to the planned addition of housing in a jobs-rich area, which affects travel behavior, including decisions around travel mode, travel route, departure time, and destination, among other travel-related choices.

The proposed project is one of the first residential projects proposed in the Bayfront Area since the rezoning of the project site from M-2 (General Industrial) to R-MU-B (Residential Mixed-Use Bonus) in late 2016. As a result, the project VMT is being estimated using the City's 2020 travel demand model. A travel demand model is a transportation planning analytical tool that utilizes land use information, travel behavior and other transportation-related data to forecast various traffic statistics such as trip generation, trip distribution, and trip length. The model is used to estimate average daily VMT thresholds for residential and office land uses that are identified in the City's TIA Guidelines.

The Menlo Park travel demand model encompasses the nine Bay Area counties divided into thousands of transportation analysis zones (TAZs). Each TAZ is comprised of several streets, neighborhoods, or city blocks depending on the geographical features and surrounding land uses. There are approximately 80 TAZs within the boundaries of Menlo Park. As such, when adding or subtracting a project from a TAZ, the internal interactions within the model will impact the entire TAZ.

As described above, the new CEQA transportation metric of VMT is intended to encourage complementary infill developments that could potentially reduce VMT to below an established significance threshold for commercial and residential uses. The City's VMT significance thresholds for individual land uses were established by aggregating the VMT by population for each land use in the TAZs within a desired area in the travel demand model. Only TAZs that contain the land use being analyzed are included in the evaluation. For the proposed project analysis, there are no existing residential uses within the project's TAZ. The existing VMT for the TAZ does not include a calculation for residential uses specifically. Therefore, for the proposed project the residential VMT is the same as the existing VMT for the TAZ.

Table 4.2.A shows the existing average daily VMT per capita for residents within the nine Bay Area counties region (regional average) and the City's VMT threshold, which is 15 percent below the regional average. The City's threshold is used to evaluate project VMT impacts to determine significance in subsection 4.2.2.4.

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12 Menlo Park, City of. 2016. *ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Area Zoning Update, Public Review Draft Environmental Impact Report*, p. 4.13-73. Website: www.menlopark.org/DocumentCenter/View/10360/ConnectMenloProjectDEIR_060116?bidId= (Accessed November 12, 2020). June 1.

Table 4.2.A: Average Regional Vehicles Miles Traveled per Capita

Land Use	Regional Average	VMT Threshold (15 Percent Below Regional Average)
Residential (per capita)	16.1	13.7

Source: Menlo Park Travel Demand Model (2020).

The City's TIA Guidelines outline specific land use types and sizes that would be exempted from VMT analysis, including local serving retail projects and other commercial projects where the total square footage is 10,000 square feet or less. Therefore, consistent with this exemption criteria, the project's proposed non-residential use is exempt from VMT analysis.

4.2.1.3 Regulatory Framework

The following Federal, State, regional, County of San Mateo, and local transportation plans, policies, and regulations guide transportation planning in Menlo Park.

Federal Regulations. This section summarizes applicable Federal regulations guiding transportation planning in Menlo Park.

Federal Highway Administration. The Federal Highway Administration (FHWA) is the agency of the United States Department of Transportation responsible for the federally-funded roadway system, including the interstate highway network and portions of the primary State highway network, such as Interstate 280 (I-280).

Americans with Disabilities Act. The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities. To implement this goal, the US Access Board, an independent Federal agency created in 1973 to ensure accessibility for people with disabilities, has created accessibility guidelines for public rights-of-way. While these guidelines have not been formally adopted, they have been widely followed by jurisdictions and agencies nationwide in the last decade. The guidelines, last revised in July 2011, address various issues, including roadway design practices, slope and terrain issues, and pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way. These guidelines would apply to proposed roadways in the study area.

State Regulations. This section summarizes applicable State regulations guiding transportation planning in Menlo Park.

California Department of Transportation. Caltrans is responsible for planning, design, construction, and maintenance of all interstate freeways and State routes. Caltrans sets design standards for State roadways that may be used by local governments. Caltrans requirements are described in their Guide for Preparation of Traffic Impact Studies,[13] which covers the

[13] California Department of Transportation. 2002. *Guide for the Preparation of Traffic Impact Studies*. December.

information needed for Caltrans to review the impacts to State highway facilities; including freeway segments, on- and off-ramps, and signalized intersections.

Senate Bill 375. As a means to achieve the Statewide emission reduction goals set by AB 32 ("The California Global Warming Solutions Act of 2006"), SB 375 ("The Sustainable Communities and Climate Protection Act of 2008") directs the California Air Resources Board (CARB) to set regional targets for reducing GHG emissions from cars and light trucks. Using the template provided by the State's Regional Blueprint program to accomplish this goal, SB 375 seeks to align transportation and land use planning to reduce VMT through modified land use patterns. There are five basic directives of the bill: 1) creation of regional targets for GHG emissions reduction tied to land use; 2) a requirement that regional planning agencies create a Sustainable Communities Strategy (SCS) to meet those targets (or an Alternative Planning Strategy if the strategies in the SCS would not reach the target set by CARB); 3) a requirement that regional transportation funding decisions be consistent with the SCS; 4) a requirement that the Regional Housing Needs Allocation numbers for municipal general plan housing element updates must conform to the SCS; and 5) CEQA exemptions and streamlining for projects that conform to the SCS. The implementation mechanism for SB 375 that applies to land use in Menlo Park is Plan Bay Area.

Senate Bill 743. Senate Bill 743 (CEQA section 21099(b)(1)) requires that the State Office of Planning and Research develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA section 21099(b)(2) states that upon certification of the revised guidelines for determining transportation impacts pursuant to CEQA section 21099(b)(1), automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA.

In January 2016, OPR published for public review and comment a Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA recommending that transportation impacts for projects be measured using a VMT metric.[14] In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the section implementing SB 743 (section 15064.3). The Office of Planning and Research developed a Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.[15]

Regional Regulations. This section summarizes applicable regional regulations guiding transportation planning in Menlo Park.

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14 OPR. 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013)*. January 20.

15 OPR. 2018, op. cit.

Metropolitan Transportation Commission. The Metropolitan Transportation Commission (MTC) is responsible for planning, coordinating, and financing transportation projects in the nine-county Bay Area. The local agencies that comprise these nine counties help the MTC prioritize projects based on need, feasibility, and conformance with federal and local transportation policies. In addition to coordinating with local agencies, the MTC distributes state and federal funding through the Regional Transportation Improvement Program (RTIP).

Plan Bay Area. Plan Bay Area 2040 is a state-mandated, integrated long-range transportation and land use plan. As required by SB 375, all metropolitan regions in California must complete a Sustainable Communities Strategy as part of a Regional Transportation Plan. This strategy integrates transportation, land use and housing to meet greenhouse gas reduction targets set by the California Air Resources Board. The plan meets those requirements. In addition, the plan sets a roadmap for future transportation investments and identifies what it would take to accommodate expected growth. The plan neither funds specific transportation projects nor changes local land use policies.

In the Bay Area, the Metropolitan Transportation Commission and the Association of Bay Area Governments adopted the latest plan in 2017. To meet the greenhouse gas reduction targets, the plan identifies priority development areas. The agencies estimate approximately 77 percent of housing and 55 percent of job growth will occur in the priority development areas between 2010 and 2040. The project site is not located within a priority development area.

City/County Association of Governments of San Mateo Congestion Management Program. The purpose of the Congestion Management Plan (CMP) is to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide transportation solutions. In order to monitor attainment of the CMP, the C/CAG adopted the roadway level of service standards. The LOS standards established for San Mateo County vary by roadway segments and conform to current land use plans and development differences among the coast, bayside, older downtowns, and other areas of San Mateo County. While the intersections associated with the development of the proposed project are monitored by C/CAG for compliance with CMP standards, the intersections are within the City of Menlo Park's city limits and are subject to the more stringent standards implemented by the City.

San Mateo County Comprehensive Bicycle and Pedestrian Plan. The San Mateo County Comprehensive Bicycle and Pedestrian Plan was developed by the City/County Association of Governments of San Mateo County with support from the San Mateo County Transportation Authority to address the planning, design, funding, and implementation of bicycle and pedestrian projects countywide. The following are the relevant goals and policies:

Goal 2: More People Riding and Walking for Transportation and Recreation

- **Policy 2.6:** Serve as a resource to county employers on promotional information and resources related to bicycling and walking.

Goal 4: Complete Streets and Routine Accommodation of Bicyclists and Pedestrians

- **Policy 4.1:** Comply with the complete streets policy requirements of Caltrans and the Metropolitan Transportation Commission concerning safe and convenient access for bicyclists and pedestrians and assist local implementing agencies in meeting their responsibilities under the policy.

- **Policy 4.5:** Encourage local agencies to adopt policies, guidelines, standards, and regulations that result in truly bicycle-friendly and pedestrian-friendly land use developments and provide them technical assistance and support in this area.

- **Policy 4.6:** Discourage local agencies from removing, degrading, or blocking access to bicycle and pedestrian facilities without providing a safe and convenient alternative.

City of Menlo Park. This section summarizes applicable City of Menlo Park regulations guiding transportation planning in the city.

Menlo Park General Plan. Transportation-related policies are included in the Circulation Element of the Menlo Park General Plan. This section was added to the General Plan to provide a framework for transportation planning within the city and was most recently updated in 2016 when the City updated its Land Use and Circulation Elements (commonly referred to as ConnectMenlo). The framework is based on existing practices and future considerations in land use, population, and regional transportation. The General Plan Circulation Element establishes a vision for the city with goals related to sustainability, reliability, and safety for all modes of transportation. The transportation goals for Menlo Park that relate to the proposed project include:

Goal CIRC-1: Provide and maintain a safe, efficient, attractive, user-friendly circulation system that promotes a healthy, safe, and active community and quality of life throughout Menlo Park.

- **Policy CIRC-1.7: Bicycle Safety.** Support and improve bicyclist safety through roadway maintenance and design efforts.

- **Policy CIRC-1.8: Pedestrian Safety.** Maintain and create a connected network of safe sidewalks and walkways within the public right of way ensuring that appropriate facilities, traffic control, and street lighting are provided for pedestrian safety and convenience, including for sensitive populations.

Goal CIRC-2: Increase accessibility for and use of streets by pedestrians, bicyclists, and transit riders.

- **Policy CIRC-2.1: Accommodating All Modes.** Plan, design and construct transportation projects to safely accommodate the needs of pedestrians, bicyclists, transit riders, motorists, people with mobility challenges, and persons of all ages and abilities.

- **Policy CIRC-2.2: Livable Streets.** Ensure that transportation projects preserve and improve the aesthetics of the city.

- **Policy CIRC-2.3: Street Classification.** Utilize measurements of safety and efficiency for all travel modes to guide the classification and design of the circulation system, with an emphasis on providing "complete streets" sensitive to neighborhood context.

- **Policy CIRC-2.4: Equity.** Identify low-income and transit-dependent districts that require pedestrian and bicycle access to, from, and within their neighborhoods.

- **Policy CIRC-2.7: Walking and Biking.** Provide for the safe, efficient, and equitable use of streets by pedestrians and bicyclists through appropriate roadway design and maintenance, effective traffic law enforcement, and implementation of the City's Comprehensive Bicycle Development Plan and the El Camino Real/Downtown Specific Plan.

- **Policy CIRC-2.8: Pedestrian Access at Intersections.** Support full pedestrian access across all legs of signalized intersections.

- **Policy CIRC-2.9: Bikeway System Expansion.** Expand the citywide bikeway system through appropriate roadway design, maintenance, effective traffic law enforcement, and implementation of the City's Comprehensive Bicycle Development Plan, and the El Camino Real/Downtown Specific Plan.

- **Policy CIRC-2.10: Green Infrastructure.** Maximize the potential to implement green infrastructure by: a) Reducing or removing administrative, physical, and funding barriers; b) Setting implementation priorities based on stormwater management needs, as well as the effectiveness of improvements and the ability to identify funding; and c) Taking advantage of opportunities such as grant funding, routine repaving or similar maintenance projects, funding associated with Priority Development Areas, public private partnerships, and other funding opportunities.

- **Policy CIRC-2.11: Design of New Development.** Require new development to incorporate design that prioritizes safe pedestrian and bicycle travel and accommodates senior citizens, people with mobility challenges, and children.

- **Policy CIRC-2.14: Impacts of New Development.** Require new development to mitigate its impacts on the safety (e.g., collision rates) and efficiency (e.g., VMT per capita) of the circulation system. New development should minimize cut-through and high-speed vehicle traffic on residential streets; minimize the number of vehicle trips; provide appropriate bicycle, pedestrian, and transit connections, amenities and improvements in proportion with the scale of proposed projects; and facilitate appropriate or adequate response times and access for emergency vehicles.

Goal CIRC-3: Increase mobility options to reduce traffic congestion, greenhouse gas emissions, and commute travel time.

- **Policy CIRC-3.1: Vehicle Miles Traveled.** Support development and transportation improvements that help reduce per capita vehicle miles traveled.

- **Policy CIRC-3.2: Greenhouse Gas Emissions.** Support development, transportation improvements, and emerging vehicle technology that help reduce per capita greenhouse gas emissions.

- **Policy CIRC-3.4: Level of Service.** Strive to maintain level of service (LOS) D at all City-controlled signalized intersections during peak hours, except at the intersection of Ravenswood Avenue and Middlefield Road and at intersections along Willow Road from Middlefield Road to US 101. The City shall work with Caltrans to ensure that average stopped delay on local approaches to State-controlled signalized intersections does not exceed LOS E.

Goal CIRC-4: Improve Menlo Park's overall health, wellness, and quality of life through transportation enhancements.

- **Policy CIRC-4.1: Global Greenhouse Gas Emissions.** Encourage the safer and more widespread use of nearly zero-emission modes, such as walking and biking, and lower emission modes like transit, to reduce greenhouse gas emissions.

- **Policy CIRC-4.2: Local Air Pollution.** Promote non-motorized transportation to reduce exposure to local air pollution, thereby reducing risks of respiratory diseases, other chronic illnesses, and premature death.

- **Policy CIRC-4.3: Active Transportation.** Promote active lifestyles and active transportation, focusing on the role of walking and bicycling, to improve public health and lower obesity.

- **Policy CIRC-4.4: Safety.** Improve traffic safety by reducing speeds and making drivers more aware of other roadway users.

Goal CIRC-6: Provide a range of transportation choices for the Menlo Park community.

- **Policy CIRC-6.1: Transportation Demand Management.** Coordinate Menlo Park's transportation demand management efforts with other agencies providing similar services within San Mateo and Santa Clara Counties.

- **Policy CIRC-6.4**: **Employers and Schools.** Encourage employers and schools to promote walking, bicycling, carpooling, shuttles, and transit use.

Menlo Park Municipal Code. The proposed project is located in the Residential Mixed Use (R-MU) zoning district. The Zoning Ordinance requires the development and implementation of a Transportation Demand Management (TDM) plan:

> <u>Chapter 16.45.090 Transportation Demand Management</u>. As stated in Chapter 16.45.090 of the City's Zoning Ordinance, all new construction, regardless of size, and building additions of 10,000 or more square feet of gross floor area, or a change of use of 10,000 or more square feet of gross floor area shall develop a TDM plan necessary to reduce associated vehicle trips to at least 20 percent below standard generation rates for uses on the

individual project site. Each individual applicant is required to prepare its own TDM plan and provide an analysis to the satisfaction of the City's Transportation Manager of the impact of that TDM program.

The Transportation Demand Management Program Guidelines[16] provide options for the City to mitigate the traffic impacts of new developments. The guidelines include an extensive list of TDM measures accompanied with the number of trips credited to each measure and the rationale for each measure. The list of recommended measures and the associated trip credit is maintained by C/CAG as part of the San Mateo County CMP and is as follows:

1. Eligible TDM measures may include but are not limited to:

- Participation in a local Transportation Management Association (TMA) that provides documented, ongoing support for alternative commute programs;
- Appropriately located transit shelter(s);
- Preferred parking for carpools or vanpools;
- Designated parking for car-share vehicles;
- Requiring drivers to pay directly for using parking facilities;
- Public and/or private bike share program;
- Provision or subsidy of carpool, vanpool, shuttle, or bus service, including transit passes for site occupants;
- Required alternative work schedules and/or telecommuting for non-residential uses;
- Passenger loading zones for carpools and vanpools at main building entrance;
- Safe, well-lit, accessible, and direct route to the nearest transit or shuttle stop or dedicated, fully accessible bicycle and pedestrian trail;
- Car share membership for employees or residents;
- Emergency Ride Home programs;
- Green Trip Certification.

2. Measures receiving TDM credit shall be:

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16 Menlo Park, City of. 2015. *Transportation Demand Management Program Guidelines*. Website: www.menlopark.org/DocumentCenter/View/303/Transportation-Demand-Management-TDM-Guidelines (accessed September 24, 2020). Adopted July 21.

- Documented in a TDM plan developed specifically for each project and noted on project site plans, if and as appropriate;

- Guaranteed to achieve the intended reduction over the life of the development, as evidenced by annual reporting provided to the satisfaction of City's Transportation Manager;

- Required to be replaced by appropriate substitute measures if unable to achieve intended trip reduction in any reporting year;

- Administered by a representative whose updated contact information is provided to the Transportation Manager.

<u>Complete Streets Policy</u>. The Complete Streets Policy was adopted by the City in 2013. The policy confirms the City's commitment to provide safe and convenient travel along and across streets for all users. It also requires Complete Streets infrastructure to be considered for incorporation into all significant planning, funding, design, approval, and implementation processes for new, maintenance, and retrofit construction.

<u>Comprehensive Bicycle Development Plan</u>. The City's Comprehensive Bicycle Development Plan provides a series of goals that establish short-term and long-term visions for bicycling in the city.[17] Policies that provide more specific descriptions of actions to implement the Bicycle Plan accompany each goal. The following are the relevant bicycle-related goals and policies:

Goal 1: Expand and Enhance Menlo Park's Bikeway Network

- **Policy 1.1:** Complete a network of bike lanes, bike routes, and shared use paths that serve all bicycle user groups, including commuting, recreation, and utilitarian trips.

Goal 2: Plan for the Needs of Bicyclists

- **Policy 2.1:** Accommodate bicyclists and other non-motorized users when planning, designing, and developing transportation improvements.

- **Policy 2.3:** Encourage traffic calming, intersection improvements, or other similar actions that improve safety for bicyclists and other non-motorized users.

- **Policy 2.4:** Require developers to adhere to the design standards identified in the Comprehensive Bicycle Development Plan.

Goal 4: Encourage and Educate Residents, Businesses and Employers in Menlo Park on Bicycling

17 Menlo Park, City of. 2005. *Comprehensive Bicycle Development Plan*. Website: www.menlopark.org/DocumentCenter/View/372/Bicycle-Development-Plan (accessed September 24, 2020). January.

- **Policy 4.6:** Encourage major Menlo Park employers and retailers to provide incentives and support facilities for existing and potential employees and customers that commute by bicycle.

- **Policy 4.9:** Promote bicycling as a healthy transportation alternative.

Neighborhood Traffic Management Plan. The Neighborhood Traffic Management Plan was developed to mitigate the adverse effects of increased vehicle speeds and vehicle volumes on neighborhood streets. The primary goal of this plan is to correct unsafe conditions at prioritized locations with higher incidences and higher speeds. The plan recommends two levels of measures, Level I "Express" and Level II. Level I "Express" measures include education and enforcement initiatives. Level II measures are traffic management features that can be implemented to divert traffic and to restrict access to certain properties. The traffic management measures are recommended by City staff at the request of the community.

Sidewalk Master Plan. The Sidewalk Master Plan documents the existing programs, policies, and municipal codes that pertain to the establishment of a comprehensive network of safe and convenient walking routes throughout Menlo Park. In addition to the Menlo Park General Plan, the City has relevant municipal codes, zoning ordinances, and a sidewalk repair and sidewalk accessible program.

Transportation Master Plan. The Transportation Master Plan will provide the ability to identify appropriate projects to enhance the transportation network, conduct community engagement to ensure such projects meet the communities' goals and values, and prioritize projects based on need for implementation. It will serve as an update to the City's Bicycle and Sidewalk Plans.

Transportation Impact Fee. The City of Menlo Park has a Transportation Impact Fee (TIF) codified in Municipal Code Chapter 13.26 to help fund transportation improvements as new development occurs in the city. New development and redevelopment projects are subject to the TIF to contribute to the cost of new transportation infrastructure associated with the development. The types of developments that are subject to the TIF are:

- All new development in all land use categories identified in the City's zoning ordinance

- Any construction adding additional floor area to a lot with an existing building

- New single-family and multi-family dwelling units

- Changes of use from one land use category to a different land use category that requires Planning Commission approval

The TIF provides a mechanism to modernize the City's fee program to collect funds towards construction of the improvements expected to be identified and prioritized in the Transportation Master Plan.

Transportation Impact Analysis Guidelines. The City's TIA Guidelines specify which projects must complete a TIA prior to obtaining approval from the City. The City requires that a TIA be prepared by a qualified consultant selected by the City and paid for by the project applicant. The TIA Guidelines also specify the requirements of the analyses that must be included in a TIA. The TIA Guidelines require analysis of both VMT and LOS transportation metrics independently using the methodologies approved by the City for all projects except those meeting established exemption criteria.

4.2.2 Impacts and Mitigation Measures

This section analyzes the potential of the proposed project to result in impacts on the transportation network. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. As previously discussed in Chapter 3.0, Project Description, the analysis below makes reference to, and tiers from, the ConnectMenlo Final EIR, where appropriate. The findings presented in the ConnectMenlo Final EIR are presented prior to the project impact analysis. The latter part of this section presents the impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate.

4.2.2.1 Significance Criteria

The proposed project would result in a significant impact related to transportation if it would:

1) Conflict with an applicable plan, ordinance, or policy, including the congestion management program, addressing all components of the circulation system;

2) Exceed an applicable VMT threshold of significance;

3) Substantially increase hazards due to a design feature or incompatible uses; or

4) Result in inadequate emergency access.

4.2.2.2 ConnectMenlo Final EIR Impacts

The following provides an overview of impacts to transportation and circulation and required mitigation measures as identified in the ConnectMenlo Final EIR. Transportation and circulation impacts assessed in the ConnectMenlo Final EIR included the proposed project site as part of the city-wide analysis. The ConnectMenlo Final EIR identified the following program-level impacts related to implementation of the General Plan (Land Use and Circulation Elements) and M-2 Area Zoning Update.

Roadway Segments. As noted in the Regulatory Framework discussion above, CEQA no longer considers automobile delay (including roadway segment LOS) to be an environmental impact. The following ConnectMenlo Final EIR impact summary is provided for informational purposes.

The ConnectMenlo Final EIR found that the implementation of ConnectMenlo would generate additional motor vehicle trips on the local roadway network, resulting in significant impacts on some study segments. Mitigation Measure TRANS-1a would require the widening of impacted roadway segments at appropriate locations throughout the city to add travel lanes and capacity to accommodate the increase in net daily trips. Implementation of Mitigation Measure TRANS-1a would reduce the impacts but not to a less than significant level. Implementation of Mitigation Measure TRANS-1a could require additional right-of-way that is not under the jurisdiction of the City and is considered infeasible in most locations. Additionally, widening of roadways may lead to other secondary impacts such as induced travel demand. Furthermore, fully mitigating the impact to less than significant levels would be infeasible because it would require eliminating most of the year 2040 traffic growth on impacted segments. For these reasons, impacts to roadway segments were considered significant and unavoidable.

Intersections. As noted in the Regulatory Framework discussion above, CEQA no longer considers automobile delay (including intersection LOS) to be an environmental impact. The following ConnectMenlo Final EIR impact summary is provided for informational purposes.

The ConnectMenlo Final EIR found that the implementation of ConnectMenlo would generate additional motor vehicle trips on the local roadway network, resulting in significant impacts on some study intersections. Mitigation Measure TRANS-1b would update the City's TIF program to secure a funding mechanism for future roadway and infrastructure improvements to mitigate impacts from future projects (based on the current standards at the time the Final EIR was certified), but would not reduce the impact to less than significant levels. The City could not guarantee improvements at the impacted intersections because the nexus study had not been prepared, some improvements could cause secondary environmental impacts that would need to be addressed prior to construction, and some impacted intersections are within the jurisdiction of the City of East Palo Alto and Caltrans. For these reasons, impacts to intersections are considered significant and unavoidable. Subsequently, the City's TIF program was recently updated and approved by the City Council. The City's Transportation Master Plan has been updated and was adopted by the City Council on November 17, 2020.

Routes of Regional Significance. As noted in the Regulatory Framework discussion above, CEQA no longer considers automobile delay (including routes of regional significance) to be an environmental impact. The following ConnectMenlo Final EIR impact summary is provided for informational purposes.

The ConnectMenlo Final EIR found that the implementation of ConnectMenlo would generate additional motor vehicle trips on the local roadway network, resulting in significant impacts on routes of regional significance. Mitigation Measure TRANS-1a would require the widening of impacted roadway segments at appropriate locations throughout the city to add travel lanes and capacity to accommodate the increase in net daily trips. Implementation of Mitigation Measure TRANS-1a would reduce the impacts but not to a less-than-significant level. Implementation of Mitigation Measure TRANS-1a could require additional right-of-way that is not under the jurisdiction of the City and is limited by downstream capacity on facilities such as US 101 and Dumbarton Bridge. As such, the mitigation was considered infeasible in most locations. For these reasons, impacts to routes of regional significance were considered significant and unavoidable.

Bicycle and Pedestrian Facilities. The ConnectMenlo Final EIR found that implementation of ConnectMenlo would not provide adequate pedestrian or bicycle facilities to connect to the area-wide circulation system. Mitigation Measure TRANS-6a would update the City's TIF program to secure a funding mechanism for future pedestrian and bicycle improvements to mitigate impacts from future projects (based on the current standards at the time the Final EIR was certified), but would not reduce the impact to less than significant levels. The nexus study had not yet been prepared, the City could not guarantee improvements, and no additional mitigation measures were feasible and available. For these reasons, impacts to bicycle and pedestrian facilities were considered significant and unavoidable. Subsequently, the City's TIF program was recently updated and approved by the City Council. The City's Transportation Master Plan has been updated and the City Council approved the updated plan on November 17, 2020.

Transit. The ConnectMenlo Final EIR found that implementation of ConnectMenlo would generate a substantial increase in transit riders that could not be adequately serviced by existing public transit services, and the implementation of ConnectMenlo would generate demand for transit services at sites more than one-quarter mile from existing public transit routes. Mitigation Measure TRANS-6b would update the City's existing Shuttle Fee program to guarantee funding for operations of City-sponsored shuttle service that is necessary to mitigate impacts from future projects based on the then-current City standards. Implementation of Mitigation Measure TRANS-6b would reduce the impacts but not to a less than significant level. The nexus study had not yet been prepared, the City could not guarantee improvements, and no additional mitigation measures were feasible and available. For these reasons, impacts to transit were considered significant and unavoidable.

The ConnectMenlo Final EIR found that implementation of ConnectMenlo would result in increased peak hour traffic delay at intersections on Bayfront Expressway, University Avenue, and Willow Road that could decrease the performance of transit service and increase the cost of transit operations. Mitigation Measure TRANS-6c could potentially result in the provision of transit service on the Dumbarton Corridor and could mitigate the impact. However, because provision of Dumbarton transit service would require approval of other public agencies and is not under the jurisdiction of the City of Menlo Park, implementation of this mitigation could not be guaranteed. No additional mitigation measures were feasible and available. For these reasons, impacts to transit were considered significant and unavoidable.

Vehicle Miles Traveled. Until July 1, 2020, the City's TIA guidelines used roadway congestion or LOS as the primary study metric. The City Council approved the VMT thresholds for incorporation into the updated TIA Guidelines on June 23, 2020. As a result, while the ConnectMenlo Final EIR did include an evaluation of VMT impacts, the VMT standards applied in the ConnectMenlo Final EIR differ from those adopted under the updated TIA Guidelines.

The ConnectMenlo Final EIR found that implementation of ConnectMenlo would not exceed the VMT threshold of significance and would result in less than significant impacts with respect to VMT.

Hazards. The ConnectMenlo Final EIR found that future developments and roadway improvements would be designed according to City standards and subject to existing regulations that are aimed at reducing hazardous conditions with respect to circulation and the adoption of ConnectMenlo would result in less than significant impacts with respect to hazards due to design features or incompatible uses.

Emergency Access. The ConnectMenlo Final EIR found that ConnectMenlo would include policies that would ensure efficient circulation and adequate access are provided in the city, which would help facilitate emergency response. Implementation of ConnectMenlo would result in less than significant impacts with respect to inadequate emergency access.

Cumulative Conditions. The ConnectMenlo Final EIR found that the cumulative impacts to the transportation network would be the same as those identified above for each topic.

4.2.2.3 Proposed Project

As discussed in Chapter 3.0, Project Description, development of the proposed project would result in the removal of the three existing buildings that occupy the project site and construction of 441 multi-family dwelling units in two apartment buildings at 141 Jefferson Drive and 42 townhome units at 180-186 Constitution Drive, as well as approximately 2,940 square feet of office uses integrated into the ground floor of one of the apartment buildings. A leasing office, bike storage rooms with 662 bicycle parking spaces, bike repair shop, and a fitness center would be provided on the ground floor of the apartment buildings. The townhouse complex would provide 63 long-term bicycle spaces. Two ground-level parking garages with a combined 484 vehicle parking spaces in automated stackers would be accessible from Constitution Drive and Jefferson Drive. Access to the two parking garages would be via two two-way entry points. One parking garage would be accessed by a two-way driveway located on Jefferson Drive and the other parking garage would be accessed by a two-way driveway located on Constitution Drive. Emergency vehicle access would be provided via a service fire lane to the south side of the project site and a fire apparatus access road that provides emergency vehicle access from Constitution Drive.

Pedestrian access to the proposed buildings would be provided from Jefferson Drive, from Constitution Drive, and within the site interior. The project includes dedication of easements along Jefferson Drive and Constitution Drive to construct a portion of public sidewalk within the site. Within the site, pedestrian walkways are incorporated around the apartment buildings and the townhouse complex and a 20-foot-wide paseo extending from Jefferson Drive to Constitution Drive would be constructed.

Following is a discussion of the proposed TDM plan that would be implemented for the proposed project as well as calculated trip generation and distribution.

Proposed Transportation Demand Management Plan. The project applicant would implement a TDM plan as part of the proposed project in an effort to reduce project-generated vehicle trips and encourage travel by other modes.[18] The TDM plan includes the following measures in compliance with the City of Menlo Park Transportation Demand Management Guidelines:

[18] Hexagon Transportation Consultants, Inc. 2019. *Menlo Uptown Housing Development in Menlo Park TDM Plan*.

- TDM Administration and Promotion
  - Assign a Transportation Coordinator to provide information regarding alternative modes of transportation to residents
  - Establish an online kiosk with transportation information including a summary of SamTrans, Caltrain, and nearby shuttle services, information about ride matching services and ridesharing services, local bikeway map and bicycling resources, and links to other resources in the Bay Area
  - Provide transportation information packets to new residents
- Bicycle and Pedestrian Amenities
  - Provide long-term bicycle parking spaces in secured bike storage rooms
  - Provide short-term bicycle parking spaces outdoors
  - Add new sidewalks with street trees along the project's Constitution Drive and Jefferson Drive frontages
  - Provide 20-foot-wide, well-lit, accessible paseo and complete sidewalks around the apartment buildings and the townhouse complex
- On-site Amenities
  - Include electric vehicle charging stations
  - Provide high-bandwidth internet connections to facilitate telecommunications
  - Include refrigerated mail areas to facilitate the delivery of groceries
- Carpool and Vanpool Programs
  - Provide a carpool/vanpool matching application to all residents as part of the welcome packets
  - Promote 511 RideMatch service and Scoop services
- Unbundle parking costs from each living unit

Trip Generation. The vehicle trip generation estimates for the proposed residential and nonresidential space and the existing office building were calculated using the trip generation rates from the most recent ITE Trip Generation Manual (10th Edition, 2018).[19] The land use categories for

[19] Institute of Transportation Engineers. 2018. *Trip Generation Manual, 10th Edition*.

General Office Building (ITE Code 710), General Light Industrial (ITE Code 110), Multi-Family Housing Mid-Rise (ITE Code 221), and Coffee/Donut Shop with Drive-Through Window (ITE Code 936), were applied to this analysis.

As further discussed in Chapter 3.0, Project Description, an approximately 2,940-square-foot office space is currently proposed as the nonresidential community amenity space. At the time that this TIA was prepared, an approximately 2,100-square-foot commercial space was proposed. At that time, the specific land use, tenant, and square footage of the proposed ground-floor nonresidential use was uncertain; therefore, in order to provide a conservative (i.e., maximum) estimate of the potential travel demand associated with the nonresidential use, the ITE "Coffee/Donut Shop" category was used. A typical use that corresponds to this category would be a café. For reference, the currently proposed 2,940-square-foot office space would generate a total of three trips during the AM peak hour and three trips during the PM peak hour. As shown in Table 4.2.B, a 2,100-square-foot café would generate 100 trips during the AM peak hour and 35 trips during the PM peak hour, or 300 percent and 11 percent more trips compared to the proposed office use, respectively. As such, the transportation analysis can be considered conservative, overestimates the potential trips that can be associated with the nonresidential use, and allows for flexibility in selecting the future tenant of the nonresidential space.

Vehicle Trip Reductions. Consistent with the Menlo Park TIA Guidelines,[20] vehicle trip reductions were taken into account for pass-by/walk-in trips, internalized trips, the TDM plan,[21] and existing uses.

The trip subtotal for the commercial space includes a 10 percent internalization reduction for the trips made onsite and not utilizing external streets, and a 43 percent pass-by/walk-in reduction to account for stops made at the commercial space, therefore not generating new trips. A 20 percent reduction was applied to account for the proposed TDM plan which would comply with City Ordinance 1026[22] and achieve the required minimum of 20 percent reduction of daily and peak hour vehicle trips. Additionally, because the site is occupied by existing active office and industrial buildings, trip credits were applied to account for the removal of the existing 110,356 square feet of office and industrial space.

As shown in Table 4.2.B, application of the vehicle trip generation rates, internalization and pass-by/walk-in assumptions, and trip reductions associated with the proposed TDM plan would result in a net project-generated increase in the number of daily and AM and PM peak hour vehicle trips. The proposed project would generate 2,772 net new daily vehicle trips, 114 net new AM peak hour vehicle trips (-13 inbound trips and 127 outbound trips) and 96 net new PM peak hour vehicle trips (103 inbound trips and -7 outbound trips). As described in the project description, a 2,940 square foot office space is currently proposed. An office space of this size would generate fewer trips than the 2,100 square foot café that is analyzed as the commercial

20 Menlo Park, City of. 2020a, op. cit.
21 Hexagon Transportation Consultants, Inc. 2019, op. cit.
22 Menlo Park, City of. Ordinance No. 1026. Available online at: www.menlopark.org/DocumentCenter/View/12605/1026---GP-MU-District?bidId= (accessed September 28, 2020).

use. The transportation analysis evaluates a project with higher trip generation potential and can therefore be considered conservative while also allowing flexibility in selecting the future tenant of the commercial space. The vehicle trip generation estimates used in this analysis have been approved by the City of Menlo Park.

Table 4.2.B: Vehicle Trip Generation Estimates

Land Use (ITE Code)	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Existing Uses								
Office Building (ITE Code 710)	72,033 sf	(702)	(72)	(12)	(84)	(13)	(70)	(83)
Industrial Building (ITE Code 110)	30,179 sf	(150)	(18)	(3)	(21)	(2)	(17)	(19)
Proposed Uses								
Residential (ITE Code 221)	483 du	2,628	45	129	174	130	83	213
Coffee/Donut Shop (ITE Code 936)[1]	2,100 sf[1]	2,120	108	104	212	38	38	76
Internalization: 5%	-	(212)	(11)	(10)	(21)	(4)	(4)	(8)
Pass-By/Walk-in: 43%	-	(912)	(46)	(45)	(91)	(17)	(16)	(33)
Coffee/Donut Shop Subtotal	-	996	51	49	100	617	18	35
PROPOSED USES SUBTOTAL		3,624	96	178	274	147	101	248
TDM Plan: 20%		-	(19)	(36)	(55)	(29)	(21)	(50)
PROPOSED USES TOTAL		3,624	77	142	219	118	80	198
NET NEW PROJECT VEHICLE TRIPS		**2,772**	**-13**	**127**	**114**	**103**	**-7**	**96**

Source: *ITE Trip Generation Manual, 10th Edition* (2018).
du = dwelling units
sf = square feet
Notes:
[1] The specific land use, tenant, and square footage of the proposed ground-floor commercial space is uncertain at this time. In order to provide a conservative (i.e., high) estimate of the potential travel demand associated with this use, the rate for a Coffee/Donut Shop was used. For reference, a 2,940 square foot office would generate a total of three trips during the AM peak hour and three trips during the PM peak hour. As currently analyzed, the 2,100 square foot Coffee/Donut Shop would generate 100 trips during the AM peak hour and 35 trips during the PM peak hour, or 300 percent and 11 percent more trips, respectively.

Trip Distribution. Project-generated vehicle traffic was distributed to the surrounding roadway network based on travel surveys and existing traffic patterns. Project-added traffic volumes at the study intersections are included in Appendix E.

4.2.2.4 Project Impacts

This section analyzes potential project-specific and cumulative impacts to the transportation and circulation network in the study area.

1) Conflict with an applicable plan, ordinance, or policy, including the congestion management program, addressing all components of the circulation system

This section discusses the proposed project's impacts related to conflicts with applicable plans, ordinances, and policies. As discussed in more detail below, for CEQA purposes, the proposed project would be consistent with applicable plans, ordinances, and policies that address the circulation system as shown on Table 4.2.C; therefore, impacts would be ***less than significant*** **(LTS).**

Table 4.2.C: Project Compliance with Applicable Transportation-Related Plans, Ordinances, and Policies

Plan/Ordinance/Policy	Project Consistency
Plan Bay Area 2040	***Consistent.*** The proposed project would be consistent with the Plan Bay Area 2040 goals and performance targets for transportation system effectiveness. Specifically, the proposed project would increase non-auto mode share. The proposed project would develop new housing units that would locate residents near existing residential, office, commercial, and light manufacturing uses, reducing the demand for travel by single occupancy vehicles. The proposed project would also develop and implement a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site. In addition, the project area is served by public transit facilities. The nearest bus stop to the project site is served by SamTrans Route 270, which runs on a loop from the Redwood City Transit Center to Atherton with hour-long headways, and is located approximately 0.5 mile to the west on Haven Avenue. The Menlo Park and Palo Alto Caltrain stations are located within 3 miles of the project site to the south. The M3 Menlo Park Shuttle stop is also located at 150 Jefferson Drive, less than 100 feet from the project site. In addition, the proposed project would provide bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single occupancy vehicles.
C/CAG Congestion Management Program	***Consistent.*** The proposed project is evaluated in this section for compliance with the C/CAG Congestion Management Program (CMP) roadway LOS standard. At locations where implementation of the proposed project would cause intersections to operate in non-compliance, measures have been identified that could bring the proposed project into conformance. LOS is no longer a CEQA threshold and this analysis is provided for informational purposes. Refer to Section 4.2.3 for additional discussion.
San Mateo County Comprehensive Bicycle and Pedestrian Plan	
Policy 2.6: Serve as a resource to county employers on promotional information and resources related to bicycling and walking.	***Consistent***. The proposed project would implement a TDM plan that includes an online kiosk with transportation information, carpool/vanpool matching services, and transportation information packets for residents. Additionally, a transportation coordinator would be appointed for trip planning assistance and would provide information on commuting options to residents, among other services. As such, the project would serve as a resource to employers on promotional information and resources related to bicycling and walking.
Policy 4.1: Comply with the complete streets policy requirements of Caltrans and the Metropolitan Transportation Commission concerning safe and convenient access for bicyclists and pedestrians and assist local implementing agencies in meeting their responsibilities under the policy.	***Consistent.*** The proposed project would provide safe and convenient access for bicyclists and pedestrians and comply with the complete streets policy requirements of Caltrans and MTC.
City of Menlo Park Circulation Element of the General Plan, Transportation Element	
Policy CIRC-1.7: Bicycle Safety. Support and improve bicyclist safety through roadway maintenance and design efforts.	***Consistent.*** The proposed project would provide safe and convenient access for bicyclists and improve bicyclist safety through design efforts, including provision of secured short- and long-term on-site parking and a bike repair station.

Table 4.2.C: Project Compliance with Applicable Transportation-Related Plans, Ordinances, and Policies

Plan/Ordinance/Policy	Project Consistency
Policy CIRC-1.8: Pedestrian Safety. Maintain and create a connected network of safe sidewalks and walkways within the public right of way ensure that appropriate facilities, traffic control, and street lighting are provided for pedestrian safety and convenience, including for sensitive populations.	***Consistent.*** The proposed project would provide safe and convenient access for pedestrians and improve pedestrian safety through design efforts, including dedication of easements along Jefferson Drive and Constitution Drive to construct a portion of public sidewalk. Within the site, pedestrian walkways would be incorporated around the apartment buildings and the townhouse complex and a 20-foot-wide paseo extending from Jefferson Drive to Constitution Drive would be constructed.
Policy CIRC-2.1: Accommodating All Modes. Plan, design and construct transportation projects to safely accommodate the needs of pedestrians, bicyclists, transit riders, motorists, people with mobility challenges, and persons of all ages and abilities.	***Consistent.*** The proposed project would plan, design, and construct site access and circulation to provide safe and convenient access for pedestrians, bicyclists, transit riders, drivers, people with mobility challenges, and people of all ages and abilities.
Policy CIRC-2.2: Livable Streets. Ensure that transportation projects preserve and improve the aesthetics of the city.	***Consistent.*** The proposed project would plan, design, and construct site improvements that preserve and improve the aesthetics of the site.
Policy CIRC-2.7: Walking and Biking. Provide for the safe, efficient, and equitable use of streets by pedestrians and bicyclists through appropriate roadway design and maintenance, effective traffic law enforcement, and implementation of the City's Comprehensive Bicycle Development Plan and the El Camino Real/Downtown Specific Plan.	***Consistent.*** The proposed project would provide for the safe, efficient, and equitable use of streets by pedestrians and bicyclists through appropriate design and maintenance. The proposed project would provide safe and convenient access for bicyclists and improve bicyclist safety through design efforts, including provision of short- and long-term on-site bike parking and a bike repair station. The proposed project would provide safe and convenient access for pedestrians and improve pedestrian safety through design efforts, including dedication of easements along Jefferson Drive and Constitution Drive to construct a portion of public sidewalk. Within the site, pedestrian walkways would be incorporated around the apartment buildings and the townhouse complex and a 20-foot-wide paseo extending from Jefferson Drive to Constitution Drive would be constructed.
Policy CIRC-2.8: Pedestrian Access at Intersections. Support full pedestrian access across all legs of signalized intersections.	***Consistent.*** The proposed project would not introduce features that preclude or interfere with pedestrian access at signalized intersections.
Policy CIRC-2.10: Green Infrastructure. Maximize the potential to implement green infrastructure by: a) Reducing or removing administrative, physical, and funding barriers; b) Setting implementation priorities based on stormwater management needs, as well as the effectiveness of improvements and the ability to identify funding; and c) Taking advantage of opportunities such as grant funding, routine repaving or similar maintenance projects, funding associated with Priority Development Areas, public private partnerships, and other funding opportunities.	***Consistent.*** The proposed project would maximize the potential to implement green infrastructure through landscaping and open space on site.

Table 4.2.C: Project Compliance with Applicable Transportation-Related Plans, Ordinances, and Policies

Plan/Ordinance/Policy	Project Consistency
Policy CIRC-2.11: Design of New Development. Require new development to incorporate design that prioritizes safe pedestrian and bicycle travel and accommodates senior citizens, people with mobility challenges, and children.	***Consistent.*** The proposed project would plan, design, and construct site access and circulation to provide safe and convenient access for pedestrians, bicyclists, transit riders, drivers, people with mobility challenges, and people of all ages and abilities.
Policy CIRC-2.14: Impacts of New Development. Require new development to mitigate its impacts on the safety (e.g., collision rates) and efficiency (e.g., VMT per capita) of the circulation system. New development should minimize cut-through and high-speed vehicle traffic on residential streets; minimize the number of vehicle trips; provide appropriate bicycle, pedestrian, and transit connections, amenities and improvements in proportion with the scale of proposed projects; and facilitate appropriate or adequate response times and access for emergency vehicles.	***Consistent.*** The proposed project is evaluated in this EIR for impacts on safety through an assessment of site access and circulation for all modes and for impacts on VMT, as well as emergency response times. As discussed, these impacts would be less than significant. Additionally, the proposed project would implement a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site. The proposed project would provide bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single occupancy vehicles.
Policy CIRC-3.1: Vehicle Miles Traveled. Support development and transportation improvements that help reduce per capita vehicle miles traveled.	***Consistent.*** The proposed project would develop new housing units that would locate residents near existing residential, office, commercial, and light manufacturing uses, reducing the demand for travel by single occupancy vehicles. The proposed project would also develop and implement a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site. In addition, the proposed project would provide bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single occupancy vehicles.
Policy CIRC-3.2: Greenhouse Gas Emissions. Support development, transportation improvements, and emerging vehicle technology that help reduce per capita greenhouse gas emissions.	***Consistent.*** The proposed project is evaluated for compliance with SB 375 requirements through an analysis of greenhouse gas emissions in Section 4.4, Greenhouse Gas Emissions of this EIR. All impacts related to greenhouse gas emissions would be less than significant.
Policy CIRC-3.4: Level of Service. Strive to maintain level of service (LOS) D at all City-controlled signalized intersections during peak hours, except at the intersection of Ravenswood Avenue and Middlefield Road and at intersections along Willow Road from Middlefield Road to US 101. The City shall work with Caltrans to ensure that average stopped delay on local approaches to State-controlled signalized intersections does not exceed LOS E.	***Not Consistent.*** The proposed project is evaluated for compliance with the LOS D policy. As summarized in the TIA, the intersections surrounding the project site would exceed LOS D. However, LOS is no longer a CEQA threshold and this analysis is provided for informational purposes. Refer to Section 4.2.3 for additional discussion.

Table 4.2.C: Project Compliance with Applicable Transportation-Related Plans, Ordinances, and Policies

Plan/Ordinance/Policy	Project Consistency
Policy CIRC-4.1: Global Greenhouse Gas Emissions. Encourage the safer and more widespread use of nearly zero-emission modes, such as walking and biking, and lower emission modes like transit, to reduce greenhouse gas emissions.	***Consistent.*** The proposed project would develop and implement a TDM plan and provide bicycle and pedestrian facilities to encourage the safer and more widespread use of nearly zero-emission modes, such as walking and biking, and lower emission modes like transit, to reduce greenhouse gas emissions.
Policy CIRC-4.2: Local Air Pollution. Promote non-motorized transportation to reduce exposure to local air pollution, thereby reducing risks of respiratory diseases, other chronic illnesses, and premature death.	***Consistent.*** The proposed project would develop and implement a TDM plan and provide bicycle and pedestrian facilities to promote non-motorized transportation to reduce exposure to local air pollution, thereby reducing risks of respiratory diseases, other chronic illnesses, and premature death.
Policy CIRC-4.3: Active Transportation. Promote active lifestyles and active transportation, focusing on the role of walking and bicycling, to improve public health and lower obesity.	***Consistent.*** The proposed project would develop and implement a TDM plan and provide bicycle and pedestrian facilities to promote active lifestyles and active transportation, focusing on the role of walking and bicycling, to improve public health and lower obesity.
Policy CIRC-4.4: Safety. Improve traffic safety by reducing speeds and making drivers more aware of other roadway users.	***Consistent.*** The proposed project would include dedication of easements along Jefferson Drive and Constitution Drive to construct a portion of public sidewalk. Within the site, pedestrian walkways would be incorporated around the apartment buildings and the townhouse complex and a 20-foot-wide paseo extending from Jefferson Drive to Constitution Drive would be constructed to increase visibility of people walking and improve traffic safety.
Policy CIRC-6.1: Transportation Demand Management. Coordinate Menlo Park's transportation demand management efforts with other agencies providing similar services within San Mateo and Santa Clara Counties.	***Consistent.*** The proposed project would develop and implement a TDM plan that includes: bicycle storage and parking, a bike repair station, public sidewalks, on-site pedestrian circulation and a paseo extending from Jefferson Drive to Constitution Drive, unbundled on-site parking, on-site amenities, and a transportation coordinator to help coordinate TDM efforts.
Policy CIRC-6.4: Employers and Schools. Encourage employers and schools to promote walking, bicycling, carpooling, shuttles, and transit use.	***Consistent.*** The proposed project would develop and implement a TDM plan that includes measures encouraging employers to promote walking, bicycling, carpooling, shuttles, and transit use.
City of Menlo Park Municipal Code, Section 16,45.090	***Consistent.*** The proposed project would develop and implement a TDM plan that reduces vehicle trips to at least 20 percent below standard generation rates for uses on the project site and includes: a transportation coordinator, an online kiosk with transportation information, ride matching services and ridesharing services, transportation information packets for new residents, long-term bicycle parking spaces in secured bike storage rooms, short-term bicycle parking spaces outdoors, new sidewalks with street trees along the project's Constitution Drive and Jefferson Drive frontages, a 20-foot-wide, well-lit, accessible paseo and complete sidewalks around the apartment buildings and the townhouse complex, on-site amenities including electric vehicle charging stations, high-bandwidth internet, refrigerated mail areas for grocery deliveries, and unbundled parking costs.

Table 4.2.C: Project Compliance with Applicable Transportation-Related Plans, Ordinances, and Policies

Plan/Ordinance/Policy	Project Consistency
City of Menlo Comprehensive Bicycle Development Plan	
Policy 1.1: Complete a network of bike lanes, bike routes, and shared use paths that serve all bicycle user groups, including commuting, recreation, and utilitarian trips.	***Consistent.*** The proposed project would provide safe and convenient access for bicyclists and improve bicyclist safety through design efforts, including provision of on-site bike parking and a bike repair station.
Policy 2.1: Accommodate bicyclists and other non-motorized users when planning, designing, and developing transportation improvements.	***Consistent.*** The proposed project would plan, design, and construct site access and circulation to provide safe and convenient access for pedestrians, bicyclists, transit riders, drivers, people with mobility challenges, and people of all ages and abilities.
Policy 2.3: Encourage traffic calming, intersection improvements, or other similar actions that improve safety for bicyclists and other non-motorized users.	***Consistent.*** The proposed project would provide for the safe, efficient, and equitable use of streets by pedestrians and bicyclists through appropriate design and maintenance. The proposed project would provide safe and convenient access for bicyclists and improve bicyclist safety through design efforts, including provision of on-site bike parking and a bike repair station. The proposed project would provide safe and convenient access for pedestrians and improve pedestrian safety through design efforts, including dedication of easements along Jefferson Drive and Constitution Drive to construct a portion of public sidewalk. Within the site, pedestrian walkways would be incorporated around the apartment buildings and the townhouse complex and a 20-foot-wide paseo extending from Jefferson Drive to Constitution Drive would be constructed.
Policy 2.4: Require developers to adhere to the design standards identified in the Comprehensive Bicycle Development Plan.	***Consistent.*** The proposed project would be designed to adhere to design standards identified in the Comprehensive Bicycle Development Plan.
Policy 4.6: Encourage major Menlo Park employers and retailers to provide incentives and support facilities for existing and potential employees and customers that commute by bicycle.	***Consistent.*** The proposed project would develop and implement a TDM plan that includes measures encouraging employers to promote walking, bicycling, carpooling, shuttles, and transit use. The TDM plan includes: a transportation coordinator, an online kiosk with transportation information, ride matching services and ridesharing services, transportation information packets for new residents, long-term bicycle parking spaces in secured bike storage rooms, short-term bicycle parking spaces outdoors, new sidewalks with street trees along the project's Constitution Drive and Jefferson Drive frontages, a 20-foot-wide, well-lit, accessible paseo and complete sidewalks around the apartment buildings and the townhouse complex, on-site amenities including electric vehicle charging stations, high-bandwidth internet, refrigerated mail areas for grocery deliveries, and unbundled parking costs.
Policy 4.9: Promote bicycling as a healthy transportation alternative.	***Consistent.*** The proposed project would develop and implement a TDM plan that includes the following measures promoting bicycling as a healthy transportation alternative: long- and short-term secure bicycle storage and a bike repair station.
City of Menlo Park Sidewalk Master Plan	***Not Applicable.*** This plan is not directly applicable to the proposed project, but the project would provide a new public sidewalk along Independence Drive.

Table 4.2.C: Project Compliance with Applicable Transportation-Related Plans, Ordinances, and Policies

Plan/Ordinance/Policy	Project Consistency
City of Menlo Park Transportation Master Plan	***Consistent.*** The proposed project does not include any modifications that would conflict with projects and recommendations identified in the Transportation Master Plan. At locations where the proposed project would cause an intersection to operate in non-compliance with General Plan Policy CIRC-3.4, and the TIA Guidelines, modifications are identified that are consistent with recommendations identified in the Transportation Master Plan.
City of Menlo Park Transportation Impact Fee	***Consistent.*** The proposed project is subject to the TIF to contribute to the cost of new transportation infrastructure associated with the development.

Source: Compiled by Kittelson & Associates, Inc. and LSA (2020).

As part of the City's entitlement process, the proposed project would be required to comply with existing regulations, including General Plan policies and zoning regulations. The proposed project would be reviewed in accordance with the City's Public Works Department Transportation Program standards and guidelines, and the department would provide oversight engineering review to ensure that the project is constructed according to City specifications.

The proposed project would provide adequate bicycle and pedestrian infrastructure and would represent an overall improvement to bicycle and pedestrian access and circulation. As discussed in Section 4.2.2.3, the proposed project would include dedication of easements along Jefferson Drive and Constitution Drive to construct a portion of public sidewalk. Within the site, pedestrian walkways would be incorporated around the apartment buildings and the townhouse complex and a 20-foot-wide paseo extending from Jefferson Drive to Constitution Drive would be constructed.

The proposed project would promote bicycle use by providing long-term and short-term bicycle parking spaces, and a bike repair station on-site. The proposed project would meet the Zoning Ordinance requirements for vehicle and bicycle parking and implement transportation demand management measures in an effort to reduce project-generated vehicle trips and encourage travel by other modes.

For these reasons, the proposed project would be consistent for CEQA purposes with applicable plans, ordinances, and policies outlined in Section 4.2.1.2 and this impact would be ***less than significant*** **(LTS)**.

2) Exceed an applicable VMT threshold of significance

This section discusses the proposed project's impacts related to VMT. As discussed in more detail below, implementation of the proposed project would not exceed an applicable VMT threshold of significance. This impact would be ***less than significant*** **(LTS).**

Menlo Park uses the following quantitative thresholds of significance to address the substantial additional VMT significance criterion:

- A residential-type project would exceed the existing regional household VMT per capita minus 15 percent.
- A retail-type project would result in a net increase in total VMT.
- For mixed-use projects, components are analyzed independently against the appropriate threshold.

VMT per capita is an efficiency metric, versus an absolute numerical value, and as such, applies only to the proposed project without regard to the VMT generated by the previously existing land use. Efficiency metrics cannot be summed because they employ a denominator.

Proposed Residential Use VMT. As described previously, the proposed project is one of the first residential projects proposed in the Bayfront Area within this particular TAZ. Thus, the TAZ does not contain any existing residential VMT. As a result, when the project is added to the City's travel demand model for this analysis, the resulting residential VMT extracted from the TAZ is considered the project VMT.

Table 4.2.D shows the existing average daily VMT per capita for residents within the region, the VMT threshold (15 percent below regional average), and for TAZ 3072, the TAZ in which the project site is located.

Table 4.2.D: Vehicles Miles Traveled

Land Use	Regional Average	VMT Threshold (15 Percent Below Regional Average)	Project Transportation Analysis Zone (TAZ 3072)
Residential (per capita)	16.1	13.7	16.0

Source: Menlo Park Travel Demand Model (2020).

As shown in Table 4.2.D, the estimated average daily VMT per capita for residential land uses within the project site's TAZ is 16.0, which is 17 percent above the threshold of significance of 13.7.

The estimated VMT does not account for the project's proposed TDM plan. Without any TDM measures, the proposed project's residential use may cause substantial additional VMT and impacts would be potentially significant. The TDM plan would need to achieve a minimum 14 percent reduction in VMT to reduce the project impacts to less-than-significant levels, which is within the 20 percent reduction in VMT required by the Zoning Ordinance. Proposed TDM measures and estimated VMT reduction calculations are described in this section and summarized in Table 4.2.E.

Table 4.2.E: Proposed Project TDM Measures and Estimated Vehicle Miles Traveled Reduction

TDM Measure (CAPCOA ID)[1]	Range of Vehicle Miles Traveled Reduction[2]	Applied Vehicle Miles Traveled Reduction Rate for Proposed Project[3]
Bike Parking (SDT-7)	0.625%	0.625%
Pedestrian Network Improvements (SDT-1)	0% to 2%	2%
Limit Parking Supply (PDT-1)[4]	5% to 12%	12%
Unbundled Parking (PDT-2)[5]	2.6% to 13%	2.6%
Commute Trip Reduction Marketing (TRT-7)[6]	0.8% to 4%	4%
Increase Density (LUT-1)[7]	9% to 30%	> 9%
Total	--	**> 30.23%**

Source: California Air Pollution Control Officers Association (CAPCOA), Quantifying Greenhouse Gas Mitigation Measures (August 2010).

Notes: "--" indicates value not applicable.

1 CAPCOA ID references the strategy as identified in the CAPCOA Quantifying Greenhouse Gas Mitigation Measures document.

2 Range of vehicle miles traveled reduction obtained from CAPCOA.

3 Vehicle miles traveled reduction rate was determined based on the estimated level of adoption and aggressiveness of implementation of a given strategy and account for the implementation of other TDM program elements so as not to overestimate vehicle trip reduction for the overall program.

4 Vehicle miles traveled reduction rate was estimated using CAPCOA equation which compares the proposed parking ratio against the ITE parking demand rate. The CAPCOA equation is: % VMT Reduction = [(Actual Parking Provision – ITE Parking Generation Rate) / ITE Parking Generation Rate] x 0.5. The project proposes to provide one space per unit. ITE parking demand rate is 1.31 spaces per unit.

5 Vehicle miles traveled reduction rate is based on the anticipated monthly cost for a parking space of $25 per month. Per CAPCOA, a 13 percent reduction could be applied if the monthly cost was increased to $125.

6 The vehicle miles traveled reduction rate selected is based on the anticipated effectiveness of the commute reduction strategies being promoted and the assumption that 100% of residents are eligible. Commute trip reduction marketing elements include: on-site amenities, transit information, on-site transportation kiosk, and programs to support commute alternatives.

7 Vehicle miles traveled reduction rate was estimated using a CAPCOA equation which calculates the percentage increase in housing units per acre and VMT elasticity with respect to density. The CAPCOA equation is: % VMT Reduction = [(Number of housing units per acre – 7.6) / 7.6] x 0.07 and is not to exceed 30%. The vehicle trip reduction rate would be greater than 30% based on the proposed residential density of 100 units per acre. For purposes of a more conservative estimate the vehicle trip reduction associated with increased density was assumed to be nine percent, or the lower end of the reduction range provided by CAPCOA.

The range of effectiveness for VMT reductions identified for each measure is based on information included in the California Air Pollution Control Officers Association (CAPCOA), Quantifying Greenhouse Gas Mitigation Measures report (CAPCOA report).[23] The quantification methods provided in the CAPCOA Report are based on an extensive literature review and are appropriate for use in this project-level analysis. The selection of the applied VMT reduction rate is also informed by the TDM Encyclopedia, published by the Victoria Transport Policy Institute. The applied VMT reduction rate for the proposed project is based on the anticipated level of adoption and aggressiveness of implementation of a given strategy.

23 California Air Pollution Control Officers Association. 2010. *Quantifying Greenhouse Gas Mitigation Measures*. Available online at: www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf (accessed July 24, 2020). August.

As shown in Table 4.2.E, implementation of the TDM plan would result in an estimated reduction of approximately 30 percent of the VMT generated by the proposed project.[24] The TDM plan for the proposed project includes:

- On-site bicycle parking. Having accessible, secure, and convenient places to store bicycles encourages residents to bike to and from the project site. The project will include both long-term and short-term bicycle parking on-site, as well as a bike repair station.
- Pedestrian network improvements. Having a complete and connected pedestrian network encourages residents to walk to and from the project site. The project will add new sidewalks with street trees along the Constitution Drive and Jefferson Drive frontages and provide 20-foot-wide, well-lit, accessible paseo and complete sidewalks around the apartment buildings and the townhouse complex.
- Limited vehicle parking supply. Reducing the supply of vehicle parking on-site discourages vehicle ownership and driving. The project proposes to provide one vehicle parking space per unit.
- Unbundled vehicle parking. Unbundling separates parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost, which discourages vehicle ownership and driving. The project will separate the cost of residential parking from the cost of leasing a unit.
- Commute trip reduction marketing. Information sharing and marketing are important components to successful vehicle trip reduction strategies. The project will appoint a transportation coordinator for trip planning assistance and provide information on commuting options to residents, among other services.
- Increased residential density. Increased densities affect the distance people travel and provide greater options for transportation mode choice. The project proposes a residential density of 100 units per acre (483 units on 4.83 acres).

While the effectiveness of the TDM plan cannot be reliably predicted and the interactions between transportation-related mitigation measures are complex, given the VMT reduction rate estimated for the proposed project was determined based on a conservative estimate of the level of adoption and aggressiveness of implementation the total VMT reduction is likely underestimated. For example, CAPCOA calculates up to 30 percent VMT reduction related to the increased density on the project site. To provide a more conservative estimate, the analysis applies the lowest end of the range, or nine percent, for that TDM category. Furthermore, the City's Zoning Ordinance requires that the TDM be guaranteed to achieve the intended reduction over the life of the development, as

[24] Under the C/CAG guidelines, the proposed project would be expected to receive up to 314 peak hour trip credits for the TDM plan, representing an over 500 percent reduction in peak hour vehicle trips. However, because the efficacy of the TDM plan cannot be predicted reliably, to provide a conservative analysis, and to be consistent with other Menlo Park traffic studies for similar projects, no further trip reductions were applied to the analysis in relation to the proposed TDM plan.

evidenced by annual reporting provided to the satisfaction of the City's Transportation Manager. TDM measures are required to be replaced by appropriate substitute measures if the intended trip reduction is not achieved in any reporting year.

As noted above, the TDM plan would need to achieve a 17 percent reduction in VMT to reduce the project impacts to less than significant levels. The proposed project would be required to meet a minimum 20 percent reduction in vehicle trips to be compliant with the Zoning Ordinance.[25] The minimum required 20 percent reduction in vehicle trips exceeds the threshold needed to be achieved to reduce the potentially significant VMT impact to less than significant. The proposed project is anticipated to achieve a 30.23 percent reduction in VMT and vehicle trips. For these reasons, with implementation of the proposed TDM plan, the VMT generated by the proposed project's residential use would result in a ***less than significant*** **(LTS)** impact.

Proposed Nonresidential Use VMT. The project proposes to provide approximately 2,940 square feet of office space. According to the City's TIA Guidelines, local serving office projects with 10,000 square feet or less would be exempt from VMT analysis. With the exemption, it is expected that the size of the space would have a less than significant impact. Therefore, consistent with OPR Guidelines, the proposed project's nonresidential space is exempt from further analysis.

3) Substantially increase hazards due to a design feature or incompatible uses

This section discusses the potential of the proposed project to substantially increase hazards due to a design feature or incompatible use. As described below, the proposed project would not substantially increase hazards due to a design feature or incompatible uses. This impact is ***less than significant*** **(LTS).**

For purposes of CEQA, hazards refer to engineering aspects of a project (e.g., speed, turning movements, complex designs, substantial distance between street crossings, sight lines) that may cause a greater risk of collisions that result in serious or fatal physical injury than a typical project. This analysis focuses on hazards that could reasonably stem from the project itself, beyond collisions that may result from aforementioned non-engineering aspects or the transportation system as a whole. Therefore, the methodology qualitatively addresses the potential for the project to exacerbate an existing or create a new potentially hazardous condition to people walking, bicycling, or driving, or for public transit operations.

The proposed project does not involve any changes to the roadway network outside the project limits and the proposed project would not include any design features that could cause potentially hazardous conditions. The proposed project includes dedication of easements along Jefferson Drive and Constitution Drive to construct a portion of public sidewalk within the site. Within the site, pedestrian walkways are incorporated around the apartment buildings and the townhouse complex

[25] Implementation of the TDM plan would replace a minimum of 20 percent of the project-generated vehicle trips by increasing walking, cycling, transit use, and telecommuting. However, due to limitations in research and data, the effect of this mode shift on VMT cannot be calculated. Therefore, the analysis assumes the reduction in VMT would be equivalent to the reduction in vehicle trips. In other words, the average vehicle trip length would not change.

and a 20-foot-wide paseo extending from Jefferson Drive to Constitution Drive would be constructed. Pedestrian access to the proposed buildings would be provided from Jefferson Drive, from Constitution Drive, and within the site interior. Vehicular access to the two parking garages would be via two two-way entry points. One parking garage will be accessed by a two-way driveway located on Jefferson Drive and the other parking garage will be accessed by a two-way driveway located on Constitution Drive.

The proposed project would provide adequate bicycle and pedestrian infrastructure and would represent an overall improvement to bicycle and pedestrian access and circulation. The proposed project would not generate activities that would create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations. Additionally, as with current practice, the proposed project would be designed and reviewed in accordance with the City's Public Works Department Transportation Program and the department would provide oversight engineering review to ensure that the project is constructed according to City specifications.

For these reasons, the proposed project would have a ***less than significant*** **(LTS)** impact with respect to design features or incompatible uses.

4) Result in inadequate emergency access

This section discusses the potential of the proposed project to result in inadequate emergency access. As described below, the project would not result in inadequate emergency access. This impact is ***less than significant*** **(LTS)**.

Emergency access to the project site and nearby hospitals would be similar to existing conditions. Menlo Park Fire District Station 77 is located on Chilco Street, approximately 0.8 miles east of the project site. Although there would be a general increase in vehicle traffic from the proposed project, the proposed project would not inhibit emergency access to the project site or materially affect emergency vehicle response out of the station. Development of the project site, and associated increases in vehicles, pedestrians, and bicycle travel would not substantially affect emergency vehicle response times or access to other buildings or land uses in the area or to hospitals. The proposed project would be designed and built according to local Fire District standards and State Building Code standards, and building and site plans would be reviewed by City Planning, Engineering and Building Departments as well as the Menlo Park Fire Protection District for compliance with the Zoning and Building Code and Engineering Standards, and the Fire Code further ensuring that emergency access by fire or emergency services personnel would not be impaired.

For these reasons, the proposed project would have a ***less than significant*** **(LTS)** impact with respect to emergency access or circulation.

4.2.2.5 Cumulative Impacts

This section discusses potential cumulative impacts to the transportation and circulation network in the study area. As summarized in this section, the proposed project, in combination with cumulative projects, would have a ***less than significant*** **(LTS)** impact with respect to conflicts with applicable plans, vehicle miles traveled, hazards, and emergency access.

Conflicts with Applicable Plans, Ordinances, or Policies. Future development would be required to comply with existing regulations, including General Plan policies and zoning regulations that have been prepared to minimize impacts related to transportation and circulation. The City, throughout the 2040 buildout horizon, would implement the General Plan programs that require the City to annually update the Capital Improvement Program to reflect City and community priorities for physical projects related to transportation for all travel modes and bi-annually update data regarding travel patterns for all modes to measure circulation system efficiency (e.g., VMT per capita, traffic volumes) and safety (e.g., collision rates) standards, amongst others as listed above. Furthermore, implementation of zoning regulations would support adequate facilities and access to transportation and future development would be consistent with the City's Bicycle Development Plan and Sidewalk Master Plan.

For these reasons, the proposed project, in combination with cumulative projects, would have a ***less than significant*** **(LTS)** cumulative impact with respect to conflicting with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities.

Vehicle Miles Traveled. Consistent with OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA[26], a project's cumulative impacts are based on an assessment of whether the "incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects". A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact.

With implementation of the proposed TDM plan, the proposed project would not exceed VMT thresholds of significance. Therefore, the proposed project would not have a cumulatively considerable impact with respect to VMT. Furthermore, given that implementation of the land use and transportation changes described in ConnectMenlo would create a built environment that supports a live/work/play environment with increased density and diversity of uses and a street network that supports safe and sustainable travel, it is expected to reduce VMT per capita within the Bayfront Area where the project site is located, further reducing potential for cumulative impacts related to VMT.

For these reasons, the proposed project, in combination with cumulative projects, would have a ***less than significant*** **(LTS)** cumulative impact with respect to VMT.

Hazards or Incompatible Uses. Overall, cumulative land use development and transportation projects would promote accessibility for people walking to and through the site by conforming to General Plan policies and zoning regulations, and by adhering to planning principles that emphasize providing convenient connections and safe routes for people walking, bicycling, driving, and taking transit. Additionally, as with current practice, projects would be designed and reviewed in accordance with the City's Public Works Department Transportation Program and the department would provide oversight engineering review to ensure that the project is constructed according to

[26] OPR. 2018, op. cit.

City specifications. As a result, the cumulative projects would not generate activities that would increase hazards due to a design feature or incompatible use.

For these reasons, the proposed project, in combination with cumulative projects, would have a ***less than significant*** **(LTS)** cumulative impact with respect to design features or incompatible uses.

Emergency Access. Future development, as part of the City's project approval process, would be required to comply with existing regulations, including General Plan policies and zoning regulations that have been prepared to minimize impacts related to emergency access. The City, throughout the 2040 buildout horizon, would implement the General Plan programs that require the City's continued coordination with MPPD and MPFPD to establish circulation standards, adopt an emergency response routes map, and equip all new traffic signals with pre-emptive traffic signal devices for emergency services. Furthermore, the implementation of the zoning regulations would help to minimize traffic congestion that could impact emergency access.

For these reasons, the proposed project, in combination with cumulative projects, would have a ***less than significant*** **(LTS)** cumulative impact with respect to emergency access.

4.2.3 Non-CEQA Analysis

4.2.3.1 Intersection Level of Service Analysis

The findings of the intersection LOS analysis are presented in this section for informational purposes. The analysis scope and methodology, analysis scenarios, data collection, and level of service policy standards are detailed in Appendix E of this EIR.

As stated above, LOS is no longer a CEQA threshold. However, the City's TIA Guidelines requires that the TIA also analyze LOS for local planning purposes. The LOS analysis would determine whether the project traffic would cause an intersection LOS to exceed the City's LOS thresholds or cause either the average delay or average critical delay to exceed the City's intersection delay thresholds under near term and cumulative conditions. The LOS and delay thresholds vary depending on the street classifications as well as whether the intersection is on a State route or not. The City's TIA Guidelines further require an analysis of the proposed project in relation to relevant policies of the Circulation Element and consideration of specific measures to address noncompliance with local policies which may occur as a result of the addition of project traffic. Although not included in the TIA for purposes of this EIR, an analysis may be prepared separately to determine if there are potential measures that could bring the proposed project into conformance with Circulation Policy 3.4 (strive to maintain LOS D at all city controlled intersections). Implementation of any such measures would require review and approval by City decision makers.

Near Term (2022) Plus Project Conditions. The following analysis is based on the TIA Guidelines for intersection LOS under Near Term (2022) Plus Project Conditions. The LOS definitions, policy standards, and thresholds are also presented in Appendix E along with the turning movement volumes, lane and roadway configurations, and Vistro[27] outputs for the Near Term (2022) Plus

[27] Vistro is a traffic engineering software that allows creation of a transportation network model and applies industry standard methodologies to evaluate signalized and unsignalized intersections.

Project Condition. Table 4.2.F provides LOS results for the study intersections during the AM and PM peak hours under Near Term (2022) Plus Project Conditions.

As explained in the subsequent paragraphs, the proposed project would increase average critical movement delay by 0.8 seconds or more during at least one peak hour and cause the following nine intersections to be non-compliant with the TIA Guidelines under Near Term (2022) Plus Project Conditions, as a result of the proposed project:

- Intersection #1, Marsh Road and Bayfront Expressway (Local Approaches to State): AM
- Intersection #8, Chrysler Drive and Constitution Drive (Menlo Park): AM
- Intersection #12, Chilco Street and Constitution Drive (Menlo Park): PM
- Intersection #14, Willow Road and Hamilton Avenue (Local Approaches to State): AM and PM
- Intersection #17, Willow Road and Newbridge Street (Local Approaches to State): PM
- Intersection #18, Willow Road and Bay Road (Local Approaches to State): AM
- Intersection #19, Willow Road and Durham Street (Menlo Park): AM
- Intersection #20, Willow Road and Coleman Avenue (Menlo Park): PM
- Intersection #21, Willow Road and Gilbert Avenue (Menlo Park): PM

The intersection of Bay Road and Ringwood Avenue (Intersection #29) would meet the MUTCD peak hour signal warrant during both the AM and PM peak hours under Near Term (2022) Plus Project Conditions. No other the study unsignalized intersections would meet peak hour signal warrant during either peak hour.

Table 4.2.F: Near Term (2022) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Near Term		Near Term Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
1	Marsh Road & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	**59.7**	**E**	**60.1**	**E**	No	Yes
				EB	**114.1**	**F**	**114.2**	**F**		
				WB	36.5	D	38.0	D		
			PM	N/A	37.4	D	38.2	D	Yes	No
2	Marsh Road & US-101 NB Off-Ramp (State)	Signal	AM	N/A	25.3	C	25.0	C	N/A	No
			PM	N/A	13.3	B	13.7	B	N/A	No
3	Marsh Road & US-101 SB Off-Ramp (State)	Signal	AM	N/A	22.9	C	22.8	C	N/A	No
			PM	N/A	17.7	B	18.0	B	N/A	No
4	Marsh Road & Scott Drive (Menlo Park)	Signal	AM	N/A	20.0	B	20.0	C	Yes	No
			PM	N/A	15.1	B	15.1	B	Yes	No

Table 4.2.F: Near Term (2022) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Near Term Delay	Near Term LOS	Near Term Plus Project Delay	Near Term Plus Project LOS	Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
5	Marsh Road & Bay Road (Menlo Park)	Signal	AM	N/A	22.7	C	22.7	C	Yes	No
			PM	N/A	18.4	B	18.5	B	Yes	No
6	Marsh Road & Middlefield Road (Atherton)	Signal	AM	N/A	**73.8**	**E**	**73.8**	**E**	N/A	No
			PM	N/A	44.2	D	44.6	D	N/A	No
7	Chrysler Drive & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	9.5	A	10.3	B	Yes	No
			PM	N/A	20.1	C	20.0	B	Yes	No
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**111.1**	**F**	**142.4**	**F**	No	Yes
			PM	N/A	39.8	D	40.8	D	Yes	No
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	N/A	23.2	C	23.6	C	Yes	No
			PM	N/A	20.1	C	22.9	C	Yes	No
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	N/A	**69.3**	**F**	**70.0**	**F**	No	No
			PM	N/A	18.3	C	18.5	C	Yes	No
11	Chilco Street & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	21.9	C	24.4	C	Yes	No
			PM	N/A	25.3	C	28.4	C	Yes	No
12	Chilco Street & Constitution Drive (Menlo Park)	Signal	AM	N/A	33.8	C	38.2	D	Yes	No
			PM	N/A	50.0	D	**58.6**	**E**	No	Yes
13	Willow Road & Bayfront Expressway (State)	Signal	AM	N/A	**193.1**	**F**	**191.6**	**F**	N/A	No
			PM	N/A	**180.9**	**F**	**180.3**	**F**	N/A	No
14	Willow Road & Hamilton Avenue (Local Approaches to State)	Signal	AM	N/A	**125.6**	**F**	**127.2**	**F**	No	Yes
				NB	**187.6**	**F**	**189.2**	**F**		
			PM	N/A	**174.6**	**F**	**176.1**	**F**	No	Yes
				NB	**248.0**	**F**	**250.1**	**F**		
15	Willow Road & Ivy Drive (Local Approaches to State)	Signal	AM	N/A	**134.4**	**F**	**135.1**	**F**	No	No
				NB	**182.9**	**F**	**182.3**	**F**		
			PM	N/A	**114.8**	**F**	**115.2**	**F**	No	No
				SB	**166.9**	**F**	**166.9**	**F**		
16	Willow Road & O'Brien Drive (Local Approaches to State)	Signal	AM	N/A	**147.0**	**F**	**147.2**	**F**	No	No
				NB	**222.7**	**F**	**222.4**	**F**		
			PM	N/A	**76.1**	**E**	**76.7**	**E**	No	No
				SB	**82.5**	**F**	**82.5**	**F**		
17	Willow Road & Newbridge Street (Local Approaches to State)	Signal	AM	N/A	**272.2**	**F**	**272.9**	**F**	No	No
				NB	**389.7**	**F**	**389.4**	**F**		
			PM	N/A	**213.8**	**F**	**215.0**	**F**	No	Yes
				NB	**275.6**	**F**	**277.0**	**F**		
18	Willow Road & Bay Road (Local Approaches to State)	Signal	AM	N/A	**154.1**	**F**	**156.6**	**F**	No	Yes
				SB	**238.2**	**F**	**243.2**	**F**		
			PM	N/A	**150.8**	**F**	**151.6**	**F**	No	No
				SB	**266.1**	**F**	**266.1**	**F**		
19	Willow Road & Durham Street (Menlo Park)	Signal	AM	N/A	**228.3**	**F**	**232.6**	**F**	No	Yes
				NB	25.9	C	25.9	C		
				SB	**438.4**	**F**	**445.6**	**F**		
				EB	55.0	D	55.0	D		
				WB	**58.1**	**E**	**58.1**	**E**		
			PM	N/A	49.1	D	49.6	D	Yes	No

Table 4.2.F: Near Term (2022) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Near Term		Near Term Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
20	Willow Road & Coleman Avenue (Menlo Park)	Signal	AM	N/A	**113.3**	**F**	**112.7**	**F**	No	No
				NB	**239.0**	**F**	**238.3**	**F**		
				SB	17.3	B	17.8	B		
				EB	**70.1**	**E**	**70.1**	**E**		
				WB	50.5	D	50.5	D		
			PM	N/A	**68.2**	**E**	**69.5**	**E**	No	Yes
				NB	**141.3**	**F**	**143.9**	**F**		
				SB	7.8	A	7.8	A		
				EB	41.2	D	41.2	D		
				WB	37.5	D	37.5	D		
21	Willow Road & Gilbert Avenue (Menlo Park)	Signal	AM	N/A	**110.1**	**F**	**109.5**	**F**	No	No
				NB	**237.3**	**F**	**236.6**	**F**		
				SB	26.1	C	26.2	C		
				EB	**57.9**	**E**	**57.9**	**E**		
				WB	**65.8**	**E**	**65.8**	**E**		
			PM	N/A	**72.8**	**E**	**74.1**	**E**	No	Yes
				NB	**139.5**	**F**	**142.1**	**F**		
				SB	15.5	B	15.5	B		
				EB	41.2	D	41.2	D		
				WB	43.8	D	43.8	D		
22	Willow Road & Middlefield Road (Menlo Park)	Signal	AM	N/A	**70.3**	**E**	**70.2**	**E**	No	No
				NB	**81.1**	**F**	**80.9**	**F**		
				SB	40.3	D	40.4	D		
				EB	**77.8**	**E**	**77.8**	**E**		
				WB	**80.7**	**F**	**80.7**	**F**		
			PM	N/A	39.8	D	40.0	D	Yes	No
23	University Avenue & Bayfront Expressway (State)	Signal	AM	N/A	12.7	B	12.9	B	N/A	No
			PM	N/A	**113.1**	**F**	**112.8**	**F**	N/A	No
24	Middlefield Road & Ravenswood Avenue (Menlo Park)	Signal	AM	N/A	**66.5**	**E**	**66.5**	**E**	No	No
				NB	52.4	D	52.4	D		
				EB	21.1	C	21.1	C		
				WB	**93.3**	**F**	**93.3**	**F**		
			PM	N/A	16.6	B	16.6	B	Yes	No
25	Middlefield Road & Ringwood Avenue (Menlo Park)	Signal	AM	N/A	12.4	B	12.4	B	Yes	No
			PM	N/A	13.6	B	13.6	B	Yes	No
26	Marsh Road & Florence Street-Bohannon Drive (Menlo Park)	Signal	AM	N/A	38.3	D	38.5	D	Yes	No
			PM	N/A	37.0	D	37.0	D	Yes	No
27	Willow Road & US-101 SB Ramps (State)	Signal	AM	N/A	**109.3**	**F**	**109.2**	**F**	N/A	No
			PM	N/A	22.6	C	22.6	C	N/A	No
28	Willow Road & US-101 NB Ramps (State)	Signal	AM	N/A	**281.2**	**F**	**282.5**	**F**	N/A	No
			PM	N/A	**243.5**	**F**	**244.0**	**F**	N/A	No

Table 4.2.F: Near Term (2022) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Near Term		Near Term Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
29	Bay Road & Ringwood Avenue (Menlo Park)	AWSC[3]	AM	N/A	**29.3**	**D**	**29.3**	**D**	No	No
			PM	N/A	**59.9**	**F**	**59.9**	**F**	No	No

Source: Kittelson & Associates, Inc. (2020).
Bold text - Indicates intersections operate at a LOS not meeting the LOS standard.
AWSC = All-way stop-controlled. Delay and LOS for the worst movement is reported. for unsignalized intersections.
TWSC = Two-way stop-controlled. Delay and LOS for the worst movement is reported. for unsignalized intersections.
N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards. The "General Plan Standard" information is only relevant where the City's LOS policy standards apply.
[1] This intersection does not meet signal warrant criteria under Near Term or Near Term Plus Project Conditions during both peak hours.
[2] This intersection does not meet signal warrant criteria under Near Term or Near Term Plus Project Conditions during both peak hours.
[3] This intersection meets signal warrant criteria under Near Term and Near Term Plus Project Conditions during both peak hours.

In accordance with the TIA Guidelines, the proposed project would increase average critical movement delay by 0.8 seconds or more during at least one peak hour and cause these intersections to be non-compliant with the TIA Guidelines under Near Term (2022) Plus Project Conditions. Following are the recommended conditions of approval to improve intersection operations to pre-project conditions, or better, at locations the proposed project would cause to operate in non-compliance with the TIA Guidelines.

Marsh Road and Bayfront Expressway (Intersection #1). Implementation of the proposed project would cause the Marsh Road and Bayfront Expressway intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modification to bring this intersection back to pre-project conditions is to restripe the through lane on Haven Avenue to a shared through/right lane. The lane configuration on Haven Avenue would have one shared left/through lane, one shared through/right lane, and one right-turn lane. No widening or additional right of way would be required. This improvement is in the City's TIF program and the project is required to pay traffic impact fees according to the City's current TIF schedule. Therefore, payment of the TIF program would address the changes in intersection delay as a result of project traffic.

With implementation of this intersection modification, the intersection would operate better than Near Term (2022) Conditions without the proposed project by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during the AM peak hour.

Chrysler Drive and Constitution Drive (Intersection #8). Implementation of the proposed project would cause the Chrysler Drive and Constitution Drive intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this City-controlled intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended intersection modification to bring this intersection back to pre-project conditions and in compliance with the TIA Guidelines are to install one left-turn lane on westbound Chrysler Drive and convert the shared left/through/right lane to a shared through/right lane resulting in having one left-turn lane and one shared through/right lane in this direction. The excessive delay on southbound Constitution Drive would require installation of a right-turn lane and conversion of the shared through/right lane to through lane resulting in having one left-turn lane, one through lane, and one right-turn lane in this direction. The recommended modifications would require a widening to accommodate the lane modifications on westbound Chrysler Drive and on southbound Constitution Drive and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. While the improvements to the westbound approach are included in the City's TIF program, the improvements on the other approaches are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Chilco Street and Constitution Drive (Intersection #12). Implementation of the proposed project would cause the Chilco Street and Constitution Drive intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this City-controlled intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the PM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to install one right-turn lane on westbound Chilco Street and convert the shared through/right lane to a through lane. The lane configuration in this direction would be two left-turn lanes, one through lane, and one right-turn lane. The recommended modifications would require a widening on westbound Chilco Street to accommodate the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Willow Road and Hamilton Avenue (Intersection #14). Implementation of the proposed project would cause the Willow Road and Hamilton Avenue intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during both AM and PM peak hours.

The recommended modification to bring this intersection back to pre-project conditions is to install one right-turn lane on eastbound Willow Road and convert the shared through/right lane to a through lane. The lane configuration in this direction would be one left-turn lane, two through lanes, and one right-turn lane. The recommended modifications would require a widening on eastbound Willow Road to accommodate the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Near Term (2022) Conditions without the proposed project by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during both AM and PM peak hours.

Willow Road and Newbridge Street (Intersection #17). Implementation of the proposed project would cause the Willow Road and Newbridge Street intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the PM peak hour.

The recommended modification to bring this intersection back to pre-project conditions is to modify the signal timing to a protected left-turn phasing operation on Newbridge Street, provide a leading left-turn phase on southbound Newbridge Street and a lagging left-turn phase on northbound Newbridge Street, and optimize signal timing. The signal modification would be consistent with the recommended Willow Road Corridor Improvement Project in the City's Transportation Master Plan. No widening or additional right of way would be required. This improvement is in the City's TIF program and the project is required to pay traffic impact fees according to the City's current TIF schedule. Therefore, payment of the TIF program would address the changes in intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Near Term (2022) Conditions without the proposed project by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during the PM peak hour.

Willow Road and Bay Road (Intersection #18). Implementation of the proposed project would cause the Willow Road and Bay Road intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modification to bring this intersection back to pre-project conditions is to install one left-turn on southbound Bay Road resulting in two left-turn lanes and one right-turn lane in this direction. The recommended modification would require narrowing the existing median on Bay Road to accommodate the additional lane. The modification would be consistent with the recommended Willow Road Corridor Improvement Project in the City's Transportation Master Plan. No widening or additional right of way would be required. This improvement is in the City's TIF program and the project is required to pay traffic impact fees according to the City's current TIF schedule. Therefore, payment of the TIF program would address the changes in intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Near Term (2022) Conditions without the proposed project by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during the AM peak hour.

Willow Road and Durham Street (Intersection #19). Implementation of the proposed project would cause the Willow Road and Durham Street intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to install one right-turn lane on westbound Willow Road and restripe the shared through/right lane to a through lane. The lane configuration in this direction would be one left-turn lane, one through lane, and one right-turn lane. The recommended modification would require a widening on westbound Willow Road for the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements on the other approaches are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Willow Road and Coleman Avenue (Intersection #20). Implementation of the proposed project would cause the Willow Road and Coleman Avenue intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the PM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to install one right-turn lane on eastbound Willow Road and restripe the shared through/right lane to a through lane. The lane configuration in this direction would be one left-turn lane, one through lane, and one right-turn lane. The recommended modification would require a widening on eastbound Willow Road for the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements on are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Willow Road and Gilbert Avenue (Intersection #21). Implementation of the proposed project would cause the Willow Road and Gilbert Avenue intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the PM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to install one right-turn lane on eastbound Willow Road and restripe the shared through/right lane to a through lane. The lane configuration in this direction would be one left-turn lane, one through lane, and one right-turn lane. The recommended modification would require a widening on eastbound Willow Road for the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay a TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Implementation of the recommended conditions of approval would not result in any changes to VMT associated with the proposed project and would not result in secondary effects or contribute to impacts under CEQA. Table 4.2.G provides results for the intersection LOS operations with the recommended improvements during the AM and PM peak hours under Near Term (2022) Plus Project Conditions.

Table 4.2.G: Near Term (2022) Plus Project Conditions with Recommended Improvements Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Near Term		Near Term Plus Project		Near Term Plus Project with Improvements		Meet General Plan Standard?[1]
					Delay	LOS	Delay	LOS	Delay	LOS	
1	Marsh Road & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	**59.7**	**E**	**60.1**	**E**	42.0	D	Yes
				EB	**114.1**	**F**	**114.2**	**F**	**84.5**	**F**	
				WB	36.5	D	38.0	D	38.1	D	
			PM	N/A	37.4	D	38.2	D	39.1	D	Yes
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**111.1**	**F**	**142.4**	**F**	37.5	D	Yes
			PM	N/A	39.8	D	40.8	D	32.9	C	Yes
12	Chilco Street & Constitution Drive (Menlo Park)	Signal	AM	N/A	33.8	C	38.2	D	29.5	C	Yes
			PM	N/A	50.0	D	**58.6**	**E**	44.6	D	Yes
14	Willow Road & Hamilton Avenue (Local Approaches to State)	Signal	AM	N/A	**125.6**	**F**	**127.2**	**F**	39.1	D	Yes
				NB	**187.6**	**F**	**189.2**	**F**	11.5	B	
			PM	N/A	**174.6**	**F**	**176.1**	**F**	**64.3**	**E**	No
				NB	**248.0**	**F**	**250.1**	**F**	13.4	B	
17	Willow Road & Newbridge Street (Local Approaches to State)	Signal	AM	N/A	**272.2**	**F**	**272.9**	**F**	**240.1**	**F**	No
				NB	**389.7**	**F**	**389.4**	**F**	**373.8**	**F**	
			PM	N/A	**213.8**	**F**	**215.0**	**F**	**162.7**	**F**	No
				NB	**275.6**	**F**	**277.0**	**F**	**191.5**	**F**	
18	Willow Road & Bay Road (Local Approaches to State)	Signal	AM	N/A	**154.1**	**F**	**156.6**	**F**	**101.0**	**F**	No
				SB	**238.2**	**F**	**243.2**	**F**	**170.5**	**F**	
			PM	N/A	**150.8**	**F**	**151.6**	**F**	51.5	D	Yes
				SB	**266.1**	**F**	**266.1**	**F**	5.2	A	
19	Willow Road & Durham Street (Menlo Park)	Signal	AM	N/A	**228.3**	**F**	**232.6**	**F**	23.2	C	Yes
				NB	25.9	C	25.9	C	29.1	C	
				SB	**438.4**	**F**	**445.6**	**F**	15.1	B	
				EB	55.0	D	55.0	D	36.9	D	
				WB	**58.1**	**E**	**58.1**	**E**	39.0	D	
			PM	N/A	49.1	D	49.6	D	30.4	C	Yes
20	Willow Road & Coleman Avenue (Menlo Park)	Signal	AM	N/A	**113.3**	**F**	**112.7**	**F**	20.5	C	Yes
				NB	**239.0**	**F**	**238.3**	**F**	11.6	B	
				SB	17.3	B	17.8	B	17.6	B	
				EB	**70.1**	**E**	**70.1**	**E**	**70.1**	**E**	
				WB	50.5	D	50.5	D	50.5	D	
			PM	N/A	**68.2**	**E**	**69.5**	**E**	9.6	A	Yes
				NB	**141.3**	**F**	**143.9**	**F**	6.2	A	
				SB	7.8	A	7.8	A	7.7	A	
				EB	41.2	D	41.2	D	41.2	D	
				WB	37.5	D	37.5	D	37.5	D	

Table 4.2.G: Near Term (2022) Plus Project Conditions with Recommended Improvements Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Near Term		Near Term Plus Project		Near Term Plus Project with Improvements		Meet General Plan Standard?[1]
					Delay	LOS	Delay	LOS	Delay	LOS	
21	Willow Road & Gilbert Avenue (Menlo Park)	Signal	AM	N/A	**110.1**	**F**	**109.5**	**F**	20.8	C	Yes
				NB	**237.3**	**F**	**236.6**	**F**	8.7	A	
				SB	26.1	C	26.2	C	13.7	B	
				EB	**57.9**	**E**	**57.9**	**E**	**57.9**	**E**	
				WB	**65.8**	**E**	**65.8**	**E**	**65.8**	**E**	
			PM	N/A	**72.8**	**E**	**74.1**	**E**	10.1	B	Yes
				NB	**139.5**	**F**	**142.1**	**F**	4.7	A	
				SB	15.5	B	15.5	B	5.3	A	
				EB	41.2	D	41.2	D	41.2	D	
				WB	43.8	D	43.8	D	43.8	D	

Source: Kittelson & Associates, Inc. (2020).
Bold text - Indicates intersections operate at LOS not meeting LOS standard.
N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards.
[1] Indicates the General Plan compliance for the intersection LOS operations under Near Term (2022) Plus Project Conditions with improvements.

Cumulative (2040) Plus Project Conditions. The following analysis is based on the City's TIA Guidelines for intersection LOS under Cumulative (2040) Plus Project Conditions. The turning movement volumes, lane configurations, and Vistro outputs for Cumulative (2040) Plus Project Conditions are provided in Appendix E. Table 4.2.H provides LOS results for the study intersections during the AM and PM peak hours under Cumulative (2040) Plus Project Conditions.

As explained in the subsequent paragraphs, the proposed project would increase average critical movement delay by 0.8 seconds or more during at least one peak hour and cause the following twelve intersections to be non-compliant with the TIA Guidelines.

- Intersection #1, Marsh Road and Bayfront Expressway (Local Approaches to State): AM
- Intersection #8, Chrysler Drive and Constitution Drive (Menlo Park): AM and PM
- Intersection #9, Chrysler Drive and Jefferson Drive (Menlo Park): PM
- Intersection #10, Chrysler Drive and Independence Drive (Menlo Park): AM
- Intersection #11, Chilco Street and Bayfront Expressway (Local Approaches to State): AM
- Intersection #12, Chilco Street and Constitution Drive (Menlo Park): AM and PM
- Intersection #14, Willow Road and Hamilton Avenue (Local Approaches to State): AM
- Intersection #17, Willow Road and Newbridge Street (Local Approaches to State): AM

- Intersection #18, Willow Road and Bay Road (Local Approaches to State): AM and PM
- Intersection #19, Willow Road and Durham Street (Menlo Park): AM and PM
- Intersection #20, Willow Road and Coleman Avenue (Menlo Park): AM and PM
- Intersection #21, Willow Road and Gilbert Avenue (Menlo Park): PM

For the MUTCD peak hour signal warrant analysis, the intersection of Chrysler Drive and Jefferson Drive (Intersection #9) would meet the peak hour warrant during the PM peak hour and the intersection of Chrysler Drive and Independence Drive (Intersection #10) would meet the peak hour warrant during the AM peak hour. The intersection of Bay Road and Ringwood Avenue (Intersection #29) would meet the peak hour warrant during both AM and PM peak hours.

Table 4.2.H: Cumulative (2040) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
1	Marsh Road & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	**96.8**	**F**	**101.8**	**F**	No	Yes
				EB	**169.0**	**F**	**169.2**	**F**		
				WB	**75.1**	**E**	**85.1**	**F**		
			PM	N/A	36.2	D	36.9	D	Yes	No
2	Marsh Road & US-101 NB Off-Ramp (State)	Signal	AM	N/A	35.1	D	34.5	C	N/A	No
			PM	N/A	16.1	B	17.5	B	N/A	No
3	Marsh Road & US-101 SB Off-Ramp (State)	Signal	AM	N/A	**36.5**	**D**	**36.7**	**D**	N/A	No
			PM	N/A	**37.6**	**D**	**41.1**	**D**	N/A	No
4	Marsh Road & Scott Drive (Menlo Park)	Signal	AM	N/A	32.8	C	32.9	C	Yes	No
			PM	N/A	22.9	C	22.9	C	Yes	No
5	Marsh Road & Bay Road (Menlo Park)	Signal	AM	N/A	28.7	C	28.6	C	Yes	No
			PM	N/A	19.8	B	19.9	B	Yes	No
6	Marsh Road & Middlefield Road (Atherton)	Signal	AM	N/A	**81.4**	**F**	**81.2**	**F**	N/A	No
			PM	N/A	52.7	D	53.4	D	N/A	No
7	Chrysler Drive & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	10.2	B	11.9	B	Yes	No
			PM	N/A	**59.4**	**E**	**58.4**	**E**	No	No
				NB	**200.3**	**F**	**197.0**	**F**		
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**298.2**	**F**	**360.5**	**F**	No	Yes
			PM	N/A	**228.1**	**F**	**233.2**	**F**	No	Yes
				SB	**795.0**	**F**	**808.2**	**F**		
				EB	**91.7**	**F**	**104.1**	**F**		
				WB	**401.4**	**F**	**398.9**	**F**		
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	N/A	**45.9**	**E**	**46.6**	**E**	No	No
			PM	N/A	**126.4**	**F**	**140.5**	**F**	No	Yes
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	N/A	**368.5**	**F**	**372.4**	**F**	No	Yes
			PM	N/A	22.6	C	22.9	C	Yes	No
11	Chilco Street & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	**57.6**	**E**	**61.6**	**E**	No	Yes
				NB	**115.2**	**F**	**164.5**	**F**		
			PM	N/A	**65.1**	**E**	**67.2**	**E**	No	No
				NB	**258.1**	**F**	**257.2**	**F**		

Table 4.2.H: Cumulative (2040) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
12	Chilco Street & Constitution Drive (Menlo Park)	Signal	AM	N/A	77.0	E	85.3	F	No	Yes
				NB	77.6	E	92.2	F		
				SB	85.3	F	94.0	F		
				EB	32.9	C	35.8	D		
				WB	47.2	D	50.1	D		
			PM	N/A	246.0	F	252.2	F	No	Yes
				NB	98.6	F	98.6	F		
				SB	177.4	F	211.6	F		
				EB	523.0	F	521.3	F		
				WB	113.7	F	113.7	F		
13	Willow Road & Bayfront Expressway (State)	Signal	AM	N/A	327.4	F	325.5	F	N/A	No
			PM	N/A	370.7	F	372.4	F	N/A	No
14	Willow Road & Hamilton Avenue (Local Approaches to State)	Signal	AM	N/A	331.3	F	332.7	F	No	Yes
				SB	210.2	F	215.6	F		
			PM	N/A	426.5	F	427.5	F	No	No
				SB	489.6	F	489.6	F		
15	Willow Road & Ivy Drive (Local Approaches to State)	Signal	AM	N/A	244.6	F	245.5	F	No	No
				NB	325.4	F	325.0	F		
			PM	N/A	420.8	F	421.1	F	No	No
				SB	624.3	F	624.3	F		
16	Willow Road & O'Brien Drive (Local Approaches to State)	Signal	AM	N/A	250.0	F	250.0	F	No	No
				NB	379.4	F	379.0	F		
			PM	N/A	328.5	F	328.8	F	No	No
				SB	480.6	F	480.6	F		
17	Willow Road & Newbridge Street (Local Approaches to State)	Signal	AM	N/A	391.1	F	391.8	F	No	Yes
				SB	255.9	F	260.5	F		
			PM	N/A	432.3	F	433.2	F	No	No
				SB	585.9	F	585.9	F		
18	Willow Road & Bay Road (Local Approaches to State)	Signal	AM	N/A	184.5	F	186.8	F	No	Yes
				SB	243.2	F	248.2	F		
			PM	N/A	133.7	F	134.9	F	No	Yes
				NB	275.4	F	277.5	F		
19	Willow Road & Durham Street (Menlo Park)	Signal	AM	N/A	282.0	F	286.1	F	No	Yes
				NB	97.3	F	97.0	F		
				SB	529.0	F	536.6	F		
				EB	56.1	E	56.1	E		
				WB	58.6	E	58.6	E		
			PM	N/A	242.7	F	243.1	F	No	Yes
				NB	80.8	F	82.2	F		
				SB	456.2	F	456.2	F		
				EB	84.2	F	84.2	F		
				WB	66.2	E	66.2	E		

Table 4.2.H: Cumulative (2040) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
20	Willow Road & Coleman Avenue (Menlo Park)	Signal	AM	N/A	**157.7**	**F**	**157.1**	**F**	No	Yes
				NB	**331.8**	**F**	**331.1**	**F**		
				SB	24.3	C	25.1	C		
				EB	**72.1**	**E**	**72.1**	**E**		
				WB	46.3	D	46.3	D		
			PM	N/A	**72.5**	**E**	**74.0**	**E**	No	Yes
				NB	**151.4**	**F**	**154.7**	**F**		
				SB	7.7	A	7.7	A		
				EB	44.3	D	44.3	D		
				WB	38.3	D	38.3	D		
21	Willow Road & Gilbert Avenue (Menlo Park)	Signal	AM	N/A	**122.3**	**F**	**121.7**	**F**	No	No
				NB	**274.0**	**F**	**273.3**	**F**		
				SB	28.8	C	29.1	C		
				EB	**63.0**	**E**	**63.0**	**E**		
				WB	**67.3**	**E**	**67.3**	**E**		
			PM	N/A	**98.1**	**F**	**99.4**	**F**	No	Yes
				NB	**207.1**	**F**	**209.9**	**F**		
				SB	18.8	B	18.8	B		
				EB	38.4	D	38.4	D		
				WB	39.5	D	39.5	D		
22	Willow Road & Middlefield Road (Menlo Park)	Signal	AM	N/A	**73.1**	**E**	**73.0**	**E**	No	No
				NB	**78.5**	**E**	**78.3**	**E**		
				SB	46.1	D	46.3	D		
				EB	**79.2**	**E**	**79.1**	**E**		
				WB	**86.6**	**F**	**86.6**	**F**		
			PM	N/A	41.6	D	41.7	D	Yes	No
23	University Avenue & Bayfront Expressway (State)	Signal	AM	N/A	**101.4**	**F**	**101.0**	**F**	N/A	No
			PM	N/A	**215.7**	**F**	**215.2**	**F**	N/A	No
24	Middlefield Road & Ravenswood Avenue (Menlo Park)	Signal	AM	N/A	**66.5**	**E**	**66.5**	**E**	No	No
				NB	52.5	D	52.5	D		
				EB	21.4	C	21.4	C		
				WB	**93.3**	**F**	**93.3**	**F**		
			PM	N/A	24.6	C	24.6	C	Yes	No
25	Middlefield Road & Ringwood Avenue (Menlo Park)	Signal	AM	N/A	13.1	B	13.1	B	Yes	No
			PM	N/A	26.3	C	26.3	C	Yes	No
26	Marsh Road & Florence Street-Bohannon Drive (Menlo Park)	Signal	AM	N/A	39.8	D	40.0	D	Yes	No
			PM	N/A	46.0	D	46.1	D	Yes	No
27	Willow Road & US-101 SB Ramps (State)	Signal	AM	N/A	**157.6**	**F**	**157.4**	**F**	NN/A	No
			PM	N/A	**111.8**	**F**	**112.3**	**F**	N/A	No

Table 4.2.H: Cumulative (2040) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
28	Willow Road & US-101 NB Ramps (State)	Signal	AM	N/A	**263.1**	**F**	**264.3**	**F**	N/A	No
			PM	N/A	**367.8**	**F**	**368.2**	**F**	N/A	No
29	Bay Road & Ringwood Avenue (Menlo Park)	AWSC[3]	AM	N/A	**80.7**	**F**	**80.7**	**F**	No	No
			PM	N/A	**66.1**	**F**	**66.1**	**F**	No	No

Source: Kittelson & Associates, Inc. (2020).
Bold text - Indicates intersections operate at a LOS not meeting the LOS standard.
AWSC = All-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
TWSC = Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards. The "General Plan Standard" information is only relevant where the City's LOS policy standards apply.
[1] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during the PM peak hour.
[2] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during the AM peak hour.
[3] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during both peak hours.

The proposed project would increase average critical movement delay by 0.8 seconds or more during at least one peak hour and cause these intersections to be non-compliant with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The following section presents recommended conditions of approval to improve intersection operations to pre-project conditions, or better, at locations the proposed project would cause to operate in non-compliance with the TIA Guidelines.

Marsh Road and Bayfront Expressway (Intersection #1). Implementation of the proposed project would cause the Marsh Road and Bayfront Expressway/Haven Avenue intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modification to bring this intersection back to pre-project conditions is to restripe the through lane on Haven Avenue to a shared through/right lane resulting in having one shared left/through lane, one shared through/right lane, and one right-turn lane. No widening or additional right of way would be required. This improvement is in the City's TIF program and the project is required to pay the TIF according to the City's current TIF schedule. Therefore, payment of the TIF would address the changes in intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Cumulative (2040) Conditions and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement delay at the intersection such that the increase becomes less than 0.8 seconds during the AM peak hour.

Chrysler Drive and Constitution Drive (Intersection #8). Implementation of the proposed project would cause the Chrysler Drive and Constitution Drive intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this City-controlled intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM and PM peak hour.

The recommended modification to bring this intersection back to pre-project conditions is to install left-turn lane on westbound Chrysler Drive and convert the shared left/through/right to a shared through/right lane resulting in having one left-turn lane and one shared through/right lane in this direction. The excessive delays on southbound Constitution Drive would require an installation of right-turn lane and a conversion of the shared through/right lane to a through lane resulting in having one left-turn lane, one through lane, and one right-turn lane. Northbound Constitution Drive would require the installation of a right-turn lane and a conversion of the shared left/through/right lane to a shared left/through lane resulting in having one shared left/through lane and one right-turn lane. The recommended modification to lane configurations would require a widening of westbound Chrysler Drive and a widening of Constitution Drive on both sides of the intersection and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. While the improvements to the westbound approach are included in the City's TIF program, the improvements on the other approaches are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Cumulative (2040) Conditions and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during the AM and PM peak hours.

Chrysler Drive and Jefferson Drive (Intersection #9). Implementation of the proposed project would cause the Chrysler Drive and Jefferson Drive intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this City-controlled intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the PM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to install a traffic signal and convert the shared left/right lane to one left-turn lane and one right-turn lane on northbound Jefferson Drive to operate in compliance with the LOS standard.

The installation of a traffic signal is consistent with the City's Transportation Master Plan, which identifies traffic signal installation as a future improvement at the intersection of Chrysler Drive and Jefferson Drive. No widening or additional right of way would be required. This improvement is in the City's TIF program and the project is required to pay the TIF according to the City's current TIF schedule. Therefore, payment of the TIF program would address the changes in intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Chrysler Drive and Independence Drive (Intersection #10). Implementation of the proposed project would cause the Chrysler Drive and Independence Drive intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this City-controlled intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to install a traffic signal, consistent with the City's Transportation Master Plan, which identifies traffic signal installation as a future improvement at the intersection of Chrysler Drive and Independence Drive. No widening or additional right of way would be required. This improvement is in the City's TIF program and the project is required to pay the TIF according to the City's current TIF schedule. Therefore, payment of the TIF program would address the changes in intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Chilco Street and Bayfront Expressway (Intersection #11). Implementation of the proposed project would cause the Chilco Street and Bayfront Expressway intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to modify the center left-turn lane to a shared left/right lane on Chilco Street and re-design the existing shared bike lane. The lane configuration in this direction would be one left-turn lane, one shared left/right lane, and one right-turn lane. The recommended improvements are subject to Caltrans' approval since the intersection is located within its jurisdiction.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Chilco Street and Constitution Drive (Intersection #12). Implementation of the proposed project would cause the Chilco Street and Constitution Drive intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this City-controlled intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during both AM and PM peak hours.

The recommended modification to bring this intersection back to pre-project conditions is to install one right-turn lane on westbound Chilco Street and convert the shared through/right lane to a through lane. The lane configuration in this direction would be two left-turn lanes, one through lane, and one right-turn lane. The excessive delay on southbound Constitution Drive would require an installation of one left-turn lane and a conversion of the shared left/through lane into a through lane resulting in one left-turn lane, one through lane, and one right-turn lane in this direction. The recommended modifications would require a widening on westbound Chilco Street and southbound Constitution Drive to accommodate the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Cumulative (2040) Conditions and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during both AM and PM peak hours.

Willow Road and Hamilton Avenue (Intersection #14). Implementation of the proposed project would cause the Willow Road and Hamilton Avenue intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modifications to bring this intersection back to pre-project conditions are to install one right-turn lane on both eastbound and westbound Willow Road and convert the shared through/right lane to a through lane for both directions. The lane configuration for both eastbound and westbound Willow Road would be one left-turn lane, two through lanes, and one right-turn lane. The recommended modification would require a widening on both directions of Willow Road to accommodate the additional lanes and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Cumulative (2040) Conditions without the proposed project and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during the AM peak hour.

Willow Road and Newbridge Street (Intersection #17). Implementation of the proposed project would cause the Willow Road and Newbridge Street intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modifications to bring this intersection back to pre-project conditions are to modify the signal timing to a protected left-turn phasing operation on Newbridge Street, provide a leading left-turn phase on southbound Newbridge Street and a lagging left-turn phase on northbound Newbridge Street, and optimize signal timing. The signal modification would be consistent with the recommended Willow Road Corridor Improvement Project in the City's Transportation Master Plan. In addition, the excessive delay on westbound Willow Road would require an installation of one right-turn lane and a conversion of the shared through/right lane to a through lane resulting in having one left-turn lane, three through lanes, and one right-turn lane in this direction. The recommended improvements would require a curb expansion for westbound Willow Road and would be subject to Caltrans approval. Since this improvement is subject to Caltrans approval, its implementation cannot be guaranteed. Additionally, it would potentially require acquisition of additional right-of-way and may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. However, the improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Cumulative (2040) Conditions without the proposed project and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during the AM peak hour.

Willow Road and Bay Road (Intersection #18). Implementation of the proposed project would cause the Willow Road and Bay Road intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during both AM and PM peak hours.

The recommended modification to bring this intersection back to pre-project conditions is to install an additional left-turn lane on southbound Bay Road resulting in having two left-turn lanes and one right-turn lane in this direction. The recommended modifications would require a narrowing of the existing median on Bay Road to accommodate the additional lane. The modification would be consistent with the recommended Willow Road Corridor Improvement Project in the City's Transportation Master Plan. No widening or additional right of way would be required. The project is required to pay the TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Cumulative (2040) Conditions without the proposed project and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during both AM and PM peak hours.

Willow Road and Durham Street (Intersection #19). Implementation of the proposed project would cause the Willow Road and Durham Street intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during both AM and PM peak hours.

The recommended modifications to bring this intersection back to pre-project conditions are to install one right-turn lane on westbound Willow Road and restripe the shared through/right lane to a through lane. The lane configuration in this direction would be one left-turn lane, one through lane, and one right-turn lane. The recommended modifications would require a widening on westbound Willow Road for the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate better than Cumulative (2040) Conditions without the proposed project and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds during both AM and PM peak hours.

Willow Road and Coleman Avenue (Intersection #20). Implementation of the proposed project would cause the Willow Road and Coleman Avenue intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during both AM and PM peak hours.

The recommended modifications to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines are to install one right-turn lane on eastbound Willow Road and restripe the shared through/right lane to a through lane. The lane configuration in this direction would be one left-turn lane, one through lane, and one right-turn lane. The recommended modifications would require a widening on eastbound Willow Road for the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Willow Road and Gilbert Avenue (Intersection #21). Implementation of the proposed project would cause the Willow Road and Gilbert Avenue intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the PM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to install one right-turn lane on eastbound Willow Road and restripe the shared through/right lane to a through lane. The lane configuration in this direction would be one left-turn lane, one through lane, and one right-turn lane. The recommended modifications would require a widening on eastbound Willow Road for the additional lane and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay the TIF according to the current TIF schedule. The improvements are beyond those in the TIF program and payment of the TIF would not entirely address the change to intersection delay as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the project's share of the non-compliant operation.

Implementation of the recommended conditions of approval would not result in any changes to VMT associated with the proposed project and would not result in secondary effects or contribute to impacts under CEQA. Table 4.2.I provides results for the intersection LOS operations with the recommended improvements during the AM and PM peak hours under Cumulative (2040) Plus Project Conditions.

Table 4.2.I: Cumulative (2040) Plus Project Conditions with Recommended Improvements Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Cumulative Plus Project with Improvements		Meet General Plan Standard?[3]
					Delay	LOS	Delay	LOS	Delay	LOS	
1	Marsh Road & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	**96.8**	**F**	**101.8**	**F**	**78.2**	**E**	No
				EB	**169.0**	**F**	**169.2**	**F**	**84.1**	**F**	
				WB	**75.1**	**E**	**85.1**	**F**	**84.8**	**F**	
			PM	N/A	36.2	D	36.9	D	38.0	D	Yes
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**298.2**	**F**	**360.5**	**F**	45.7	D	Yes
			PM	N/A	**228.1**	**F**	**233.2**	**F**	**121.1**	**F**	No
				SB	**795.0**	**F**	**808.2**	**F**	**421.7**	**F**	
				EB	**91.7**	**F**	**104.1**	**F**	**83.1**	**F**	
				WB	**401.4**	**F**	**398.9**	**F**	**81.1**	**F**	
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	N/A	**45.9**	**E**	**46.6**	**E**	24.6	C	Yes
			PM	N/A	**126.4**	**F**	**140.5**	**F**	48.1	D	Yes
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	N/A	**368.5**	**F**	**372.4**	**F**	13.7	B	Yes
			PM	N/A	22.6	C	22.9	C	6.1	A	Yes

Table 4.2.I: Cumulative (2040) Plus Project Conditions with Recommended Improvements Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Cumulative Plus Project with Improvements		Meet General Plan Standard?[3]
					Delay	LOS	Delay	LOS	Delay	LOS	
11	Chilco Street & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	**57.6**	**E**	**61.6**	**E**	52.4	D	Yes
				NB	**115.2**	**F**	**164.5**	**F**	54.9	D	
			PM	N/A	**65.1**	**E**	**67.2**	**E**	35.8	D	Yes
				NB	**258.1**	**F**	**257.2**	**F**	40.9	D	
12	Chilco Street & Constitution Drive (Menlo Park)	Signal	AM	N/A	**77.0**	**E**	**85.3**	**F**	49.7	D	Yes
				NB	**77.6**	**E**	**92.2**	**F**	**85.2**	**F**	
				SB	**85.3**	**F**	**94.0**	**F**	40.0	D	
				EB	32.9	C	35.8	D	34.1	C	
				WB	47.2	D	50.1	D	49.0	D	
			PM	N/A	**246.0**	**F**	**252.2**	**F**	**124.0**	**F**	No
				NB	**98.6**	**F**	**98.6**	**F**	**98.6**	**F**	
				SB	**177.4**	**F**	**211.6**	**F**	**75.3**	**E**	
				EB	**523.0**	**F**	**521.3**	**F**	**185.6**	**F**	
				WB	**113.7**	**F**	**113.7**	**F**	**113.7**	**F**	
14	Willow Road & Hamilton Avenue (Local Approaches to State)	Signal	AM	N/A	**331.3**	**F**	**332.7**	**F**	35.5	D	Yes
				SB	**210.2**	**F**	**215.6**	**F**	41.0	D	
			PM	N/A	**426.5**	**F**	**427.5**	**F**	**80.6**	**F**	No
				SB	**489.6**	**F**	**489.6**	**F**	37.3	D	
17	Willow Road & Newbridge Street (Local Approaches to State)	Signal	AM	N/A	**391.1**	**F**	**391.8**	**F**	**74.7**	**E**	No
				SB	**255.9**	**F**	**260.5**	**F**	37.4	D	
			PM	N/A	**432.3**	**F**	**433.2**	**F**	**87.9**	**F**	No
				SB	**585.9**	**F**	**585.9**	**F**	**120.8**	**F**	
18	Willow Road & Bay Road (Local Approaches to State)	Signal	AM	N/A	**184.5**	**F**	**186.8**	**F**	**124.1**	**F**	No
				SB	**243.2**	**F**	**248.2**	**F**	**172.0**	**F**	
			PM	N/A	**133.7**	**F**	**134.9**	**F**	**80.3**	**F**	No
				NB	**275.4**	**F**	**277.5**	**F**	**162.3**	**F**	
19	Willow Road & Durham Street (Menlo Park)	Signal	AM	N/A	**282.0**	**F**	**286.1**	**F**	**60.4**	**E**	No
				NB	**97.3**	**F**	**97.0**	**F**	**96.5**	**F**	
				SB	**529.0**	**F**	**536.6**	**F**	23.7	C	
				EB	**56.1**	**E**	**56.1**	**E**	**56.1**	**E**	
				WB	**58.6**	**E**	**58.6**	**E**	**58.6**	**E**	
			PM	N/A	**242.7**	**F**	**243.1**	**F**	**56.1**	**E**	No
				NB	**80.8**	**F**	**82.2**	**F**	**81.9**	**F**	
				SB	**456.2**	**F**	**456.2**	**F**	25.1	C	
				EB	**84.2**	**F**	**84.2**	**F**	**84.1**	**F**	
				WB	**66.2**	**E**	**66.2**	**E**	**66.2**	**E**	

Table 4.2.I: Cumulative (2040) Plus Project Conditions with Recommended Improvements Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Cumulative Plus Project with Improvements		Meet General Plan Standard?[3]
					Delay	LOS	Delay	LOS	Delay	LOS	
20	Willow Road & Coleman Avenue (Menlo Park)	Signal	AM	N/A	**157.7**	**F**	**157.1**	**F**	27.2	C	Yes
				NB	**331.8**	**F**	**331.1**	**F**	17.1	B	
				SB	24.3	C	25.1	C	24.9	C	
				EB	**72.1**	**E**	**72.1**	**E**	**72.1**	**E**	
				WB	46.3	D	46.3	D	46.3	D	
			PM	N/A	**72.5**	**E**	**74.0**	**E**	10.3	B	Yes
				NB	**151.4**	**F**	**154.7**	**F**	6.0	A	
				SB	7.7	A	7.7	A	7.5	A	
				EB	44.3	D	44.3	D	44.3	D	
				WB	38.3	D	38.3	D	38.3	D	
21	Willow Road & Gilbert Avenue (Menlo Park)	Signal	AM	N/A	**122.3**	**F**	**121.7**	**F**	26.0	C	Yes
				NB	**274.0**	**F**	**273.3**	**F**	10.9	B	
				SB	28.8	C	29.1	C	17.2	B	
				EB	**63.0**	**E**	**63.0**	**E**	**63.0**	**E**	
				WB	**67.3**	**E**	**67.3**	**E**	**67.3**	**E**	
			PM	N/A	**98.1**	**F**	**99.4**	**F**	15.4	B	Yes
				NB	**207.1**	**F**	**209.9**	**F**	8.8	A	
				SB	18.8	B	18.8	B	10.1	B	
				EB	38.4	D	38.4	D	38.4	D	
				WB	39.5	D	39.5	D	39.5	D	

Source: Kittelson & Associates, Inc. (2020).
Bold text - Indicates intersections operate at LOS not meeting LOS standard.
TWSC = Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards. The "General Plan Standard" information is only relevant where the City's LOS policy standards apply.
[1] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during the PM peak hour. The intersection is signalized with improvements.
[2] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during the AM peak hour. The intersection is signalized with improvements.
[3] Indicates the General Plan compliance for the intersection LOS operations under Cumulative (2040) Plus Project Conditions with improvements.

4.2.3.2 Roadway Segment Level of Service Analysis

The findings of the roadway segment LOS compliance analysis are presented in this section for informational purposes. The analysis scope and methodology, analysis scenarios, data collection, and level of service policy standards are detailed in Appendix E.

Near Term (2022) Plus Project Conditions. For Near Term (2022) Plus Project Conditions, the project vehicle trips for the study CMP segments were identified from the project trip distribution assigned to each route. A difference of the turning movement volumes at the adjacent intersections between Near Term (2022) and Near Term (2022) Plus Project Conditions indicates the amount of net-new vehicle traffic that the proposed project would add to the study CMP segments.

Table 4.2.J shows the project trips estimated and the percentage of the segment capacity that would be added to each of the study CMP segments.

Table 4.2.J: Near Term (2022) Plus Project Conditions for Study Roadway Segments

No.	Route	Segment	Near Term (2022) Level of Service	Net-New Project Vehicle Trips[1]	Percent of Capacity
1	Bayfront Expressway (SR 84)	Bayshore Freeway (US 101) - Willow Road (SR 114)	**F**	**81**	**2.5%**
2	Bayfront Expressway (SR 84)	Willow Road (SR 114) - University Avenue (SR 109)	F	26	0.8%
3	Bayfront Expressway (SR 84)	University Avenue (SR 109) - San Mateo County Line	F	22	0.7%
4	University Avenue (SR 109)	Bayshore Freeway (US 101) - Bayfront Expressway (SR 84)	F	4	0.2%
5	Willow Road (SR 114)	Bayshore Freeway (US 101) - Bayfront Expressway (SR 84)	F	13	0.6%
6	Bayshore Freeway (US 101)	North of Marsh Road	F	34	0.4%
7	Bayshore Freeway (US 101)	Marsh Road - Willow Road (SR 114)	F	24	0.3%
8	Bayshore Freeway (US 101)	Willow Road (SR 114) - University Avenue (SR 109)	F	24	0.3%
9	Bayshore Freeway (US 101)	South of University Avenue (SR 109)	F	24	0.3%

Source: Kittelson & Associates, Inc. (2020).
Bold text Indicates segment operations exceed LOS standard or the new project trips are more than one percent of the segment capacity.
[1] Peak direction for either the AM or PM peak hour.

The proposed project would increase traffic volume by one or more than one percent of the roadway capacity and cause one roadway segment to exceed CMP LOS Standards under Near Term (2022) Plus Project Conditions.

Segment #1, Bayfront Expressway (SR 84) between Bayshore Freeway (US 101) and Willow Road (SR 114). The proposed project would cause this segment to experience an increase in traffic volume by one or more than one percent of the roadway capacity.

The roadway segment level of service operations could be improved by providing additional travel lanes (e.g., from six to eight lanes) to increase its capacity for serving the additional trips. This would improve the LOS of the segment to the conditions similar to or better than without project conditions. However, a roadway widening measure could cause induced travel demand following higher roadway capacity, air quality degradation, increases in noise from additional traffic, and reductions in transit use. In addition, the routes of regional significance are not under the jurisdiction of the City and a widening of State roadway facilities would require regional scale planning and funding. Rather than increasing the roadway capacity, using measures to reduce traffic demand would be more sustainable in the long term. In order for the roadway segment to operate better than Near Term (2022) Conditions without the proposed project, measures that would reduce peak traffic demand for the amount higher than the net-new project vehicle trips (e.g., 81 vehicles per hour) should be considered.

With implementation of travel lane modifications and/or measures to reduce travel demand by one or more than one percent of the capacity, the segment would operate at or better than Near Term (2022) Conditions.

Cumulative (2040) Plus Project Conditions. For Cumulative Plus Project (2040) Conditions, the project vehicle trips for the study CMP segments were identified from the project trip distribution assigned to each route. A difference of the turning movement volumes at the adjacent intersections between Cumulative (2040) and Cumulative (2040) Plus Project Conditions indicates the amount of net-new vehicle traffic that the proposed project would add to the study CMP segments.

Table 4.2.K shows the net new project vehicle trips estimated and the percentage of the segment capacity that would be added to each of the study segments.

Table 4.2.K: Cumulative (2040) Plus Project Conditions for Study Roadway Segments

No.	Route	Segment	Cumulative (2040) Level of Service	Net-New Project Vehicle Trips[1]	Percent of Capacity
1	Bayfront Expressway (SR 84)	Bayshore Freeway (US 101) - Willow Road (SR 114)	**F**	**81**	**2.5%**
2	Bayfront Expressway (SR 84)	Willow Road (SR 114) - University Avenue (SR 109)	F	26	0.8%
3	Bayfront Expressway (SR 84)	University Avenue (SR 109) - San Mateo County Line	F	22	0.7%
4	University Avenue (SR 109)	Bayshore Freeway (US 101) - Bayfront Expressway (SR 84)	F	4	0.2%
5	Willow Road (SR 114)	Bayshore Freeway (US 101) - Bayfront Expressway (SR 84)	F	13	0.6%
6	Bayshore Freeway (US 101)	North of Marsh Road	F	34	0.4%
7	Bayshore Freeway (US 101)	Marsh Road - Willow Road (SR 114)	F	24	0.3%
8	Bayshore Freeway (US 101)	Willow Road (SR 114) - University Avenue (SR 109)	F	24	0.3%
9	Bayshore Freeway (US 101)	South of University Avenue (SR 109)	F	24	0.3%

Source: Kittelson & Associates, Inc. (2020).
Bold text Indicates segments operate exceeds LOS standard or the new project trips are more than one percent of the segment capacity.
[1] Peak direction for either the AM or PM peak hour.

The proposed project would increase traffic volume by one or more than one percent of the roadway capacity and cause one roadway segment to exceed CMP LOS Standards under Cumulative (2040) Plus Project Conditions.

Segment #1, Bayfront Expressway (SR 84) between Bayshore Freeway (US 101) and Willow Road (SR 114). The proposed project would cause this segment to experience an increase in traffic volume by one or more than one percent of the roadway capacity.

The roadway segment level of service operations could be improved by providing additional travel lanes (e.g., from six to eight lanes) to increase its capacity for serving the additional trips.

This would improve the level of service of the segment to the conditions similar to or better than without project conditions. However, a roadway widening measure could cause induced travel demand following higher roadway capacity, air quality degradation, increases in noise from additional traffic, and reductions in transit use. In addition, the routes of regional significance are not under the jurisdiction of the City and a widening of State roadway facilities would require a regional scale planning and funding. Rather than increasing the roadway capacity, using measures to reduce traffic demand would be more sustainable in a long term. In order for the roadway segment to operate better than Cumulative (2040) Conditions without the proposed project, measures that would reduce peak traffic demand for the amount higher than the net-new project vehicle trips (e.g., 81 vehicles per hour) should be considered.

With implementation of travel lane modifications and/or measures to reduce travel demand by one or more than one percent of the capacity, the segment would operate at or better than Cumulative (2040) Conditions.

4.2.3.3 Parking Assessment

Code Requirements. The R-MU-B zoning district code requirements for residential and office land uses is described in Table 4.2.L.

Table 4.2.L: Menlo Park Municipal Code Parking Standards

Land Use	Vehicle Parking Requirement/Allowance		Minimum Bicycle Parking Requirement
	Minimum (per unit or 1,000 sf)	Maximum (per unit or 1,000 sf)	
Residential units	1 per unit	1.5 per unit	1.5 long-term per unit; 10% additional short-term for guests
Office	2	3	1 per 5,000 sf gross floor area; Minimum 2 spaces for office development (80% for long-term and 20% for short-term)

Source: Menlo Park Municipal Code (June 2020).
Note: long-term parking is defined as use over several hours or overnight, typically used by employees and residents; short-term parking is defined as visitor parking for use from several minutes to up to a couple of hours.
sf = square feet

The project proposes 483 residential dwelling units and an approximately 2,940 square foot office space. The R-MU-B zoning district requires one to 1.5 vehicle parking stalls per residential unit and two to three vehicle parking stalls per 1,000 square feet of office space. The proposed project would require 483 to 725 vehicle parking stalls for residents and six to nine vehicle parking stalls for office employees.

The zoning district requires 1.5 long-term bicycle parking spaces per residential unit plus an additional 10 percent for short-term bicycle parking. The office use requires one bicycle parking space per 5,000 square feet with a minimum of two bicycle parking spaces. The proposed project would require a minimum of 725 long-term bicycle parking spaces for residents with an additional 75 short-term bicycle parking spaces (73 spaces for residential guests and two spaces for office guests and employees).

Parking Supply. The proposed project would provide 553 vehicle parking spaces. A total of 441 vehicle parking spaces would be provided for the residents in the apartment building and 66 vehicle parking spaces would be provided for residents of the townhomes. An additional 46 vehicle parking spaces would be provided for guests. This would result in a parking ratio of approximately 1.14 stalls per residential unit. The R-MU-B zoning district requires between one and 1.5 stalls per unit; therefore, the proposed project meets the Zoning Ordinance requirements for vehicle parking.

The proposed project would also include long-term and short-term bicycle parking for residents and visitors. The proposed project would provide a total of 725 long-term bicycle parking spaces (1.5 per unit), and a total of 74 short-term bicycle parking spaces (10.2 percent of the number of long-term bicycle parking spaces).

Residents of the apartments would have access to a large bike storage room on the ground level of the north apartment building that would accommodate 662 bikes. Residents of the townhomes would have access to the 63 long-term bicycle parking stalls.

Bicycle racks with a capacity of 67 bicycles would be installed throughout the paseo between the apartment buildings and townhouses and along the street frontages of Constitution Drive and Jefferson Drive. Another seven short-term bicycle parking spaces would be provided at the townhouse complex.

The R-MU-B zoning district requires 1.5 long-term bicycle parking stalls per residential unit plus an additional 10 percent for short-term guests. Therefore, the proposed project would be required to provide 725 long-term bicycle parking stalls and 73 short-term bicycle parking spaces. The proposed project meets the Zoning Ordinance requirements for bicycle parking.

Parking Demand. ITE Parking Generation rates estimate 1.31 parking stalls per dwelling unit, resulting in an estimated demand of 633 parking stalls for the project, more than the 507 parking stalls the project proposes for residents. ITE Parking Generation rates estimate 2.39 parking stalls per 1,000 square feet of office space, resulting in a demand of eight parking stalls for the proposed office use. Six vehicle parking spaces would be designated for the proposed office use.

The proposed project would implement a TDM plan in an effort to reduce vehicle trips and associated demand for parking. For example, the proposed project would separate the cost of parking from the cost of leasing a unit. Unbundling of parking from leases is done to allow residents to rely less on driving and promote the use of more environmentally sustainable modes of transportation. Approximately six percent of commuters use public transit while another 10 percent walk or bike to commute.[28] The proposed project would also include bicycle and pedestrian facilities, such as bicycle parking spaces and well-lighted sidewalks and walkways, to encourage residents and visitors to use non-auto modes of transportation. Proposed on-site amenities, such as a fitness center and bike repair shop, further reduce the need to drive to other sites and therefore, reduce the demand for vehicular parking.

[28] United States Census Bureau. 2018. ACS 5-Year Estimate Subject Tables.

4.3 AIR QUALITY

This section has been prepared using methodologies and assumptions recommended in the air quality impact assessment guidelines of the Bay Area Air Quality Management District (BAAQMD).[1] In keeping with these guidelines, this section describes existing air quality, impacts of the proposed project on local carbon monoxide (CO) levels, impacts of vehicular emissions that have regional effects, and exposure of sensitive receptors to toxic air contaminants (TACs). A Health Risk Assessment (HRA) was also performed and is included in this section. Mitigation measures to reduce or eliminate potentially significant air quality impacts are identified, where appropriate. The analysis and mitigations in this section comply with ConnectMenlo Mitigation Measures AQ-2a, AQ-2b1, AQ-2b2, AQ-3b, and AQ-5[2] as further described below. Air quality modeling data is included in Appendix F and the HRA data results are included in Appendix G.

Impacts related to odors were evaluated in Section 3.3 of the Initial Study (Appendix B) and were determined to be less than significant; therefore, this topic is not further evaluated in this section.

4.3.1 Setting

The following discussion provides an overview of existing air quality conditions in the region and in the City. Ambient air quality standards and the regulatory framework are summarized and climate, air quality conditions, and typical air pollutant types and sources are also described.

4.3.1.1 Air Pollutants and Health Effects

Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O_3 and NO_2, are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and Pb are considered local pollutants that tend to accumulate in the air locally.

The primary pollutants of concern in the project area are O_3, CO, and suspended particulate matter. Significance thresholds established by an air district are used to manage total regional and local emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual development projects that would contribute to regional and local emissions and could adversely affect or delay the air basin's projected attainment target goals for nonattainment criteria pollutants.

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1 Bay Area Air Quality Management District (BAAQMD). 2017. *California Environmental Quality Act, Air Quality Guidelines*. May.

2 ConnectMenlo Mitigation Measure AQ-5 requires implementation of Mitigation Measures AQ-2a through AQ-3b to reduce criteria air pollutant emissions, as applicable. The ConnectMenlo Final EIR identified Mitigation Measure AQ-3a to reduce impacts associated with diesel particulate matter emissions for non-residential land uses within the city. The proposed project would include a multi-family apartment building; therefore this mitigation measure would not apply.

Because of the conservative nature of the significance thresholds, and the basin-wide context of individual development project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_x) and reactive organic gases (ROG).

Further, by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself; result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, the air districts have considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise. These populations are referred to as sensitive receptors.

Air pollutants and their health effects, and other air pollution-related considerations are summarized in Table 4.3.A and are described in more detail below.

Table 4.3.A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O_3)	• Precursor sources:[a] motor vehicles, industrial emissions, and consumer products.	• Respiratory symptoms. • Worsening of lung disease leading to premature death. • Damage to lung tissue. • Crop, forest, and ecosystem damage. • Damage to a variety of materials, including rubber, plastics, fabrics, paints, and metals.
Particulate Matter Less than 2.5 Microns in Aerodynamic Diameter ($PM_{2.5}$)	• Cars and trucks (especially diesels). • Fireplaces, woodstoves. • Windblown dust from roadways, agriculture, and construction.	• Premature death. • Hospitalization for worsening of cardiovascular disease. • Hospitalization for respiratory disease. • Asthma-related emergency room visits. • Increased symptoms, increased inhaler usage.

Table 4.3.A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Particulate Matter Less than 10 Microns in Aerodynamic Diameter (PM_{10})	• Cars and trucks (especially diesels). • Fireplaces, woodstoves. • Windblown dust from roadways, agriculture, and construction.	• Premature death and hospitalization, primarily for worsening of respiratory disease. • Reduced visibility and material soiling.
Nitrogen Oxides (NO_x)	• Any source that burns fuels such as cars, trucks, construction and farming equipment, and residential heaters and stoves.	• Lung irritation. • Enhanced allergic responses.
Carbon Monoxide (CO)	• Any source that burns fuels such as cars, trucks, construction and farming equipment, and residential heaters and stoves.	• Chest pain in patients with heart disease. • Headache. • Light-headedness. • Reduced mental alertness.
Sulfur Oxides (SO_x)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits.
Lead (Pb)	• Contaminated soil.	• Impaired mental functioning in children. • Learning disabilities in children. • Brain and kidney damage.
Toxic Air Contaminants (TACs)	• Cars and trucks (especially diesels). • Industrial sources, such as chrome platers. • Neighborhood businesses, such as dry cleaners and service stations. • Building materials and products.	• Cancer. • Reproductive and developmental effects. • Neurological effects.

Source: California Air Resources Board (2018).

[a] Ozone is not generated directly by these sources. Rather, chemicals emitted by these precursor sources react with sunlight to form ozone in the atmosphere.

Ozone. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_x. The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the San Francisco Bay Area (Bay Area), automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide. CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. CO transport is limited – it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Extremely high levels of CO, such as those generated when a vehicle is running in an unventilated garage, can be fatal.

Particulate Matter. Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is categorized in two size ranges: PM_{10} for particles less than 10 microns in diameter and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about half of the air basin's particulates, through tailpipe emissions as well as brake pad, tire wear, and entrained road dust. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (CARB), studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children.[3] Statewide attainment of particulate matter standards could reduce premature deaths, hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and episodes of respiratory illness in California.

Nitrogen Dioxide. NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide. SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. SO_2 also reduces visibility and the level of sunlight at the ground surface.

Lead. Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery factories. Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the United States Environmental Protection Agency (USEPA) established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The USEPA banned the use of leaded gasoline in highway vehicles in

3 California Air Resources Board (CARB). 2020. Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}). Website: ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health (accessed October 2020).

December 1995. As a result of USEPA regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Toxic Air Contaminants. In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. Some examples of TACs include: benzene, butadiene, formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the USEPA and the CARB. In 1998, the CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. The CARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by use of diesel-fueled engines.[4] High volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

The BAAQMD regulates TACs using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, in order to provide a quantitative estimate of health risks.[5] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. Monitoring data and emissions inventories of TACs help the BAAQMD determine health risk to Bay Area residents.

Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for a substantial portion of the ambient background risk in the Bay Area.[6] According to the BAAQMD, ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due to this reduction, the calculated average cancer risk based on monitoring results has also been reduced.

4 CARB. 2000a. *Fact Sheet – California's Plan to Reduce Diesel Particulate Matter Emissions*. October. Available online at: www.arb.ca.gov/diesel/factsheets/rrpfactsheet.pdf (accessed April 2020).

5 In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

6 BAAQMD. 2015. *Toxic Air Contaminant Control Program Annual Report, Volume 1.* May. Website: www.baaqmd.gov/research-and-data/air-toxics/annual-report (accessed April 2020).

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources – primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways. Agricultural and mining equipment is not commonly used in urban parts of the Bay Area, while construction equipment typically operates for a limited time at various locations. As a result, the readily identifiable locations where diesel particulate matter is emitted in the Bay Area include high-traffic roadways and other areas with substantial truck traffic.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[7] The CARB Diesel Risk Reduction Plan is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines.[8] The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The CARB anticipates that by 2020 average Statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the Diesel Risk Reduction Plan, meaning that the Statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. It is likely that the Bay Area cancer risk from diesel particulate matter will decrease by a similar factor by 2020.

High Volume Roadways. Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways, and human health studies have consistently demonstrated that children living within 100 to 200 meters (328 to 656 feet) of freeways or busy roadways have reduced lung function and higher rates of respiratory disease. At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics.

4.3.1.2 National and State Ambient Air Quality Standards

Both State and federal governments have established health-based Ambient Air Quality Standards for criteria air pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

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7 Ibid.

8 CARB. 2000b. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Prepared by the Stationary Source Division and Mobile Source Control Division. Available online at: www.arb.ca.gov/diesel/documents/rrpFinal.pdf (accessed April 2020). October.

Both the USEPA and the CARB have established ambient air quality standards for the following common pollutants: CO, O_3, NO_2, SO_2, Pb, and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. These ambient air quality standards are levels of contaminants that avoid specific adverse health effects associated with each pollutant.

Federal standards include both primary and secondary standards. Primary standards establish limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings.[9] State and federal standards for the criteria air pollutants are listed in Table 4.3.B.

4.3.1.3 Existing Climate and Air Quality

The following provides a discussion of the local and regional air quality and climate in the Menlo Park area.

Regional and Local Air Quality. Menlo Park is located in the southern part of the San Francisco Bay Area Air Basin (Air Basin), a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The city is within the jurisdiction of the BAAQMD, which regulates air quality in the Bay Area. Air quality conditions in the Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Neither State nor national ambient air quality standards of the following chemicals have been violated in recent decades: nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and vinyl chloride. Those exceedances of air quality standards that do occur primarily happen during meteorological conditions conducive to high pollution levels, such as cold, windless nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State and federal agencies. The reduction of peak concentrations represents progress in improving public health; however the Bay Area still exceeds the State standard for 1-hour ozone as well as the State and federal 8-hour standards. Levels of PM_{10} have exceeded State standards two of the last three years, and the area is considered a nonattainment area for this pollutant relative to the State standards. The Bay Area is an unclassified area for the federal PM_{10} standard.

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

9 United States Environmental Protection Agency (USEPA). 2017. Website: www.epa.gov/criteria-air-pollutants (accessed April 2020).

Table 4.3.B: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a]		Federal Standards [b]		
		Concentration [c]	Method [d]	Primary [c,e]	Secondary [c,f]	Method [g]
Ozone (O_3)[h]	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[i]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		–		
Fine Particulate Matter ($PM_{2.5}$)[i]	24-Hour	–		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	–	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	
Nitrogen Dioxide (NO_2)[j]	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Gas Phase Chemi-luminescence	53 ppb (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	–	
Lead (Pb)[l,m]	30-Day Average	1.5 µg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3 (for certain areas)[l]	Same as Primary Standard	
	Rolling 3-Month Average [i]	–		0.15 µg/m^3		
Sulfur Dioxide (SO_2)[k]	24-Hour	0.04 ppm (105 µg/m3)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)[k]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[k]	–	
Visibility-Reducing Particles [l]	8-Hour	See footnote [n]	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [j]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: Ambient Air Quality Standards (California Air Resources Board 2016).

Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current national policies.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[h] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[i] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] To attain the 1-hour national standard, the three-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[k] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the three-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[l] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[n] In 1989, the CARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the Statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
CARB = California Air Resources Board
USEPA = United States Environmental Protection Agency
ppb = parts per billion
ppm = parts per million
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

Local Climate and Air Quality. Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Two meteorological factors affect air quality in Menlo Park: wind and temperature. Winds affect the direction of transport of any air pollution emissions and wind also controls the volume of air into which pollution is mixed in a given period of time. While winds govern horizontal mixing processes, temperature inversions determine the vertical mixing depth of air pollutants.

The city is located in San Mateo County, which lies in the middle of the San Francisco Peninsula, south of San Francisco County, and north of Santa Clara and Santa Cruz counties. San Mateo County is bounded by the Pacific Ocean to the west and San Francisco Bay to the east. Cool, foggy weather is prevalent along the western coast of the peninsula, particularly during the summer. Summertime average daily temperatures are moderate along the west coast and warm in the county's east side. In the winter, average daily temperatures across the county range from mild to moderate. Winds are mild, with the highest wind speeds focused along the western coast. Rainfall averages about 20 to 25 inches per year at lower elevations and up to 36 inches in the Santa Cruz Mountains.[10]

Ozone and fine particle pollution, or $PM_{2.5}$, are the major regional air pollutants of concern in the Bay Area. Ozone is primarily a problem in the summer, and fine particle pollution in the winter.[11] In San Mateo County, ozone almost never exceeds health standards, and $PM_{2.5}$ exceeds the national standard only on about one day each year. San Mateo County frequently receives fresh marine air from the Pacific Ocean, which passes over the coastal hills. In winter, $PM_{2.5}$ may be transported into San Mateo County from other parts of the Bay Area, adding to wood smoke, which may lead to elevated concentrations, but these are rarely high enough to exceed health standards.[12]

Air Quality Monitoring Results. Air quality monitoring stations are located throughout the nation and maintained by the local air pollution control district and state air quality regulating agencies. Ambient air data collected at permanent monitoring stations are used by the USEPA to identify regions as attainment or nonattainment depending on whether the regions met the requirements stated in the primary National Ambient Air Quality Standards (NAAQS). Attainment areas are required to maintain their status through moderate, yet effective air quality maintenance plans. Nonattainment areas are imposed with additional restrictions as required by the USEPA. In addition, different classifications of attainment such as marginal, moderate, serious, severe, and extreme are used to classify each air basin in the state on a pollutant-by-pollutant basis. Different classifications have different mandated attainment dates and are used as guidelines to create air quality management strategies to improve air quality and comply with the NAAQS by the attainment date. A region is determined to be unclassified when the data collected from the air quality monitoring stations do not support a designation of attainment or nonattainment, due to lack of information, or a conclusion cannot be made with the available data. The San Francisco Bay Area Air Basin's attainment statuses for each of the criteria pollutants are listed in Table 4.3.C**.**

10 BAAQMD. 2019. San Mateo County. Website: www.baaqmd.gov/about-the-air-district/in-your-community/san-mateo-county (accessed October 2020). February 14.

11 Ibid.

12 Ibid.

Table 4.3.C: San Francisco Bay Area Basin Attainment Status

	Averaging Time	California Standards [a]		National Standards [b]	
		Concentration	Attainment Status	Concentration [c]	Attainment Status
Ozone (O_3)	8-Hour	0.070 ppm (137µg/m^3)	Nonattainment [i]	0.070 ppm	Nonattainment [d]
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	[e]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment [f]
	1-Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm (339 µg/m^3)	Attainment	0.100 ppm [k]	[k]
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Not Applicable	0.053 ppm (100 µg/m^3)	Attainment
Sulfur Dioxide (SO_2) [l]	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	[l]
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	0.075 ppm (196 µg/m^3)	[l]
	Annual Arithmetic Mean	Not Applicable	Not Applicable	0.030 ppm (80 µg/m^3)	[l]
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	Nonattainment [g]	Not Applicable	Not Applicable
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	Nonattainment [g]	15 µg/m^3 [o]	Unclassified/ Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m^3 [j]	Nonattainment
Sulfates	24-Hour	25 µg/m^3	Attainment	Not Applicable	Not Applicable
Lead (Pb) [m]	30-Day Average	1.5 µg/m^3	Not Applicable	Not Applicable	Attainment
	Calendar Quarter	Not Applicable	Not Applicable	1.5 µg/m^3	Attainment
	Rolling 3-Month Average [n]	Not Applicable	Not Applicable	0.15 µg/m^3	[n]
Hydrogen Sulfide	1-Hour	0.010 ppm (26 µg/m^3)	Unclassified	Not Applicable	Not Applicable
Vinyl Chloride (chloroethene)	24-Hour	0.010 ppm (26 µg/m^3)	No Information Available	Not Applicable	Not Applicable
Visibility Reducing Particles	8-Hour (10:00 to 18:00 PST)	[h]	Unclassified	Not Applicable	Not Applicable

Source: Bay Area Attainment Status (BAAQMD 2017).
Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the State standard.

[b] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of 98th percentiles is less than 35 µg/m^3.
Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the three-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the three-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

[c] National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety.

[d] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. USEPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

[e] The national 1-hour ozone standard was revoked by USEPA on June 15, 2005.

[f] In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

[g] In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

[h] Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10 miles nominal visual range.

[I] The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005, and became effective on May 17, 2006.

[j] On January 9, 2013, USEPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This USEPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this USEPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to USEPA and USEPA approves the proposed redesignation.

[k] To attain this standard, the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010). The USEPA expects to make a designation for the Bay Area by the end of 2017.

[l] On June 2, 2010, the USEPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following USEPA initial designations of the new 1-hour SO_2 NAAQS. USEPA expects to make designation for the Bay Area by the end of 2017.

[m] CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.

[n] National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

[o] In December 2012, USEPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter (µg/m^3). In December 2014, USEPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

CARB = California Air Resources Board
USEPA = United States Environmental Protection Agency
ppm = parts per million
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

The CARB and the USEPA maintain ambient air quality monitoring stations within California. The air quality monitoring station closest to the project site is the 897 Barron Avenue monitoring station in Redwood City, which monitors criteria air pollutant data.[13] The air quality trends from this station are used to represent the ambient air quality in the project area. Ambient air quality in the project area from 2016 to 2018 (the most recent available period) is shown in Table 4.3.D. The pollutants monitored were CO, O_3, $PM_{2.5}$, and NO_2. Air quality trends for PM_{10} and SO_2 are not monitored in San Mateo County; therefore the air quality trends for PM_{10} and SO_2 are from the 156B Jackson Street monitoring station in San Jose.

Table 4.3.D: Ambient Air Quality at the 897 Barron Avenue, Redwood City Monitoring Station

Pollutant	Standard	2016	2017	2018
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		2.2	2.8	2.5
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.1	1.4	1.7
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.075	0.115	0.067
Number of days exceeded:	State: > 0.09 ppm	0	2	0
Maximum 8-hour concentration (ppm)		0.061	0.087	0.050
Number of days exceeded:	State: > 0.07 ppm	0	2	0
	Federal: > 0.07 ppm	0	2	0
Coarse Particulates (PM_{10}) [1]				
Maximum 24-hour concentration (µg/m^3)		41.0	69.8	121.8
Number of days exceeded:	State: > 50 µg/m^3	0	6	4
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		18.3	21.3	23.1
Exceeded for the year:	State: > 20 µg/m^3	No	Yes	Yes
	Federal: > 50 µg/m^3	No	No	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m^3)		19.5	60.8	120.9
Number of days exceeded:	Federal: > 35 µg/m^3	0	6	13
Annual arithmetic average concentration (µg/m^3)		8.3	9.0	10.5
Exceeded for the year:	State: > 12 µg/m^3	No	No	No
	Federal: > 15 µg/m^3	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.046	0.067	0.077
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.009	0.011	0.010
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)[1]				
Maximum 1-hour concentration (ppm)		0.0018	0.0036	0.0069
Number of days exceeded:	State: > 0.25 ppm	0	0	0

13 CARB gathers ambient air quality data fir the State of California and ensures the quality of this data. CARB provides ambient air quality monitoring sites throughout California's counties and air basins.

Table 4.3.D: Ambient Air Quality at the 897 Barron Avenue, Redwood City Monitoring Station

Pollutant	Standard	2016	2017	2018
Maximum 24-hour concentration (ppm)		0.0008	0.0011	0.0011
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.00019	0.0002	0.00021
Exceeded for the year:	Federal: > 0.030 ppm	0	0	0

Source: CARB and USEPA (2019).
[1] Data taken at the 156B Jackson Street air quality monitoring station in San Jose.
ppm = parts per million
µg/m^3 = micrograms per cubic meter
ND = No data. There was insufficient (or no) data to determine the value.

Pollutant monitoring results indicate that air quality in the San Mateo County area has generally been good. As indicated in the monitoring results, 1-hour ozone concentrations exceeded the State standard twice in 2017 and the 8-hour ozone concentrations exceeded the federal standard twice in 2017 and the State standard twice in 2017. In addition, the federal $PM_{2.5}$ standard was exceeded six times in 2017 and 13 times in 2018. The CO and NO_2 standards were not exceeded in this area during the three-year period.

In addition, the Office of Environmental Health Hazard Assessment (OEHHA), on behalf of the California Environmental Protection Agency (CalEPA), released Version 3.0 of the California Communities Environmental Health Screening Tool (CalEnviroScreen) in January 2017. CalEnviroScreen identifies California communities by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution. Pollution Burden scores for each census tract are derived from the average percentiles of the seven Exposures indicators (ozone and $PM_{2.5}$ concentrations, diesel PM emissions, drinking water contaminants, pesticide use, toxic releases from facilities, and traffic density) and the five Environmental Effects indicators (cleanup sites, impaired water bodies, groundwater threats, hazardous waste facilities and generators, and solid waste sites and facilities). According to the CalEnviroScreen 3.0 Map,[14] the project site has a pollution burden percentile of 54. Other portions of the Bay Area have pollution burdens ranging from the lowest scores of between 1 and 10 percent and the second highest score of between 81 and 90 percent. In addition, according to the Senate Bill (SB) 535 Disadvantaged Communities Map,[15] the project site is not designated as an SB 535 disadvantaged community.

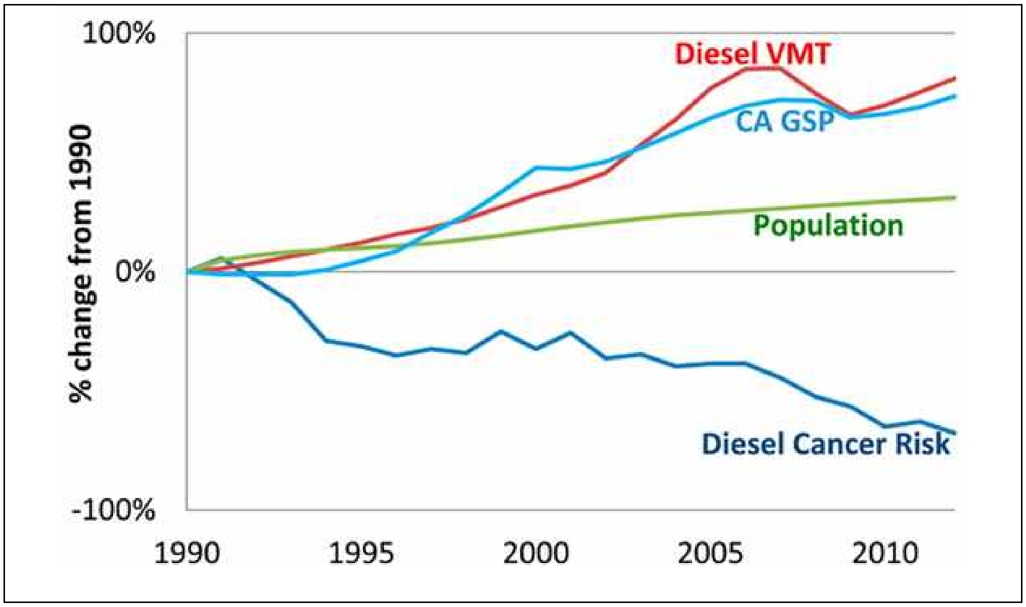
Toxic Air Contaminant Trends. In 1984, the CARB adopted regulations to reduce TAC emissions from mobile and stationary sources, as well as consumer products. A CARB study showed that ambient concentrations and emissions of the seven TACs responsible for the most cancer risk from airborne

14 Office of Environmental Health Hazard Assessment (OEHHA). 2017. *CalEnviroScreen 3.0.* Website: oehha.ca.gov/calenviroscreen/report/calenviroscreen-30 (accessed September 2020).

15 OEHHA. 2018. *SB 535 Disadvantaged Communities using CalEnviroScreen 3.0 results.* Website: oehha.maps.arcgis.com/apps/View/index.html?appid=c3e4e4e1d115468390cf61d9db83efc4 (accessed November 2020). June.

exposure declined by 76 percent between 1990 and 2012.[16] Concentrations of diesel particulate matter, a key TAC, declined by 68 percent between 1990 and 2012, despite a 31 percent increase in State population and an 81 percent increase in diesel vehicle miles traveled (VMT), as shown on Figure 4.3-1. The study also found that the significant reductions in cancer risk to California residents from the implementation of air toxics controls are likely to continue.

Figure 4.3-1: California Population, Gross State Product (GSP), Diesel Cancer Risk, and Diesel Vehicle Miles Traveled (VMT) Regulatory Context



Source: Ambient and Emission Trends of Toxic Air Contaminants in California (Propper, Ralph, et al. 2015).

The USEPA and the CARB regulate direct emissions from motor vehicles. The BAAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as monitoring ambient pollutant concentrations.

4.3.1.4 Regulatory Framework

The BAAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. BAAQMD jurisdiction encompasses seven counties – Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa – and portions of Solano and Sonoma counties. USEPA and CARB regulate direct emissions from motor vehicles.

The applicable federal, State, regional, and local regulatory framework is discussed below.

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16 Propper, Ralph, et al. 2015. Ambient and Emission Trends of Toxic Air Contaminants in California. *American Chemical Society: Environmental Science & Technology*. Website: pubs.acs.org/doi/full/10.1021/acs.est.5b02766 (accessed July 30, 2020).

Federal Regulations. At the federal level, the USEPA has been charged with implementing national air quality programs. USEPA air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required USEPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. USEPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the USEPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area, which imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions on transportation funding and stationary air pollution sources in the air basin.

The USEPA is also required to develop National Emission Standards for Hazardous Air Pollutants, which are defined as those which may reasonably be anticipated to result in increased deaths or serious illness and which are not already regulated. An independent science advisory board reviews the health and exposure analyses conducted by the USEPA on suspected hazardous pollutants prior to regulatory development.

State Regulations. The CARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources, and provides districts with the authority to regulate indirect sources.

The CARB is also primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. The CARB is primarily responsible for Statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. The CARB combines this data and submits the completed SIP to USEPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for mobile sources, consumer products, small utility engines, and off-road vehicles. The CARB Diesel Risk Reduction Plan is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines.[17]

[17] CARB. 2000b, op. cit.

Because of the robust evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the CARB also created guidance for avoiding air quality conflicts in land use planning in its Air Quality and Land Use Handbook: A Community Health Perspective.[18] In its guidance, the CARB advises that new sensitive uses (e.g., residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day.

CARB guidance suggests that the use of these guidelines be customized for individual land use decisions, and take into account the context of proposed development projects. The Air Quality and Land Use Handbook specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

Regional Regulations. The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

Clean Air Plan. The Clean Air Plan guides the region's air quality planning efforts to attain the CAAQS.[19] The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017, by the BAAQMD Board of Directors, is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (e.g., ROG and NO_x), particulate matter and greenhouse gas (GHG) emissions.

The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities;
- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050;
- Provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve GHG reduction targets; and

18 California Environmental Protection Agency and California Air Resources Board. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. Available online at: www.arb.ca.gov/ch/handbook.pdf (accessed July 30, 2020). April.

19 BAAQMD. 2017. *Final 2017 Clean Air Plan*. Available online at: www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed October 2020). April 19.

- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "Super-GHGs" that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

BAAQMD CARE Program. The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that include an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TACs, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and a high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area.

For commercial and industrial sources, the BAAQMD regulates TACs using a risk-based approach. This approach uses an HRA to determine what sources and pollutants to control as well as the degree of control. An HRA is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, in order to provide a quantitative estimate of health risks.[20] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. The BAAQMD has identified seven impacted communities;[21] the City of Menlo Park has not been identified as an affected community.[22]

BAAQMD CEQA Air Quality Guidelines. The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air

20 In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

21 The seven impacted communities include Richmond/San Pablo; eastern San Francisco, including Treasure Island; San Jose; western Alameda County; Concord, Vallejo; and Pittsburg/Antioch.

22 BAAQMD. 2014. *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area Version 2*. Available online at: www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/ImpactCommunities_2_Methodology.ashx?la=en (accessed November 2020). March.

quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions.

In June 2010, the BAAQMD adopted updated draft CEQA Air Quality Guidelines and finalized them in May 2011. These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The 2017 CEQA Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the proposed project.

City of Menlo Park. The City of Menlo Park addresses air quality in the Open Space, Conservation, Noise and Safety Elements of the General Plan.[23] The Open Space, Conservation, Noise and Safety Elements set goals, policies, and implementing programs that work to ensure healthy air quality. The following policies are applicable to the proposed project.

- **Policy OSC5.1: Air and Water Quality Standards.** Continue to apply standards and policies established by the BAAQMD, San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the CEQA process and other means as applicable.

- **Policy OSC5.2: Development in Industrial Areas.** Evaluate development projects in industrial areas for impacts to air and water resources in relation to truck traffic, hazardous materials use and production-level manufacturing per CEQA and require measures to mitigate potential impacts to less-than-significant levels.

4.3.2 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to air quality that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. A summary of the ConnectMenlo Final EIR impacts and mitigation measures is then provided. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate. As previously discussed in Chapter 3.0, Project Description, the analysis below makes reference to, and tiers from, the ConnectMenlo Final EIR, where appropriate.

4.3.2.1 Significance Criteria

The project would result in a significant impact related to air quality if it would:

1) Conflict with or obstruct implementation of the applicable air quality plan;

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23 Menlo Park, City of. 2013. *City of Menlo Park General Plan, Open Space Conservation, Noise and Safety Elements*. May 21.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or State ambient air quality standard;

3) Expose sensitive receptors to substantial pollutant concentrations; or

4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

As discussed in Section 3.3.d of the Initial Study (Appendix B), the proposed project would not result in other emissions, such as those leading to odors, that would adversely affect a substantial number of people, and this impact was determined to be less than significant. Therefore, this criterion is not further addressed below.

4.3.2.2 ConnectMenlo Final EIR Impacts

The following provides an overview of impacts to air quality and required mitigation measures as identified in the ConnectMenlo Final EIR.

Clean Air Plan. The ConnectMenlo Final EIR evaluated ConnectMenlo's consistency with the 2010 Bay Area Clean Air Plan and found that ConnectMenlo would be consistent with the goals and applicable control measures of the 2010 Bay Area Clean Air Plan. In addition, the ConnectMenlo Final EIR determined that regional growth projections for VMT, population, and employment would not exceed forecasts in the Association of Bay Area Government (ABAG)/Metropolitan Transportation Commission (MTC) Plan Bay Area. As such, the ConnectMenlo Final EIR determined impacts related to consistency with air quality plans to be less than significant.

Criteria Pollutants. The ConnectMenlo Final EIR found that construction emissions associated with individual development projects would generate an increase in criteria air pollutants and TACs and that subsequent environmental review of future development projects would be required to assess potential impacts under BAAQMD project-level thresholds. Construction emissions from buildout of future projects within Menlo Park, including the proposed project, would primarily be: 1) exhaust emissions from off-road diesel-powered construction equipment; 2) dust generated by demolition, grading, earthmoving, and other construction activities; 3) exhaust emissions from on-road vehicles; and 4) off-gas emissions of ROGs from application of asphalt, paints, and coatings. The ConnectMenlo Final EIR found that construction-related impacts would be significant and identified Mitigation Measures AQ-2b1 and AQ-2b2 to reduce impacts to the extent feasible. Mitigation Measure AQ-2b1 requires the implementation of BAAQMD Basic Construction Mitigation Measures for all construction projects within the City and Mitigation Measure AQ-2b2 requires implementation of BAAQMD-approved mitigation measures if determined during subsequent environmental review that future individual development projects in Menlo Park could generate construction exhaust emissions in excess of the BAAQMD significance thresholds. Even with implementation of these measures, the ConnectMenlo Final EIR determined that construction-period impacts associated with buildout of ConnectMenlo would be significant and unavoidable.

The ConnectMenlo Final EIR found that criteria air pollutant emissions associated with development allowed by ConnectMenlo would generate a substantial net increase in emissions that exceeds the

BAAQMD regional significance thresholds. Because cumulative development within the City could exceed the regional significance thresholds, any development project could contribute to an increase in adverse health effects in the Air Basin until the attainment standards are met. Criteria air pollutant emissions would be generated from on-site area sources (e.g., landscaping fuel, consumer products), vehicle trips generated by individual projects, and energy use (e.g., natural gas used for cooking and heating). The ConnectMenlo Final EIR identified Mitigation Measure AQ-2a to require implementation of BAAQMD-approved mitigation measures if subsequent environmental review determines that future development projects in Menlo Park could generate operational emissions in excess of the BAAQMD significance thresholds.

Finally, the ConnectMenlo Final EIR found that buildout of ConnectMenlo would not increase traffic at affected intersections such that the BAAQMD screening criteria would be exceeded and would not contribute to localized CO concentrations that exceed State or federal standards.

Exposure of Sensitive Receptors to Pollutant Concentrations. The ConnectMenlo Final EIR identified Mitigation Measure AQ-3a to reduce impacts associated with diesel particulate matter emissions for non-residential land uses within the City. The proposed project would include a multi-family apartment building; therefore, this mitigation measure would not apply. The ConnectMenlo Final EIR also determined that the placement of new sensitive land uses, such as residential units, near major sources of air pollution could expose sensitive receptors to elevated concentrations of air pollutants. As such, the ConnectMenlo Final EIR identified Mitigation Measure AQ-3b to ensure that placement of sensitive receptors near major sources of air pollution would achieve the incremental risk thresholds established by BAAQMD and these impacts would be less than significant.

4.3.2.3 Project Impacts

The following section discusses the potential air quality impacts associated with implementation of the proposed project.

1) Conflict with or obstruct implementation of the applicable air quality plan

Since the publication of the ConnectMenlo Final EIR, the BAAQMD adopted a new 2017 Bay Area Clean Air Plan (Clean Air Plan).[24] The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce GHG emissions to protect the climate. Consistency with the Clean Air Plan can be determined if a project: 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 measures from the Clean Air Plan. Following is an evaluation of the proposed project's consistency with each of these criteria and, as discussed below, the proposed project would not conflict with the Clean Air Plan goals or control measures and would not obstruct its implementation. Therefore, this impact would be ***less than significant*** **(LTS)**.

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24 BAAQMD. 2017. *Clean Air Plan.* April 19.

Clean Air Plan Goals. The primary goals of the Clean Air Plan are to: attain air quality standards; reduce population exposure and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect climate.

The BAAQMD has established significance thresholds for project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed in more detail in the analysis below, implementation of the proposed project would result in less-than-significant operation-period emissions and, with implementation of Mitigation Measure AIR-1, the project would result in less-than-significant construction-period emissions. Therefore, the project would not conflict with the Clean Air Plan goals.

Clean Air Plan Control Measures. The control strategies of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Measures, Energy Measures, Building Measures, Agriculture Measures, Natural and Working Lands Measures, Waste Management Measures, Water Measures, and Super-GHG Pollutants Measures. The proposed project's consistency with each of these strategies is discussed below.

Stationary Source Control Measures. The Stationary Source Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by BAAQMD Permit and Inspection programs. Since the proposed project would not include any such stationary sources, the Stationary Source Measures of the Clean Air Plan are not applicable to the project.

Transportation Control Measures. The BAAQMD identifies Transportation Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, TACs, and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The proposed project would develop new residences that would locate residents near existing school, office, commercial, and light manufacturing uses, reducing the demand for travel by single occupancy vehicles. The proposed project would also develop a transportation demand management (TDM) plan to provide trip reduction measures and reduce vehicle traffic in and around the project site (refer to Section 4.2, Transportation, for additional discussion). In addition, the project area is served by nearby public transit facilities. The nearest bus stop to the project site is served by the San Mateo County Transit District (SamTrans) Route 270 and is located approximately 0.5 miles to the west on Haven Avenue. The Menlo Park and Palo Alto Caltrain stations are located within 3 miles of the project site to the south. The M3 Menlo Park Shuttle stop is also located at 150 Jefferson Drive, less than 150 feet from the project site. In addition, the proposed project would provide both long-term and short-term bicycle parking on-site for residents and visitors. In addition, a bike repair station with basic tools for cyclists to make repairs and adjustments would be available for residents in each of the proposed apartment buildings. As such, the proposed project would help to reduce the demand for travel by single occupancy vehicles. Therefore, the project would promote BAAQMD initiatives to reduce vehicle trips and vehicle miles traveled and would increase the use of alternate means of transportation.

Energy Control Measures. The Clean Air Plan also includes Energy Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the Energy Control Measures of the Clean Air Plan are not applicable to the proposed project. However, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for Electric Vehicle (EV) charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards. In addition, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. Therefore, the proposed project would comply with applicable Energy Measures.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. Therefore, the Building Control Measures of the Clean Air Plan are not applicable to the proposed project. However, the proposed project would be required to comply with CALGreen standards and code amendments such as local reach codes.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the project does 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, as well as encouraging local governments to adopt ordinances that promote urban tree plantings. Since the proposed project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the project.

Waste Management Control Measures. The Waste Management Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the proposed project.

Super GHG Control Measures. Super GHGs include GHGs with very high global warming potential, such as methane, black carbon, and fluorinated gases. The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the proposed project.

Clean Air Plan Implementation. As discussed above, the proposed project would generally implement the applicable measures outlined in the Clean Air Plan, including Transportation Control Measures. Therefore, the proposed project would not disrupt or hinder implementation of a control measure from the current Clean Air Plan and, similar to the findings of the ConnectMenlo Final EIR, this impact would be ***less than significant*** **(LTS)**.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or State ambient air quality standard

According to the BAAQMD CEQA Guidelines, to meet air quality standards for operational-related criteria air pollutant and air precursor impacts, the proposed project must not:

- Contribute to CO concentrations exceeding the State ambient air quality standards;
- Generate average daily construction emissions of ROG, NO_x or $PM_{2.5}$ (exhaust) greater than 54 pounds per day or PM_{10} exhaust emissions greater than 82 pounds per day; or
- Generate operational emissions of ROG, NO_x or $PM_{2.5}$ of greater than 10 tons per year or 54 pounds per day or PM_{10} emissions greater than 15 tons per year or 82 pounds per day.

The BAAQMD is currently designated as a nonattainment area for State and national ozone standards and national particulate matter ambient air quality standards. BAAQMD nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. The following sections describe the proposed project's construction- and operation-related air quality impacts and CO impacts. As discussed, construction-period activities would generate air pollutant emissions that could violate air quality standards; however, implementation of Mitigation Measure AIR-1, which requires implementation of the BAAQMD's Basic Construction Measures as outlined in ConnectMenlo Final EIR Mitigation Measure AQ-2b1, would reduce this impact to ***less than significant with mitigation*** **(LTS/M)**. During project operation, the proposed project would not exceed the significance criteria for ROG, NO_2, PM_{10} or $PM_{2.5}$ emissions and would not result in localized CO concentrations that exceed State or federal standards; therefore, the proposed project would not have a significant effect on regional air quality and this impact would be ***less than significant*** **(LTS)**.

Construction Emissions. During construction of the proposed project, short-term degradation of air quality may occur due to the release of particulate matter emissions (e.g., fugitive dust) generated by demolition, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter. The proposed project would exceed the BAAQMD's screening level criteria of 240 dwelling units for construction emissions; therefore, per ConnectMenlo Mitigation Measure AQ-2b2, project-specific construction emissions are evaluated below.

Impact AIR-1: Construction of the proposed project would generate air pollutant emissions that could violate air quality standards. (PS)

Site preparation and project construction would involve demolition, grading, paving, and other activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM_{10}). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, ROGs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using the California Emissions Estimator Model (CalEEMod) version 2016.3.2, consistent with BAAQMD recommendations. As stated in Section 3.4.5 in Chapter 3.0, Project Description, the proposed project would include demolition of approximately 118,944 square feet of existing buildings and surface parking lots on the project site, including 110,365 square feet of building area, which was included in CalEEMod. In addition, a total of approximately 16,500 cubic yards of soils would be imported to the project site, which was included in CalEEMod. Construction of the proposed project is anticipated to begin in May 2021 and would occur over a 37-month period. The proposed project is anticipated to be fully operational and occupied by summer 2024. The project sponsor provided construction fleet details; however, other construction details are not yet known and would not be available until the project is undergoing final design; therefore, default assumptions (e.g., construction worker and truck trips) from CalEEMod were used. This analysis assumes the use of Tier 2 construction equipment. Construction-related emissions are presented in Table 4.3.E. CalEEMod output sheets are included in Appendix F.

Table 4.3.E: Project Construction Emissions in Pounds Per Day

Project Construction	ROG	NO_x	Exhaust PM_{10}	Fugitive Dust PM_{10}	Exhaust $PM_{2.5}$	Fugitive Dust $PM_{2.5}$
Average Daily Emissions	8.1	30.2	0.9	3.6	0.9	1.1
BAAQMD Thresholds	54.0	54.0	82.0	BMP	54.0	BMP
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (October 2020).
BMP = best management practices

As shown in Table 4.3.E, construction ROG, NO_x, $PM_{2.5}$, and PM_{10} exhaust emissions would be below the BAAQMD's thresholds. In order to reduce construction fugitive dust impacts to a less-than-significant level, the BAAQMD requires the implementation of BAAQMD Basic Construction Mitigation Measures. The ConnectMenlo Final EIR identified Mitigation Measure AQ-2b1, which would require implementation of BAAQMD Best Management Practices (BMPs) to reduce construction-related air quality impacts of PM_{10} and $PM_{2.5}$ emissions. As identified above, ConnectMenlo Final EIR Mitigation Measure AQ-2b2 further requires implementation of BAAQMD-approved mitigation measures if it is determined during project-specific evaluation that individual development projects would generate construction exhaust emissions in excess of the BAAQMD significance thresholds. As the proposed project would not exceed BAAQMD thresholds, implementation of the additional construction measures (e.g., Table 8-3, Additional

Construction Measures Recommended for Projects with Construction Emissions Above the Threshold of the current 2017 BAAQMD CEQA Guidelines) as identified in ConnectMenlo Final EIR Mitigation Measure AQ-2b2 would not be required.

Mitigation Measure AIR-1: Consistent with Connect Menlo Final EIR Mitigation Measure AQ-2b1, the proposed project would be required to comply with BAAQMD basic control measures for reducing construction emissions of PM_{10} (Table 8-2, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the BAAQMD 2017 CEQA Guidelines), as follows:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- 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.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, 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.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the City of Menlo Park regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number for BAAQMD shall also be visible to ensure compliance with applicable regulations.

With implementation of the BAAQMD's Basic Construction Mitigation Measures Recommended for All Proposed Projects as outlined in Mitigation Measure AIR-1, and consistent with

ConnectMenlo Final EIR Mitigation Measure AQ-2b1, construction-related air quality impacts would be ***less than significant with mitigation*** **(LTS/M)**.

Operational Emissions. Similar to the impacts identified in the ConnectMenlo Final EIR, long-term air pollutant emission impacts that would result from the proposed project are those that are associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity), area sources (e.g., architectural coatings and the use of landscape maintenance equipment), and stationary sources (e.g., emergency generators).

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which electricity is used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Trip generation rates used in CalEEMod for the project were based on the project's trip generation estimates, which assume the proposed project would typically generate approximately 2,772 net new average daily trips (refer to Table 4.2.B in Section 4.2, Transportation, for trip generation estimates).[25] Consistent with ConnectMenlo requirements, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen

[25] As further discussed in Chapter 3.0, Project Description and Section 4.2, Transportation, an approximately 2,940-square-foot office space is currently proposed. An office space of this size would generate fewer trips than the approximately 2,100-square-foot commercial space (café) that is analyzed as the nonresidential community amenity use in the proposed project trip generation estimate. Thus, the transportation analysis, and other technical evaluations that are based on this analysis including air quality, evaluate a project with higher trip generation potential. Therefore, this analysis can be considered conservative while also allowing flexibility in selecting the future tenant of the nonresidential space.

standards, all of which were included in the CalEEMod modeling assumptions. The proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric. In addition, the proposed project would include two emergency generators within the interior of each of the multi-family buildings, which were included in CalEEMod. When project-specific data were not available, default assumptions from CalEEMod were used to estimate project emissions. Model results are shown in Table 4.3.F. CalEEMod output sheets are included in Appendix F.

Table 4.3.F: Project Operational Emissions

	ROG	NO_x	PM_{10}	$PM_{2.5}$
Pounds Per Day				
Area Source Emissions	13.1	0.5	0.2	8.2
Energy Source Emissions	0.1	1.2	0.1	0.1
Mobile Source Emissions	3.6	14.1	11.9	3.2
Stationary Source Emissions	<0.1	<0.1	<0.1	<0.1
Total Emissions	**16.8**	**15.8**	**12.2**	**3.6**
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**No**	**No**	**No**	**No**
Tons Per Year				
Area Source Emissions	2.3	<0.1	<0.1	<0.1
Energy Source Emissions	<0.1	0.2	<0.1	<0.1
Mobile Source Emissions	0.6	2.5	2.1	0.6
Stationary Source Emissions	<0.1	<0.1	<0.1	<0.1
Total Emissions	**2.9**	**2.8**	**2.1**	**0.6**
BAAQMD Thresholds	10.0	10.0	15.0	10.0
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: LSA (October 2020).

The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the project; emissions are released in other areas of the Air Basin. The daily and annual emissions associated with project operational trip generation, energy, area, and stationary sources are identified in Table 4.3.F for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The results shown in Table 4.3.F indicate the project would not exceed the significance criteria for ROG, NO_2, PM_{10} or $PM_{2.5}$ emissions; therefore, the proposed project would not have a significant effect on regional air quality and mitigation measures to reduce operational emissions, as required by ConnectMenlo Final EIR Mitigation Measure AQ-2a, would not be necessary. This impact would be ***less than significant*** **(LTS)**.

Localized CO Impacts. Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. BAAQMD 2017 CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed development projects.

A screening level analysis using guidance from the BAAQMD CEQA Guidelines was performed to determine the impacts of the project. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD CEQA Guidelines, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project 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, or below-grade roadway).

The Air Basin has been designated attainment under both the national and California AAQS for CO. Therefore, the proposed project would not have the potential to substantially increase CO hotspots at intersections in Menlo Park.

Implementation of the proposed project would not conflict with the San Mateo County Transportation Authority for designated roads or highways, a regional transportation plan, or other agency plans. As further discussed in Section 4.2, Transportation, the proposed project would generate approximately 114 AM and 96 PM peak hour trips; therefore, similar to total buildout projected for implementation of ConnectMenlo, the project's contribution to peak hour traffic volumes at intersections in the vicinity of the project site would be well below 44,000 vehicles per hour. Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards and this impact would be ***less than significant*** **(LTS)**.

3) Expose sensitive receptors to substantial pollutant concentrations

As previously discussed, sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks. The closest sensitive receptors include the TIDE Academy, located at 150 Jefferson Drive, approximately 85 feet south of the project site. In addition, across the UPRR tracks and 0.6 mile east of the site is the Belle Haven residential neighborhood, which is generally occupied by single-family residences.

The following section describes the potential impacts on sensitive receptors from construction and operation of the proposed project. Since the proposed project would include a multi-family apartment building, an operational HRA was conducted consistent with ConnectMenlo Final EIR Mitigation Measure AQ-3b. The HRA analysis and results are presented below; data outputs are included in Appendix G. As discussed below, construction of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations; therefore, construction-period impacts to sensitive receptors would be ***less than significant*** **(LTS)**. With implementation of Mitigation Measure AIR-2, operation period impacts to sensitive receptors and exposure to toxic air contaminants would be ***less than significant with mitigation*** **(LTS/M)**.

Construction Health Risk to Nearby Sensitive Receptors. A construction HRA, which evaluates construction-period health risk to off-site receptors, was performed for the proposed project, and the analysis is presented below. The project site is located near existing residential uses that could be exposed to diesel emission exhaust during the construction period.

Impact AIR-2: Construction of the proposed project would expose nearby sensitive receptors to toxic air contaminants. (PS)

To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including diesel particulate matter), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location of interest (i.e., a nearby residence and worksites). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using the CARB exposure methodology with the air dispersion modeling performed using the USEPA dispersion model AERMOD. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and meteorological data. Table 4.3.G, below, identifies the results of the analysis assuming the use of Tier 2 construction equipment. Model snap shots of the sources are shown in Appendix G of this EIR.

Table 4.3.G: Unmitigated Inhalation Health Risks from Project Construction to Off-Site Receptors

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual	63.3	0.040	0.000	0.20
Threshold	**10.0**	**1.0**	**1.0**	**0.30**
Exceed?	**Yes**	**No**	**No**	**No**

Source: LSA (October 2020).
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
$\mu g/m^3$ = micrograms per cubic meter

As shown in Table 4.3.G, the risk associated with project construction at the maximally exposed individual (MEI) would be 63.3 in one million, which would exceed the BAAQMD cancer risk of 10 in one million. The total chronic hazard index would be 0.040, which is below the threshold of 1.0. In addition, the total acute hazard index would be nominal (0.000), which would also not exceed the threshold of 1.0. The results of the analysis indicate that the total $PM_{2.5}$ concentration would be 0.20 µg/m^3, which would also not exceed the BAAQMD significance threshold of 0.30 µg/m^3. As indicated above, the cancer risk of 63.3 in one million would exceed BAAQMD thresholds. Therefore, implementation of Mitigation Measure AIR-2 would be required to reduce substantial pollutant concentrations during project construction.

Mitigation Measure AIR-2 During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board Tier 4 emissions standards or equivalent. In the event that some specialty equipment (e.g., geotechnical, vibratory compaction, or soil mixing equipment), is not Tier 4 compliant due to lack of availability, then Tier 3 equipment shall be used.

Table 4.3.H identifies the results of the analysis with implementation of Mitigation Measure AIR-2.

Table 4.3.H: Mitigated Inhalation Health Risks from Project Construction to Off-Site Receptors

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration (µg/m^3)
Maximally Exposed Individual	5.06	0.003	0.000	0.02
Threshold	**10.0**	**1.0**	**1.0**	**0.30**
Exceed?	**No**	**No**	**No**	**No**

Source: LSA (July 2020).
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
µg/m^3 = micrograms per cubic meter

As shown in Table 4.3.H, the mitigated cancer risk at the MEI would be 5.06 in one million, which would not exceed the BAAQMD cancer risk of 10 in one million. Therefore, with implementation of Mitigation Measure AIR-2, construction of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations and this impact would be ***less than significant with mitigation*** **(LTS/M)**.

Operational Health Risk to Future Residents. Consistent with the requirements of ConnectMenlo Final EIR Mitigation Measure AQ-3b, an analysis of potential health risk and mitigation strategies was performed for the proposed project. To determine health risks associated with the proposed project to on-site receptors, an HRA was conducted for the proposed project based on three current guidance documents: 1) the California USEPA Air Toxics Hot Spots Program Risk Assessment Guidelines;[26] 2) The California Air Pollution Control Officers

[26] California Environmental Protection Agency (CalEPA). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines*. August.

Association (CAPCOA) Health Risk Assessment for Proposed Land Use Projects;[27] and 3) the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards.[28] The BAAQMD document was released in May 2012 with the purpose of assisting lead agencies in conducting a risk and hazard analysis as part of the environmental review process for proposed land use projects, and it provides Bay Area-specific guidance on how to screen projects and provides specific inputs for HRA modeling. The operational HRA is presented below. As further discussed, this impact would be ***less than significant*** **(LTS)**.

<u>Mobile Sources</u>. High volume roadways in the project vicinity could expose future residents on the project site to TACs. The project site is located approximately 785 feet north of US 101 and approximately 410 feet south of SR 84. The HRA was conducted using several steps, as follows: 1) determine the PM_{10} emission factor; 2) determine source emission rates; 3) determine concentrations at the project site; 4) translate the PM_{10} concentrations into health risk values; and 5) compare the health risk values to BAAQMD thresholds to determine significance.

The BAAQMD requires that age sensitivity be included when assessing long term exposure or a 30-year lifetime cancer risk to sensitive receptors. The exposure assumptions are very conservative in that they assume an individual would reside at this location from birth through 30 years.

With the recent approval of the new OEHHA guidance, additional adjustments are recommended to account for the amount of time a person spends away from their home during his or her lifetime.[29] Following the new OEHHA guidance document recommendations, a time away from home (TAFH) factor of 76.7 percent was applied to more accurately represent the exposure a person would have over a lifetime when they are at home.

Annual traffic data obtained from Caltrans was used as an input to the model. According to Caltrans, the total annual average daily traffic (AADT) along US 101 near the project site is 227,900 vehicles and the AADT along SR 84 near the project site is 66,000 vehicles.[30] As indicated above, the project site is located approximately 785 feet north of US 101 and approximately 410 feet south of SR 84. Emission factors for vehicle emissions were determined using the EMFAC 2017 On-Road Emission Factor Estimator. EMFAC 2017 includes assumptions of technological and regulatory changes that will reduce emission rates over time. However, this HRA only allows for a single emission rate for the entire 30-year health risk evaluation period. The average of diesel vehicle weighted emission rates

27 California Air Pollution Control Officers Association. 2009. *Health Risk Assessment for Proposed Land Use Projects.* July.

28 BAAQMD. 2016. *Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines.* Available online at: www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en (accessed April 2020). January.

29 OEHHA. 2015. *Risk Assessment Guidelines. A Guidance Manual for the Preparation of Health Risk Assessments.* February.

30 California Department of Transportation. 2017. Traffic Census Program, 2017 All Traffic Volumes on California State Highways. Website: www.dot.ca.gov/trafficops/census (accessed June 2020).

for the 30-year period (2020 to 2050) is 0.015 gram of diesel particulate matter per vehicle mile traveled (g dpm/VMT), which is almost identical to the year 2024 diesel vehicle weighted average emission rates. Therefore, a set of emissions factors from the year 2024 was used to represent the long-term 30-year evaluation period.

The classification of the total AADT into 13 vehicle type categories and the corresponding total emissions for that volume of vehicles at the average speed (5-90 miles per hour) were used in the analysis. For the purpose of this assessment, it is assumed that the traffic volumes are constant throughout the year. The diesel particulate matter emission rates used in the analysis were determined based on the vehicle distribution by type according to the Caltrans traffic data for US 101 and SR 84.[31]

Analysis Methodology. The dispersion modeling analysis was performed using AERMOD (American Meteorological Society/EPA Regulatory Model, Version 16216) to compute plume dispersion characteristics. AERMOD is a steady-state Gaussian air dispersion model that can be used to calculate pollutant concentrations from a wide variety of sources associated with a roadway out to a distance of 50 kilometers. The AERMOD model allows the selection of a number of options that affect model output. The regulatory default AERMOD model options were selected for this analysis.

A five-year meteorological dataset (2009 – 2013) was downloaded from the CARB website for air dispersion modeling.[32] The meteorological dataset includes surface meteorological data recorded at the nearby San Carlos Airport monitoring station and upper air data recorded at Oakland International Airport.[33]

The sources were modeled to approximately 0.5 miles north and south of the proposed project site, as shown in Appendix G. For purposes of this analysis, diesel vehicle exhaust was modeled based on an eight-lane highway with each lane consisting of 287-volume sources, representing northbound and southbound traffic along US 101, respectively. SR 84 had approximately 141 volume sources for each lane. Exhaust emissions for diesel cars and trucks were modeled as line volume sources, with a volume height of 3.05 meters. Modeled receptors were placed in a grid representing the proposed residential building at the project site. Appendix G shows a representation of the modeled grid. The HRA modeling was conducted using the ARB Hotspots Analysis Reporting Program (HARP2, Air Dispersion & Risk Tool Version dated 17314).

The HRA was conducted following the BAAQMD Health Risk Assessment Guidelines.[34] These guidelines are used by the BAAQMD to evaluate the health impacts from new and existing sources of toxic air contaminants. Listed below are the risk assessment assumptions that were used in the modeling.

31 Ibid.

32 CARB. 2015. HARP AERMOD Meteorological Files. Website: www.arb.ca.gov/toxics/harp/metfiles2.htm (accessed July 2020).

33 The San Carlos Airport monitoring station is the closest station with recorded meteorological data.

34 Ibid.

- The residential cancer risk estimates are based on 30-year exposure (consistent with OEHHA guidance).

- Deposition velocity of 0.02 m/sec to calculate the rate toxic air contaminants in particulate form deposit on the soil, which may be ingested in soil or home-grown produce.

- Pathways considered for residential exposure included inhalation, soil ingestion, dermal absorption, homegrown produce, and mother's milk.

- A "mixed" climate was assumed for the dermal exposure pathway.

Analysis Results. The results of the health risk analysis from US 101 and SR 84 traffic emission sources are shown in Table 4.3.I. Results indicate that vehicle exhaust concentrations on the project site would not exceed the individual source significance thresholds established by the BAAQMD.

Table 4.3.I: Maximum Long-Term Health Risk Impacts from Mobile Sources to the Project Site

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
SR 84	5.27	0.005	0.004	0.005
US 101	9.72	0.010	0.011	0.009
Threshold	**10.0**	**1.0**	**1.0**	**0.30**
Exceed?	**No**	**No**	**No**	**No**

Source: LSA (July 2020).
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
$\mu g/m^3$ = micrograms per cubic meter

Results of the analysis indicate that the MEI inhalation cancer risk associated with US 101 would be 9.72 in 1 million, which would not exceed the BAAQMD threshold of 10 in 1 million. The maximum chronic Hazard Index would be 0.010, which would be below the BAAQMD significance threshold of 1.0. The maximum acute Hazard Index would be 0.011, which would be below the BAAQMD significance threshold of 1.0. In addition, the total $PM_{2.5}$ concentration would be 0.09 $\mu g/m^3$, which would also not exceed the BAAQMD significance threshold of 0.30 $\mu g/m^3$. In addition, results of the analysis indicate that the MEI inhalation cancer risk associated with SR 84 would be 5.27 in 1 million, which would also be below the BAAQMD threshold of 10 in 1 million. Therefore, operation of the project would not expose sensitive receptors to substantial pollutant concentrations and this impact would be ***less than significant*** **(LTS)**.

Stationary Sources. Implementation of the proposed project would allow new residential uses that would include sensitive receptors. LSA conducted a search of all stationary sources permitted by the BAAQMD within 1,000 feet of the project site. Using the BAAQMD

Stationary Source Screening Analysis Tool, six stationary sources were identified within the project site vicinity, four of which are generators. The results of the stationary source analysis are presented in Table 4.3.J. Following BAAQMD guidance, the stationary sources were scaled for distance using the Diesel Internal Combustion (IC) Engine Distance Multiplier Tool.

Table 4.3.J: Stationary Sources within 1,000 Feet of the Project Site

Facility ID	Stationary Source (Type)	Distance (feet)	Adjusted Risk (in one million)	$PM_{2.5}$ Conc. (μg/m³)	Hazard
22180	Boston Scientific Structural Heart, 185 Constitution Drive, Menlo Park, CA 94025	110	0.000	0.000	0.020
200419	Facebook MPK61, 150 Independence Drive, Menlo Park, CA 94025 (generator)	620	2.039	0.003	0.010
200566	Menlo Gateway Hotel, 190 Independence Drive, Menlo Park, CA 94025 (generator)	620	3.424	0.005	0.010
23602	EtaGen Inc, 186 Constitution Drive, Menlo Park, CA 94025 (generator)	310	0.655	0.002	0.020
200438	Facebook Inc., 162 Jefferson Drive, Menlo Park, CA 94025 (generator)	780	0.337	0.001	0.000
2877	L-3 Communications Randtron Antenna Systems, 130 Constitution Drive, Menlo Park, CA 94025	825	2.450	0.000	0.000
Total Health Risk			8.905	0.011	0.060
Single Source Threshold			**10 in 1 million**	**0.3**	**1.0**
Exceed?			No	No	No
BAAQMD Cumulative Threshold			**100 in a million**	**0.80**	**10.0**
Exceed?			No	No	No

Source: LSA (July 2020).

As shown in Table 4.3.J, the highest risk would be 3.424 in one million, which would not exceed the BAAQMD cancer risk threshold of 10 in one million. The highest hazard index would be 0.010, which is below the threshold of 1.0. The results of the analysis also indicate that the highest $PM_{2.5}$ concentration would be 0.005, which would not exceed the BAAQMD significance threshold of 0.3 μg/m³. The BAAQMD cumulative threshold of cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 μg/m³ on an annual average basis would not be exceeded. Therefore, implementation of the project would not expose sensitive receptors to substantial pollutant concentrations associated with nearby stationary sources and this impact would be ***less than significant*** **(LTS)**.

Cumulative TAC Analysis. The cumulative analysis sums all sources of emissions in the vicinity of the project site including stationary source and mobile sources. The cumulative cancer risk, hazard index, acute index and $PM_{2.5}$ concentrations are shown in Table 4.3.K. Results of the cumulative analysis indicate the proposed project would not exceed BAAQMD cumulative thresholds and would not expose future residents of the project site to significant cumulative health risks. Therefore, future residents of the project site would not be exposed to a substantial increase in health risk impacts from stationary sources of toxic air contaminants in the project vicinity. Impacts would be ***less than significant*** **(LTS)**.

Table 4.3.K: Cumulative Risk from All Sources

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Traffic on SR 84	5.27	0.005	0.004	0.005
Traffic on US 101	9.72	0.010	0.011	0.009
Stationary Sources	8.905	0.011	0.011	0.060
Total	**23.895**	**0.026**	**0.026**	**0.074**
Threshold	**100.0**	**10.0**	**10.0**	**0.80**
Exceed?	**No**	**No**	**No**	**No**

Source: LSA (July 2020).
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
$\mu g/m^3$ = micrograms per cubic meter

Regional Operational Health Effects. BAAQMD project-level thresholds are based in part on Section 180(e) of the Clean Air Act. The project-level thresholds are intended to provide a means of consistency in significance determination within the environmental review process.

Notwithstanding, BAAQMD project-level thresholds do not reflect particular health impacts to a nearby individual or the region. The reason for this is that the project-level thresholds are in pounds/day and tons/year emitted into the air, whereas health effects are determined based on the concentration of a pollutant in the air at a particular location (e.g., ppm by volume of air or $\mu g/m^3$of air). CAAQS and NAAQS were developed to protect the most susceptible population groups from adverse health effects and were established in terms of ppm or $\mu g/m^3$ for the applicable emissions.

The daily and annual emissions associated with project operational trip generation, energy, area, and stationary sources are identified in Table 4.3.F for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The results shown in Table 4.3.F indicate the project would not exceed the significance criteria for ROG, NO_x, PM_{10} or $PM_{2.5}$ emissions. The increase in emissions associated with the proposed project would be a small fraction of the Air Basin's emissions.

Therefore, the emissions associated with implementation of the proposed project would not be expected to exceed the most stringent applicable NAAQS or CAAQS for NO_x, $PM_{2.5}$, and PM_{10}. It should be noted that the AAQS are developed and represent levels at which the most susceptible persons (children and the elderly) are protected. In other words, the AAQS are purposefully set low to protect children, the elderly, and those with existing respiratory problems.

Furthermore, air quality trends for emissions of NO_X, ROG, and ozone (which is a byproduct of NO_X and ROG) have been trending downward within the Air Basin even as development has increased over the last several years. Therefore, implementation of the proposed project is not expected to result in any Basin-wide increase in health effects. As such, impacts are considered ***less than significant*** **(LTS)**.

4.3.2.4 Cumulative Impacts

According to the BAAQMD, regional air pollution is largely a cumulative impact. No single project is sufficient in size to independently create regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts.

The BAAQMD is currently designated as a nonattainment area for State and national ozone standards and national particulate matter ambient air quality standards. BAAQMD nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Therefore, if the proposed project's daily average or annual emissions of construction- or operational-related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the proposed project would result in a considerable contribution to a cumulatively significant impact. As shown in Table 4.3.F, implementation of the proposed project would not generate significant operational emissions. As shown in the project-specific air quality impacts discussion above, the proposed project would not result in individually significant impacts and therefore the proposed project would not result in a cumulatively considerable contribution to regional air quality impacts. Cumulative impacts would be considered ***less than significant*** **(LTS)**.

4.3 AIR QUALITY

This section has been prepared using methodologies and assumptions recommended in the air quality impact assessment guidelines of the Bay Area Air Quality Management District (BAAQMD).[1] In keeping with these guidelines, this section describes existing air quality, impacts of the proposed project on local carbon monoxide (CO) levels, impacts of vehicular emissions that have regional effects, and exposure of sensitive receptors to toxic air contaminants (TACs). A Health Risk Assessment (HRA) was also performed and is included in this section. Mitigation measures to reduce or eliminate potentially significant air quality impacts are identified, where appropriate. The analysis and mitigations in this section comply with ConnectMenlo Mitigation Measures AQ-2a, AQ-2b1, AQ-2b2, AQ-3b, and AQ-5[2] as further described below. Air quality modeling data is included in Appendix F and the HRA data results are included in Appendix G.

Impacts related to odors were evaluated in Section 3.3 of the Initial Study (Appendix B) and were determined to be less than significant; therefore, this topic is not further evaluated in this section.

4.3.1 Setting

The following discussion provides an overview of existing air quality conditions in the region and in the City. Ambient air quality standards and the regulatory framework are summarized and climate, air quality conditions, and typical air pollutant types and sources are also described.

4.3.1.1 Air Pollutants and Health Effects

Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O_3 and NO_2, are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and Pb are considered local pollutants that tend to accumulate in the air locally.

The primary pollutants of concern in the project area are O_3, CO, and suspended particulate matter. Significance thresholds established by an air district are used to manage total regional and local emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual development projects that would contribute to regional and local emissions and could adversely affect or delay the air basin's projected attainment target goals for nonattainment criteria pollutants.

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1 Bay Area Air Quality Management District (BAAQMD). 2017. *California Environmental Quality Act, Air Quality Guidelines*. May.

2 ConnectMenlo Mitigation Measure AQ-5 requires implementation of Mitigation Measures AQ-2a through AQ-3b to reduce criteria air pollutant emissions, as applicable. The ConnectMenlo Final EIR identified Mitigation Measure AQ-3a to reduce impacts associated with diesel particulate matter emissions for non-residential land uses within the city. The proposed project would include a multi-family apartment building; therefore this mitigation measure would not apply.

Because of the conservative nature of the significance thresholds, and the basin-wide context of individual development project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_x) and reactive organic gases (ROG).

Further, by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself; result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, the air districts have considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise. These populations are referred to as sensitive receptors.

Air pollutants and their health effects, and other air pollution-related considerations are summarized in Table 4.3.A and are described in more detail below.

Table 4.3.A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O_3)	● Precursor sources:[a] motor vehicles, industrial emissions, and consumer products.	● Respiratory symptoms. ● Worsening of lung disease leading to premature death. ● Damage to lung tissue. ● Crop, forest, and ecosystem damage. ● Damage to a variety of materials, including rubber, plastics, fabrics, paints, and metals.
Particulate Matter Less than 2.5 Microns in Aerodynamic Diameter ($PM_{2.5}$)	● Cars and trucks (especially diesels). ● Fireplaces, woodstoves. ● Windblown dust from roadways, agriculture, and construction.	● Premature death. ● Hospitalization for worsening of cardiovascular disease. ● Hospitalization for respiratory disease. ● Asthma-related emergency room visits. ● Increased symptoms, increased inhaler usage.

Table 4.3.A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Particulate Matter Less than 10 Microns in Aerodynamic Diameter (PM_{10})	• Cars and trucks (especially diesels). • Fireplaces, woodstoves. • Windblown dust from roadways, agriculture, and construction.	• Premature death and hospitalization, primarily for worsening of respiratory disease. • Reduced visibility and material soiling.
Nitrogen Oxides (NO_x)	• Any source that burns fuels such as cars, trucks, construction and farming equipment, and residential heaters and stoves.	• Lung irritation. • Enhanced allergic responses.
Carbon Monoxide (CO)	• Any source that burns fuels such as cars, trucks, construction and farming equipment, and residential heaters and stoves.	• Chest pain in patients with heart disease. • Headache. • Light-headedness. • Reduced mental alertness.
Sulfur Oxides (SO_x)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits.
Lead (Pb)	• Contaminated soil.	• Impaired mental functioning in children. • Learning disabilities in children. • Brain and kidney damage.
Toxic Air Contaminants (TACs)	• Cars and trucks (especially diesels). • Industrial sources, such as chrome platers. • Neighborhood businesses, such as dry cleaners and service stations. • Building materials and products.	• Cancer. • Reproductive and developmental effects. • Neurological effects.

Source: California Air Resources Board (2018).

[a] Ozone is not generated directly by these sources. Rather, chemicals emitted by these precursor sources react with sunlight to form ozone in the atmosphere.

Ozone. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_x. The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the San Francisco Bay Area (Bay Area), automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide. CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. CO transport is limited – it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Extremely high levels of CO, such as those generated when a vehicle is running in an unventilated garage, can be fatal.

Particulate Matter. Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is categorized in two size ranges: PM_{10} for particles less than 10 microns in diameter and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about half of the air basin's particulates, through tailpipe emissions as well as brake pad, tire wear, and entrained road dust. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (CARB), studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children.[3] Statewide attainment of particulate matter standards could reduce premature deaths, hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and episodes of respiratory illness in California.

Nitrogen Dioxide. NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide. SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. SO_2 also reduces visibility and the level of sunlight at the ground surface.

Lead. Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery factories. Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the United States Environmental Protection Agency (USEPA) established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The USEPA banned the use of leaded gasoline in highway vehicles in

[3] California Air Resources Board (CARB). 2020. Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}). Website: ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health (accessed October 2020).

December 1995. As a result of USEPA regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Toxic Air Contaminants. In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. Some examples of TACs include: benzene, butadiene, formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the USEPA and the CARB. In 1998, the CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. The CARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by use of diesel-fueled engines.[4] High volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

The BAAQMD regulates TACs using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, in order to provide a quantitative estimate of health risks.[5] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. Monitoring data and emissions inventories of TACs help the BAAQMD determine health risk to Bay Area residents.

Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for a substantial portion of the ambient background risk in the Bay Area.[6] According to the BAAQMD, ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due to this reduction, the calculated average cancer risk based on monitoring results has also been reduced.

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4 CARB. 2000a. *Fact Sheet – California's Plan to Reduce Diesel Particulate Matter Emissions*. October. Available online at: www.arb.ca.gov/diesel/factsheets/rrpfactsheet.pdf (accessed April 2020).

5 In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

6 BAAQMD. 2015. *Toxic Air Contaminant Control Program Annual Report, Volume 1.* May. Website: www.baaqmd.gov/research-and-data/air-toxics/annual-report (accessed April 2020).

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources – primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways. Agricultural and mining equipment is not commonly used in urban parts of the Bay Area, while construction equipment typically operates for a limited time at various locations. As a result, the readily identifiable locations where diesel particulate matter is emitted in the Bay Area include high-traffic roadways and other areas with substantial truck traffic.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[7] The CARB Diesel Risk Reduction Plan is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines.[8] The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The CARB anticipates that by 2020 average Statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the Diesel Risk Reduction Plan, meaning that the Statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. It is likely that the Bay Area cancer risk from diesel particulate matter will decrease by a similar factor by 2020.

High Volume Roadways. Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways, and human health studies have consistently demonstrated that children living within 100 to 200 meters (328 to 656 feet) of freeways or busy roadways have reduced lung function and higher rates of respiratory disease. At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics.

4.3.1.2 National and State Ambient Air Quality Standards

Both State and federal governments have established health-based Ambient Air Quality Standards for criteria air pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

7 Ibid.

8 CARB. 2000b. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Prepared by the Stationary Source Division and Mobile Source Control Division. Available online at: www.arb.ca.gov/diesel/documents/rrpFinal.pdf (accessed April 2020). October.

Both the USEPA and the CARB have established ambient air quality standards for the following common pollutants: CO, O_3, NO_2, SO_2, Pb, and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. These ambient air quality standards are levels of contaminants that avoid specific adverse health effects associated with each pollutant.

Federal standards include both primary and secondary standards. Primary standards establish limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings.[9] State and federal standards for the criteria air pollutants are listed in Table 4.3.B.

4.3.1.3 Existing Climate and Air Quality

The following provides a discussion of the local and regional air quality and climate in the Menlo Park area.

Regional and Local Air Quality. Menlo Park is located in the southern part of the San Francisco Bay Area Air Basin (Air Basin), a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The city is within the jurisdiction of the BAAQMD, which regulates air quality in the Bay Area. Air quality conditions in the Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Neither State nor national ambient air quality standards of the following chemicals have been violated in recent decades: nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and vinyl chloride. Those exceedances of air quality standards that do occur primarily happen during meteorological conditions conducive to high pollution levels, such as cold, windless nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State and federal agencies. The reduction of peak concentrations represents progress in improving public health; however the Bay Area still exceeds the State standard for 1-hour ozone as well as the State and federal 8-hour standards. Levels of PM_{10} have exceeded State standards two of the last three years, and the area is considered a nonattainment area for this pollutant relative to the State standards. The Bay Area is an unclassified area for the federal PM_{10} standard.

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

9 United States Environmental Protection Agency (USEPA). 2017. Website: www.epa.gov/criteria-air-pollutants (accessed April 2020).

Table 4.3.B: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a]		Federal Standards [b]		
		Concentration [c]	Method [d]	Primary [c,e]	Secondary [c,f]	Method [g]
Ozone (O_3)[h]	1-Hour	0.09 ppm (180 μg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 μg/m^3)		0.070 ppm (137 μg/m^3)		
Respirable Particulate Matter (PM_{10})[i]	24-Hour	50 μg/m^3	Gravimetric or Beta Attenuation	150 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m^3		–		
Fine Particulate Matter ($PM_{2.5}$)[i]	24-Hour	–	–	35 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m^3	Gravimetric or Beta Attenuation	12.0 μg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	–	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	
Nitrogen Dioxide (NO_2)[j]	Annual Arithmetic Mean	0.03 ppm (57 μg/m^3)	Gas Phase Chemi-luminescence	53 ppb (100 μg/m^3)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1-Hour	0.18 ppm (339 μg/m^3)		100 ppb (188 μg/m^3)	–	
Lead (Pb)[l,m]	30-Day Average	1.5 μg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 μg/m^3 (for certain areas)[l]	Same as Primary Standard	
	Rolling 3-Month Average [i]	–		0.15 μg/m^3		
Sulfur Dioxide (SO_2)[k]	24-Hour	0.04 ppm (105 μg/m3)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 μg/m^3)	
	1-Hour	0.25 ppm (655 μg/m^3)		75 ppb (196 μg/m^3)[k]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[k]	–	
Visibility-Reducing Particles [l]	8-Hour	See footnote [n]	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 μg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [j]	24-Hour	0.01 ppm (26 μg/m^3)	Gas Chromatography			

Source: Ambient Air Quality Standards (California Air Resources Board 2016).

Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current national policies.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Reference method as described by the USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the USEPA.

[h] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[i] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] To attain the 1-hour national standard, the three-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[k] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the three-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[l] The CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[n] In 1989, the CARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the Statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
CARB = California Air Resources Board
USEPA = United States Environmental Protection Agency
ppb = parts per billion
ppm = parts per million
mg/m^3 = milligrams per cubic meter
$\mu g/m^3$ = micrograms per cubic meter

Local Climate and Air Quality. Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Two meteorological factors affect air quality in Menlo Park: wind and temperature. Winds affect the direction of transport of any air pollution emissions and wind also controls the volume of air into which pollution is mixed in a given period of time. While winds govern horizontal mixing processes, temperature inversions determine the vertical mixing depth of air pollutants.

The city is located in San Mateo County, which lies in the middle of the San Francisco Peninsula, south of San Francisco County, and north of Santa Clara and Santa Cruz counties. San Mateo County is bounded by the Pacific Ocean to the west and San Francisco Bay to the east. Cool, foggy weather is prevalent along the western coast of the peninsula, particularly during the summer. Summertime average daily temperatures are moderate along the west coast and warm in the county's east side. In the winter, average daily temperatures across the county range from mild to moderate. Winds are mild, with the highest wind speeds focused along the western coast. Rainfall averages about 20 to 25 inches per year at lower elevations and up to 36 inches in the Santa Cruz Mountains.[10]

Ozone and fine particle pollution, or $PM_{2.5}$, are the major regional air pollutants of concern in the Bay Area. Ozone is primarily a problem in the summer, and fine particle pollution in the winter.[11] In San Mateo County, ozone almost never exceeds health standards, and $PM_{2.5}$ exceeds the national standard only on about one day each year. San Mateo County frequently receives fresh marine air from the Pacific Ocean, which passes over the coastal hills. In winter, $PM_{2.5}$ may be transported into San Mateo County from other parts of the Bay Area, adding to wood smoke, which may lead to elevated concentrations, but these are rarely high enough to exceed health standards.[12]

Air Quality Monitoring Results. Air quality monitoring stations are located throughout the nation and maintained by the local air pollution control district and state air quality regulating agencies. Ambient air data collected at permanent monitoring stations are used by the USEPA to identify regions as attainment or nonattainment depending on whether the regions met the requirements stated in the primary National Ambient Air Quality Standards (NAAQS). Attainment areas are required to maintain their status through moderate, yet effective air quality maintenance plans. Nonattainment areas are imposed with additional restrictions as required by the USEPA. In addition, different classifications of attainment such as marginal, moderate, serious, severe, and extreme are used to classify each air basin in the state on a pollutant-by-pollutant basis. Different classifications have different mandated attainment dates and are used as guidelines to create air quality management strategies to improve air quality and comply with the NAAQS by the attainment date. A region is determined to be unclassified when the data collected from the air quality monitoring stations do not support a designation of attainment or nonattainment, due to lack of information, or a conclusion cannot be made with the available data. The San Francisco Bay Area Air Basin's attainment statuses for each of the criteria pollutants are listed in Table 4.3.C**.**

10 BAAQMD. 2019. San Mateo County*.* Website: www.baaqmd.gov/about-the-air-district/in-your-community/san-mateo-county (accessed October 2020). February 14.

11 Ibid.

12 Ibid.

Table 4.3.C: San Francisco Bay Area Basin Attainment Status

	Averaging Time	California Standards [a]		National Standards [b]	
		Concentration	Attainment Status	Concentration [c]	Attainment Status
Ozone (O_3)	8-Hour	0.070 ppm (137µg/m^3)	Nonattainment [i]	0.070 ppm	Nonattainment [d]
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	[e]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment [f]
	1-Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm (339 µg/m^3)	Attainment	0.100 ppm [k]	[k]
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Not Applicable	0.053 ppm (100 µg/m^3)	Attainment
Sulfur Dioxide (SO_2) [l]	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	[l]
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	0.075 ppm (196 µg/m^3)	[l]
	Annual Arithmetic Mean	Not Applicable	Not Applicable	0.030 ppm (80 µg/m^3)	[l]
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	Nonattainment [g]	Not Applicable	Not Applicable
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	Nonattainment [g]	15 µg/m^3 [o]	Unclassified/ Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m^3 [j]	Nonattainment
Sulfates	24-Hour	25 µg/m^3	Attainment	Not Applicable	Not Applicable
Lead (Pb) [m]	30-Day Average	1.5 µg/m^3	Not Applicable	Not Applicable	Attainment
	Calendar Quarter	Not Applicable	Not Applicable	1.5 µg/m^3	Attainment
	Rolling 3-Month Average [n]	Not Applicable	Not Applicable	0.15 µg/m^3	[n]
Hydrogen Sulfide	1-Hour	0.010 ppm (26 µg/m^3)	Unclassified	Not Applicable	Not Applicable
Vinyl Chloride (chloroethene)	24-Hour	0.010 ppm (26 µg/m^3)	No Information Available	Not Applicable	Not Applicable
Visibility Reducing Particles	8-Hour (10:00 to 18:00 PST)	[h]	Unclassified	Not Applicable	Not Applicable

Source: Bay Area Attainment Status (BAAQMD 2017).
Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the State standard.

[b] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than 150 $\mu g/m^3$. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of 98th percentiles is less than 35 $\mu g/m^3$.
Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the three-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the three-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

[c] National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety.

[d] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. USEPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

[e] The national 1-hour ozone standard was revoked by USEPA on June 15, 2005.

[f] In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

[g] In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

[h] Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10 miles nominal visual range.

[I] The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005, and became effective on May 17, 2006.

[j] On January 9, 2013, USEPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This USEPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this USEPA action, the Bay Area will continue to be designated as “non-attainment” for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to USEPA and USEPA approves the proposed redesignation.

[k] To attain this standard, the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010). The USEPA expects to make a designation for the Bay Area by the end of 2017.

[l] On June 2, 2010, the USEPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following USEPA initial designations of the new 1-hour SO_2 NAAQS. USEPA expects to make designation for the Bay Area by the end of 2017.

[m] CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure below which there are no adverse health effects determined.

[n] National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

[o] In December 2012, USEPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter ($\mu g/m^3$). In December 2014, USEPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated “unclassifiable/attainment” must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

CARB = California Air Resources Board
USEPA = United States Environmental Protection Agency
ppm = parts per million
mg/m^3 = milligrams per cubic meter
$\mu g/m^3$ = micrograms per cubic meter

The CARB and the USEPA maintain ambient air quality monitoring stations within California. The air quality monitoring station closest to the project site is the 897 Barron Avenue monitoring station in Redwood City, which monitors criteria air pollutant data.[13] The air quality trends from this station are used to represent the ambient air quality in the project area. Ambient air quality in the project area from 2016 to 2018 (the most recent available period) is shown in Table 4.3.D. The pollutants monitored were CO, O_3, $PM_{2.5}$, and NO_2. Air quality trends for PM_{10} and SO_2 are not monitored in San Mateo County; therefore the air quality trends for PM_{10} and SO_2 are from the 156B Jackson Street monitoring station in San Jose.

Table 4.3.D: Ambient Air Quality at the 897 Barron Avenue, Redwood City Monitoring Station

Pollutant	Standard	2016	2017	2018
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		2.2	2.8	2.5
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.1	1.4	1.7
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.075	0.115	0.067
Number of days exceeded:	State: > 0.09 ppm	0	2	0
Maximum 8-hour concentration (ppm)		0.061	0.087	0.050
Number of days exceeded:	State: > 0.07 ppm	0	2	0
	Federal: > 0.07 ppm	0	2	0
Coarse Particulates (PM_{10}) [1]				
Maximum 24-hour concentration (µg/m^3)		41.0	69.8	121.8
Number of days exceeded:	State: > 50 µg/m^3	0	6	4
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		18.3	21.3	23.1
Exceeded for the year:	State: > 20 µg/m^3	No	Yes	Yes
	Federal: > 50 µg/m^3	No	No	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m^3)		19.5	60.8	120.9
Number of days exceeded:	Federal: > 35 µg/m^3	0	6	13
Annual arithmetic average concentration (µg/m^3)		8.3	9.0	10.5
Exceeded for the year:	State: > 12 µg/m^3	No	No	No
	Federal: > 15 µg/m^3	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.046	0.067	0.077
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.009	0.011	0.010
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)[1]				
Maximum 1-hour concentration (ppm)		0.0018	0.0036	0.0069
Number of days exceeded:	State: > 0.25 ppm	0	0	0

[13] CARB gathers ambient air quality data fir the State of California and ensures the quality of this data. CARB provides ambient air quality monitoring sites throughout California's counties and air basins.

Table 4.3.D: Ambient Air Quality at the 897 Barron Avenue, Redwood City Monitoring Station

Pollutant	Standard	2016	2017	2018
Maximum 24-hour concentration (ppm)		0.0008	0.0011	0.0011
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.00019	0.0002	0.00021
Exceeded for the year:	Federal: > 0.030 ppm	0	0	0

Source: CARB and USEPA (2019).
[1] Data taken at the 156B Jackson Street air quality monitoring station in San Jose.
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
ND = No data. There was insufficient (or no) data to determine the value.

Pollutant monitoring results indicate that air quality in the San Mateo County area has generally been good. As indicated in the monitoring results, 1-hour ozone concentrations exceeded the State standard twice in 2017 and the 8-hour ozone concentrations exceeded the federal standard twice in 2017 and the State standard twice in 2017. In addition, the federal $PM_{2.5}$ standard was exceeded six times in 2017 and 13 times in 2018. The CO and NO_2 standards were not exceeded in this area during the three-year period.

In addition, the Office of Environmental Health Hazard Assessment (OEHHA), on behalf of the California Environmental Protection Agency (CalEPA), released Version 3.0 of the California Communities Environmental Health Screening Tool (CalEnviroScreen) in January 2017. CalEnviroScreen identifies California communities by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution. Pollution Burden scores for each census tract are derived from the average percentiles of the seven Exposures indicators (ozone and $PM_{2.5}$ concentrations, diesel PM emissions, drinking water contaminants, pesticide use, toxic releases from facilities, and traffic density) and the five Environmental Effects indicators (cleanup sites, impaired water bodies, groundwater threats, hazardous waste facilities and generators, and solid waste sites and facilities). According to the CalEnviroScreen 3.0 Map,[14] the project site has a pollution burden percentile of 54. Other portions of the Bay Area have pollution burdens ranging from the lowest scores of between 1 and 10 percent and the second highest score of between 81 and 90 percent. In addition, according to the Senate Bill (SB) 535 Disadvantaged Communities Map,[15] the project site is not designated as an SB 535 disadvantaged community.

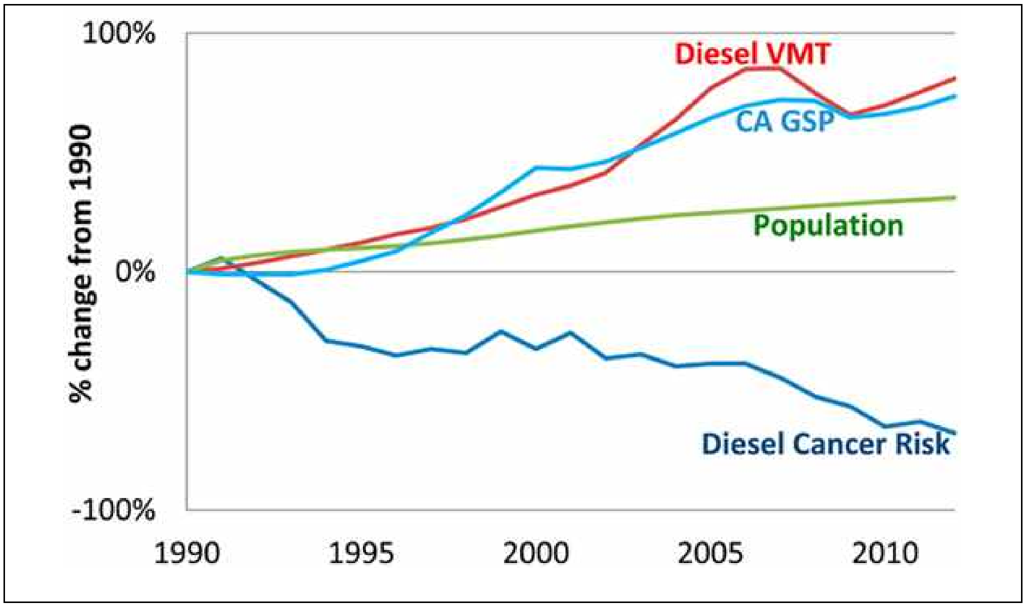
Toxic Air Contaminant Trends. In 1984, the CARB adopted regulations to reduce TAC emissions from mobile and stationary sources, as well as consumer products. A CARB study showed that ambient concentrations and emissions of the seven TACs responsible for the most cancer risk from airborne

[14] Office of Environmental Health Hazard Assessment (OEHHA). 2017. *CalEnviroScreen 3.0.* Website: oehha.ca.gov/calenviroscreen/report/calenviroscreen-30 (accessed September 2020).

[15] OEHHA. 2018. *SB 535 Disadvantaged Communities using CalEnviroScreen 3.0 results.* Website: oehha.maps.arcgis.com/apps/View/index.html?appid=c3e4e4e1d115468390cf61d9db83efc4 (accessed November 2020). June.

exposure declined by 76 percent between 1990 and 2012.[16] Concentrations of diesel particulate matter, a key TAC, declined by 68 percent between 1990 and 2012, despite a 31 percent increase in State population and an 81 percent increase in diesel vehicle miles traveled (VMT), as shown on Figure 4.3-1. The study also found that the significant reductions in cancer risk to California residents from the implementation of air toxics controls are likely to continue.

Figure 4.3-1: California Population, Gross State Product (GSP), Diesel Cancer Risk, and Diesel Vehicle Miles Traveled (VMT) Regulatory Context



Source: Ambient and Emission Trends of Toxic Air Contaminants in California (Propper, Ralph, et al. 2015).

The USEPA and the CARB regulate direct emissions from motor vehicles. The BAAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as monitoring ambient pollutant concentrations.

4.3.1.4 Regulatory Framework

The BAAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. BAAQMD jurisdiction encompasses seven counties – Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa – and portions of Solano and Sonoma counties. USEPA and CARB regulate direct emissions from motor vehicles.

The applicable federal, State, regional, and local regulatory framework is discussed below.

16 Propper, Ralph, et al. 2015. Ambient and Emission Trends of Toxic Air Contaminants in California. *American Chemical Society: Environmental Science & Technology*. Website: pubs.acs.org/doi/full/ 10.1021/acs.est.5b02766 (accessed July 30, 2020).

Federal Regulations. At the federal level, the USEPA has been charged with implementing national air quality programs. USEPA air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required USEPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. USEPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the USEPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area, which imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions on transportation funding and stationary air pollution sources in the air basin.

The USEPA is also required to develop National Emission Standards for Hazardous Air Pollutants, which are defined as those which may reasonably be anticipated to result in increased deaths or serious illness and which are not already regulated. An independent science advisory board reviews the health and exposure analyses conducted by the USEPA on suspected hazardous pollutants prior to regulatory development.

State Regulations. The CARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources, and provides districts with the authority to regulate indirect sources.

The CARB is also primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. The CARB is primarily responsible for Statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. The CARB combines this data and submits the completed SIP to USEPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for mobile sources, consumer products, small utility engines, and off-road vehicles. The CARB Diesel Risk Reduction Plan is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines.[17]

[17] CARB. 2000b, op. cit.

Because of the robust evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the CARB also created guidance for avoiding air quality conflicts in land use planning in its Air Quality and Land Use Handbook: A Community Health Perspective.[18] In its guidance, the CARB advises that new sensitive uses (e.g., residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day.

CARB guidance suggests that the use of these guidelines be customized for individual land use decisions, and take into account the context of proposed development projects. The Air Quality and Land Use Handbook specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

Regional Regulations. The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

Clean Air Plan. The Clean Air Plan guides the region's air quality planning efforts to attain the CAAQS.[19] The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017, by the BAAQMD Board of Directors, is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (e.g., ROG and NO_x), particulate matter and greenhouse gas (GHG) emissions.

The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities;
- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050;
- Provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve GHG reduction targets; and

18 California Environmental Protection Agency and California Air Resources Board. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. Available online at: www.arb.ca.gov/ch/handbook.pdf (accessed July 30, 2020). April.

19 BAAQMD. 2017. *Final 2017 Clean Air Plan*. Available online at: www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed October 2020). April 19.

- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "Super-GHGs" that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

BAAQMD CARE Program. The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that include an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TACs, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and a high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area.

For commercial and industrial sources, the BAAQMD regulates TACs using a risk-based approach. This approach uses an HRA to determine what sources and pollutants to control as well as the degree of control. An HRA is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, in order to provide a quantitative estimate of health risks.[20] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. The BAAQMD has identified seven impacted communities;[21] the City of Menlo Park has not been identified as an affected community.[22]

BAAQMD CEQA Air Quality Guidelines. The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air

[20] In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

[21] The seven impacted communities include Richmond/San Pablo; eastern San Francisco, including Treasure Island; San Jose; western Alameda County; Concord, Vallejo; and Pittsburg/Antioch.

[22] BAAQMD. 2014. *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area Version 2*. Available online at: www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/ImpactCommunities_2_Methodology.ashx?la=en (accessed November 2020). March.

quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions.

In June 2010, the BAAQMD adopted updated draft CEQA Air Quality Guidelines and finalized them in May 2011. These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The 2017 CEQA Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the proposed project.

City of Menlo Park. The City of Menlo Park addresses air quality in the Open Space, Conservation, Noise and Safety Elements of the General Plan.[23] The Open Space, Conservation, Noise and Safety Elements set goals, policies, and implementing programs that work to ensure healthy air quality. The following policies are applicable to the proposed project.

- **Policy OSC5.1: Air and Water Quality Standards.** Continue to apply standards and policies established by the BAAQMD, San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the CEQA process and other means as applicable.

- **Policy OSC5.2: Development in Industrial Areas.** Evaluate development projects in industrial areas for impacts to air and water resources in relation to truck traffic, hazardous materials use and production-level manufacturing per CEQA and require measures to mitigate potential impacts to less-than-significant levels.

4.3.2 Impacts and Mitigation Measures

This section provides an assessment of the potential impacts related to air quality that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. A summary of the ConnectMenlo Final EIR impacts and mitigation measures is then provided. The latter part of this section presents potential impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate. As previously discussed in Chapter 3.0, Project Description, the analysis below makes reference to, and tiers from, the ConnectMenlo Final EIR, where appropriate.

4.3.2.1 Significance Criteria

The project would result in a significant impact related to air quality if it would:

1) Conflict with or obstruct implementation of the applicable air quality plan;

23 Menlo Park, City of. 2013. *City of Menlo Park General Plan, Open Space Conservation, Noise and Safety Elements*. May 21.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or State ambient air quality standard;

3) Expose sensitive receptors to substantial pollutant concentrations; or

4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

As discussed in Section 3.3.d of the Initial Study (Appendix B), the proposed project would not result in other emissions, such as those leading to odors, that would adversely affect a substantial number of people, and this impact was determined to be less than significant. Therefore, this criterion is not further addressed below.

4.3.2.2 ConnectMenlo Final EIR Impacts

The following provides an overview of impacts to air quality and required mitigation measures as identified in the ConnectMenlo Final EIR.

Clean Air Plan. The ConnectMenlo Final EIR evaluated ConnectMenlo's consistency with the 2010 Bay Area Clean Air Plan and found that ConnectMenlo would be consistent with the goals and applicable control measures of the 2010 Bay Area Clean Air Plan. In addition, the ConnectMenlo Final EIR determined that regional growth projections for VMT, population, and employment would not exceed forecasts in the Association of Bay Area Government (ABAG)/Metropolitan Transportation Commission (MTC) Plan Bay Area. As such, the ConnectMenlo Final EIR determined impacts related to consistency with air quality plans to be less than significant.

Criteria Pollutants. The ConnectMenlo Final EIR found that construction emissions associated with individual development projects would generate an increase in criteria air pollutants and TACs and that subsequent environmental review of future development projects would be required to assess potential impacts under BAAQMD project-level thresholds. Construction emissions from buildout of future projects within Menlo Park, including the proposed project, would primarily be: 1) exhaust emissions from off-road diesel-powered construction equipment; 2) dust generated by demolition, grading, earthmoving, and other construction activities; 3) exhaust emissions from on-road vehicles; and 4) off-gas emissions of ROGs from application of asphalt, paints, and coatings. The ConnectMenlo Final EIR found that construction-related impacts would be significant and identified Mitigation Measures AQ-2b1 and AQ-2b2 to reduce impacts to the extent feasible. Mitigation Measure AQ-2b1 requires the implementation of BAAQMD Basic Construction Mitigation Measures for all construction projects within the City and Mitigation Measure AQ-2b2 requires implementation of BAAQMD-approved mitigation measures if determined during subsequent environmental review that future individual development projects in Menlo Park could generate construction exhaust emissions in excess of the BAAQMD significance thresholds. Even with implementation of these measures, the ConnectMenlo Final EIR determined that construction-period impacts associated with buildout of ConnectMenlo would be significant and unavoidable.

The ConnectMenlo Final EIR found that criteria air pollutant emissions associated with development allowed by ConnectMenlo would generate a substantial net increase in emissions that exceeds the

BAAQMD regional significance thresholds. Because cumulative development within the City could exceed the regional significance thresholds, any development project could contribute to an increase in adverse health effects in the Air Basin until the attainment standards are met. Criteria air pollutant emissions would be generated from on-site area sources (e.g., landscaping fuel, consumer products), vehicle trips generated by individual projects, and energy use (e.g., natural gas used for cooking and heating). The ConnectMenlo Final EIR identified Mitigation Measure AQ-2a to require implementation of BAAQMD-approved mitigation measures if subsequent environmental review determines that future development projects in Menlo Park could generate operational emissions in excess of the BAAQMD significance thresholds.

Finally, the ConnectMenlo Final EIR found that buildout of ConnectMenlo would not increase traffic at affected intersections such that the BAAQMD screening criteria would be exceeded and would not contribute to localized CO concentrations that exceed State or federal standards.

Exposure of Sensitive Receptors to Pollutant Concentrations. The ConnectMenlo Final EIR identified Mitigation Measure AQ-3a to reduce impacts associated with diesel particulate matter emissions for non-residential land uses within the City. The proposed project would include a multi-family apartment building; therefore, this mitigation measure would not apply. The ConnectMenlo Final EIR also determined that the placement of new sensitive land uses, such as residential units, near major sources of air pollution could expose sensitive receptors to elevated concentrations of air pollutants. As such, the ConnectMenlo Final EIR identified Mitigation Measure AQ-3b to ensure that placement of sensitive receptors near major sources of air pollution would achieve the incremental risk thresholds established by BAAQMD and these impacts would be less than significant.

4.3.2.3 Project Impacts

The following section discusses the potential air quality impacts associated with implementation of the proposed project.

1) Conflict with or obstruct implementation of the applicable air quality plan

Since the publication of the ConnectMenlo Final EIR, the BAAQMD adopted a new 2017 Bay Area Clean Air Plan (Clean Air Plan).[24] The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce GHG emissions to protect the climate. Consistency with the Clean Air Plan can be determined if a project: 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 measures from the Clean Air Plan. Following is an evaluation of the proposed project's consistency with each of these criteria and, as discussed below, the proposed project would not conflict with the Clean Air Plan goals or control measures and would not obstruct its implementation. Therefore, this impact would be ***less than significant*** **(LTS)**.

[24] BAAQMD. 2017. *Clean Air Plan.* April 19.

Clean Air Plan Goals. The primary goals of the Clean Air Plan are to: attain air quality standards; reduce population exposure and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect climate.

The BAAQMD has established significance thresholds for project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed in more detail in the analysis below, implementation of the proposed project would result in less-than-significant operation-period emissions and, with implementation of Mitigation Measure AIR-1, the project would result in less-than-significant construction-period emissions. Therefore, the project would not conflict with the Clean Air Plan goals.

Clean Air Plan Control Measures. The control strategies of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Measures, Energy Measures, Building Measures, Agriculture Measures, Natural and Working Lands Measures, Waste Management Measures, Water Measures, and Super-GHG Pollutants Measures. The proposed project's consistency with each of these strategies is discussed below.

<u>Stationary Source Control Measures</u>. The Stationary Source Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by BAAQMD Permit and Inspection programs. Since the proposed project would not include any such stationary sources, the Stationary Source Measures of the Clean Air Plan are not applicable to the project.

<u>Transportation Control Measures</u>. The BAAQMD identifies Transportation Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, TACs, and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The proposed project would develop new residences that would locate residents near existing school, office, commercial, and light manufacturing uses, reducing the demand for travel by single occupancy vehicles. The proposed project would also develop a transportation demand management (TDM) plan to provide trip reduction measures and reduce vehicle traffic in and around the project site (refer to Section 4.2, Transportation, for additional discussion). In addition, the project area is served by nearby public transit facilities. The nearest bus stop to the project site is served by the San Mateo County Transit District (SamTrans) Route 270 and is located approximately 0.5 miles to the west on Haven Avenue. The Menlo Park and Palo Alto Caltrain stations are located within 3 miles of the project site to the south. The M3 Menlo Park Shuttle stop is also located at 150 Jefferson Drive, less than 150 feet from the project site. In addition, the proposed project would provide both long-term and short-term bicycle parking on-site for residents and visitors. In addition, a bike repair station with basic tools for cyclists to make repairs and adjustments would be available for residents in each of the proposed apartment buildings. As such, the proposed project would help to reduce the demand for travel by single occupancy vehicles. Therefore,

the project would promote BAAQMD initiatives to reduce vehicle trips and vehicle miles traveled and would increase the use of alternate means of transportation.

Energy Control Measures. The Clean Air Plan also includes Energy Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the Energy Control Measures of the Clean Air Plan are not applicable to the proposed project. However, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for Electric Vehicle (EV) charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards. In addition, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. Therefore, the proposed project would comply with applicable Energy Measures.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. Therefore, the Building Control Measures of the Clean Air Plan are not applicable to the proposed project. However, the proposed project would be required to comply with CALGreen standards and code amendments such as local reach codes.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the project does 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, as well as encouraging local governments to adopt ordinances that promote urban tree plantings. Since the proposed project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the project.

Waste Management Control Measures. The Waste Management Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

<u>Water Control Measures</u>. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the proposed project.

<u>Super GHG Control Measures</u>. Super GHGs include GHGs with very high global warming potential, such as methane, black carbon, and fluorinated gases. The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the proposed project.

Clean Air Plan Implementation. As discussed above, the proposed project would generally implement the applicable measures outlined in the Clean Air Plan, including Transportation Control Measures. Therefore, the proposed project would not disrupt or hinder implementation of a control measure from the current Clean Air Plan and, similar to the findings of the ConnectMenlo Final EIR, this impact would be ***less than significant*** **(LTS)**.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or State ambient air quality standard

According to the BAAQMD CEQA Guidelines, to meet air quality standards for operational-related criteria air pollutant and air precursor impacts, the proposed project must not:

- Contribute to CO concentrations exceeding the State ambient air quality standards;
- Generate average daily construction emissions of ROG, NO_x or $PM_{2.5}$ (exhaust) greater than 54 pounds per day or PM_{10} exhaust emissions greater than 82 pounds per day; or
- Generate operational emissions of ROG, NO_x or $PM_{2.5}$ of greater than 10 tons per year or 54 pounds per day or PM_{10} emissions greater than 15 tons per year or 82 pounds per day.

The BAAQMD is currently designated as a nonattainment area for State and national ozone standards and national particulate matter ambient air quality standards. BAAQMD nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. The following sections describe the proposed project's construction- and operation-related air quality impacts and CO impacts. As discussed, construction-period activities would generate air pollutant emissions that could violate air quality standards; however, implementation of Mitigation Measure AIR-1, which requires implementation of the BAAQMD's Basic Construction Measures as outlined in ConnectMenlo Final EIR Mitigation Measure AQ-2b1, would reduce this impact to ***less than significant with mitigation*** **(LTS/M)**. During project operation, the proposed project would not exceed the significance criteria for ROG, NO_2, PM_{10} or $PM_{2.5}$ emissions and would not result in localized CO concentrations that exceed State or federal standards; therefore, the proposed project would not have a significant effect on regional air quality and this impact would be ***less than significant*** **(LTS)**.

Construction Emissions. During construction of the proposed project, short-term degradation of air quality may occur due to the release of particulate matter emissions (e.g., fugitive dust) generated by demolition, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter. The proposed project would exceed the BAAQMD's screening level criteria of 240 dwelling units for construction emissions; therefore, per ConnectMenlo Mitigation Measure AQ-2b2, project-specific construction emissions are evaluated below.

Impact AIR-1: Construction of the proposed project would generate air pollutant emissions that could violate air quality standards. (PS)

Site preparation and project construction would involve demolition, grading, paving, and other activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM_{10}). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, ROGs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using the California Emissions Estimator Model (CalEEMod) version 2016.3.2, consistent with BAAQMD recommendations. As stated in Section 3.4.5 in Chapter 3.0, Project Description, the proposed project would include demolition of approximately 118,944 square feet of existing buildings and surface parking lots on the project site, including 110,365 square feet of building area, which was included in CalEEMod. In addition, a total of approximately 16,500 cubic yards of soils would be imported to the project site, which was included in CalEEMod. Construction of the proposed project is anticipated to begin in May 2021 and would occur over a 37-month period. The proposed project is anticipated to be fully operational and occupied by summer 2024. The project sponsor provided construction fleet details; however, other construction details are not yet known and would not be available until the project is undergoing final design; therefore, default assumptions (e.g., construction worker and truck trips) from CalEEMod were used. This analysis assumes the use of Tier 2 construction equipment. Construction-related emissions are presented in Table 4.3.E. CalEEMod output sheets are included in Appendix F.

Table 4.3.E: Project Construction Emissions in Pounds Per Day

Project Construction	ROG	NO_x	Exhaust PM_{10}	Fugitive Dust PM_{10}	Exhaust $PM_{2.5}$	Fugitive Dust $PM_{2.5}$
Average Daily Emissions	8.1	30.2	0.9	3.6	0.9	1.1
BAAQMD Thresholds	54.0	54.0	82.0	BMP	54.0	BMP
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (October 2020).
BMP = best management practices

As shown in Table 4.3.E, construction ROG, NO_x, $PM_{2.5}$, and PM_{10} exhaust emissions would be below the BAAQMD's thresholds. In order to reduce construction fugitive dust impacts to a less-than-significant level, the BAAQMD requires the implementation of BAAQMD Basic Construction Mitigation Measures. The ConnectMenlo Final EIR identified Mitigation Measure AQ-2b1, which would require implementation of BAAQMD Best Management Practices (BMPs) to reduce construction-related air quality impacts of PM_{10} and $PM_{2.5}$ emissions. As identified above, ConnectMenlo Final EIR Mitigation Measure AQ-2b2 further requires implementation of BAAQMD-approved mitigation measures if it is determined during project-specific evaluation that individual development projects would generate construction exhaust emissions in excess of the BAAQMD significance thresholds. As the proposed project would not exceed BAAQMD thresholds, implementation of the additional construction measures (e.g., Table 8-3, Additional

Construction Measures Recommended for Projects with Construction Emissions Above the Threshold of the current 2017 BAAQMD CEQA Guidelines) as identified in ConnectMenlo Final EIR Mitigation Measure AQ-2b2 would not be required.

Mitigation Measure AIR-1: Consistent with Connect Menlo Final EIR Mitigation Measure AQ-2b1, the proposed project would be required to comply with BAAQMD basic control measures for reducing construction emissions of PM_{10} (Table 8-2, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the BAAQMD 2017 CEQA Guidelines), as follows:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- 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.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, 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.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the City of Menlo Park regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number for BAAQMD shall also be visible to ensure compliance with applicable regulations.

With implementation of the BAAQMD's Basic Construction Mitigation Measures Recommended for All Proposed Projects as outlined in Mitigation Measure AIR-1, and consistent with

ConnectMenlo Final EIR Mitigation Measure AQ-2b1, construction-related air quality impacts would be ***less than significant with mitigation*** **(LTS/M)**.

Operational Emissions. Similar to the impacts identified in the ConnectMenlo Final EIR, long-term air pollutant emission impacts that would result from the proposed project are those that are associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity), area sources (e.g., architectural coatings and the use of landscape maintenance equipment), and stationary sources (e.g., emergency generators).

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which electricity is used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Trip generation rates used in CalEEMod for the project were based on the project's trip generation estimates, which assume the proposed project would typically generate approximately 2,772 net new average daily trips (refer to Table 4.2.B in Section 4.2, Transportation, for trip generation estimates).[25] Consistent with ConnectMenlo requirements, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen

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[25] As further discussed in Chapter 3.0, Project Description and Section 4.2, Transportation, an approximately 2,940-square-foot office space is currently proposed. An office space of this size would generate fewer trips than the approximately 2,100-square-foot commercial space (café) that is analyzed as the nonresidential community amenity use in the proposed project trip generation estimate. Thus, the transportation analysis, and other technical evaluations that are based on this analysis including air quality, evaluate a project with higher trip generation potential. Therefore, this analysis can be considered conservative while also allowing flexibility in selecting the future tenant of the nonresidential space.

standards, all of which were included in the CalEEMod modeling assumptions. The proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric. In addition, the proposed project would include two emergency generators within the interior of each of the multi-family buildings, which were included in CalEEMod. When project-specific data were not available, default assumptions from CalEEMod were used to estimate project emissions. Model results are shown in Table 4.3.F. CalEEMod output sheets are included in Appendix F.

Table 4.3.F: Project Operational Emissions

	ROG	NO_x	PM_{10}	$PM_{2.5}$
Pounds Per Day				
Area Source Emissions	13.1	0.5	0.2	8.2
Energy Source Emissions	0.1	1.2	0.1	0.1
Mobile Source Emissions	3.6	14.1	11.9	3.2
Stationary Source Emissions	<0.1	<0.1	<0.1	<0.1
Total Emissions	**16.8**	**15.8**	**12.2**	**3.6**
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**No**	**No**	**No**	**No**
Tons Per Year				
Area Source Emissions	2.3	<0.1	<0.1	<0.1
Energy Source Emissions	<0.1	0.2	<0.1	<0.1
Mobile Source Emissions	0.6	2.5	2.1	0.6
Stationary Source Emissions	<0.1	<0.1	<0.1	<0.1
Total Emissions	**2.9**	**2.8**	**2.1**	**0.6**
BAAQMD Thresholds	10.0	10.0	15.0	10.0
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: LSA (October 2020).

The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the project; emissions are released in other areas of the Air Basin. The daily and annual emissions associated with project operational trip generation, energy, area, and stationary sources are identified in Table 4.3.F for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The results shown in Table 4.3.F indicate the project would not exceed the significance criteria for ROG, NO_2, PM_{10} or $PM_{2.5}$ emissions; therefore, the proposed project would not have a significant effect on regional air quality and mitigation measures to reduce operational emissions, as required by ConnectMenlo Final EIR Mitigation Measure AQ-2a, would not be necessary. This impact would be ***less than significant*** **(LTS)**.

Localized CO Impacts. Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. BAAQMD 2017 CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed development projects.

A screening level analysis using guidance from the BAAQMD CEQA Guidelines was performed to determine the impacts of the project. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD CEQA Guidelines, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project 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, or below-grade roadway).

The Air Basin has been designated attainment under both the national and California AAQS for CO. Therefore, the proposed project would not have the potential to substantially increase CO hotspots at intersections in Menlo Park.

Implementation of the proposed project would not conflict with the San Mateo County Transportation Authority for designated roads or highways, a regional transportation plan, or other agency plans. As further discussed in Section 4.2, Transportation, the proposed project would generate approximately 114 AM and 96 PM peak hour trips; therefore, similar to total buildout projected for implementation of ConnectMenlo, the project's contribution to peak hour traffic volumes at intersections in the vicinity of the project site would be well below 44,000 vehicles per hour. Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards and this impact would be ***less than significant*** **(LTS)**.

3) Expose sensitive receptors to substantial pollutant concentrations

As previously discussed, sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks. The closest sensitive receptors include the TIDE Academy, located at 150 Jefferson Drive, approximately 85 feet south of the project site. In addition, across the UPRR tracks and 0.6 mile east of the site is the Belle Haven residential neighborhood, which is generally occupied by single-family residences.

The following section describes the potential impacts on sensitive receptors from construction and operation of the proposed project. Since the proposed project would include a multi-family apartment building, an operational HRA was conducted consistent with ConnectMenlo Final EIR Mitigation Measure AQ-3b. The HRA analysis and results are presented below; data outputs are included in Appendix G. As discussed below, construction of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations; therefore, construction-period impacts to sensitive receptors would be ***less than significant*** **(LTS)**. With implementation of Mitigation Measure AIR-2, operation period impacts to sensitive receptors and exposure to toxic air contaminants would be ***less than significant with mitigation*** **(LTS/M)**.

Construction Health Risk to Nearby Sensitive Receptors. A construction HRA, which evaluates construction-period health risk to off-site receptors, was performed for the proposed project, and the analysis is presented below. The project site is located near existing residential uses that could be exposed to diesel emission exhaust during the construction period.

Impact AIR-2: Construction of the proposed project would expose nearby sensitive receptors to toxic air contaminants. (PS)

To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including diesel particulate matter), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location of interest (i.e., a nearby residence and worksites). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using the CARB exposure methodology with the air dispersion modeling performed using the USEPA dispersion model AERMOD. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and meteorological data. Table 4.3.G, below, identifies the results of the analysis assuming the use of Tier 2 construction equipment. Model snap shots of the sources are shown in Appendix G of this EIR.

Table 4.3.G: Unmitigated Inhalation Health Risks from Project Construction to Off-Site Receptors

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual	63.3	0.040	0.000	0.20
Threshold	**10.0**	**1.0**	**1.0**	**0.30**
Exceed?	**Yes**	**No**	**No**	**No**

Source: LSA (October 2020).
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
$\mu g/m^3$ = micrograms per cubic meter

As shown in Table 4.3.G, the risk associated with project construction at the maximally exposed individual (MEI) would be 63.3 in one million, which would exceed the BAAQMD cancer risk of 10 in one million. The total chronic hazard index would be 0.040, which is below the threshold of 1.0. In addition, the total acute hazard index would be nominal (0.000), which would also not exceed the threshold of 1.0. The results of the analysis indicate that the total $PM_{2.5}$ concentration would be 0.20 µg/m^3, which would also not exceed the BAAQMD significance threshold of 0.30 µg/m^3. As indicated above, the cancer risk of 63.3 in one million would exceed BAAQMD thresholds. Therefore, implementation of Mitigation Measure AIR-2 would be required to reduce substantial pollutant concentrations during project construction.

Mitigation Measure AIR-2 During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board Tier 4 emissions standards or equivalent. In the event that some specialty equipment (e.g., geotechnical, vibratory compaction, or soil mixing equipment), is not Tier 4 compliant due to lack of availability, then Tier 3 equipment shall be used.

Table 4.3.H identifies the results of the analysis with implementation of Mitigation Measure AIR-2.

Table 4.3.H: Mitigated Inhalation Health Risks from Project Construction to Off-Site Receptors

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration (µg/m^3)
Maximally Exposed Individual	5.06	0.003	0.000	0.02
Threshold	**10.0**	**1.0**	**1.0**	**0.30**
Exceed?	**No**	**No**	**No**	**No**

Source: LSA (July 2020).
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
µg/m^3 = micrograms per cubic meter

As shown in Table 4.3.H, the mitigated cancer risk at the MEI would be 5.06 in one million, which would not exceed the BAAQMD cancer risk of 10 in one million. Therefore, with implementation of Mitigation Measure AIR-2, construction of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations and this impact would be ***less than significant with mitigation* (LTS/M)**.

Operational Health Risk to Future Residents. Consistent with the requirements of ConnectMenlo Final EIR Mitigation Measure AQ-3b, an analysis of potential health risk and mitigation strategies was performed for the proposed project. To determine health risks associated with the proposed project to on-site receptors, an HRA was conducted for the proposed project based on three current guidance documents: 1) the California USEPA Air Toxics Hot Spots Program Risk Assessment Guidelines;[26] 2) The California Air Pollution Control Officers

[26] California Environmental Protection Agency (CalEPA). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines*. August.

Association (CAPCOA) Health Risk Assessment for Proposed Land Use Projects;[27] and 3) the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards.[28] The BAAQMD document was released in May 2012 with the purpose of assisting lead agencies in conducting a risk and hazard analysis as part of the environmental review process for proposed land use projects, and it provides Bay Area-specific guidance on how to screen projects and provides specific inputs for HRA modeling. The operational HRA is presented below. As further discussed, this impact would be ***less than significant*** **(LTS)**.

Mobile Sources. High volume roadways in the project vicinity could expose future residents on the project site to TACs. The project site is located approximately 785 feet north of US 101 and approximately 410 feet south of SR 84. The HRA was conducted using several steps, as follows: 1) determine the PM_{10} emission factor; 2) determine source emission rates; 3) determine concentrations at the project site; 4) translate the PM_{10} concentrations into health risk values; and 5) compare the health risk values to BAAQMD thresholds to determine significance.

The BAAQMD requires that age sensitivity be included when assessing long term exposure or a 30-year lifetime cancer risk to sensitive receptors. The exposure assumptions are very conservative in that they assume an individual would reside at this location from birth through 30 years.

With the recent approval of the new OEHHA guidance, additional adjustments are recommended to account for the amount of time a person spends away from their home during his or her lifetime.[29] Following the new OEHHA guidance document recommendations, a time away from home (TAFH) factor of 76.7 percent was applied to more accurately represent the exposure a person would have over a lifetime when they are at home.

Annual traffic data obtained from Caltrans was used as an input to the model. According to Caltrans, the total annual average daily traffic (AADT) along US 101 near the project site is 227,900 vehicles and the AADT along SR 84 near the project site is 66,000 vehicles.[30] As indicated above, the project site is located approximately 785 feet north of US 101 and approximately 410 feet south of SR 84. Emission factors for vehicle emissions were determined using the EMFAC 2017 On-Road Emission Factor Estimator. EMFAC 2017 includes assumptions of technological and regulatory changes that will reduce emission rates over time. However, this HRA only allows for a single emission rate for the entire 30-year health risk evaluation period. The average of diesel vehicle weighted emission rates

27 California Air Pollution Control Officers Association. 2009. *Health Risk Assessment for Proposed Land Use Projects.* July.

28 BAAQMD. 2016. *Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines.* Available online at: www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en (accessed April 2020). January.

29 OEHHA. 2015. *Risk Assessment Guidelines. A Guidance Manual for the Preparation of Health Risk Assessments.* February.

30 California Department of Transportation. 2017. Traffic Census Program, 2017 All Traffic Volumes on California State Highways. Website: www.dot.ca.gov/trafficops/census (accessed June 2020).

for the 30-year period (2020 to 2050) is 0.015 gram of diesel particulate matter per vehicle mile traveled (g dpm/VMT), which is almost identical to the year 2024 diesel vehicle weighted average emission rates. Therefore, a set of emissions factors from the year 2024 was used to represent the long-term 30-year evaluation period.

The classification of the total AADT into 13 vehicle type categories and the corresponding total emissions for that volume of vehicles at the average speed (5-90 miles per hour) were used in the analysis. For the purpose of this assessment, it is assumed that the traffic volumes are constant throughout the year. The diesel particulate matter emission rates used in the analysis were determined based on the vehicle distribution by type according to the Caltrans traffic data for US 101 and SR 84.[31]

Analysis Methodology. The dispersion modeling analysis was performed using AERMOD (American Meteorological Society/EPA Regulatory Model, Version 16216) to compute plume dispersion characteristics. AERMOD is a steady-state Gaussian air dispersion model that can be used to calculate pollutant concentrations from a wide variety of sources associated with a roadway out to a distance of 50 kilometers. The AERMOD model allows the selection of a number of options that affect model output. The regulatory default AERMOD model options were selected for this analysis.

A five-year meteorological dataset (2009 – 2013) was downloaded from the CARB website for air dispersion modeling.[32] The meteorological dataset includes surface meteorological data recorded at the nearby San Carlos Airport monitoring station and upper air data recorded at Oakland International Airport.[33]

The sources were modeled to approximately 0.5 miles north and south of the proposed project site, as shown in Appendix G. For purposes of this analysis, diesel vehicle exhaust was modeled based on an eight-lane highway with each lane consisting of 287-volume sources, representing northbound and southbound traffic along US 101, respectively. SR 84 had approximately 141 volume sources for each lane. Exhaust emissions for diesel cars and trucks were modeled as line volume sources, with a volume height of 3.05 meters. Modeled receptors were placed in a grid representing the proposed residential building at the project site. Appendix G shows a representation of the modeled grid. The HRA modeling was conducted using the ARB Hotspots Analysis Reporting Program (HARP2, Air Dispersion & Risk Tool Version dated 17314).

The HRA was conducted following the BAAQMD Health Risk Assessment Guidelines.[34] These guidelines are used by the BAAQMD to evaluate the health impacts from new and existing sources of toxic air contaminants. Listed below are the risk assessment assumptions that were used in the modeling.

31 Ibid.

32 CARB. 2015. HARP AERMOD Meteorological Files. Website: www.arb.ca.gov/toxics/harp/metfiles2.htm (accessed July 2020).

33 The San Carlos Airport monitoring station is the closest station with recorded meteorological data.

34 Ibid.

- The residential cancer risk estimates are based on 30-year exposure (consistent with OEHHA guidance).

- Deposition velocity of 0.02 m/sec to calculate the rate toxic air contaminants in particulate form deposit on the soil, which may be ingested in soil or home-grown produce.

- Pathways considered for residential exposure included inhalation, soil ingestion, dermal absorption, homegrown produce, and mother's milk.

- A "mixed" climate was assumed for the dermal exposure pathway.

Analysis Results. The results of the health risk analysis from US 101 and SR 84 traffic emission sources are shown in Table 4.3.I. Results indicate that vehicle exhaust concentrations on the project site would not exceed the individual source significance thresholds established by the BAAQMD.

Table 4.3.I: Maximum Long-Term Health Risk Impacts from Mobile Sources to the Project Site

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
SR 84	5.27	0.005	0.004	0.005
US 101	9.72	0.010	0.011	0.009
Threshold	**10.0**	**1.0**	**1.0**	**0.30**
Exceed?	**No**	**No**	**No**	**No**

Source: LSA (July 2020).
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
$\mu g/m^3$ = micrograms per cubic meter

Results of the analysis indicate that the MEI inhalation cancer risk associated with US 101 would be 9.72 in 1 million, which would not exceed the BAAQMD threshold of 10 in 1 million. The maximum chronic Hazard Index would be 0.010, which would be below the BAAQMD significance threshold of 1.0. The maximum acute Hazard Index would be 0.011, which would be below the BAAQMD significance threshold of 1.0. In addition, the total $PM_{2.5}$ concentration would be 0.09 $\mu g/m^3$, which would also not exceed the BAAQMD significance threshold of 0.30 $\mu g/m^3$. In addition, results of the analysis indicate that the MEI inhalation cancer risk associated with SR 84 would be 5.27 in 1 million, which would also be below the BAAQMD threshold of 10 in 1 million. Therefore, operation of the project would not expose sensitive receptors to substantial pollutant concentrations and this impact would be ***less than significant*** **(LTS)**.

Stationary Sources. Implementation of the proposed project would allow new residential uses that would include sensitive receptors. LSA conducted a search of all stationary sources permitted by the BAAQMD within 1,000 feet of the project site. Using the BAAQMD

Stationary Source Screening Analysis Tool, six stationary sources were identified within the project site vicinity, four of which are generators. The results of the stationary source analysis are presented in Table 4.3.J. Following BAAQMD guidance, the stationary sources were scaled for distance using the Diesel Internal Combustion (IC) Engine Distance Multiplier Tool.

Table 4.3.J: Stationary Sources within 1,000 Feet of the Project Site

Facility ID	Stationary Source (Type)	Distance (feet)	Adjusted Risk (in one million)	$PM_{2.5}$ Conc. (μg/m^3)	Hazard
22180	Boston Scientific Structural Heart, 185 Constitution Drive, Menlo Park, CA 94025	110	0.000	0.000	0.020
200419	Facebook MPK61, 150 Independence Drive, Menlo Park, CA 94025 (generator)	620	2.039	0.003	0.010
200566	Menlo Gateway Hotel, 190 Independence Drive, Menlo Park, CA 94025 (generator)	620	3.424	0.005	0.010
23602	EtaGen Inc, 186 Constitution Drive, Menlo Park, CA 94025 (generator)	310	0.655	0.002	0.020
200438	Facebook Inc., 162 Jefferson Drive, Menlo Park, CA 94025 (generator)	780	0.337	0.001	0.000
2877	L-3 Communications Randtron Antenna Systems, 130 Constitution Drive, Menlo Park, CA 94025	825	2.450	0.000	0.000
Total Health Risk			8.905	0.011	0.060
Single Source Threshold			**10 in 1 million**	**0.3**	**1.0**
Exceed?			No	No	No
BAAQMD Cumulative Threshold			**100 in a million**	**0.80**	**10.0**
Exceed?			No	No	No

Source: LSA (July 2020).

As shown in Table 4.3.J, the highest risk would be 3.424 in one million, which would not exceed the BAAQMD cancer risk threshold of 10 in one million. The highest hazard index would be 0.010, which is below the threshold of 1.0. The results of the analysis also indicate that the highest $PM_{2.5}$ concentration would be 0.005, which would not exceed the BAAQMD significance threshold of 0.3 μg/m^3. The BAAQMD cumulative threshold of cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 μg/m^3 on an annual average basis would not be exceeded. Therefore, implementation of the project would not expose sensitive receptors to substantial pollutant concentrations associated with nearby stationary sources and this impact would be ***less than significant*** **(LTS)**.

Cumulative TAC Analysis. The cumulative analysis sums all sources of emissions in the vicinity of the project site including stationary source and mobile sources. The cumulative cancer risk, hazard index, acute index and $PM_{2.5}$ concentrations are shown in Table 4.3.K. Results of the cumulative analysis indicate the proposed project would not exceed BAAQMD cumulative thresholds and would not expose future residents of the project site to significant cumulative health risks. Therefore, future residents of the project site would not be exposed to a substantial increase in health risk impacts from stationary sources of toxic air contaminants in the project vicinity. Impacts would be ***less than significant*** **(LTS)**.

Table 4.3.K: Cumulative Risk from All Sources

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Traffic on SR 84	5.27	0.005	0.004	0.005
Traffic on US 101	9.72	0.010	0.011	0.009
Stationary Sources	8.905	0.011	0.011	0.060
Total	**23.895**	**0.026**	**0.026**	**0.074**
Threshold	**100.0**	**10.0**	**10.0**	**0.80**
Exceed?	**No**	**No**	**No**	**No**

Source: LSA (July 2020).
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
$\mu g/m^3$ = micrograms per cubic meter

Regional Operational Health Effects. BAAQMD project-level thresholds are based in part on Section 180(e) of the Clean Air Act. The project-level thresholds are intended to provide a means of consistency in significance determination within the environmental review process.

Notwithstanding, BAAQMD project-level thresholds do not reflect particular health impacts to a nearby individual or the region. The reason for this is that the project-level thresholds are in pounds/day and tons/year emitted into the air, whereas health effects are determined based on the concentration of a pollutant in the air at a particular location (e.g., ppm by volume of air or $\mu g/m^3$of air). CAAQS and NAAQS were developed to protect the most susceptible population groups from adverse health effects and were established in terms of ppm or $\mu g/m^3$ for the applicable emissions.

The daily and annual emissions associated with project operational trip generation, energy, area, and stationary sources are identified in Table 4.3.F for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The results shown in Table 4.3.F indicate the project would not exceed the significance criteria for ROG, NO_x, PM_{10} or $PM_{2.5}$ emissions. The increase in emissions associated with the proposed project would be a small fraction of the Air Basin's emissions.

Therefore, the emissions associated with implementation of the proposed project would not be expected to exceed the most stringent applicable NAAQS or CAAQS for NO_x, $PM_{2.5}$, and PM_{10}. It should be noted that the AAQS are developed and represent levels at which the most susceptible persons (children and the elderly) are protected. In other words, the AAQS are purposefully set low to protect children, the elderly, and those with existing respiratory problems.

Furthermore, air quality trends for emissions of NO_X, ROG, and ozone (which is a byproduct of NO_X and ROG) have been trending downward within the Air Basin even as development has increased over the last several years. Therefore, implementation of the proposed project is not expected to result in any Basin-wide increase in health effects. As such, impacts are considered ***less than significant*** **(LTS)**.

4.3.2.4 Cumulative Impacts

According to the BAAQMD, regional air pollution is largely a cumulative impact. No single project is sufficient in size to independently create regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts.

The BAAQMD is currently designated as a nonattainment area for State and national ozone standards and national particulate matter ambient air quality standards. BAAQMD nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Therefore, if the proposed project's daily average or annual emissions of construction- or operational-related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the proposed project would result in a considerable contribution to a cumulatively significant impact. As shown in Table 4.3.F, implementation of the proposed project would not generate significant operational emissions. As shown in the project-specific air quality impacts discussion above, the proposed project would not result in individually significant impacts and therefore the proposed project would not result in a cumulatively considerable contribution to regional air quality impacts. Cumulative impacts would be considered ***less than significant*** **(LTS)**.

4.4 GREENHOUSE GAS EMISSIONS

This section summarizes existing greenhouse gas (GHG) emissions and discusses global climate change, its causes, and the contribution of human activities. This section also estimates the likely GHG emissions that would result from construction and operational activities associated with development of the proposed project, including vehicular traffic, energy consumption and other emission sources. Mitigation measures are recommended, where appropriate, to reduce potential impacts to a less-than-significant level. The analysis performed for this section is based on the BAAQMD CEQA Air Quality Guidelines.[1]

4.4.1 Setting

The following discussion describes existing GHG emissions in the City of Menlo Park, beginning with typical GHG types and sources, impacts of global climate change, the regulatory framework surrounding these issues, and current emission levels.[2]

4.4.1.1 Background

The following section provides background information on GHGs and global climate change.

Global Climate Change. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (°C) or 1.1 ± 0.4° Fahrenheit (°F) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[3]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are the following:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)

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[1] Bay Area Air Quality Management District (BAAQMD). 2017. *CEQA Air Quality Guidelines.* May.

[2] Purple Air collects and provides data from real-time private air quality emission sensors throughout the State; however, the data supplied by this source is not calibrated and is not reviewed or approved by the California Air Resources Board. Therefore, emissions from this source are not referenced in the analysis for this EIR.

[3] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, GHGs like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of GHG results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this air quality analysis, the term "GHGs" will refer collectively only to the six gases listed above.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one-unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). Table 4.4.A shows the GWP for each type of GHG. For example, sulfur hexafluoride is 22,800 times more potent at contributing to global warming than carbon dioxide.

Table 4.4.A: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: Climate Change 2007: The Physical Science Basis (Intergovernmental Panel on Climate Change [IPCC] 2007).

The following discussion summarizes the characteristics of the six GHGs and black carbon. Black carbon also contributes to climate change and is therefore discussed below.

Carbon Dioxide. In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic out gassing, decomposition of organic matter and evaporation from the oceans. Human caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.

In 2017, the year for which the most current data is available, CO_2 emissions accounted for approximately 83 percent of California's overall GHG emissions.[4] The transportation sector accounted for California's largest portion of CO_2 emissions, approximately 47 percent, with gasoline consumption making up the greatest portion of these emissions. Industrial sources were California's second largest category of GHG emissions.

Methane. Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation in dairy cows, manure management, and rice cultivation are also significant sources of CH_4 in California. Methane accounted for approximately 9 percent of GHG emissions in California in 2017.[5]

Total annual emissions of methane in California are approximately 39.9 million tons, with manmade emissions accounting for the majority. As with CO_2, the major removal process of atmospheric methane—a natural chemical breakdown in the atmosphere—cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing.

Nitrous Oxide. Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. Nitrous oxide emissions accounted for approximately 3.1 percent of GHG emissions in California in 2017.[6]

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4 California Air Resources Board (CARB). 2019. *GHG Current California Emission Inventory Data, 2019 GHG Inventory.* Website: ww2.arb.ca.gov/ghg-inventory-data (accessed October 2020). July 11.

5 Ibid.

6 Ibid.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[7] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry has resulted in greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 4.7 percent of GHG emissions in California in 2017.[8]

Black Carbon. Black carbon is the most strongly light-absorbing component of particulate matter (PM) formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the atmosphere in the form of particulate matter less than 2.5 microns in size ($PM_{2.5}$) and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb one million times more energy than CO_2.[9] Black carbon contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global-warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel fueled vehicles.[10] The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. Black carbon emissions in the U.S. are projected to decline substantially by 2030, largely due to controls on new mobile diesel emissions.[11]

Effects of Global Climate Change. Effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme weather events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global climate change may also result in impacts to local air quality from increased ground-level ozone and particulate matter.[12]

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7 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

8 Ibid.

9 U.S. Environmental Protection Agency (USEPA). 2017. Black Carbon, Basic Information. Website: 19january2017snapshot.epa.gov/www3/airquality/blackcarbon/basic.html (accessed April 28, 2020). February 14.

10 Ibid.

11 Ibid.

12 USEPA. 2020. Air Quality and Climate Change Research. Website: www.epa.gov/air-research/air-quality-and-climate-change-research (accessed July 14, 2020).

Additionally, according to the 2006 California Climate Action Team (CAT) Report,[13] the following climate change effects, which are based on trends established by the United Nations Intergovernmental Panel on Climate Change (IPCC), can be expected in California over the course of the next century:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;[14]
- Rise in global average sea level, primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets;[15]
- Changes in weather that include widespread changes in precipitation, ocean salinity, wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;[16]
- Decline of the Sierra snowpack, which accounts for approximately one-half of the surface water storage in California by 70 percent to as much as 90 percent over the next 100 years;[17]
- Increase in the number of days conducive to ozone (O_3) formation by 25 to 85 percent (depending on the future temperature scenario) in high O_3 areas of Los Angeles and the San Joaquin Valley by the end of the 21st century;[18] and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.[19]

A summary of these potential effects is provided in Table 4.4.B.

[13] California Environmental Protection Agency (CalEPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.
[14] Ibid.
[15] Ibid.
[16] Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*. February.
[17] CalEPA. 2006, op. cit.
[18] Ibid.
[19] Ibid.

Table 4.4.B: Potential Impacts of Global Warming and Expected Consequences for California

Potential Water Resource Impacts	Anticipated Consequences Statewide
Reduction of the State's average annual snowpack	• The decline of the Sierra snowpack would lead to a loss in half of the surface water storage in California by 70% to 90% over the next 100 years • Potential loss of 5 million acre-feet or more of average annual water storage in the State's snowpack • Increased challenges for reservoir management and balancing the competing concerns of flood protection and water supply • Higher surface evaporation rates with a corresponding increase in tropospheric water vapor
Rise in average sea level	• Potential economic impacts related to coastal tourism, commercial fisheries, coastal agriculture, and ports • Increased risk of flooding, coastal erosion along the State's coastline, seawater intrusion into the Delta and levee systems
Changes in weather	• Changes in precipitation, ocean salinity, and wind patterns • Increased likelihood for extreme weather events, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones
Changes in the timing, intensity, location, amount, and variability of precipitation	• Potential increased storm intensity and increased potential for flooding • Possible increased potential for droughts • Long-term changes in vegetation and increased incidence of wildfires • Changes in the intensity and timing of runoff • Possible increased incidence of flooding and increased sedimentation • Sea level rise and inundation of coastal marshes and estuaries • Increased salinity intrusion into the Sacramento-San Joaquin River Delta (Delta) • Increased potential for Delta levee failure • Increased potential for salinity intrusion into coastal aquifers (groundwater) • Increased potential for flooding near the mouths of rivers due to backwater effects
Increased water temperatures	• Increased environmental water demand for temperature control • Possible increased problems with foreign invasive species in aquatic ecosystems • Potential adverse changes in water quality, including the reduction of dissolved oxygen levels • Possible critical effects on listed and endangered aquatic species
Changes in urban and agricultural water demand	• Changes in demand patterns and evapotranspiration
Increase in the number of days conducive to O_3 formation	• Increased temperatures • Potential health effects, including adverse impacts to respiratory systems

Source: Environmental Water Account Draft Supplemental EIS/EIR to the Environmental Water Account Final EIS/EIR (U.S. Department of the Interior, October 2007).
EIR = Environmental Impact Report
EIS = Environmental Impact Statement
O_3 = ozone

Emissions Inventories. An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, and California GHG emission inventories.

Global Emissions. Worldwide emissions of GHGs in 2016, the year for which the most recent data is available, totaled approximately 26 billion metric tons of CO_2e.[20] Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change (UNFCCC).

United States Emissions. In 2018, the year for which the most recent data is available, the United States emitted about 6,677.8 million metric tons of CO_2e. The total 2018 CO_2e emissions represent a 3.7 percent increase from 1990 to 2018, down from a high of 15.2 percent above 1990 levels in 2007. Overall, net emissions in 2018 increased 3.2 percent since 2017 and decreased 10.2 percent from 2005 levels. Of the six major sectors – residential, commercial, agricultural, industry, transportation, and electricity generation – transportation accounted for the highest amount of GHG emissions in 2018 (approximately 27.9 percent), with electricity generation second at 26.9 percent and emissions from industry third at 22.2 percent.[21]

State of California Emissions. According to California Air Resources Board (CARB) emission inventory estimates, the State emitted approximately 424.1 million metric tons of CO_2e emissions in 2017. This is a decrease of 4.9 million metric tons CO_2e since 2016.[22]

The CARB estimates that transportation was the source of approximately 41 percent of the State's GHG emissions in 2017, followed by industrial sources at 24 percent and electricity generation at 15 percent. The remaining sources of GHG emissions were agriculture at 8 percent, residential activities at 7 percent and commercial activities at 5 percent.[23]

San Francisco Bay Area Emissions. The BAAQMD established a climate protection program in 2005 to acknowledge the link between climate change and air quality. The BAAQMD regularly prepares inventories of criteria and toxic air pollutants to support planning, regulatory and other programs. The most recent emissions inventory estimates GHG emissions produced by the San Francisco Bay Area (Bay Area) in 2011.[24] The inventory, which was published January 2015, updates the BAAQMD's previous GHG emission inventory for base year 2007.

In 2011, 86.6 million metric tons of CO_2e of GHGs were emitted in the Bay Area. Fossil fuel consumption in the transportation sector was the single largest source of the Bay Area's GHG emissions in 2011. The transportation sector (including on-road motor vehicles, locomotives,

[20] United Nations Climate Change. 2016. GHG data from UNFCCC. Website: unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc (accessed April 28, 2020).

[21] USEPA. 2020. Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018. Available online at: www.epa.gov/sites/production/files/2020-02/documents/us-ghg-inventory-2020-main-text.pdf (accessed April 28, 2020).

[22] CARB. 2019, op. cit.

[23] Ibid.

[24] BAAQMD. 2015. *Source Inventory of Bay Area Greenhouse Gas Emissions.* January.

ships and boats, and aircraft) contributed 39.7 percent of GHG emissions and the industrial and commercial sectors (excluding electricity and agriculture) contributed 35.7 percent of GHG emissions in the Bay Area. Energy production activities such as electricity generation and co-generation were the third largest contributor with approximately 14 percent of the total GHG emissions. Off-road equipment such as construction, industrial, commercial, and lawn and garden equipment contributed 1.5 percent of GHG emissions.

City of Menlo Park Emissions. The City of Menlo Park's Climate Action Plan identifies the City's communitywide GHG emissions by source for the years 2005 and 2017.[25] As shown in Table 4.4.C below, in 2005, the community emitted 349,284 metric tons of CO_2e, most of which was the result of vehicles (40 percent), emissions from electricity (25 percent), natural gas (29 percent), and waste (6 percent). In 2017, the community emitted 284,378 metric tons of CO_2e, most of which was the result of vehicles (56 percent) followed by natural gas (34 percent), electricity (7 percent), and waste (3 percent). In addition, the aim of the City's Climate Action Plan is to reduce community-wide emissions by another 71 percent for a total reduction of 90 percent from 2005 emissions, leaving just 34,933 tons of CO_2e per year by 2030, as shown in Table 4.4.C below.

Table 4.4.C: City of Menlo Park Greenhouse Gas Emissions Inventory

Source	2005	2017	2030
Vehicles	137,628	158,686	18,373
Natural Gas	102,295	95,742	13,656
Electricity	87,617	21,528	-
Waste	21,745	8,424	2,903
Total Greenhouse Gas Emissions (MT CO_2e)	**349,285**	**284,380**	**34,933**

Source: 2030 Climate Action Plan (City of Menlo Park, June 2020).

4.4.1.2 Regulatory Framework

This section describes applicable regulations related to GHG emissions at the federal, State, regional, and local level.

Federal Regulations. The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the United States Environmental Protection Agency (USEPA) has the authority to regulate CO_2 emissions under the federal Clean Air Act. While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the USEPA commenced several actions in 2009 to implement a regulatory approach to global climate change.

This includes the 2009 USEPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the USEPA Administrator signed an endangerment finding action in 2009 under the Clean Air Act, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6)

25 Menlo Park, City of. 2020. *2030 Climate Action Plan*. June.

constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

State Regulations. The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002). In a response to the transportation sector's significant contribution to California CO_2 emissions, Assembly Bill (AB) 1493 was enacted on July 22, 2002. AB 1493 requires the CARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of Clean Air Act Preemption was not granted by the USEPA until June 30, 2009. The CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025.

Executive Order S-3-05 (2005). Executive Order S-3-05 was signed by the Governor on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010;
- GHG emissions should be reduced to 1990 levels by 2020; and
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State legislature disclosing the progress made toward greenhouse emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads the Climate Action Team (CAT) comprised of representatives from State agencies as well as numerous other boards and departments. CAT members work to coordinate Statewide efforts to implement global warming emission reduction programs and the State Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the Statewide GHG targets that were established in the executive order and further defined under AB 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and State legislature was released in March 2006 and it presented 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the Executive Order. The most recent CAT Report to the Governor and State legislature was released in December 2010.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by the CARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT of CO_2e, or approximately 30 percent, from the State's projected 2020 emission level of 596 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002 to 2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high-speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust CEQA-equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade program took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

The CARB has not yet determined what amount of GHG reductions it recommends from local government operations and local land use decisions; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, the CARB is also developing an additional protocol for community emissions). The CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. With regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO_2e reduction due to implementation of SB 375 (discussed later in this subsection).

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the CARB and the CAT to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, the Governor signed Executive Order S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the CARB to consider the Low Carbon Fuel Standard as a discrete early action measure. In 2011, the U.S. District Court issued an injunction preventing implementation of the Low Carbon Fuel Standard, ruling that it is unconstitutional. In 2012, the Ninth Circuit Court of Appeal stayed the District Court's injunction, allowing implementation of the Low Carbon Fuel Standard. The Ninth Circuit decided to uphold the Low Carbon Fuel Standard.

In June 2007, the CARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[26] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide GHG emissions by nearly 16 MMT.[27]

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines the CARB climate change priorities until 2020, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The First Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan, and it also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. The CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by Executive Order B-30-

26 CARB. 2007. Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration. October.

27 CARB. 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

15 and codified by SB 32.[28] The 2030 target is to reduce GHG emissions to 40 percent below 1990 levels by 2030.

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the State Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the CEQA Guidelines in January 2010, which went into effect in March 2010. The amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008). Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, the CARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The CARB may update the targets every four years and must update them every eight years. MPOs in turn must demonstrate how their plans, policies and transportation investments meet the targets set by the CARB through Sustainable Community Strategies (SCS). The SCS are included with the Regional Transportation Plan (RTP), a report required by State law. However, if an MPO finds that their SCS will not meet the GHG reduction target, they may prepare an Alternative Planning Strategy (APS). The APS identifies the impediments to achieving the targets.

Executive Order B-30-15 (2015). The Governor signed Executive Order B-30-15 on April 29, 2015, which added the immediate target:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. The CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

28 CARB. 2017. *California's 2017 Climate Change Scoping Plan*. November.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act. SB 350, signed by the Governor on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increasing energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission for private utilities and by the California Energy Commission for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to state energy agencies under existing law. The addition made by this legislation requires state energy agencies to plan for, and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197. In summer 2016 the Legislature passed, and the Governor signed, SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in the April 2015 Executive Order B-30-15. SB 32 builds on AB 32 and keeps the State on the path toward achieving the 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by the CARB was posted in December 2016.

Senate Bill 100 (SB 100). On September 10, 2018, the Governor signed SB 100, which raises California's Renewable Portfolio Standard (RPS) requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18. Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs the CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other

Statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Title 24, Building Standards Code and CALGreen Code. In November 2008, the California Building Standards Commission established the California Green Building Standards (CALGreen) Code, which sets performance standards for residential and nonresidential development to reduce environmental impacts and encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2016 to include new mandatory measures for residential as well as nonresidential uses; the new measures took effect on January 1, 2017.

Cap and Trade. The development of a cap-and-trade program was included as a key reduction measure of the CARB AB 32 Climate Change Scoping Plan. The cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. The cap-and-trade emissions trading program developed by the CARB took effect on January 1, 2012, with enforceable compliance obligations beginning January 1, 2013. The cap-and-trade program aims to regulate GHG emissions from the largest producers in the State by setting a Statewide firm limit, or cap, on allowable annual GHG emissions. The cap was set in 2013 at approximately 2 percent below the emissions forecast for 2020. In 2014, the cap declined approximately 2 percent. Beginning in 2015 and continuing through 2020, the cap has been declining approximately 3 percent annually. The CARB administered the first auction on November 14, 2012, with many of the qualified bidders representing corporations or organizations that produce large amounts of GHG emissions, including energy companies, agriculture and food industries, steel mills, cement companies, and universities. On January 1, 2015, compliance obligation began for distributors of transportation fuels, natural gas, and other fuels. California is working closely with British Columbia, Ontario, Quebec, and Manitoba through the Western Climate Initiative to develop harmonized cap-and-trade programs that will deliver cost-effective emission reductions. Two lawsuits have been filed against cap-and-trade, but the cap-and-trade program will be implemented as-is until further notice.[29]

Executive Order N-79-20. Executive Order N-79-20, which was signed by the Governor on September 23, 2020, sets the following goals for the State: 100 percent of in-State sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the State shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the State shall be zero-emission by 2035, where feasible.

[29] CARB. 2014. Cap-and-Trade Program. Website: www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed April 2020).

Regional Regulations. Regional regulations that are applicable to GHG emissions generated by the proposed project are implemented by the Metropolitan Transportation Commission (MTC), Association of Bay Area Governments (ABAG), and BAAQMD, as discussed below.

Plan Bay Area 2040. Plan Bay Area 2040 is a State-mandated, integrated long-range transportation and land use plan. As required by Senate Bill 375, all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of a Regional Transportation Plan. In the Bay Area, the MTC and the ABAG are jointly responsible for developing and adopting a SCS that integrates transportation, land use and housing to meet GHG reduction targets set by the CARB. Plan Bay Area 2040 includes 7 goals and 13 performance targets covering three broad areas: the environment, equity, and the economy. These targets enable the plan to be evaluated by its performance in areas identified as key regional concerns, including equitable access, economic vitality and transportation system effectiveness.

Bay Area Air Quality Management District. The BAAQMD is the regional government agency that regulates sources of air pollution within the nine Bay Area counties. The BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

Clean Air Plan. The Clean Air Plan guides the region's air quality planning efforts to attain the California Air Resources Board California Ambient Air Quality Standards (CAAQS).[30] The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017, by the BAAQMD Board of Directors, is the current Clean Air Plan, which contains district-wide control measures to reduce ozone precursor emissions (e.g., reactive organic gases [ROG] and nitrogen oxide [NO_x]), particulate matter and GHG emissions.

The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD's plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities;
- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050;
- Provides a regional climate protection strategy that will put the Bay area on a pathway to achieve GHG reduction targets; and
- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "Super Greenhouse Gases" that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

30 BAAQMD. 2017. *Final 2017 Clean Air Plan*. Available online at: www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed July 2020). April 19.

BAAQMD Climate Protection Program. The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the Air Basin. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing GHG emissions and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

BAAQMD CEQA Air Quality Guidelines. The BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions.

In June 2010, the BAAQMD adopted updated draft CEQA Air Quality Guidelines and finalized them in May 2011. These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The 2017 CEQA Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the project.

Under the CEQA Air Quality Guidelines, a local government may prepare a Qualified Greenhouse Gas Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified Greenhouse Gas Reduction Strategy and General Plan that addresses the project's GHG emissions, it can be presumed that the project will not have significant GHG emissions under CEQA. The CEQA Air Quality Guidelines also included a quantitative threshold for project level analyses based on estimated greenhouse emissions as well as per capita metrics.

City of Menlo Park. The City of Menlo Park addresses global climate change and GHG emissions in the General Plan and Climate Action Plan, as discussed below.

General Plan. The City of Menlo Park addresses GHG emissions in the Open Space, Conservation, Noise and Safety Elements of the General Plan.[31] The Open Space, Conservation, Noise and Safety Elements set goals, policies, and implementing programs that work to promote

[31] Menlo Park, City of. 2013. *City of Menlo Park General Plan. Open Space Conservation, Noise and Safety Elements*. May 21.

sustainability and climate action planning. The following policies are applicable to the proposed project.

- **Policy OSC4.1: Sustainable Approach to Land Use Planning to Reduce Resource Consumption.** Encourage, to the extent feasible, 1) a balance and match between jobs and housing, 2) higher density residential and mixed-use development to be located adjacent to commercial centers and transit corridors, and 3) retail and office areas to be located within walking and biking distance of transit or existing and proposed residential developments.

- **Policy OSC4.2: Sustainable Building.** Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.

- **Policy OSC4.3: Renewable Energy.** Promote the installation of renewable energy technology, such as, on residences and businesses through education, social marketing methods, establishing standards and/or providing incentives.

- **Policy OSC4.4: Vehicles Using Alternative Fuel**. Explore the potential for installing infrastructure for vehicles that use alternative fuel, such as electric plug in recharging stations.

- **Policy OSC4.5: Energy Standards in Residential and Commercial Construction.** Encourage projects to achieve a high level of energy conservation exceeding standards set forth in the California Energy Code for Residential and Commercial development.

- **Policy OSC4.6: Waste Reduction Target.** Strive to meet the California State Integrated Waste Management Board per person target of waste generation per person per day through their source reduction, reuse, and recycling programs.

- **Policy OSC4.7: Waste Management Collaboration.** Continue to support and participate in efforts such as the South Bayside Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.

- **Policy OSC4.8: Waste Diversion.** Develop and implement a zero waste policy, or implement standards, incentives, or other programs that would lead the community towards a zero waste goal.

- **Policy OSC4.10: Energy Upgrade California.** Consider actively marketing and providing additional incentives for residents and businesses to participate in local, State, and/or Federal renewable or energy conservation programs.

Climate Action Plan. The City's CAP was first adopted in May 2009 and is updated from time to time, most recently in 2020, and identifies local emissions reduction strategies designed to help meet AB 32 targets. CEQA authorizes reliance on a previously approved CAP that was prepared per Section 15183.5 of the CEQA Guidelines. This section of the guidelines establishes opportunities for CEQA tiering; the City's CAP does not meet these tiering requirements because the CAP does not include specific thresholds of significance for determining the significance of GHG emissions, nor has the CAP been adopted in a public process following environmental review. Consequently, because the City's CAP does not satisfy the tiering requirements of CEQA established in Section 15183.5 of the State CEQA Guidelines, it is not used to determine the significance of project-related GHG emissions, as described below. However, for informational purposes, this qualitative analysis compares the project against measures found in the City's CAP.

The CAP recommends various community and municipal strategies for near-term and mid-term considerations. The emissions reduction strategies are generally focused on community actions, since more than 99 percent of the emissions are from community sources.

The City updates its community-wide GHG inventory and CAP annually. In 2011, the City completed the first update to the City's CAP Strategy, known as the 2011 CAP Assessment Report. As part of the 2013 update, the City Council adopted a target of reducing community-wide GHG emissions by 27 percent below 2005 levels by 2020.

The most recent status update to the City's CAP was conducted in June 2020.[32] The 2020 CAP Update includes updated emissions inventories through year 2017 and adopts a climate goal of zero carbon by 2030. The CAP aims for a 90 percent reduction in CO_2e emissions from 2005 levels by 2030.

4.4.2 Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to GHG emissions that could result from implementation of the proposed project.

A single project typically does not generate a sufficient quantity of GHG emissions to affect global climate change; therefore, the global climate change impacts of the proposed project are discussed in the context of cumulative impacts, following the approach recommended by the BAAQMD. This section begins by establishing the thresholds to determine whether an impact is significant and then analyzes GHG emissions both quantitatively and qualitatively. As previously discussed in Chapter 3.0, Project Description, the analysis below makes reference to, and tiers from, the ConnectMenlo Final EIR, where appropriate. The findings presented in the ConnectMenlo Final EIR are presented prior to the project impact analysis. The latter part of this section identifies GHG emissions associated with existing operations within the project area and evaluates the GHG emissions expected to result from the project and the recommended feasible mitigation measures, if required.

4.4.2.1 Significance Criteria

Per Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to greenhouse gas emissions if it would:

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32 Menlo Park, City of. 2020, op. cit.

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

2) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Project-Specific Thresholds. Section 15064.4 of the CEQA Guidelines states that: "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project." In performing that analysis, the lead agency has discretion to determine whether to use a model or methodology to quantify GHG emissions, or to rely on a qualitative analysis or performance-based standards. This EIR relies on both quantitative thresholds, which are scaled from the State, and BAAQMD numeric operational thresholds and a qualitative analysis of compliance with applicable regulatory standards. In making a determination as to the significance of potential impacts, the lead agency then considers the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting, whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project, and the extent to which the project complies with regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Construction Threshold. The BAAQMD has not adopted thresholds for construction emissions but recommends quantification and disclosure of these emissions. Local agencies are encouraged to adopt feasible mitigation measures to reduce construction emissions. This EIR quantifies and analyzes whether the project's construction GHG emissions would be cumulatively significant and, if so, whether the project itself would then result in significant adverse impacts on global climate change. Pursuant to BAAQMD guidance, feasible mitigation measures are identified to reduce construction-period emissions.

Operational Threshold. The BAAQMD's most recent quantitative threshold is 4.6 metric tons of CO_2e per year per service population. This numeric operational threshold set by the BAAQMD was calculated to achieve the State's 2020 target for GHG emissions levels (and not the SB 32 specified target of 40 percent below the 1990 GHG emissions level). BAAQMD has not yet updated the operational threshold to achieve target GHG emissions levels for 2030. Construction of the proposed project is estimated to begin May 2021 and would occur for approximately 37 months. The proposed project, therefore, would not be fully constructed and operational until 2024. Because the proposed project would begin operations in the post-2020 timeframe, the BAAQMD 2020 efficiency target of 4.6 metric tons of CO_2e per year per service population, which has been the threshold most recently applied to development projects, would not directly apply, as using it would not achieve the State's post-2020 GHG reduction goals.

CARB has completed a Scoping Plan, which will be utilized by the BAAQMD to establish the 2030 GHG efficiency threshold. However, BAAQMD has yet to publish a quantified GHG efficiency threshold for the 2030 target. Therefore, pursuant to CEQA Guidelines Section 15064.4(a), the City has the discretion to, in the context of a particular project, both quantify a project-specific threshold and conduct a qualitative analysis. Therefore, a scaled threshold consistent with State goals detailed in SB 32, Executive Order B-30-15, and Executive Order S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, respectively was developed for evaluation of the proposed project for 2024, when the proposed project is anticipated to be operational.

Based on the calculations, discussed in more detail below, to quantitatively determine significance, this EIR uses a threshold of 3.9 metric tons of CO_2e per capita service population (employees plus residents) per year, which was calculated for the buildout year of 2024 based on the GHG reduction goals of SB 32 and Executive Order B-30-15. This threshold is scaled from the BAAQMD 2020 target threshold to fit the Statewide 2030 target (40 percent below 1990 levels of emissions).

The scaled threshold was calculated as follows:

- The 2020 threshold was based on the 2020 target (1990 levels of emissions by 2020). Based on the current 2030 target (40 percent below 1990 levels by 2030), 40 percent below the 2020 threshold (1990 level) of 4.6 metric tons of CO_2e per capita service population (employees plus residents) per year would represent the 2030 threshold (2.76 metric tons of CO_2e per capita service population per year).

- The threshold between 2020 and 2030 is scaled at 4 percent per year (40 percent across the 10-year period).

- With an anticipated project operation date of 2024, the proposed project's target would be 3.9 metric tons of CO_2e per capita service population per year. This threshold is 16 percent below the 2020 target at a 4 percent per year reduction from the 2020 target for the 4-year period between 2020 and 2024.

Given the above, the analysis below is based on the following scaled threshold and the proposed project would have a significant impact related to greenhouse gas emissions if it would:

- Result in operational-related GHG emissions of greater than 3.9 metric tons of CO_2e per capita service population (employees plus residents) per year,[33] or

- Conflict with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions (qualitatively discussed).

4.4.2.2 ConnectMenlo Final EIR Impacts

The ConnectMenlo Final EIR determined that future development would contribute to global climate change through direct and indirect emissions of GHGs from energy (natural gas and purchased electricity), on-road transportation sources, potable water use, wastewater generation, solid waste disposal, and off-road sources (e.g., equipment used for landscaping, commercial activities, and construction).

[33] This threshold is based on the BAAQMD's threshold of 4.6 metric tons of CO_2e per capita service population, but scaled to reflect the updated Statewide 2030 target (40 percent below 1990 levels of emissions).

The ConnectMenlo Final EIR identified that ConnectMenlo would promote the creation of a live/work/play environment with travel patterns that are oriented toward pedestrian, transit, and bicycle use, including identifying public paseos to improve connectivity. In addition, the ConnectMenlo Final EIR found that new development projects would be required to develop a Transportation Demand Management (TDM) plan to reduce trip generation by 20 percent below standard use rates. The TDM plan may include participation in a Transportation Management Association, preferred parking for carpools/vanpools, public and/or private bike-share programs, subsidy for alternative transportation (e.g., carpool/vanpool, shuttles, and bus service including transit passes), alternative work schedules, car-share membership, emergency ride home, and other measures to reduce trip generation.

In addition, the ConnectMenlo Final EIR found that ConnectMenlo includes Residential and Non-Residential Green Building Requirements, which identify that new development projects are required to be built to specific green building requirements for LEED certification, install EV charging, meet 100 percent of electricity and natural gas demand through either onsite generation and/or purchase of renewable electricity or electricity credits (or combination) to offset energy use, use recycled water, and minimize waste to landfill and incineration.

In addition, the ConnectMenlo Final EIR included an emissions inventory for ConnectMenlo scenarios compared to existing conditions for the years 2020 and 2040. Emissions were estimated for the year 2020 in order to evaluate consistency with AB 32, which sets a Statewide target for 2020. Emissions were estimated for the year 2040 since that is the horizon year for ConnectMenlo. The ConnectMenlo Final EIR found that GHG emissions would result in a substantial increase from existing conditions (pre-2020 target) by the horizon year 2040 and would not achieve the 2040 efficiency (per service population) target, which is based on a trajectory to the 2050 goal of an 80 percent reduction from 1990 levels. The policies identified in the General Plan as well as the TDM and other green building sustainability measures in the Zoning Ordinance would reduce GHG emissions, to the extent feasible. However, additional State and federal actions are necessary to ensure that State and federally regulated sources (i.e., sources outside the City's jurisdictional control) take measures to ensure the deep reductions needed to achieve the 2050 target. Therefore, the ConnectMenlo Final EIR considered GHG emissions to be significant and unavoidable.

The ConnectMenlo Final EIR also evaluated ConnectMenlo's consistency with the State's GHG emissions reductions objectives, which are embodied in AB 32, Executive Order B-30-15, Executive Order S-03-05, and SB 375. The ConnectMenlo Final EIR determined that applicable plans adopted for the purpose of reducing GHG emissions include the Scoping Plan, Plan Bay Area, and the City's CAP and found that ConnectMenlo would be consistent with the regional objectives of the Plan Bay Area and the City's CAP. However, the ConnectMenlo Final EIR found that the CARB had not yet drafted a plan to achieve the Statewide GHG emissions goals established in Executive Order S-03-05, and therefore, while ConnectMenlo supports progress toward the long term-goals identified in Executive Order B-30-15 and Executive Order S-03-05, it cannot yet be demonstrated that Menlo Park will achieve GHG emissions reductions that are consistent with a 40 percent reduction below 1990 levels by 2030 or an 80 percent reduction below 1990 levels by the year 2050 based on existing technologies and currently adopted policies and programs. Therefore, the ConnectMenlo Final EIR considered consistency with applicable plans to be significant and unavoidable.

4.4.2.3 Project Impacts

The following section describes potential impacts associated with GHG emissions that could occur with development of the proposed project.

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment

This section discusses the proposed project's impacts related to the release of GHG emissions for both the construction and operation periods. As discussed in more detail below, with implementation of Mitigation Measure AIR-1, which is identified in Section 4.3, Air Quality of this EIR and which requires implementation of the BAAQMD's Basic Construction Measures as outlined in ConnectMenlo Final EIR Mitigation Measure AQ-2b1, construction-period GHG emissions would be reduced to ***less than significant with mitigation*** **(LTS/M)**. Based on the project-specific thresholds developed for this analysis, operation period emissions would be below 3.9 metric tons of CO_2e per capita service population (employees plus residents) per year; therefore, operation period impacts would also be ***less than significant*** **(LTS)**.

Construction Impacts. GHG emissions associated with the proposed project would occur over the short term from demolition and construction activities, which would produce combustion emissions from various sources, but primarily of emissions from equipment exhaust. During demolition and construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As identified in Section 4.4.2.1 above, the BAAQMD has not adopted thresholds for construction emissions but recommends quantification and disclosure of these emissions. The California Emissions Estimator Model version 2016.3.2 (CalEEMod) was used to estimate demolition and construction-related emissions associated with the proposed project. The proposed project would include demolition of the 118,944 square feet of existing buildings and surface parking lots on the project site, which was included in CalEEMod. In addition, a total of approximately 16,500 cubic yards of soils would be imported to the project site, which was included in CalEEMod. Construction of the proposed project is anticipated to begin in May 2021 and would occur over a 37-month period. The proposed project is anticipated to be fully operational and occupied by summer 2024. The project sponsor provided construction fleet details; however, other construction details are not yet known and would not be available until the project is undergoing final design; therefore, default assumptions (e.g., construction worker and truck trips) from CalEEMod were used. This analysis assumes the use of Tier 2 construction equipment. CalEEMod output sheets are included in Appendix F.

Using CalEEMod, it is estimated that construction of the proposed project would generate a total of approximately 3,569.4 metric tons of CO_2e. Although the BAAQMD does not have adopted thresholds for construction emissions, without implementation of all feasible reduction measures, construction period impacts would be potentially significant.

The BAAQMD recommends adoption of Best Management Practices to mitigate GHG construction emissions. Implementation of Mitigation Measure AIR-1 which, as identified in Section 4.3, Air Quality, would require implementation of the BAAQMD's Basic Construction Measures as required by ConnectMenlo Final EIR Mitigation Measure AQ-2b1, would reduce GHG emissions by reducing the amount of construction vehicle idling and by requiring the use of properly maintained equipment. In addition, implementation of Mitigation Measure AIR-2, as identified in Section 4.3, Air Quality, would require the use of Tier 4 construction equipment. Therefore, project construction impacts associated with GHG emissions would be ***less than significant with mitigation*** **(LTS/M)**.

Operational Impacts. The proposed project would generate GHG emissions associated with energy, on-road transportation sources, potable water use, wastewater generation, solid waste disposal, and stationary sources. Long-term operational GHG emissions associated with the proposed project were calculated using CalEEMod. The methodology and/or qualitative description of the sources of GHG emissions associated with transportation, electricity, water use, solid waste disposal, and use of the two emergency generators are described below.

The proposed project would result in GHG emissions from the combustion of fossil fuels associated with an increase in daily automobile trips generated by the proposed residential and office land uses. For land use development projects like the proposed project, vehicle miles traveled (VMT) and vehicle trips are the most direct indicators of GHG emissions. Trip generation rates used in CalEEMod for the project were based on the project's trip generation estimates, which assumes the proposed project would typically generate approximately 2,772 net new average daily trips (refer to Table 4.2.B in Section 4.2, Transportation, for trip generation estimates).[34]

Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. Consistent with ConnectMenlo requirements, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards, which was included in CalEEMod. The proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric.

[34] As further discussed in Chapter 3.0, Project Description and Section 4.2, Transportation, an approximately 2,940-square-foot office space is currently proposed. An office space of this size would generate fewer trips than the approximately 2,100-square-foot commercial space (café) that is analyzed as the nonresidential community amenity use in the proposed project trip generation estimate. Thus, the transportation analysis, and other technical evaluations that are based on this analysis including greenhouse gas emissions, evaluate a project with higher trip generation potential. Therefore, this analysis can be considered conservative while also allowing flexibility in selecting the future tenant of the nonresidential space.

Water and wastewater related GHG emissions are based on water supply and conveyance, water treatment, water distribution, and wastewater treatment. Each element of the water use cycle has unique energy intensities (kilowatt hours [kWh]/million gallons). Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Land filling and other methods of disposal use energy for transporting and managing the waste, and these activities produce additional GHGs to varying degrees. Land filling, the most common waste management practice, results in the release of CH_4 from the anaerobic decomposition of organic materials. CH_4 is a GHG that is 25 times more potent than CO_2. However, landfill CH_4 can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere. In addition, stationary sources would be associated with the two emergency generators.

As identified above, long-term operational GHG emissions associated with the proposed project were calculated using CalEEMod. When project-specific data were not available, default assumptions from CalEEMod were used to estimate project emissions. Model results are shown in Table 4.4.D below. CalEEMod output sheets are included in Appendix F.

As shown in Table 4.4.D, mobile source emissions are the largest source of emissions, at approximately 76 percent of total CO_2e emissions, followed by energy source emissions at approximately 21 percent of the total. In addition, water source emissions are approximately 2 percent and waste source emissions are approximately 1 percent of the total emissions. Area and stationary source emissions each account for less than 1 percent of the total emissions.

Table 4.4.D: Proposed Project GHG Emissions (Metric Tons Per Year)

Emissions Source	Operational Emissions				
	CO_2	CH_4	N_2O	CO_2e	Percent of Total
Area Source Emissions	5.9	<0.1	0.0	6.0	<1
Energy Source Emissions	568.3	<0.1	<0.1	572.2	21
Mobile Source Emissions	2,077.1	0.1	0.0	2,079.0	76
Stationary Source Emissions	1.2	<0.1	0.0	1.2	<1
Waste Source Emissions	11.4	0.7	0.0	28.2	1
Water Source Emissions	40.2	0.8	<0.1	66.9	2
Total Annual Emissions				**2,753.5**	**100**
Total Annual Service Population Emissions (Metric Tons/Year/Service Population)				**2.2**	-
Service Population Threshold[1]				**3.9**	-
Exceed?				**No**	-

Source: LSA (October 2020).

[1] This threshold is based on the BAAQMD thresholds using a Statewide 2020 target (achieve 1990 levels by 2020) regressed to fit the Statewide 2030 target (40 percent below 1990 levels of emissions) for the project's opening year of 2024.

As discussed in Section 4.4.1.2 and based on the project-specific thresholds developed for this analysis, greenhouse gas emissions generated by the proposed project would be less than significant if the proposed project would result in operational-related greenhouse gas emissions of less than 3.9 metric tons of CO_2e per service population (residents plus employees).

The proposed project would develop 483 residential units, which would provide housing for approximately 1,242 people. The proposed project would also result in the addition of approximately 13 new employees; therefore the total service population (residents plus employees) would be 1,255 people (refer to Section 4.1, Population and Housing). Therefore, the project's GHG emissions would result in a GHG efficiency of 2.2 metric tons CO_2e per service population, which would be below the 3.9 metric tons of CO_2e per service population threshold. Therefore, the operational GHG emission impact of the proposed project would be ***less than significant*** **(LTS)**.

2) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs

As discussed in the ConnectMenlo Final EIR, the State's GHG emissions reductions objectives are embodied in AB 32, Executive Order B-30-15, Executive Order S-03-05, and SB 375. Applicable plans adopted for the purpose of reducing GHG emissions include the Scoping Plan, Plan Bay Area, and the City's CAP. As such, the proposed project was evaluated for consistency with those plans to demonstrate whether the proposed project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the GHG emissions. As described in more detail below, the proposed project would be generally consistent with the City's CAP, Plan Bay Area, and the California Climate Change Scoping Plan. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the GHG emissions. This impact would be ***less than significant*** **(LTS)**.

Scoping Plan. The following discussion evaluates the proposed project according to the goals of AB 32, the AB 32 Scoping Plan, Executive Order B-30-15, SB 32, and AB 197.

AB 32 is aimed at reducing GHG emissions to 1990 levels by 2020. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The AB 32 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 implementation fee to fund the program.

Executive Order B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. The CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32.[35] SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Executive Order B-30-15. SB 32 builds on AB 32 and keeps the State on the path toward achieving the 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to

[35] CARB. 2017, op. cit.

provide easier public access to air emissions data that are collected by the CARB was posted in December 2016.

As identified above, the AB 32 Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by AB 32, Executive Order B-30-15 and codified by SB 32 and AB 197. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as qualitatively discussed below.

Energy Measures. Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As identified above, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards. In addition, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. Therefore, the proposed project would comply with applicable energy measures.

Water Conservation and Efficiency Measures. Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the project would comply with specific green building requirements for LEED certification, use new modern appliances and equipment, and comply with current CALGreen standards. LEED green building requirements and CALGreen standards include a variety of different measures, including reduction of wastewater and water use. Therefore, the proposed project would comply with applicable water conservation and efficiency measures.

Transportation and Motor Vehicle Measures. The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. However, vehicles traveling to and from the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020.

Vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. Therefore, the proposed project would comply with applicable transportation and motor vehicle measures.

The proposed project would develop new residences that would locate residents near existing school, office, commercial, and light manufacturing uses, reducing the demand for travel by single occupancy vehicles. The proposed project would also develop a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site (refer to Section 4.2, Transportation). In addition, the project area is served by public transit facilities and the proposed project would provide bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single occupancy vehicles.

A summary of the proposed project's consistency with the 2017 Scoping Plan's mitigation measures identified in Appendix B of the 2017 Scoping Plan is shown in Table 4.4.E.

Table 4.4.E: Project Consistency with 2017 Scoping Plan Appendix B Measures

2017 Scoping Plan Appendix B Measures	Project Consistency
Comply with lead agency's standards for mitigating transportation impacts under SB 743.	***Consistent.*** The proposed project will be evaluated by the City of Menlo Park for compliance with SB 743 requirements through an analysis of VMT and implementation of recommended mitigation measures. Refer to Section 4.2, Transportation, for additional discussion.
Require on-site EV charging capabilities for parking spaces serving the project to meet jurisdiction-wide EV proliferation goals.	***Consistent.*** The proposed project would provide outlets for EV charging.
Allow for new construction to install fewer on-site parking spaces than required by local municipal building code, if appropriate.	***Consistent.*** The proposed project would develop and implement a TDM Plan to provide trip reduction measures and reduce vehicle traffic in and around the project site. In addition, the proposed project would provide on-site amenities that would provide an incentive to residents to depend less on automobile ownership, reduce the need to drive to other sites, and encourage walking or bicycling. The proposed project would assign a Transportation Coordinator, which should provide on-site ride matching assistance and 511RideMatch assistance which would encourage residents to take transportation modes other than driving alone.

Table 4.4.E: Project Consistency with 2017 Scoping Plan Appendix B Measures

2017 Scoping Plan Appendix B Measures	Project Consistency
Dedicate on-site parking for shared vehicles.	***Not Consistent.*** The proposed project would not include on-site parking for shared vehicles; however, proposed project would develop a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site. In addition, the proposed project would provide onsite amenities that would provide an incentive to residents to depend less on automobile ownership, reduce the need to drive to other sites, and encourage walking or bicycling. In addition, the project sponsor would assign a Transportation Coordinator, which should provide on-site ride matching assistance and 511RideMatch assistance. As such, the TDM measures would encourage residents to utilize other transportation options and rely less on driving alone, consistent with this measure.
Provide adequate, safe, convenient, and secure on-site bicycle parking and storage in multi-family residential projects and in non-residential projects.	***Consistent.*** The proposed project would provide both long-term and short-term bicycle parking on-site for residents and visitors. In addition, a bike repair station with basic tools for cyclists to make repairs and adjustments would be available for residents in each apartment building.
Provide on- and off-site safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements identified in an applicable bicycle and/or pedestrian master plan.	***Consistent.*** The proposed project would install and maintain safety and security systems for pedestrians and cyclists. In addition, the proposed project would include a pedestrian paseo at the center of the site that would create a mid-block pedestrian connection between Constitution Drive and Jefferson Drive. This paseo would also extend from the center of the site through the townhome development.
Require on-site renewable energy generation.	***Consistent.*** Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. The proposed project would comply with these requirements.
Prohibit wood-burning fireplaces in new development, and require replacement of wood-burning fireplaces for renovations over a certain size developments.	***Consistent.*** The proposed project would not include wood-burning fireplaces.
Require cool roofs and "cool parking" that promotes cool surface treatment for new parking facilities as well as existing surface lots undergoing resurfacing.	***Consistent.*** The proposed project would include cool roofs. In addition, the proposed project would demolish the existing surface parking lot and would provide parking within an enclosed parking structure, negating the need for cool parking facilities.

Table 4.4.E: Project Consistency with 2017 Scoping Plan Appendix B Measures

2017 Scoping Plan Appendix B Measures	Project Consistency
Require solar-ready roofs.	***Not Applicable.*** The proposed project would not include solar-ready roofs, which more appropriately fit the design of single-family residences. However, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. The proposed project would comply with these requirements.
Require organic collection in new developments.	***Consistent.*** Menlo Park residents are served by Recology San Mateo County for solid waste, recycling, and composting services. As such, the proposed project would provide composting services.
Require low-water landscaping in new developments. Require water efficient landscape maintenance to conserve water and reduce landscape waste.	***Consistent.*** The proposed project would provide a landscaped area providing stormwater treatment drought and/or disease resistant landscaping, and energy-efficient appliances and efficient irrigation systems.
Achieve Zero Net Energy performance building standards prior to dates required by the Energy Code.	***Consistent.*** Although the project is not anticipated to achieve net zero energy, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards. These measures exceed the building performance standards required by the Energy Code. In addition, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. The proposed project would comply with these requirements.

Table 4.4.E: Project Consistency with 2017 Scoping Plan Appendix B Measures

2017 Scoping Plan Appendix B Measures	Project Consistency
Encourage new construction, including municipal building construction, to achieve third-party green building certifications, such as the GreenPoint Rated program or the LEED rating system.	***Consistent.*** The proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric. In addition, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards. In addition, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. The proposed project would comply with these requirements.
Require the design of bike lanes to connect to the regional bicycle network.	***Consistent.*** The proposed project would not include bike lanes; however, there is an existing bike lane bordering the project site on Constitution Drive. The project would design streets/roads that encourage pedestrian and bicycle access and discourage automobile access. In addition, the project would provide both long-term and short-term bicycle parking on-site for residents and visitors. In addition, a bike repair station with basic tools for cyclists to make repairs and adjustments would be available for residents in each apartment building.
Expand urban forestry and green infrastructure in new land development.	***Consistent.*** A total of approximately 86,952 square feet of on-site private residential, common, and publicly accessible open space would be provided by the proposed development. In addition, approximately 20 new trees would be planted on the project site, including between each of the buildings and along Jefferson Drive and Constitution Drive. Landscaping would also be provided throughout the project site in the open space areas mentioned above.

Table 4.4.E: Project Consistency with 2017 Scoping Plan Appendix B Measures

2017 Scoping Plan Appendix B Measures	Project Consistency
Require preferential parking spaces for park and ride to incentivize carpooling, vanpooling, commuter bus, electric vehicles, and rail service use.	***Consistent.*** The proposed project would assign a Transportation Coordinator to provide information regarding alternative modes of transportation to residents. The Transportation Coordinator's responsibilities would include updating information on the online information board/kiosk, providing trip planning assistance and/or ride-matching assistance to residents who are considering an alternative mode for their commute, and managing the annual surveys. The Transportation Coordinator should maintain a supply of up-to-date transit schedules and route maps for SamTrans and Caltrain and be knowledgeable enough to answer residents' TDM program-related questions. The Transportation Coordinator should distribute a carpool/vanpool matching application to all residents as part of the New Resident Information packets. The application would match residents who live on-site and may be able to carpool or vanpool together. Additionally, the proposed project would include EV charging stations and would be hard-wired to provide additional EV charging as needed.
Require a transportation management plan for specific plans, which establishes a numeric target for non-SOV travel and overall VMT.	***Consistent.*** The proposed project would develop a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site. In addition, the proposed project would provide on-site amenities that would provide an incentive to residents to depend less on automobile ownership, reduce the need to drive to other sites, and encourage walking or bicycling. The proposed project would also include a Transportation Coordinator to provide information regarding alternative modes of transportation to residents.
Develop a rideshare program targeting commuters to major employment centers.	***Consistent.*** The proposed project would develop a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site. In addition, the proposed project would provide on-site amenities that would provide an incentive to residents to depend less on automobile ownership, reduce the need to drive to other sites, and encourage walking or bicycling. The proposed project would assign a Transportation Coordinator, which should provide on-site ride matching assistance and 511RideMatch assistance.
Require the design of bus stops/shelters/express lanes in new developments to promote the usage of mass-transit.	***Not Applicable.*** There are no planned bus stops within the immediate vicinity of the project site. The proposed project would install and maintain alternative transportation kiosks.
Require gas outlets in residential backyards for use with outdoor cooking appliances such as gas barbeques if natural gas service is available.	***Not Applicable.*** The proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric.
Require the installation of electrical outlets on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment.	***Consistent.*** The proposed project would provide electric outlets to promote the use of electric landscape maintenance equipment.

Table 4.4.E: Project Consistency with 2017 Scoping Plan Appendix B Measures

2017 Scoping Plan Appendix B Measures	Project Consistency
Require the design of the electric boxes in new residential unit garages to promote electric vehicle usage.	***Consistent.*** The proposed project would provide outlets for EV charging.
Require electric vehicle charging station (Conductive/inductive) and signage for non-residential developments.	***Consistent.*** The proposed project would provide outlets for EV charging.
Provide electric outlets to promote the use of electric landscape maintenance equipment to the extent feasible on parks and public/quasi-public lands.	***Consistent.*** The proposed project would provide electric outlets to promote the use of electric landscape maintenance equipment.
Require each residential unit to be "solar ready," including installing the appropriate hardware and proper structural engineering.	***Consistent.*** As the proposed project would include rental units, each unit would not be solar ready. However, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. The proposed project would comply with these requirements. In addition, Title 24 provides options for complying with the "solar ready" requirement; and the proposed project would incorporate a wireless thermostat and Energy Star appliances consistent with this measure.
Require the installation of energy conserving appliances such as on-demand tankless water heaters and whole-house fans.	***Consistent.*** The proposed project would incorporate efficient lighting and appliances.
Require each residential and commercial building to be equipped with energy efficient AC units and heating systems with programmable thermostats/timers.	***Consistent.*** As the proposed project would comply with specific green building requirements for LEED certification, use new modern appliances and equipment, and comply with current CALGreen standards, it is assumed that the proposed project would be equipped with energy efficient AC units and heating systems with programmable thermostats/timers.
Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use.	***Consistent.*** The proposed project would enroll in the USEPA Energy Star Building Portfolio Manager, which is an online tool used to measure and track energy and water consumption.
Require each residential and commercial building to utilize low flow water fixtures such as low-flow toilets and faucets.	***Consistent.*** As the proposed project would comply with specific green building requirements for LEED certification, use new modern appliances and equipment, and comply with current CALGreen standards, it is assumed that the proposed project would utilize low flow water fixtures.

Table 4.4.E: Project Consistency with 2017 Scoping Plan Appendix B Measures

2017 Scoping Plan Appendix B Measures	Project Consistency
Require the use of energy-efficient lighting for all street, parking, and area lighting.	***Consistent.*** As the proposed project would comply with specific green building requirements for LEED certification, use new modern appliances and equipment, and comply with current CALGreen standards, it is assumed that the proposed project would incorporate efficient lighting.
Require the landscaping design for parking lots to utilize tree cover and compost/mulch.	***Not Applicable.*** The proposed project would provide all parking within a parking garage; therefore this measure is not applicable.
Incorporate water retention in the design of parking lots and landscaping, including using compost/mulch.	***Consistent.*** The proposed project would provide all parking within a parking garage; therefore, this measure is not applicable to the project.
Require the development project to propose an off-site mitigation project which should generate carbon credits equivalent to the anticipated GHG emission reductions. This would be implemented via an approved protocol for carbon credits from California Air Pollution Control Officers Association (CAPCOA), the California Air Resources Board, or other similar entities determined acceptable by the local air district.	***Not Applicable.*** The proposed project would not propose an off-site mitigation project as mitigation is not required.
Require the project to purchase carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry determined to be acceptable by the local air district.	***Not Applicable.*** The proposed project would not purchase carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry as mitigation is not required.
Encourage the applicant to consider generating or purchasing local and California-only carbon credits as the preferred mechanism to implement its off-site mitigation measure for GHG emissions and that will facilitate the State's efforts in achieving the GHG emission reduction goal.	***Not Applicable.*** The proposed project would not generate or purchase local or California-only carbon to achieve net zero GHG emissions as mitigation is not required.

Source: Compiled by LSA (July 2020).
AC = air conditioning
CALGreen Code = California Green Building Standards Code
EV = electric vehicle
GHG = greenhouse gas
SB = Senate Bill
SOV = single-occupancy vehicle
VMT = vehicle miles traveled

Plan Bay Area. As described above, Plan Bay Area 2040 is a State-mandated, integrated long-range transportation and land use plan. Plan Bay Area 2040 includes 7 goals and 13 performance targets covering three broad areas: the environment, equity and the economy. These targets enable the plan to be evaluated by its performance in areas identified as key regional concerns, including equitable access, economic vitality and transportation system effectiveness. Table 4.4.F includes an evaluation of the proposed project's consistency with the Plan Bay Area 2040 goals and performance targets.

Table 4.4.F: Project Consistency with Plan Bay Area 2040

Goal	Target	Project Consistency
Climate Protection	1. Reduce per-capita CO_2 emissions	***Consistent.*** The proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards. In addition, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project. The proposed project would comply with these requirements.
Adequate Housing	2. House the region's population	***Consistent.*** The proposed project would include multi-family residential buildings with approximately 482 dwelling units.
Healthy and Safe Communities	3. Reduce adverse health impacts	***Consistent.*** As discussed in Section 4.3, Air Quality, the proposed project would not result in the exposure of future residents to adverse health effects.
Open Space and Agricultural Preservation	4. Direct development within urban footprint	***Consistent.*** The proposed project would result in the demolition of existing office and industrial square footage and the redevelopment of the project site with residential buildings.
Equitable Access	5. Decrease share of lower-income households' budgets spent on housing and transportation	***Consistent.*** The project sponsor is currently proposing that 15 percent or a minimum of 73 of the total number of units across the entire project, with a mix of apartments and townhomes, would comply with the City's Below Market Rate Housing Program Ordinance, Chapter 16.96, and the City's Below Market Rate Guidelines.
	6. Increase share of affordable housing	***Consistent.*** The project sponsor is currently proposing that 15 percent or a minimum of 73 of the total number of units across the entire project, with a mix of apartments and townhomes, would comply with the City's Below Market Rate Housing Program Ordinance, Chapter 16.96, and the City's Below Market Rate Guidelines.
	7. Do not increase share of households at risk of displacement	***Consistent.*** The proposed project would result in the demolition of existing office and industrial square footage and the redevelopment of the project site with residential buildings. As discussed in detail in Section 4.1, Population and Housing, the proposed project would not result in the direct or indirect displacement of existing housing.

Table 4.4.F: Project Consistency with Plan Bay Area 2040

Goal	Target	Project Consistency
Economic Vitality	8. Increase share of jobs accessible in congested conditions	***Not Applicable.*** This strategy is not applicable, as the proposed project would consist of multi-family apartment and townhome buildings. However, jobs within walking and biking distance could be accessible to occupants of the housing units.
	9. Increase jobs in middle-wage industries	***Not Applicable.*** This strategy is not applicable, as the proposed project would consist of multi-family apartment and townhome buildings.
	10. Reduce per-capita delay on freight network	***Not Applicable.*** This strategy is not applicable, as the proposed project would consist of multi-family apartment and townhome buildings
Transportation System Effectiveness	11. Increase non-auto mode share	***Consistent.*** The proposed project would develop new housing units that would locate residents near existing school, office, commercial, and light manufacturing uses, reducing the demand for travel by single occupancy vehicles. The proposed project would also develop a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site. In addition, the project area is served by public transit facilities. The nearest bus stop to the project site is served by SamTrans Route 270, which runs on a loop from the Redwood City Transit Center to Atherton with hour-long headways, and is located approximately 0.5 mile to the west on Haven Avenue. The Menlo Park and Palo Alto Caltrain stations are located within 3 miles of the project site to the south. The M3 Menlo Park Shuttle stop is also located at 150 Jefferson Drive, less than 100 feet from the project site. In addition, the proposed project would provide bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single occupancy vehicles.
	12. Reduce vehicle operating and maintenance costs due to pavement conditions	***Not Applicable.*** This strategy is not applicable, as the proposed project would consist of multi-family and townhome residential buildings.
	13. Reduce per-rider transit delay due to aged infrastructure	***Not Applicable.*** This strategy is not applicable, as the proposed project would consist of multi-family and townhome residential buildings. In addition, the proposed project would provide on-site amenities that would provide an incentive to residents to depend less on automobile ownership, reduce the need to drive to other sites, and encourage walking or bicycling. The proposed project would also include a Transportation Coordinator to provide information regarding alternative modes of transportation to residents.

Source: Metropolitan Transportation Commission and Association of Bay Area Governments (2015), LSA (July 2020).

Menlo Park Climate Action Plan. As discussed above, the City's CAP was first adopted in May 2009 and is updated from time to time, most recently in 2020, and identifies local emissions reduction strategies designed to help meet AB 32 targets. The CAP recommends various community and municipal strategies for near-term and mid-term considerations. The emissions reduction strategies are generally focused on community actions, since more than 99 percent of the emissions are from community sources.

The City updates its community-wide GHG inventory and CAP annually. In 2011, the City completed the first update to the City's CAP Strategy, known as the 2011 CAP Assessment Report. As part of the 2013 update, the City Council adopted a target of reducing community-wide GHG emissions by 27 percent below 2005 levels by 2020.

The most recent status update to the City's CAP was conducted in June 2020.[36] The 2020 CAP includes updated emissions inventories through year 2017 and adopted a climate goal of zero carbon by 2030. The CAP aims for a 90 percent reduction in CO_2e emissions from 2005 levels by 2030.

Table 4.4.G includes an evaluation of the proposed project's consistency with the CAP's GHG reduction strategies.

Table 4.4.G: Project Consistency with CAP Strategies

Strategy	Project Consistency
Explore policy/program options to convert 95 percent of existing buildings to all-electric by 2030.	***Consistent.*** The proposed project would not increase the demand for natural gas as the City's reach codes would require the building to be all electric. In addition, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards. In addition, Section 16.45.130(2)(A) of the Zoning Ordinance requires all new construction to meet 100 percent of energy demand through any combination of the following measures: 1) on-site energy generation; 2) purchase of 100 percent renewable electricity through Peninsula Clean Energy or Pacific Gas and Electric Company in an amount equal to the annual energy demand of the project; 3) purchase and installation of local renewable energy generation within the City of Menlo Park in an amount equal to the annual energy demand of the project; and 4) purchase of certified renewable energy credits and/or certified renewable energy offsets annually in an amount equal to the annual energy demand of the project.
Support setting regional goals for increasing EVs and decreasing gasoline sales.	***Consistent.*** The proposed project would provide outlets for EV charging.
Expand access to EV charging for multifamily and commercial properties.	***Consistent.*** The proposed project would provide outlets for EV charging.

36 Menlo Park, City of. 2020, op. cit.

Table 4.4.G: Project Consistency with CAP Strategies

Strategy	Project Consistency
Reduce vehicle miles traveled (VMT) by 25 percent or an amount recommended by the Complete Streets Commission.	***Consistent.*** The proposed project would develop new residences that would locate residents near existing residential, office, commercial, and light manufacturing uses, reducing the demand for travel by single occupancy vehicles. The proposed project would also develop a TDM plan to provide trip reduction measures and reduce vehicle traffic in and around the project site (refer to Section 4.2, Transportation). In addition, the project area is served by public transit facilities and the proposed project would provide bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single occupancy vehicles.
Eliminate the use of fossil fuels from municipal operations.	***Not Applicable.*** This action is not directly applicable to the proposed project.
Develop a climate adaptation plan to protect the community from sea level rise and flooding.	***Not Applicable.*** This action is not directly applicable to the proposed project.

Source: City of Menlo Park (2020), LSA (October 2020).

Conclusion. As described above, the proposed project would generally be consistent with the City of Menlo Park CAP, Plan Bay Area, and the California Climate Change Scoping Plan. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the GHG emissions. This impact would be ***less than significant*** **(LTS)**.

4.4.2.4 Cumulative Impacts

GHG impacts are by their nature cumulative impacts. Localized impacts of climate change are the result of the cumulative impact of global emissions. The combined benefits of reductions achieved by all levels of government help to slow or reverse the growth in GHG emissions. In the absence of comprehensive international agreements on appropriate levels of reductions achieved by each country, another measure of cumulative contribution is required. This serves to define the State's share of the reductions regardless of the activities or lack of activities of other areas of the U.S. or the world. Therefore, a cumulative threshold based on consistency with State targets and actions to reduce GHGs is an appropriate standard of comparison for significance determinations.

AB 32 requires the CARB to reduce Statewide GHG emissions to 1990 level by 2020. As part of this legislation, the CARB was required to prepare a "Scoping Plan" that demonstrates how the State will achieve this goal. The Scoping Plan was first adopted in 2011 and in it; local governments were described as "essential partners" in meeting the Statewide goal, recommending a GHG reduction level of 15 percent below 2005 to 2008 levels by 2020. In addition, the CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 GHG emissions reductions target of at least 40 percent below 1990 levels by 2030. As discussed above, the City updates its community-wide GHG inventory and CAP annually. In 2011, the City completed the first update to the City's CAP Strategy, known as the 2011 CAP Assessment Report. As part of the 2013 update, the City Council adopted a target of reducing community-wide GHG emissions by 27 percent below 2005 levels by 2020. The most recent status update to the City's CAP was conducted in June 2020.[37] The 2020 CAP includes updated emissions inventories through year 2017 and adopted a climate goal of zero carbon by 2030. The CAP aims for a 90 percent reduction in CO_2e emissions from 2005 levels by 2030.

Reductions would be achieved by existing development and new projects. Residents of new development projects would achieve lower per capita rates than residents of existing development. This is because of greater energy efficiency in new structures and lower motor vehicle travel resulting from the project designs and higher development densities anticipated from implementation of the new developments, including the proposed project.

The proposed project is anticipated to be fully operational and occupied by approximately summer 2024. As such, the proposed project would be required to help the City do its part in reducing GHG emissions beyond 2020. As identified above, the proposed project incorporates design features consistent with the applicable measures as included in the City's CAP, Plan Bay Area 2040, and the Scoping Plan. In addition, the proposed project would not generate GHG emissions that would exceed the scaled BAAQMD significance thresholds. As such, cumulative impacts would be considered ***less than significant*** **(LTS)**.

[37] Menlo Park, City of. 2020, op. cit.

4.5 NOISE

This section describes existing noise conditions within the project area, sets forth criteria for determining the significance of noise impacts and estimates the likely noise impacts that would result from operation of the proposed project. Noise model outputs are included in Appendix H of this EIR.

As discussed in Section 3.13, Noise, of the Initial Study prepared for the proposed project (Appendix B), with implementation of ConnectMenlo Final EIR Mitigation Measures NOISE-1c and NOISE-2a, the proposed project would result in less-than-significant construction-period noise and vibration impacts. The Initial Study also found that the proposed project would not expose people residing or working in the project area to excessive noise levels associated with aircraft activity. Therefore, potential impacts related to construction-period noise, groundborne vibration, and proximity of public and private airports are not further addressed in this section.

4.5.1 Setting

The setting section begins with an introduction to several key concepts and terms that are used in evaluating noise. This section also includes a description of current noise sources that affect the project site and the noise conditions that are experienced in the project site vicinity.

4.5.1.1 Characteristics of Sound

Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. Table 4.5.A contains a list of typical acoustical terms and definitions. Figure 4.5-1 shows representative outdoor and indoor noise levels in units of dBA.

Table 4.5.A: Definitions of Acoustical Terms

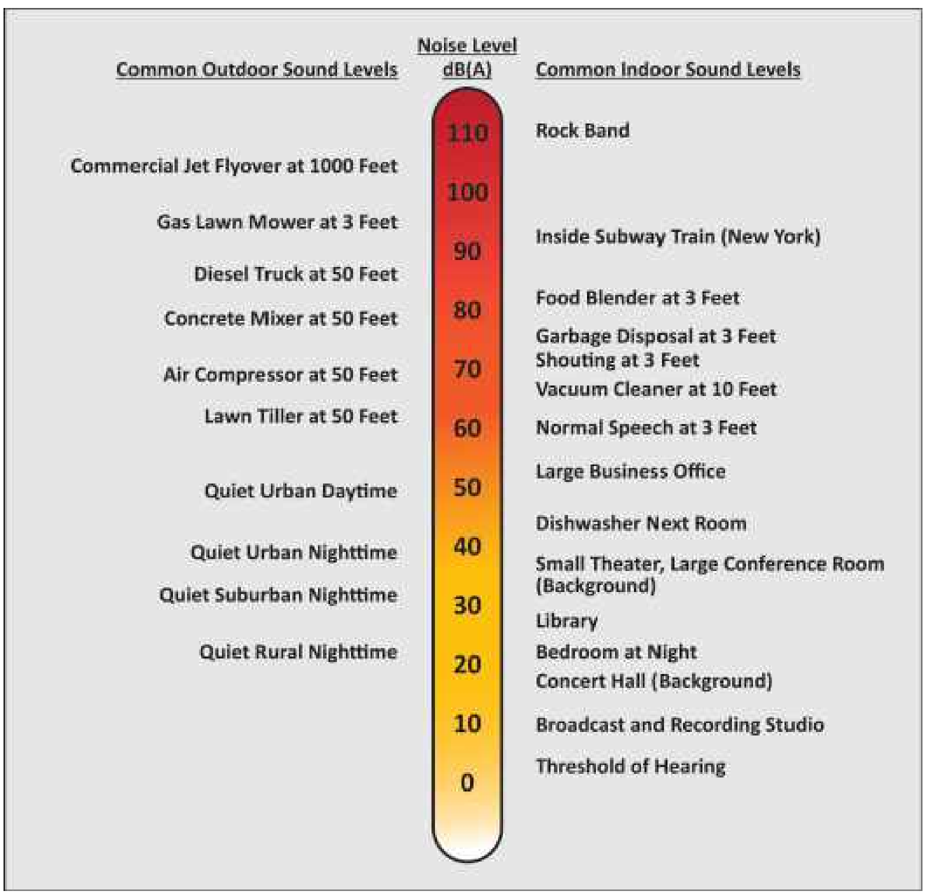
Term	Definitions
Decibel, dB	A unit of measurement that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Cyril Harris 1998).

A decibel (dB) is a unit of measurement, which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern. There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described in Figure 4.5-1.

Figure 4.5-1: Typical A-Weighted Sound Levels



Source: Compiled by LSA (2016).

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

Noise standards in terms of percentile exceedance levels, L_n, are often used together with the L_{max} for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the L_{10} noise level represents the level exceeded ten percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level. For a relatively steady noise, the measured L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dBA or greater, since, as described earlier, this level of noise change has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dBA that are inaudible to the human ear. A change in noise level of at least 5 dBA would be required before any noticeable change in human response would be expected and a 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise. The effects of noise on people can also be described in three categories: annoyance, interference with activities such as speech or sleep, and physiological effects such as hearing loss. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling.

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Noise annoyance occurs when it interferes with sleeping, conversation, and noise-sensitive work, including learning or listening to the radio, television, or music. According to World Health Organization (WHO) noise studies, few people are seriously annoyed by daytime activities with noise levels below 55 dBA, or are only moderately annoyed with noise levels below 50 dBA.[1]

1 World Health Organization. 1999. *Guidelines for Community Noise*.

4.5.1.2 Existing Noise Environment

The ambient noise environment in the City of Menlo Park is affected by a variety of noise sources, including vehicle traffic, train noise, aircraft noise, and stationary source noise. The General Plan Noise and Safety Element includes projected 2035 noise contours throughout the city, which indicate that the project site would be exposed to a noise level of 65 dBA CNEL primarily associated with vehicle traffic noise on US Highway 101 (US 101). The following section describes the existing noise environment and identifies the primary noise sources in the vicinity of the project site.

Existing Traffic Noise. Motor vehicles with their distinctive noise characteristics are a major source of noise in Menlo Park. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Menlo Park is exposed to noise generated by traffic on US 101, Interstate 280 (I-280), State Route 84 (SR 84), El Camino Real, Middlefield Road, Willow Road, Ravenswood Avenue, Santa Cruz Avenue, and Sand Hill Road.

Existing highway and roadway traffic noise levels in the project site vicinity were assessed using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108). This model uses a typical vehicle mix for urban/suburban areas in California and requires parameters, including traffic volumes, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Existing traffic noise contours along modeled roadway segments are shown in Table 4.5.B

Table 4.5.B: Existing Traffic Noise Levels

Roadway Segment	Average Daily Trips	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 Feet From Outermost Lane
Marsh Road south of US-101 NB Off-Ramp	9,900	< 50	< 50	109	62.3
US-101 NB Off-Ramp east of Marsh Road	30,860	137	294	633	74.8
US-101 NB Off-Ramp west of Marsh Road	32,360	141	303	653	75.5
Marsh Road north of US-101 SB Off-Ramp	14,720	< 50	70	140	64.0
US-101 SB Off-Ramp east of Marsh Road	31,350	138	297	640	75.3
US-101 SB Off-Ramp west of Marsh Road	22,550	111	239	513	73.9
Scott Drive east of Marsh Road	30,330	< 50	61	130	65.5
Bay Road east of Marsh Road	19,410	< 50	60	129	65.5
Chrysler Drive north of Constitution Drive	3,970	< 50	< 50	< 50	56.7
Chrysler Drive south of Constitution Drive	5,460	< 50	< 50	< 50	58.1
Constitution Drive west of Chrysler Drive	6,560	< 50	< 50	80	62.4
Chrysler Drive south of Jefferson Drive	4,680	< 50	< 50	< 50	57.4
Jefferson Drive east of Chrysler Drive	5,950	< 50	< 50	< 50	58.5
Chilco Street south of Bayfront Expressway	35,670	55	115	247	69.1
Bayfront Expressway west of Chilco Street	8,140	< 50	85	170	64.9
Chilco Street north of Constitution Drive	5,650	< 50	< 50	73	61.1
Constitution Drive east of Chilco Street	9,520	< 50	< 50	103	64.0
Constitution Drive west of Chilco Street	9,010	< 50	< 50	99	63.7

Table 4.5.B: Existing Traffic Noise Levels

Roadway Segment	Average Daily Trips	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 Feet From Outermost Lane
Willow Road south of Bayfront Expressway	48,170	84	176	376	70.9
Bayfront Expressway west of Willow Road	25,260	84	168	355	69.8
Hamilton Avenue east of Willow Road	24,460	< 50	53	113	64.6
University Avenue south of Bayfront Expressway	64,390	82	172	367	70.8
Florence Street-Bohannon Drive east of Marsh Road	22,910	< 50	51	108	64.3
Florence Street-Bohannon Drive west of Marsh Drive	19,320	< 50	< 50	97	63.6

Source: Compiled by LSA (October 2020).
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Equivalent Noise Level
dBA = A-weighted decibels

Existing Train Noise. Two rail lines traverse Menlo Park, including a former Union Pacific Railroad (UPRR) rail line and the Caltrain rail line. The UPRR rail line is no longer functional and the Caltrain rail line is located approximately 1.8 miles south of the project site. At this distance, railway noise would not be audible on the project site.

Existing Stationary Source Noise. Stationary sources of noise may occur from all types of land uses. Menlo Park is mostly developed with residential, commercial, and some light industrial uses. Commercial uses can generate noise from heating, ventilation, air conditioning (HVAC) systems, loading docks, trash compactors, and other sources. Industrial uses may generate noise from HVAC systems, loading docks, and machinery required for manufacturing processes. Noise generated by commercial uses is generally short and intermittent. Industrial uses may generate noise on a more continual basis, or intermittently, depending on the processes and types of machinery involved.

Existing Sensitive Land Uses. Certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project site is generally surrounded by a variety of land uses, including school, office, commercial, and light manufacturing uses. The closest sensitive receptors include the TIDE Academy, located at 150 Jefferson Drive, located approximately 85 feet south of the project site. In addition, across the Union Pacific Railroad (UPRR) tracks and 0.6 mile east of the site is the Belle Haven residential neighborhood, which is generally occupied by single-family residences.

4.5.1.3 Regulatory Framework

The following section provides brief discussions of the federal, State, and local regulatory framework related to noise.

Federal Regulations. In 1972, Congress enacted the Noise Control Act. This act authorized the USEPA to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in Table 4.5.C. The USEPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an $L_{eq}(24)$ of 70 dBA. The "(24)" signifies an L_{eq} duration of 24 hours. The USEPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

Table 4.5.C: Summary of USEPA Noise Levels

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (USEPA, March 1974).

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in Table 4.5.D. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 feet, and no substantial community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

Table 4.5.D: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}

Type of Effect	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 0.35 meter. 99 percent sentence intelligibility (average) at 1.0 meter. 95 percent sentence intelligibility (average) at 3.5 meters.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below "vigorous action."
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

Source: *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (USEPA, March 1974).

State Regulations. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. The "State Noise Insulation Standard" requires noise-sensitive land uses to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the building. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses.

City of Menlo Park. The City addresses noise in the General Plan and Municipal Code, as outlined below. The City does not have established specific vibration impact criteria; therefore, the FTA criteria presented above is utilized to assess potential damage and human annoyance during construction activities.

General Plan. The City of Menlo Park addresses noise in the Open Space, Conservation, Noise and Safety Elements of the General Plan.[2] 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, as shown in Table 4.5.E below. The following policies are applicable to the proposed project.

- **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 City's 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.

[2] Menlo Park, City of. 2013. *City of Menlo Park General Plan. Open Space Conservation, Noise and Safety Elements*. May 21.

- **Policy N1.3: Exterior and Interior Noise Standards for Residential Use Areas.** Strive to achieve acceptable interior noise levels and exterior noise levels for backyards and/or common usable outdoor areas in new residential development and reduce outdoor noise levels in existing residential areas where economically and aesthetically feasible.

- **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 without appropriate mitigation and locate noise sensitive uses away from noise sources unless mitigation measures are included in development plans.

- **Policy N1.5: Planning and Design of New Development to Reduce Noise Impacts.** Design residential developments to minimize the transportation-related noise impacts to adjacent residential areas and encourage new development to be site planned and architecturally designed to minimize noise impacts on noise-sensitive spaces. Proper site planning can be effective in reducing noise impacts.

- **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 space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to 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 N1.8: Potential Annoying or Harmful Noise.** Preclude the generation of annoying or harmful noise on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

- **Policy N1.9: Transportation Related Noise Attenuation**. Strive to minimize traffic noise through land use policies, traffic-calming methods to reduce traffic speed, law enforcement and street improvements, and encourage other agencies to reduce noise levels generated by roadways, railways, rapid transit, and other facilities.

- **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 through implementation and updating of the Noise Ordinance.

City of Menlo Park Municipal Code. The City also addresses noise in Chapter 8.06, Noise of the Municipal Code (Noise Ordinance), which contains noise limitations and exclusions for land uses within the city. The Municipal Code addresses noise limits that would constitute a noise disturbance, primarily as measured on residential land uses. The following regulations would be applicable to the project.

Table 4.5.E: Land Use Compatibility Noise Standards for New Development

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dB)					
	55	60	65	70	75	80
Residential – Low Density (Single Family, Duplex, Mobile Homes)						
Residential – Multi Family						
Transient Lodging (Motels, Hotels)						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concerts, Halls, Amphitheaters						
Sports Area, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Commercial and Professional Centers						
Industrial, Manufacturing, Utilities, Agriculture						

Source: City of Menlo Park (2013).

Normally Acceptable	Specified land use is satisfactory, based upon 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 included in the design. Conventional construction, but with closed windows and fresh air supply systems 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 generally not be undertaken.

Section 8.06.030 of the Noise Ordinance sets maximum noise levels at any residential receiving property to a maximum of 60 dBA during the daytime hours between 7:00 a.m. and 10:00 p.m., and to 50 dBA during the nighttime hours between 10:00 p.m. and 7:00 a.m. The ordinance applies an additional 5 dBA penalty to sounds of a particularly annoying nature, such as tones, screeches,

whines, and pulses, among others. The ordinance also includes a qualitative standard that prohibits noises that can be reasonably determined to be disturbing to an entire neighborhood or any considerable number of residents.

Section 8.06.040 of the Noise Ordinance also contains a number of qualified exceptions to the limitations stipulated in the ordinance; these include construction, powered equipment, and leaf blowers, deliveries, social gatherings, pavement sweeping, garbage collection, and animals. Additionally, the ordinance contains general exemptions for emergencies and emergency warning devices, sporting and City-permitted events, City and State projects, and the normal operation of typical motor vehicles. Of these, the most notable exceptions and exemptions for the purposes of this analysis include those motor vehicles and deliveries.

Notwithstanding specialized vehicle equipment or sound amplification systems, noise from the normal operation of motor vehicles (including cars, trucks, busses, trains, and airplanes) is exempted from the provisions of the noise ordinance. Noise from deliveries to food retailers and restaurants are generally excepted from the ordinance, while noise from other commercial and industrial deliveries are generally excepted between 7:00 a.m. and 6:00 p.m. Monday through Friday and 9:00 a.m. to 5:00 p.m. Saturday and Sunday.

In addition, Section 16.08.095 of the Municipal Code requires that 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 shall be screened from view as observed at an eye level horizontal to the top of the roof-mounted equipment and all sounds emitted by such equipment shall not exceed 50 dBA at 50 feet from such equipment.

4.5.2 Impacts and Mitigation Measures

This section discusses potential noise and vibration impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. As previously discussed in Chapter 3.0, Project Description, the analysis below makes reference to, and tiers, from the ConnectMenlo Final EIR, where appropriate. The findings presented in the ConnectMenlo Final EIR are presented prior to the project impact analysis. The latter part of this section presents the impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate.

4.5.2.1 Significance Criteria

The project would result in a significant impact related to noise if it would:

1) Generate a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or

2) Generate excessive groundborne vibration or groundborne noise levels.

In *California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, the California Supreme Court[3] concluded that CEQA generally does not require analysis or mitigation of the impact of existing environmental conditions on a project, including a project's future users or residents. However, as with other laws and regulations enforced by other agencies that protect public health and safety, the City as the lead agency has authority, other than CEQA, to require measures to protect public health and safety. Therefore, this document includes an evaluation of the environment's impacts on the proposed project. The evaluation includes an assessment of the project's potential to locate residential land uses in an area considered to be "conditionally acceptable" in the City's noise and land use compatibility standards.

As discussed in Section 3.13, Noise, of the Initial Study prepared for the proposed project (Appendix B), with implementation of ConnectMenlo Final EIR Mitigation Measure NOISE-1c, the proposed project would result in less-than-significant construction-period noise impacts. In addition, with implementation of ConnectMenlo Final EIR Mitigation Measure NOISE-2a, the proposed project would result in less-than-significant construction-period vibration impacts. The Initial Study also found that the proposed project would not expose people residing or working in the project area to excessive noise levels associated with aircraft activity. Therefore, potential impacts related to construction-period noise, groundborne vibration, and proximity of public and private airports will not be addressed in the following analysis.

4.5.2.2 ConnectMenlo Final EIR Impacts

The ConnectMenlo Final EIR determined that with buildout of the development potential assumed in ConnectMenlo, there would be substantial permanent increases to the ambient noise levels throughout Menlo Park, and that these increases would primarily result from increases to transportation-related noise, especially that of automobile traffic. As discussed in the ConnectMenlo Final EIR, Noise Element Policies N-1.6 and N-1.9 and Programs N-1.B and N-1.C are intended to prevent or reduce traffic noise impacts on surrounding land uses. Implementation of these policies and programs would serve to reduce noise from vehicles at the source and to otherwise shield uses from excessive noise.

The ConnectMenlo Final EIR also determined that a portion of the substantial permanent increases to ambient noise levels that could result from implementation of ConnectMenlo would be attributable to ongoing operations. As discussed in the ConnectMenlo Final EIR, residential, open space, and most passive recreational land uses (i.e., trails, rests areas, picnic areas) are generally not associated with substantial permanent increases in ambient noise. In the case of these land uses, very specific sources of noise, such as lawn equipment or social gatherings, would be the most likely source of excessive noise. However, these noise sources would be addressed via the Section 8.06, Noise, of the City's Municipal Code. Noise sources associated with residential, open space, and passive recreational land uses are generally not sufficiently frequent or sustained so as to result in permanent substantial increases to ambient noise levels. Instead, substantial permanent increases in ambient noise levels would be most likely to result from development of commercial, industrial,

[3] California Supreme Court. 2015. *California Building Industry Association v. Bay Area Air Quality Management District 62 Cal.4th 369, Case No. S213478*. December.

mixed-use, and certain institutional or active recreational land uses (i.e., sports fields, skate-parks, dog parks).

As discussed in the ConnectMenlo Final EIR, new residential land uses could experience an indoor noise level exceeding 45 dBA. Consistent with the requirements of Mitigation Measure NOISE-1a of the ConnectMenlo Final EIR, to meet the requirements of Title 24 and General Plan Program N-1.A, acoustical studies shall be performed for individual development projects prior to issuance of building permits for development of new noise-sensitive uses. New residential dwellings, hotels, motels, dormitories, and school classrooms must meet an interior noise limit of 45 dBA CNEL or L_{dn}. Developments in areas exposed to more than 60 dBA CNEL must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. Where exterior noise levels are projected to exceed 60 dBA CNEL or L_{dn} at the façade of a building, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the 45 dBA noise limit. Acoustical studies must be performed for all new multi-family residential projects within the projected L_{dn} 60 dB noise contours, so that noise mitigation measures can be incorporated into project design and site planning.

4.5.2.3 Project Impacts

The following section discusses the potential noise impacts associated with implementation of the proposed project.

1) Create a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established by the City

Sources of noise associated with residential uses typically include vehicle traffic and operational noise, such as HVAC equipment. As further discussed below, operation of the proposed project would result in the generation of noise levels above existing conditions; however, these noise levels would not exceed established standards for such increases and this impact would be ***less than significant*** **(LTS)**. As discussed, in more detail below, impacts associated with interior and exterior noise exposure would exceed the City's conditionally acceptable noise criteria for multi-family development; however, with implementation of Mitigation Measure NOI-1, this impact would be ***less than significant with mitigation*** **(LTS/M)**.

Traffic Noise Impacts. Traffic noise levels were assessed using the FHWA Highway Traffic Noise Prediction Model (FHWA RD 77-108). This model uses a typical vehicle mix for urban/suburban areas in California and requires parameters, including traffic volumes, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Traffic volumes for Existing, Near Term, and Cumulative without and with project traffic noise levels at 50 feet from the centerline of the outermost travel lane for each roadway segment in the project vicinity are shown in Table 4.5.F. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between traffic and the location where the noise contours are drawn. Appendix H provides the specific assumptions used in developing these noise levels and model printouts.[4]

On-Site Traffic Noise Impacts. As shown in Table 4.5.F, with implementation of the proposed project, future noise levels along Jefferson Drive and Constitution Drive adjacent to the project site (represented by the shaded cells in the table) would result in a 0.3 dBA increase and 1.0 dBA increase over conditions without the proposed project, respectively. The resulting noise levels along Jefferson Drive would be 58.7 dBA CNEL under Existing with Project conditions, 58.9 dBA CNEL under Near Term with Project conditions, and 58.9 dBA CNEL under Cumulative with Project conditions, which would be below the City's normally acceptable exterior noise level for residential land uses. In addition, the resulting noise levels along Constitution Drive would be 63.8 dBA CNEL under Existing with Project conditions and Near Term with Project conditions and 64.8 dBA CNEL under Cumulative with Project conditions, which would also be below the City's normally acceptable exterior noise level for residential land uses. The noise level increase would be well below the significance threshold for noise-level increases of 3 dBA or more. Therefore, on-site traffic-related noise impacts would be ***less than significant*** **(LTS)**.

Off-Site Traffic Noise Impacts. As indicated above, certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project site is generally surrounded by a variety of land uses, including office, light manufacturing, commercial, and proposed residential uses. The closest sensitive receptors include the TIDE Academy, located at 150 Jefferson Drive, approximately 85 feet south of the project site. In addition, across the UPRR tracks and 0.6 mile east of the site is the Belle Haven residential neighborhood, which is generally occupied by single-family residences.

As shown in Table 4.5.F, future noise levels along existing roadways are projected to increase by approximately up to 0.6 dBA at off-site roadway segments (Chrysler Drive north of Constitution Drive) under Existing with Project conditions. Resulting noise levels would be 57.3 dBA CNEL under Existing with Project conditions, 60.1 dBA CNEL under Near Term with Project conditions, and 60.4 dBA CNEL under Cumulative with Project conditions, which would be below the City's normally acceptable exterior noise level for residential and school land uses.

4 As further discussed in Chapter 3.0, Project Description and Section 4.2, Transportation, an approximately 2,940-square-foot office space is currently proposed. An office space of this size would generate fewer trips than the approximately 2,100-square-foot commercial space (café) that is analyzed as the nonresidential community amenity use in the proposed project trip generation estimate. Thus, the transportation analysis, and other technical evaluations that are based on this analysis including noise, evaluate a project with higher trip generation potential. Therefore, this analysis can be considered conservative while also allowing flexibility in selecting the future tenant of the nonresidential space.

Table 4.5.F: Traffic Noise Levels Without and With Proposed Project

Roadway Segment	Existing Traffic Volumes					Near Term Traffic Volumes					Cumulative Traffic Volumes				
	Without Project		With Project			Without Project		With Project			Without Project		With Project		
	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions
Marsh Road south of US-101 NB Off-Ramp	9,900	62.3	10,100	62.4	0.1	10,330	62.5	10,530	62.5	0.0	10,340	62.5	10,540	62.5	0.0
US-101 NB Off-Ramp east of Marsh Road	30,860	74.8	31,420	74.8	0.0	36,430	75.5	36,990	75.6	0.1	40,860	76.0	41,420	76.0	0.0
US-101 NB Off-Ramp west of Marsh Road	32,360	75.5	32,720	75.5	0.0	37,500	76.1	37,860	76.1	0.0	41,920	76.6	42,280	76.6	0.0
Marsh Road north of US-101 SB Off-Ramp	14,720	64.0	15,000	64.1	0.1	15,090	64.1	15,370	64.2	0.1	19,400	65.2	19,680	65.3	0.1
US-101 SB Off-Ramp east of Marsh Road	31,350	75.3	31,720	75.4	0.1	34,850	75.8	35,220	75.8	0.0	38,610	76.2	38,980	76.3	0.1
US-101 SB Off-Ramp west of Marsh Road	22,550	73.9	22,640	73.9	0.0	25,740	74.5	25,830	74.5	0.0	27,230	74.7	27,320	74.7	0.0
Scott Drive east of Marsh Road	30,330	65.5	30,420	65.6	0.1	33,520	66.0	33,610	66.0	0.0	35,000	66.2	35,090	66.2	0.0
Bay Road east of Marsh Road	19,410	65.5	19,490	65.5	0.0	21,770	66.0	21,850	66.0	0.0	22,620	66.1	22,700	66.1	0.0
Chrysler Drive north of Constitution Drive	3,970	56.7	4,550	57.3	0.6	8,640	60.1	9,220	60.4	0.3	8,710	60.1	9,290	60.4	0.3
Chrysler Drive south of Constitution Drive	5,460	58.1	5,730	58.3	0.2	6,500	58.9	6,770	59.0	0.1	10,860	61.1	11,130	61.2	0.1
Constitution Drive west of Chrysler Drive	6,560	62.4	6,930	62.6	0.2	6,810	62.5	7,180	62.8	0.3	11,070	64.6	11,440	64.8	0.2
Chrysler Drive south of Jefferson Drive	4,680	57.4	5,050	57.8	0.4	4,990	57.7	5,360	58.0	0.3	8,270	59.9	8,640	60.1	0.2
Jefferson Drive east of Chrysler Drive	5,950	58.5	6,320	58.7	0.2	6,200	58.6	6,570	58.9	0.3	10,420	60.9	10,790	61.1	0.2
Chilco Street south of Bayfront Expressway	35,670	69.1	35,940	69.2	0.1	39,720	69.6	39,990	69.6	0.0	45,110	70.2	45,830	70.2	0.0
Bayfront Expressway west of Chilco Street	8,140	64.9	8,410	65.1	0.2	9,300	65.5	9,570	65.6	0.1	13,570	67.1	13,840	67.2	0.1
Chilco Street north of Constitution Drive	5,650	61.1	5,970	61.4	0.3	6,810	61.9	7,130	62.1	0.2	9,720	63.5	10,040	63.6	0.1
Constitution Drive east of Chilco Street	9,520	64.0	9,790	64.1	0.1	10,680	64.5	10,950	64.6	0.1	18,300	66.8	18,570	66.9	0.1
Constitution Drive west of Chilco Street	9,010	63.7	9,060	63.8	0.1	9,010	63.7	9,060	63.8	0.1	11,380	64.8	11,430	64.8	0.0
Willow Road south of Bayfront Expressway	48,170	70.9	48,370	71.0	0.1	51,140	71.2	51,340	71.2	0.0	64,200	72.2	64,400	72.2	0.0
Bayfront Expressway west of Willow Road	25,260	69.8	25,330	69.8	0.0	28,750	70.4	28,820	70.4	0.0	40,190	71.9	40,260	71.9	0.0
Hamilton Avenue east of Willow Road	24,460	64.6	24,530	64.6	0.0	29,020	65.4	29,090	65.4	0.0	39,630	66.7	39,700	66.7	0.0
University Avenue south of Bayfront Expressway	64,390	70.8	64,560	70.8	0.0	67,400	71.0	67,570	71.0	0.0	82,050	71.8	82,220	71.8	0.0
Florence Street-Bohannon Drive east of Marsh Road	22,910	64.3	23,000	64.3	0.0	26,100	64.9	26,190	64.9	0.0	27,590	65.1	27,680	65.1	0.0
Florence Street-Bohannon Drive west of Marsh Drive	19,320	63.6	19,400	63.6	0.0	21,690	64.1	21,770	64.1	0.0	22,830	64.3	22,910	64.3	0.0

Source: Compiled by LSA (October 2020).
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
Shaded cells indicate roadways adjacent to the project site.
ADT = average daily traffic; ADT refers to the specific roadway segment and is calculated based on the PM peak hour turning movement volumes.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels

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As discussed above, with implementation of the proposed project, future noise levels along Jefferson Drive adjacent to the project site and TIDE Academy would result in a 0.3 dBA increase and 1.0 dBA increase over conditions without the proposed project, respectively. The resulting noise levels along Jefferson Drive would be 58.7 dBA CNEL under Existing with Project conditions, 58.9 dBA CNEL under Near Term with Project conditions, and 58.9 dBA CNEL under Cumulative with Project conditions, which would be below the City's normally acceptable exterior noise level for school land uses.

With implementation of the proposed project, the noise level increases would be well below the significance threshold for noise-level increases of 3 dBA or more and would not result in a perceptible increase in noise at nearby residential uses or at the TIDE Academy. Therefore, off-site traffic-related noise impacts would be ***less than significant*** **(LTS)**.

Stationary Source Noise Impacts. A total of approximately 52,439 square feet of open space would be provided with Buildings A and B. Private residential open space would consist of balconies and terraces, totaling approximately 14,832 square feet. Common useable space for residents would consist of an approximately 8,725-square-foot plaza on the ground floor between the two buildings, the combined total of approximately 14,225 square feet of amenity decks on the third floors, and the combined total of approximately 3,032 square feet of roof terraces on the seventh floors, for a total of approximately 25,980 square feet of common open space across Buildings A and B. Publicly accessible open space on the multifamily portion of the development site would consist of an approximately 11,627-square-foot pedestrian paseo on the ground floor that would bisect the site and provide access between Constitution Drive and Jefferson Drive.

Building Site TH1 would include a total of 34,513 square feet of open space. Private residential open space would consist of balconies on the second floor of each unit, which would total approximately 13,428 square feet. Common useable open space would consist of an approximately 2,453-square-foot park area in the center of Building Site TH1. Publicly accessible open space would consist of an approximately 10,075-square-foot extension of the pedestrian paseo, running between the townhome buildings. The remaining approximately 8,557 square feet of open space would consist of landscaped areas located throughout Building Site TH1. Noise generated by the open space would include people conversing and occasional dogs barking; however, due to the intermittent nature of these activities, the proposed open space uses would not cause an increase in noise levels of more than 3 dBA. In addition, as required by ConnectMenlo Final EIR Mitigation Measure NOISE-1b, stationary noise sources, and landscaping and maintenance activities shall comply with Chapter 8.06, Noise, of the Menlo Park Municipal Code, which sets maximum noise levels at any residential receiving property to a maximum of 60 dBA during the daytime hours between 7:00 a.m. to 10:00 p.m., and to 50 dBA during the nighttime hours between 10:00 p.m. and 7:00 a.m. In addition, Section 8.06.040 of the Noise Ordinance also contains a number of qualified exceptions to the limitations stipulated in the ordinance, including social gatherings and animals.

Operational noise associated with residential uses typically include HVAC equipment and emergency generators. The proposed project would include two emergency generators within the interior of each of the multi-family buildings. As the emergency generators would be located inside, noise associated with the emergency generators would be shielded and would not be noticeable at the surrounding uses. As such, implementation of the proposed project would generate stationary noise sources from HVAC equipment associated with the proposed building. Noise associated with HVAC equipment could take the form of fans, pumps, air compressors, chillers, or cooling towers. HVAC operations would be required to meet all noise standards, including Section 16.08.095 of the City's Municipal Code, which requires that 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 shall be screened from view as observed at an eye level horizontal to the top of the roof-mounted equipment and all sounds emitted by such equipment shall not exceed 50 dBA at 50 feet from such equipment.

For purposes of this analysis, 75 dBA L_{max} at 3 feet was assumed to represent HVAC-related noise.[5] At 50 feet, there would be a decrease of approximately 24 dBA over the existing noise levels due to attenuation with distance. As such, HVAC-related noise would be approximately 51 dBA L_{max} at 50 feet. In addition, this analysis assumes that the HVAC equipment would be screened with a parapet, which would reduce noise levels by approximately 5 dBA. Therefore, HVAC-related noise would be approximately 46 dBA at 50 feet, which would not exceed the City's noise level standards for mechanical equipment of 50 dBA L_{max} at 50 feet. Therefore, HVAC equipment noise associated with the proposed project would be ***less than significant*** **(LTS)**.

Applicable Noise Level Standards. The City sets forth normally acceptable noise level standards for land use compatibility and interior noise exposure of new development. The normally acceptable exterior noise level for multi-family residential land uses is up to 65 dBA CNEL. Noise levels of 60 to 70 dBA CNEL are considered conditionally acceptable when a detailed analysis of noise reduction requirements is made and needed noise insulation features included in the design. Noise levels of 70 to 75 dBA CNEL are considered normally unacceptable and require a detailed analysis of noise reduction requirements be made and needed noise insulation features included in the design. Noise levels above 75 dBA CNEL are considered clearly unacceptable and new development should generally not be undertaken. The normally acceptable interior noise level for residential units is 45 dBA CNEL.

Impact NOI-1: The proposed project would locate residential land uses in an area that is considered a conditionally acceptable noise environment based on the City's Noise and Land Use Compatibility Guidelines for multi-family residential land uses. (PS)

The noise environment at the project site is dominated by vehicle traffic noise on Jefferson Drive and Constitution Drive. Based on the traffic noise modeling presented in Table 4.5.F, traffic noise levels associated with Constitution Drive would result in the highest traffic-related noise levels at the project site. The proposed multi-family buildings would be located approximately 35 feet from the centerline of the outermost lane of Constitution Drive. At 35 feet, there would be an increase of approximately 3.1 dBA from the modeled noise levels of 63.7 dBA at 50 feet from the centerline due to attenuation with distance from Constitution Drive. Therefore, the proposed multi-family residential building may be subject to traffic noise levels of approximately

5 Trane. 2002. *Sound Data and Application Guide for the New and Quieter Air-Cooled Series R Chiller*.

66.8 dBA CNEL. Based on the City's noise and land use compatibility standards, this noise level is considered conditionally acceptable for multi-family residential land uses. According to the City's guidelines, 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. Therefore, the land use may be permitted only after detailed analysis of the noise reduction features proposed to be incorporated in the building design. Consistent with the City's requirements and the requirements of Mitigation Measure NOISE-1a of the ConnectMenlo Final EIR, a detailed interior and exterior noise analysis is provided below.

<u>Interior Noise Analysis.</u> Based on USEPA Protective Noise Levels,[6] with a combination of walls, doors, and windows, standard construction for Northern California buildings (STC-28) would provide more than 25 dBA in exterior-to-interior noise reduction with windows closed and 15 dBA or more with windows open. With windows open, the buildings would not meet the City's normally acceptable interior noise standard of 45 dBA CNEL (i.e., 66.8 dBA – 15 dBA = 51.8 dBA). Therefore, an alternate form of ventilation, such as an air-conditioning system, would be required to ensure that windows can remain closed for a prolonged period of time. A ventilation system would reduce noise levels for residents with windows closed and would meet the City's normally acceptable interior noise level criterion of 45 dBA CNEL (i.e., 66.8 dBA – 25 dBA = 41.8 dBA). Therefore, the City should verify that buildings include fresh air ventilation.

Implementation of the HVAC system would allow windows to remain closed in order to reduce interior noise levels by 25 dBA, resulting in interior noise levels of 41.8 dBA CNEL, which would meet the City's interior noise standard of 45 dBA CNEL. Project-Specific Mitigation Measure NOI-1 below would include modifications to ensure that buildings would comply with the City's noise and land use compatibility standards and reduce interior noise impacts.

Mitigation Measure NOI-1: Consistent with ConnectMenlo Final EIR Mitigation Measure NOISE-1a, the proposed project shall implement the following building design measures to the satisfaction of the City in order to reduce interior noise impacts in compliance with City noise standards:

- In order for windows and doors to remain closed, mechanical ventilation such as air conditioning shall be provided for all units.
- All windows and glass doors shall be rated STC 28 or higher such that the noise reduction provided will satisfy the interior noise standard of 45 dBA CNEL.
- All vent ducts connecting interior spaces to the exterior (i.e., bathroom exhaust, etc.) shall have at least two 90 degree turns in the duct.

6 U.S. Environmental Protection Agency. 1978. *Protective Noise Levels, Condensed Version of EPA Levels Document*. November.

Implementation of Mitigation Measure NOI-1 would ensure that interior noise levels would be reduced to 45 dBA or less and would be acceptable under the City's land use compatibility standards. Therefore, this impact would be ***less than significant with mitigation (LTS/M).***

Exterior Noise Analysis. As identified above, noise levels on the project site range up to 66.8 dBA CNEL. Based on the City's noise and land use compatibility standards, this noise level is within the City's conditionally acceptable noise level of 60 to 70 dBA CNEL for multi-family residential land uses. According to the City's guidelines, 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. The existing on-site noise level would meet the City's exterior noise level standards if noise reduction requirements and noise insulation features are included in the design to meet the interior noise standard. As discussed above, interior noise levels would meet the City's standards with implementation of Mitigation Measure NOI-1 outlined above. Therefore, since interior noise levels would meet City standards, the proposed project would meet the City's exterior land use compatibility standards, resulting in a less-than-significant exterior noise impact with implementation of Mitigation Measure NOI-1. This impact would be ***less than significant with mitigation*** **(LTS/M)**.

2) Generate excessive groundborne vibration or groundborne noise levels

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source, through intervening soil and rock layers, to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are occasional traffic on rough roads. However, when roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible.

The streets surrounding the project site are paved, smooth, and unlikely to cause significant groundborne vibration. In addition, the rubber tires and suspension systems of on-road vehicles make it unusual for on-road vehicles to cause groundborne noise or vibration problems. It is therefore assumed that no such vehicular vibration impacts would occur and, therefore, no vibration impact analysis of on-road vehicles is necessary. Additionally, once constructed, the proposed project would not contain uses that would generate groundborne vibration. Therefore, groundborne vibration impacts associated with the proposed project would be considered ***less than significant*** **(LTS)**.

4.5.2.4 Cumulative Impacts

Mobile Source Noise. Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to operation of the project and other projects in the vicinity. A project's contribution to a cumulative traffic noise increase could be considered significant when the combined effect exceeds the perception level (i.e., auditory level increase) threshold. The combined effect compares the Cumulative with Project conditions to Existing conditions. This comparison accounts for the traffic noise increase generated by a project combined with the traffic noise increase generated by projects in the area (refer to Table 4.A in Chapter 4.0, Setting, Impacts and Mitigation Measures). The incremental effect compares the Cumulative with Project conditions to the Cumulative without Project conditions. The following combined effect and incremental effect criteria have been utilized to evaluate the overall effect of the cumulative noise increase.

- **Combined Effect.** The Cumulative with Project noise level would cause a significant cumulative impact if a 3.0 dB increase over Existing conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use. Although there may be a significant noise increase due to the proposed project in combination with other related projects (combined effects), it must also be demonstrated that the project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed project.

- **Incremental Effects.** The Cumulative with Project noise level results in a 1.0 dBA increase in noise over the Cumulative without Project noise level.

A significant impact would result only if both the combined and incremental effects criteria have been exceeded at a single roadway segment, since such an occurrence would indicate that there is a significant noise increase due to the proposed project in combination with other related projects and a significant portion of the noise increase is due to the proposed project. Noise by definition is a localized phenomenon and reduces as distance from the source increases. Consequently, only the proposed project and growth due to occur in the project site's general vicinity would contribute to cumulative noise impacts. Table 4.5.G lists the traffic noise effects along roadway segments in the project vicinity for existing and Cumulative traffic noise levels without and with proposed project, including incremental and net cumulative impacts.

As shown in Table 4.5.G, Chrysler Drive north of Constitution Drive and Chrysler Drive south of Constitution Drive would surpass the combined effect threshold of 3.0 dBA over Existing Conditions. However, the incremental effect would be 0.3 dBA for Chrysler Drive north of Constitution Drive and 0.1 dBA for Chrysler Drive south of Constitution Drive. As such, this combined effect would occur with or without the proposed project. Therefore, no significant cumulative traffic noise impact would result. No other roadway segments would surpass the combined effect or incremental effect thresholds. Therefore, cumulative operational mobile source noise impacts would be ***less than significant*** **(LTS)**.

Table 4.5.G: Cumulative Traffic Noise Scenario

Roadway Segment	CNEL (dBA) 50 feet from Centerline of Outermost Lane			Combined Effects[1]	Incremental Effects[2]	Cumulatively Significant Impact?
	Existing	Cumulative Without Project	Cumulative With Project			
Marsh Road south of US-101 NB Off-Ramp	62.3	62.5	62.5	0.2	0.0	No
US-101 NB Off-Ramp east of Marsh Road	74.8	76.0	76.0	1.2	0.0	No
US-101 NB Off-Ramp west of Marsh Road	75.5	76.6	76.6	1.1	0.0	No
Marsh Road north of US-101 SB Off-Ramp	64.0	65.2	65.3	1.3	0.1	No
US-101 SB Off-Ramp east of Marsh Road	75.3	76.2	76.3	1.0	0.1	No
US-101 SB Off-Ramp west of Marsh Road	73.9	74.7	74.7	0.8	0.0	No
Scott Drive east of Marsh Road	65.5	66.2	66.2	0.7	0.0	No
Bay Road east of Marsh Road	65.5	66.1	66.1	0.6	0.0	No
Chrysler Drive north of Constitution Drive	56.7	60.1	60.4	3.7	0.3	No
Chrysler Drive south of Constitution Drive	58.1	61.1	61.2	3.1	0.1	No
Constitution Drive west of Chrysler Drive	62.4	64.6	64.8	2.4	0.2	No
Chrysler Drive south of Jefferson Drive	57.4	59.9	60.1	2.7	0.2	No
Jefferson Drive east of Chrysler Drive	58.5	60.9	61.1	2.6	0.2	No
Chilco Street south of Bayfront Expressway	69.1	70.2	70.2	1.1	0.0	No
Bayfront Expressway west of Chilco Street	64.9	67.1	67.2	2.3	0.1	No
Chilco Street north of Constitution Drive	61.1	63.5	63.6	2.5	0.1	No
Constitution Drive east of Chilco Street	64.0	66.8	66.9	2.9	0.1	No
Constitution Drive west of Chilco Street	63.7	64.8	64.8	1.1	0.0	No
Willow Road south of Bayfront Expressway	70.9	72.2	72.2	1.3	0.0	No
Bayfront Expressway west of Willow Road	69.8	71.9	71.9	2.1	0.0	No
Hamilton Avenue east of Willow Road	64.6	66.7	66.7	2.1	0.0	No
University Avenue south of Bayfront Expressway	70.8	71.8	71.8	1.0	0.0	No
Florence Street-Bohannon Drive east of Marsh Road	64.3	65.1	65.1	0.8	0.0	No
Florence Street-Bohannon Drive west of Marsh Drive	63.6	64.3	64.3	0.7	0.0	No

Source: Compiled by LSA (October 2020).
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
[1] Difference in CNEL between Existing and Cumulative with Project.
[2] Difference in CNEL between Cumulative Without Project and Cumulative with Project.
ADT = average daily trips
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
NB = northbound
SB = southbound

Stationary Source Noise. Long-term stationary noise sources associated with the development of the proposed project, combined with other cumulative projects, could cause local noise level increases. Noise levels associated with the proposed project and related cumulative projects together could result in higher noise levels than considered separately. As previously described, on-site noise sources associated with the proposed project would not exceed any applicable noise standards. Additionally, related cumulative projects would be required to comply with the City's noise level standards and include mitigation measures if standards are exceeded. Therefore, cumulative noise impacts from stationary noise sources would be ***less than significant*** **(LTS)**.

5.0 OTHER CEQA CONSIDERATIONS

As required by CEQA, this chapter discusses the following types of impacts that could result from implementation of the proposed project: growth-inducing impacts; significant irreversible changes; effects found not to be significant; and significant unavoidable effects.

5.1 GROWTH INDUCEMENT

A project is considered growth inducing if it would directly or indirectly foster substantial economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are only sparsely developed or are underdeveloped. Typically, development projects on sites that are designated for development and surrounded by existing suburban uses are not considered adversely growth-inducing because growth in areas that already have development and infrastructure available to serve new development are generally considered environmentally beneficial.

Implementation of the proposed project would result in direct population growth within the city and specifically within the Bayfront Area through the construction of 483 dwelling units. As discussed in Section 4.1, Population and Housing, the proposed project could increase the local population by approximately 1,242 persons. The growth would account for approximately nine percent of the population growth anticipated by ConnectMenlo and evaluated in the ConnectMenlo Final EIR. Furthermore, this growth accounts for less than one percent of the projected and planned for growth within the County and the region. As such, the proposed project would neither directly nor indirectly lead to substantial or unforeseen economic or population growth, but would instead contribute to the anticipated local and regional housing supply.

Additionally, the proposed project would involve infill development within an existing urbanized area and would not require the extension of utilities or roads into undeveloped areas that are not planned for the expansion of infrastructure or directly or indirectly lead to development of greenfield sites. Due to the location of the project site, the presence of existing uses on and in the vicinity of the site, and consistency with ConnectMenlo, development of the proposed project would not induce unplanned growth in the area. Therefore, the growth that would occur as a result of the proposed project would not be substantial or adverse.

5.2 SIGNIFICANT IRREVERSIBLE CHANGES

CEQA requires that EIRs assess whether the proposed project would result in significant irreversible changes to the physical environment. The CEQA Guidelines discuss three categories of significant irreversible changes that should be considered. Each is addressed below.

5.2.1 Changes in Land Use Which Commit Future Generations

The project site is located within the Bayfront Area of the city and is generally surrounded by commercial and light industrial uses. The approximately 4.83-acre project site is currently developed and construction of the proposed project would occur on land that is designated for urban uses. Additionally, the proposed project would be consistent with existing zoning for the site; in the future the site could be rezoned, in which case at the end of the useful life of the project, the use could change. Therefore, the proposed project would not commit future generations to a significant change in land use.

5.2.2 Irreversible Damage from Environmental Accidents

No significant environmental damage, such as accidental spills or explosion of a hazardous material, is anticipated to occur with development of the proposed project. As described in Section 3.9 of the Initial Study, Hazards and Hazardous Materials, which is included as Appendix B, Phase I and II Environmental Site Assessments (ESA) found elevated concentrations of volatile organic compounds (VOCs) and petroleum hydrocarbons in groundwater and sub-slab vapor that exceed residential environmental screening levels (ESLs). Implementation of Mitigation Measures HAZ-4a and HAZ-4b from the ConnectMenlo Final EIR, which require the preparation of an Environmental Site Management Plan and vapor intrusion assessment, would ensure that any potential impacts related to the release of hazardous materials would be less than significant. No irreversible changes – such as those which might result from construction of a large-scale mining project, a hydroelectric dam project, or other institutional project – would result from development of the proposed project.

5.2.3 Consumption of Non-Renewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. As discussed in Section 3.2 of the Initial Study, the State Department of Conservation designates the site as “Urban and Built-Up Land,” and the site is located in an urbanized area of Menlo Park. Therefore, no existing agricultural lands would be converted to non-agricultural uses. In addition, the project site does not contain known mineral resources and does not serve as a mining reserve; thus, development of the proposed project would not result in the loss of access to mining reserves. Please refer to the Initial Study included in Appendix B for a discussion of impacts related to agricultural and mining resources.

Construction of the proposed project would require the use of energy, including energy produced from non-renewable resources. Energy consumption would also occur during the operational period of the proposed project. The proposed project is expected to be relatively energy efficient and would incorporate green building measures in compliance with the latest CALGreen standard building measures for residential buildings and Title 24 requirements. As discussed in Section 4.4, Greenhouse Gas Emissions, of this EIR, the proposed project would not result in any significant impacts associated with an increase in greenhouse gas emissions or conflict with measures adopted for the purpose of reducing such emissions, such as the City's Climate Action Plan. Implementation of Mitigation Measures AIR-1, as identified in Section 4.3, Air Quality, would further reduce the less than significant impact associated with construction period greenhouse gas emissions, to the extent feasible. Additionally, the proposed project would not require the construction of major new lines to deliver energy as this service is already provided in the area. In compliance with the City’s reach codes, the proposed project would not include natural gas connections. Therefore, the proposed project would not result in a significant impact associated with the consumption of nonrenewable resources.

5.3 EFFECTS FOUND NOT TO BE SIGNIFICANT

The environmental topics analyzed in Chapter 4.0, Setting, Impacts, and Mitigation Measures, represent those topics which generated the greatest potential controversy and expectation of adverse impacts associated with development of the proposed project. As discussed in more detail in the Initial Study (Appendix B) the following topics are not addressed in this EIR because impacts related to these topics either would not occur or would be less than significant. A summary of the conclusions provided in the Initial Study analysis for each of the topics scoped out of the EIR is provided below. In addition, the topic of tribal cultural resources is also addressed.

5.3.1 Aesthetics

The project site is located within a developed portion of the Bayfront Area and does not provide public views of the Bay, and therefore would not block any scenic vistas. Additionally, potential future development city-wide, including the proposed project, would be subject to the City's existing architectural control process. As noted in the ConnectMenlo Final EIR, the Bayfront Area is not located within the viewshed of Interstate 280 (I-280), which is considered a State scenic highway. The proposed project would have an average height of 62 feet, 5 inches and would not exceed the maximum allowed average height for the project site of 62 feet, 6 inches. Although the total maximum height would be up to 84 feet, 10 inches, bonus-level development within the R-MU-B zoning district allows for a maximum height of up to 85 feet in exchange for community amenities. As noted above, the proposed project would be subject to the City existing architectural control process, which would ensure the proposed project complies with the existing design standards outlined in the Zoning Ordinance, including light and glare standards. Additionally, Policy LU-2.3 from the City's General Plan requires that new development with residential units address potential compatibility issues such as light spillover. Therefore, potential impacts related to scenic vistas, scenic resources, scenic regulations, and light and glare would be ***less than significant (LTS)***.

5.3.2 Agriculture and Forestry Resources

The project site and vicinity are located within an urban area of the city. The project site is located within the R-MU-B (Residential Mixed Use Bonus) zoning district and is classified as "Urban and Built-Up Land" by the State Department of Conservation. The project site is not used for agricultural production nor does it support forestry resources. Therefore, there would be ***no impact*** to agricultural and forestry resources.

5.3.3 Biological Resources

The project site is currently developed and does not include any sensitive habitat, nor is it located near any sensitive habitats. The proposed project would be required to comply with the bird-safe design measures included in the building regulations for the Bayfront Area. The project site does not contain any riparian habitat, federally protected wetlands, or wildlife movement corridors. The proposed project would include the removal of 10 protected trees; however, at least 20 new trees would be planted. The project site is not subject to the Stanford University Habitat Conservation Plan. Therefore, potential impacts related to biological resources would be ***less than significant*** **(LTS)**.

5.3.4 Cultural Resources

The existing buildings on the project site were constructed between 1963 and 1964, and therefore do meet the 50-year threshold for Mitigation Measure CULT-1 from the ConnectMenlo Final EIR. A Historic Resource Assessment prepared for the project site determined that none of the buildings appear to be eligible for listing in the National Register of Historical Places or the California Register of Historical Resources. Adjoining properties include buildings that are 50 years or older; however, as noted above, none of the recognized historic properties within the city are located within the Bayfront Area or within the immediate project vicinity. ConnectMenlo Final EIR Mitigation Measures CULT-2a and CULT-4 would ensure that potential impacts to previously unknown archaeological resources or human remains would be ***less than significant with mitigation*** **(LTS/M)**.

5.3.5 Energy

Consistent with ConnectMenlo requirements, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, provide on-site renewable energy generation, enroll in the USEPA Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards, which would help to reduce energy and natural gas consumption. Electricity demand associated with the proposed project would be less than 0.06 percent of San Mateo County's total energy demand. The proposed project would also be required to comply with the CALGreen Code, which includes provisions related to insulation and design aimed at minimizing energy consumption. In addition, the proposed project would implement Transportation Demand Management measures (refer to Section 4.2, Transportation, of this EIR) and would help the area change from an auto-oriented corridor to a multi-modal oriented community, with related energy conservation resulting from the more efficient use of transportation, circulation, and infrastructure systems by locating a residential use within a jobs-rich area. Therefore, the proposed project would be consistent with the State's goal of reducing vehicle miles traveled and vehicular greenhouse gas emissions as outlined in SB 743. The proposed project would also be consistent with the ConnectMenlo energy conservation policies, as noted above, and the City's Climate Action Plan. Therefore, potential impacts related to energy use would be ***less than significant*** **(LTS)**.

5.3.6 Geology and Soils

The ConnectMenlo Final EIR determined that no Alquist-Priolo Earthquake Fault Zones have been mapped within the Bayfront Area. Additionally, the ConnectMenlo Final EIR determined that compliance with existing regulations, including General Plan policies and the California Building Code, would ensure that potential impacts related to strong seismic ground shaking; seismic-related ground failure, including liquefaction or land sliding, would be less than significant. Additionally, the proposed project would incorporate recommendations from the site-specific Geotechnical Investigation, which would ensure that potential impacts related to soil erosion and unstable soils would be less than significant. Implementation of ConnectMenlo Final EIR Mitigation Measure CULT-

3 would ensure that potential impacts of the proposed project to paleontological resources would be ***less than significant with mitigation*** **(LTS/M)**.

5.3.7 Hazards and Hazardous Materials

The proposed project includes the demolition of the existing buildings on the project site and the construction of new residential apartments and townhomes. The ConnectMenlo Final EIR determined that these types of land uses typically do not involve transport, use, or disposal of significant quantities of hazardous materials. Phase I and II ESAs prepared for the project site identified elevated concentrations of VOCs and petroleum hydrocarbons in groundwater and sub-slab vapor that exceed residential ESLs. Implementation of ConnectMenlo Final EIR Mitigation Measures HAZ-4a and HAZ-4b, which require the preparation of an Environmental Site Management Plan and vapor intrusion assessment, would ensure that any potential impacts related to the release of hazardous materials would be less than significant.

The TIDE Academy is located across Jefferson Drive; however, as noted above, the proposed project would not emit hazardous emissions or include the regular handling of hazardous materials.[1] Back-up generators would be installed on the first level of both Buildings A and B and would only be operated during emergencies or in the event of power outages. Each generator would be installed and operated according to manufacturer requirements and per the permitting requirements of the BAAQMD and the City's Hazardous Materials Permit. The project site is included on a list of hazardous materials sites; however, it is not an active site included on the State's Hazardous Waste and Substances Site List (Cortese List), and implementation of ConnectMenlo Final EIR Mitigation Measures HAZ-4 and HAZ-4b would ensure potential impacts related to hazardous materials would be less than significant. The project site is not located within and airport land use plan or two miles of any airport, nor would it substantially alter any adjacent roadways, and therefore would not be expected to impair the function of nearby evacuation routes. As noted in the ConnectMenlo Final EIR, compliance with existing regulations, including the California Building Code, California Fire Code, and Menlo Park Fire Protection District Fire Code would ensure that the proposed project would not expose people to loss, injury, or death involving wildland fires. Therefore, impacts related to hazards and hazardous materials would be ***less than significant with mitigation*** **(LTS/M).**

5.3.8 Hydrology and Water Quality

The proposed project would be required to comply with the City's Stormwater Management Program, and would be required to prepare a Hydrology Report. The proposed project would incorporate site design measures to reduce stormwater runoff during the operation period, including directing runoff onto vegetated areas, maximizing permeability by clustering development and preserving open space, and using micro-detention. In addition, the proposed project would also implement source controls to reduce pollution runoff during the operation period, including marking on-site inlets with the words "No Dumping! Flows to Bay," plumbing interior parking garage floor drains to the sanitary sewer, and providing landscaping that is drought and/or disease resistant and minimizes runoff.

[1] The proposed project would include the use of diesel fuel for backup generators. However, generators would only be used in the event of an emergency, and therefore would not require the regular use or transport of diesel fuel.

The proposed project would result in a decrease of impervious surfaces on the project site from 194,456 square feet of existing impervious surface coverage to 177,514 square feet of impervious surface coverage. Additionally, the proposed project would include stormwater control features that would enhance filtration of stormwater to the subsurface and would therefore increase the amount of groundwater recharge compared to existing conditions. The proposed project would also reflect pre-project drainage conditions, ensuring that the existing drainage pattern of the site and surrounding area would not be substantially altered such that it causes substantial erosion or flooding. As noted in Section 3.0, Project Description, the project site is located within a flood zone with a base elevation of 11 feet, and the grade of the project site would be raised three to five feet to meet FEMA requirements. The proposed project would connect to the Menlo Park Municipal Water system, and would not require the use of any groundwater. Therefore, the proposed project's impact to hydrology and water quality would be ***less than significant*** **(LTS)**.

5.3.9 Land Use and Planning

The ConnectMenlo Final EIR concluded that implementation of ConnectMenlo would not include any new major roadways or other physical features through existing residential neighborhoods or other communities that would create new barriers in the city. Therefore, the proposed project would not physically divide an established community.

The project site is located within the R-MU-B zoning district, which allows for residential uses. The proposed project would be consistent with the mix and intensity of development contemplated by ConnectMenlo, as it includes bonus-level residential development with community amenities. As noted throughout the Initial Study and this EIR, the proposed project would generally not conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts related to land use and planning for CEQA purposes would be ***less than significant*** **(LTS)**.

5.3.10 Mineral Resources

The project site is currently developed and located within an urban area. The ConnectMenlo Final EIR determined that there are no mineral resource recovery operations within the city. Therefore, there would be ***no impact*** related to mineral resources.

5.3.11 Noise (Construction Period and Aircraft Noise)

As discussed in the Initial Study and further summarized in Section 4.5, Noise of this EIR, the ConnectMenlo Final EIR determined that all construction-period noise and vibration impacts of new development citywide would be less than significant with implementation of ConnectMenlo Final EIR Mitigation Measures NOISE-1c and NOISE-2a. Further, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with aircraft activity. Potential operation period transportation-related and stationary noise and vibration impacts are discussed in Section 4.5, Noise of this EIR. However, impacts related to construction-period noise and aircraft noise would be ***less than significant with mitigation*** **(LTS/M)** and therefore are not further discussed.

5.3.12 Public Services

The ConnectMenlo Final EIR determined that adherence to State and City requirements and the Menlo Park Fire Protection District (MPFPD) permitting process would ensure that the proposed project would not result in the need for remodeled or expanded MPFPD facilities. Additionally, Station 77, which would serve the project site, was planned and budgeted for prior to ConnectMenlo. The Menlo Park Police Department (MPPD) also indicated of ConnectMenlo would not require the expansion or addition of facilities. The proposed project would be subject to the payment of development impact fees, which under SB 50, are deemed to be full and complete mitigation. The proposed project would include private and public open space and contribute development impact fees that would address infrastructure and service needs, and would not result in substantial deterioration of parks or other public facilities. Therefore, the proposed project's impacts to public services would be ***less than significant*** **(LTS)**.

5.3.13 Recreation

The ConnectMenlo Final EIR determined that full buildout of ConnectMenlo would result in a parkland ratio per 1,000 residents of 5.2 acres. In addition to the existing parkland within the city, the proposed project would include a total of 86,952 square feet of open space, which would include private residential balconies and terraces, common courtyards and plazas, roof terraces, a park, landscaped areas, and a publicly-accessible paseo. The City's Zoning Ordinance requires a minimum of 6.25 percent (13,142 square feet) of the site to be publicly-accessible open space. Approximately 10.3 percent of the project site would consist of publicly-accessible open space, including the paseo and paseo extension running between the townhome buildings. The proposed project does not include or require the construction or expansion of existing public recreational facilities. Therefore, the proposed project's impacts on recreational facilities would be ***less than significant*** **(LTS)**.

5.3.14 Tribal Cultural Resources

The ConnectMenlo Final EIR did not identify any tribal cultural resources within the Bayfront Area. As noted above, potential impacts to archaeological resources would be reduced to a less-than-significant level with implementation of ConnectMenlo Final EIR Mitigation Measures CULT-2a and CULT-4.

AB 52 states that prior to the release of an EIR for public review, a lead agency must provide the opportunity to consult with local tribes. A request form describing the proposed project was sent to the Native American Heritage Commission (NAHC) in West Sacramento requesting a list of eligible tribes to consult with the City, pursuant to Public Resources Code Section 21080.3.1. On May 24, 2019, the NAHC responded in a letter with a list of tribal contacts. The City sent letters providing the opportunity for consultation pursuant to AB 52 for the project to these individuals on October 22, 2019. No requests for consultation were received at the time that the Initial Study was published or as of the date of publication of this EIR; therefore, the City considers the consultation period to be closed. Given that no requests for consultation were received or additional information as to the presence of known tribal cultural resources in the area were provided by tribal representatives, it is concluded that, with implementation of ConnectMenlo Final EIR Mitigation Measures CULT-2a and CULT-4, impacts to tribal resources would be ***less than significant with mitigation*** **(LTS/M)**.

5.3.15 Utilities and Service Systems

The ConnectMenlo Final EIR determined that projects consistent with the type and intensity of development assumed would have less than significant impacts related to utilities and service systems. Additionally, as noted in Table 3.A, in Chapter 3.0, Project Description, the project sponsor would be required to coordinate with the City, MPFPD, and West Bay Sanitary to ensure that water and wastewater supply and infrastructure would be adequate. The proposed project would also have a gross floor area of more than 100,000 square feet, and is therefore required to submit a proposed water budget for review by the City prior to issuance of a certificate of occupancy. Additionally, as a part of the Zoning Update, ConnectMenlo includes green and sustainable building standards in the Bayfront Area that require all applicants to submit a zero-waste management plan to the City. Therefore, impacts to utilities and service systems would be ***less than significant*** **(LTS)**.

5.3.16 Wildfire

The ConnectMenlo Final EIR determined that the Bayfront Area does not contain areas of moderate, high, or very high Fire Hazard Severity for the Local Responsibility area, nor does it contain any areas of moderate, high, or very high Fire Hazard Severity for the State Responsibility Area. Therefore, the proposed project would have ***no impact*** related to wildfire.

5.4 SIGNIFICANT UNAVOIDABLE IMPACTS

With implementation of the mitigation measures recommended in this EIR, all project impacts would be reduced to a less-than-significant level and the proposed project would not result in any significant unavoidable impacts.

6.0 ALTERNATIVES

In accordance with CEQA and the CEQA Guidelines (Section 15126.6), an EIR must describe a reasonable range of alternatives to the project, or to the location of the project, that could attain most of the project's basic objectives, while avoiding or substantially lessening any of the significantly adverse environmental effects of the project. An EIR does not need to consider every conceivable alternative to a project, rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

As an EIR identifies ways to mitigate or avoid significant effects that a project may have on the environment, the discussion of alternatives should focus on alternatives to the project or its location that are capable of avoiding or substantially lessening significant effects of the project. The EIR needs to include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project, the significant effects of the alternative should be discussed, but in less detail than the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative."

As described in more detail in Chapter 3.0, Project Description, the proposed project would involve redevelopment of the project site, which is currently developed with two single-story commercial office buildings and a single-story industrial building totaling approximately 110,356 square feet, with a maximum of 441 multi-family rental units within two seven-story buildings (Buildings A and B) and 42 for-sale, three-story townhome units totaling approximately 471,986 square feet of gross floor area, as well as approximately 2,940 square feet of office space, associated open space, circulation and parking, and infrastructure improvements.

The project sponsor is currently proposing that 15 percent or a minimum of 73 of the total number of units across the entire project, with a mix of apartments and townhomes, would comply with the City's Below Market Rate (BMR) Housing Program and the City's BMR Guidelines. As provided by the project sponsor, the objectives of the proposed project are to:

- Provide safe, high quality, affordable and market rate housing to members of the community;
- Achieve the ambitious environmental goals established by the City of Menlo Park including 100 percent electrification and Leadership in Energy and Environmental Design (LEED) Gold certification;
- Develop a high-quality-aesthetic project that complements the surrounding neighborhood and promotes connectedness; and
- Provide community amenities to surrounding neighborhoods by creating open space and providing amenities that benefit the Belle Haven neighborhood.

The potential environmental effects of implementing the proposed project are analyzed in Chapter 4.0, Setting, Impacts, and Mitigation Measures. Table 6.E, located at the end of this chapter, summarizes the impacts of the proposed project. The proposed project has been described and analyzed in the previous chapters and in the Initial Study (Appendix B), with an emphasis on evaluating significant impacts resulting from the project and identifying mitigation measures to avoid or reduce these impacts to a less-than-significant level. It should be noted that all of the impacts identified for the proposed project can be mitigated to a less-than-significant level with implementation of the recommended mitigation measures.

The three alternatives to the proposed project that are discussed and evaluated in this chapter are the following:

- **No Project Alternative.** Under the No Project alternative, the project site would continue to be occupied by the three existing single-story office and industrial buildings totaling approximately 110,356 square feet with designated surface parking for approximately 221 vehicles. No modifications to existing site access or infrastructure would occur.

- **Base Level Alternative.** Under the Base Level alternative, the proposed project would be developed at the base level of development allowed under the R-MU-B zoning district. The Base Level alternative would include approximately 144 residential units (21 of which would be affordable units), which would include 102 multifamily units and 42 townhomes and up to 31,539 square feet of nonresidential space, which would include approximately 21,539 square feet of office space and up to 10,000 square feet of child care center space. The building's maximum height would be 45 feet with a maximum gross floor area of 220,776 square feet. The multifamily and office buildings would include a ground floor parking garage with a combined total of 210 vehicle parking spaces and similar site access and infrastructure improvements as those identified for the proposed project. The total square footage of open space would be reduced compared to the proposed project.

- **Maximum Buildout Alternative.** Under the Maximum Buildout alternative, the proposed project would be developed at the maximum bonus level of development allowed in the R-MU-B zoning district. The Maximum Buildout alternative would include approximately 483 residential units (73 of which would be affordable units) within two residential buildings (approximately 473,091 gross residential floor area) and up to 52,565 square feet of nonresidential space, which would include approximately 42,565 square feet of office space and up to 10,000 square feet of child care center space within a single building. The buildings would have a maximum height of approximately 85 feet. Each building would include a ground floor parking garage with a combined total of 505 vehicle parking spaces and similar site access and infrastructure improvements as those identified for the proposed project. The total square footage of open space would be reduced compared to the proposed project.

These alternatives represent a reasonable range of potential alternatives to the proposed project in light of the objective of further reducing impacts that are already less than significant with mitigation as identified in this EIR. The proposed project has no significant and unavoidable impacts; therefore, rather than focusing on alternatives that would reduce impacts from significant and unavoidable to less than significant, these alternatives focus on policy based alternatives and were designed to represent the mixed-use development envisioned by ConnectMenlo. Several other potential alternatives were also considered, as discussed later in this chapter; however, none of these alternatives would substantially reduce or avoid the environmental impacts of the proposed project and/or would not meet many of the basic project objectives and were therefore ultimately not selected for further analysis.

The purpose of this discussion of alternatives to the proposed project is to enable decision makers to evaluate the project by considering how alternatives to the project as proposed might reduce or avoid the project's impacts on the physical environment. The analysis in this chapter provides both a quantitative and qualitative evaluation of the environmental impacts that could be associated with each alternative and compares those potential impacts to those identified for the proposed project as described in Chapter 4.0, Setting, Impacts, and Mitigation Measures of this EIR. Table 6.E, located at the end of this chapter, summarizes the impacts of the proposed project and compares those impacts to those that would be associated with each alternative.

If City decision-makers were to decide to move forward with any of the development alternatives as identified in this chapter, additional site planning and design work and analysis would be required for the environmental impacts associated with the alternative, and specific mitigation measures for each potentially significant impact would need to be developed and considered.

6.1 NO PROJECT ALTERNATIVE

The following provides a description of the No Project alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated environmental impacts of the No Project alternative to the environmental impacts associated with the proposed project. The discussion includes a determination of whether or not the No Project alternative would reduce, eliminate, or create new significant environmental impacts and would or would not meet the objectives of the project.

6.1.1 Principal Characteristics

The No Project alternative assumes that the proposed project would not be developed and that the project site would generally remain in its current condition. The project site would continue to be occupied by the three single-story office and industrial buildings totaling approximately 110,356 square feet with designated surface parking for about 221 vehicles. The 33 existing trees on the site would not be removed. No modifications to existing site access or infrastructure would occur.

6.1.2 Analysis of the No Project Alternative

The potential impacts associated with the No Project alternative are described below. As discussed, the No Project alternative would avoid all of the less than significant impacts of the proposed project. However, the No Project alternative would also not achieve any of the objectives of the proposed project. The No Project alternative would not provide affordable or market rate housing that would tend to moderate displacement pressures, would not provide housing in a job-rich area to reduce the jobs-housing imbalance and reduce vehicle miles traveled, would not contribute to electrification within the City, would not develop a high-quality-aesthetic project, and would not provide any community amenities. Furthermore, the No Project alternative would not further any of the objectives of the Land Use Element for Mixed Use Residential to promote live/work/play environments oriented toward pedestrians, transit, and bicycle use, especially for commuting to nearby jobs or achieve the purpose and intent of the R-MU zoning district to provide high density housing to complement nearby employment and encourage mixed use development.

6.1.2.1 Population and Housing

Implementation of the No Project alternative would not result in any new construction on the project site, and therefore the No Project alternative would not introduce new residential or office uses or either directly or indirectly add new residents to the project site or the Bayfront Area of the City. Therefore, compared to the less than significant impacts of the proposed project, there would be ***no impact*** related to unplanned population growth or potential displacement of housing or people.

6.1.2.2 Transportation

Implementation of the No Project alternative would not result in any increases in automobile, transit, bicycle, or pedestrian travel to or from the project site. Therefore, compared to the less than significant impacts of the proposed project, there would be ***no impact*** related to conflicts with applicable transportation-related plans, policies and ordinances; vehicle miles traveled (VMT); design hazards; and emergency access.

6.1.2.3 Air Quality

Implementation of the No Project alternative would not result in demolition or construction activity within the project site, nor would new residents be located on the site. As a result, pollutant and odor concentrations would not be increased and dust, exhaust, and organic emissions related to construction would not be generated; therefore, implementation of Project Mitigation Measure AIR-1 would not be required to reduce construction-period air quality impacts. Similarly, this alternative would not result in new exposure of residents to toxic air contaminants; therefore, implementation of Project Mitigation Measure AIR-2 would not be required. Finally, this alternative would not result in the development of residential and office uses on the site and would not result in an increase in operational vehicle trips in the city; therefore, the No Project alternative would not result in the less than significant project impacts related to Clean Air Plan implementation. With implementation of the No Project alternative, there would be ***no impact*** on air quality.

6.1.2.4 Greenhouse Gas Emissions

Implementation of the No Project alternative would not result in any demolition or construction activity within the project site, nor would new residents be located on the site. As a result, this alternative would not result in the generation of construction-period greenhouse gas (GHG) emissions. Therefore, implementation of ConnectMenlo Final EIR Mitigation Measure AQ-2b1 (Project Mitigation Measure AIR-1) would not be necessary to reduce construction emissions. Similarly, the No Project alternative would not result in an increase in VMT, daily vehicle trips, or utility use (i.e., electricity, water, and wastewater) on the project site; therefore, the No Project alternative would not result in the less than significant project impacts related to operational-period GHG emissions and potential conflicts with applicable plans, policies, or regulations adopted for the purposes of reducing the emission of GHGs. With implementation of the No Project alternative, there would be ***no impact*** on greenhouse gas emissions.

6.1.2.5 Noise

Implementation of the No Project alternative would not result in any demolition or construction activity within the project site, nor would new residents be located on the site. Therefore, the No Project alternative would not expose surrounding land uses to short-term noise or vibration during construction and implementation of ConnectMenlo Final EIR Mitigation NOISE-1c would not be required. Noise at the project site would not increase above that already occurring on the site and no increase in traffic noise would occur. In addition, the No Project alternative would not locate residential uses in an area that is generally considered a conditionally acceptable noise environment for these uses, and implementation of Project Mitigation Measure NOI-1 would not be required. With implementation of the No Project alternative, there would be ***no impact*** related to noise.

6.2 BASE LEVEL ALTERNATIVE

The following provides a description of the Base Level alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated environmental impacts of the Base Level alternative to the environmental impacts associated with the proposed project. The discussion includes a determination of whether or not the Base Level alternative would reduce, eliminate, or create new significant environmental impacts and would or would not meet the objectives of the project.

6.2.1 Principal Characteristics

The Base Level alternative assumes that the proposed project would be developed at the base level allowed within the R-MU district. Without provision of a community amenity, the project would not qualify for bonus level development and site development would be limited to the maximum base residential density identified for the R-MU district, which is 30 units per acre, with a floor area ratio (FAR) of up to 90 percent for residential uses, a FAR of up to 15 percent for nonresidential uses and a height of up to 45 feet. As such, the approximately 4.83-acre project site could be developed with up to 144 dwelling units (approximately 189,236 square feet of gross residential floor area) and up to approximately 31,539 square feet of nonresidential floor area, with a maximum gross floor area of approximately 220,776 square feet.

Under this alternative, the project site would be redeveloped with approximately 189,236 gross square feet of residential uses (up to 144 total units, or 339 fewer units than the proposed project) and up to 31,539 square feet (or 28,599 square feet more than the proposed project) of nonresidential uses, consisting of a child care center of approximately 10,000 square feet and up to 21,539 square feet of office uses. A total of 102 rental units would be located within one four-story building, which would front to Jefferson Drive. Similar to the proposed project, residential units would consist of a mix of studio, junior one-bedroom, one-bedroom, two-bedroom, and three-bedroom units averaging approximately 700 square feet in size. A total of 42 townhome buildings would front to Constitution Drive and would contain a total of 42 three-story units, including three-bedroom and four-bedroom units with an average size of approximately 1,776 square feet. Up to 15 percent of the total units, or 22 units, would be affordable, consistent with the City's Below Market Rate (BMR) Housing Program.

The nonresidential building, which would include the child care use and the office uses, would front to Constitution Drive. The child care center would be located at the ground level and would include an outdoor play area situated internally to the site, away from adjacent roadways.

Approximately 210 parking spaces, consisting of one parking space per residential unit and two spaces per 1,000 square feet of child care center and office uses, would be provided within parking garages on the ground floor of each building. Site access and infrastructure improvements would be similar to the proposed project. The total square footage of open space would be reduced compared to the proposed project and would comply with City requirements; approximately 13,142 square feet of publicly-accessible open space (6.25 percent of the total site) would be provided.

6.2.2 Analysis of the Base Level Alternative

The potential impacts associated with the Base Level alternative are described below. As discussed, under the Base Level alternative the project site would be developed consistent with the zoning with both residential and nonresidential uses, although with fewer residential units and more nonresidential space as compared to the proposed project. The Base Level alternative would achieve most of the project objectives, although to a lesser extent than the proposed project. In particular, objectives related to electrification, a high-quality aesthetic project, and providing community amenities would be achieved under this alternative, although the objective related to providing affordable and market rate housing would not be achieved to the same extent as the proposed project as the site would only be developed at the base level residential density, and not the bonus level residential density. As described below, the Base Level alternative would require implementation of the same mitigation measures as those required for the proposed project, although construction-related impacts would be reduced given that construction activities on the site would be reduced with the smaller buildings, as compared to the proposed project. However, as described below, the Base Level alternative would result in a new ***significant and unavoidable*** **(SU)** impact which would not occur with the proposed project.

6.2.2.1 Population and Housing

Under the Base Level alternative, similar to the proposed project, the project site would be developed with residential uses, although fewer residential units and more nonresidential space would be developed as compared to the proposed project. The Base Level alternative's contribution to the number of residential units planned for and anticipated by ConnectMenlo would be 3.2 percent (144 units of the 4,500 total units studied or 4.8 percent of the unrestricted residential units). The Base Level alternative would also generate increased demand for housing from additional nonresidential square footage. The Base Level alternative would be consistent with the mix and intensity of development contemplated by ConnectMenlo. Similar to the proposed project, the Base Level alternative would add to the supply of market rate and affordable housing and would moderate displacement pressures to some degree by relieving market pressures on existing housing stock, although to a lesser degree than the proposed project as fewer residential units would be developed. Similar to the proposed project, impacts related to population and housing would be ***less than significant*** **(LTS)** with implementation of the Base Level alternative.

6.2.2.2 Transportation

Under the Base Level alternative, similar to the proposed project, the project site would be developed with residential uses, although fewer residential units and more nonresidential space would be developed as compared to the proposed project. Additionally, a child care center use would be added. The transportation and circulation changes under the Base Level alternative, including the site access and infrastructure improvements, would be similar to the proposed project. Therefore, the Base Level alternative would result in the same ***less-than-significant (LTS)*** impacts related to design hazards and emergency vehicle access as the proposed project. Vehicle trip generation associated with the Base Level alternative and related VMT and policy conflicts are further discussed below, and, unlike the proposed project, would result in a new ***significant and unavoidable (SU)*** impact to VMT.

Trip Generation. The travel demand for the Base Level alternative was estimated for weekday daily and weekday AM and PM peak periods. The vehicle trip generation estimates for the proposed residential and nonresidential space were calculated using the trip generation rates from the most recent ITE Trip Generation Manual.[1]

As with for the proposed project, the Multi-Family Housing Mid-Rise (ITE Code 221) category was applied to the proposed residential use. The Child Care Center (ITE Code 565) and the Office Building (ITE Code 710) were applied to the nonresidential uses.

The ITE Trip Generation Manual does not provide data on trip reductions (pass-by/walk-in or internalized trips[2]) for these uses. Therefore, consistent with ITE and in an effort to provide a conservatively high estimate of the trip generation potential associated with these uses, vehicle trip reductions were not taken to account for pass-by/walk-in or internalized trips. Consistent with the Menlo Park TIA Guidelines, vehicle trip reductions were taken to account for the Transportation Demand Management (TDM) plan[3] and existing uses. The resulting trip generation is provided in Table 6.A, along with a comparison of the net new vehicle trips generated under the Base Level alternative and the proposed project.

Conflict with Applicable Plan, Ordinances, or Policies. As part of the City's entitlement process, the Base Level alternative would be required to comply with existing regulations, including General Plan policies and zoning regulations. The Base Level alternative would be reviewed in accordance with the City's Public Works Department Transportation Program standards and guidelines, and the department would provide oversight engineering review to ensure that the project is constructed according to City specifications.

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1 Institute of Transportation Engineers. 2018. *Trip Generation Manual, 10th Edition*.

2 Internal trip capture, or internalization, refers to the portion of trips generated by a mixed-use development that both begin and end within the development. This alternative would include a mix of uses and would likely result in some internal trip capture. This analysis applies the single land use rates without adjustment and can therefore be considered conservative.

3 Hexagon Transportation Consultants, Inc. 2019. *Menlo Uptown Housing Development in Menlo Park TDM Plan*.

Table 6.A: Base Level Alternative - Net New Vehicle Trips Comparison to Proposed Project

Project Scenario	Size	Daily	AM Peak Hour	PM Peak Hour
Existing Uses				
Office Building (ITE Code 710)	30,179 sf	(702)	(84)	(83)
General Light Industrial (ITE Code 110)	72,033 sf	(150)	(21)	(19)
Base Level Alternative				
Residential (ITE Code 221)	144 du	783	52	63
Office Building (ITE Code 710)	21,539 sf	210	25	25
Child Care Center (ITE Code 565)	10,000 sf	1,110	110	112
Base Level Alternative Subtotal		2,103	187	200
TDM Plan: 20%		(421)	(37)	(40)
Base Level Alternative Total		1,682	150	160
Net New Vehicle Trips				
Base Level Alternative (Base Level Alternative Total minus Existing Uses)	--	830	45	58
Proposed Project	--	2,772	114	96
Difference (Base Level Alternative minus Proposed Project)	--	(1,942) 70% Reduction	(69) 60% Reduction	(38) 40% Reduction

Source: *ITE Trip Generation Manual, 10th Edition* (2018).
du = dwelling units
sf = square feet

The site access and infrastructure improvements provided under the Base Level alternative would be similar to the proposed project and would represent an overall improvement to bicycle and pedestrian access and circulation. Similar to the proposed project, the Base Level alternative would result in the construction of a public sidewalk and installation of street lighting to encourage a pedestrian friendly environment. Additionally, the Base Level alternative would promote bicycle use by providing long-term and short-term bicycle parking spaces and a bike repair station. The Base Level alternative would meet the Zoning Ordinance requirements for vehicle and bicycle parking and implement TDM measures in an effort to reduce project-generated vehicle trips and encourage travel by other modes. Therefore, this impact would remain ***less than significant*** **(LTS)**.

Vehicle Miles Traveled. The VMT for the Base Level alternative is the same as under the proposed project for the residential component. The estimated average daily VMT per capita for residential land uses within the project site's TAZ is 16.0, which is about 17 percent above the threshold of significance of 13.7. The estimated VMT does not account for the project's proposed TDM plan. Without any TDM measures, the residential use may cause substantial additional VMT, and impacts would be potentially significant. The minimum 20 percent reduction required by the City's TDM Program exceeds the threshold needed to be achieved to reduce the potentially significant VMT impact to less than significant. Implementation of the TDM plan would result in an estimated reduction of approximately 30 percent of the vehicle miles traveled generated by the Base Level alternative.

The range of effectiveness for VMT reductions associated with the proposed TDM plan is based on information included in the California Air Pollution Control Officers Association (CAPCOA), Quantifying Greenhouse Gas Mitigation Measures report (CAPCOA report).[4] The quantification methods provided in the CAPCOA report are based on an extensive literature review. The selection of the applied VMT reduction rate is also informed by the TDM Encyclopedia, published by the Victoria Transport Policy Institute. The applied VMT reduction rate is based on the anticipated level of adoption and aggressiveness of implementation of a given strategy. The VMT reduction rate estimated for the TDM plan was determined based on a conservative estimate of the level of adoption and aggressiveness of implementation; therefore, the total VMT reduction is likely underestimated. Furthermore, the City's Zoning Ordinance requires that the TDM plan be guaranteed to achieve the intended reduction over the life of the development, as evidenced by annual reporting provided to the satisfaction of the City's Transportation Manager. TDM measures are required to be replaced by appropriate substitute measures if the intended trip reduction is not achieved in any reporting year. The minimum required 20 percent reduction in vehicle trips exceeds the threshold needed to be achieved to reduce the potentially significant VMT impact to less than significant. For these reasons, as with the proposed project, and with implementation of the proposed TDM plan, the Base Level alternative would not exceed an applicable VMT threshold of significance for the residential component of the Base Level alternative. This impact would be ***less than significant*** **(LTS)**.

The Base Level alternative would provide approximately 21,539 square feet of office space. Because the office space exceeds 10,000 square feet in size, a VMT analysis is required.[5] Table 6.B shows the average daily VMT per employee for workers within the City of Menlo Park; the VMT threshold (15 percent below citywide average); and the VMT for TAZ 3072, the TAZ in which the project site is located.

Table 6.B: Vehicle Miles Traveled – Office Use

Land Use	City of Menlo Park Average	VMT Threshold (15 Percent Below Citywide Average)	Project Transportation Analysis Zone (TAZ 3072)
Office (per employee)	14.9	12.7	21.0

Source: Menlo Park Travel Demand Mode, 2020.

As shown in Table 6.B, the average daily VMT per employee for office land uses within the project site's TAZ is 21.0, which is 66 percent above the threshold of significance of 12.7.

Given the project is located in an area where VMT is more than 15 percent above the citywide average, the Base Level alternative's office use may cause substantial additional VMT and impacts

4 California Air Pollution Control Officers Association. 2010. *Quantifying Greenhouse Gas Mitigation Measures*. Available online at: www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf (accessed July 24, 2020). August.

5 According to the City's TIA Guidelines, local serving commercial projects with 10,000 square feet or less are exempt from VMT analysis. The proposed project would include less than 10,000 square feet of commercial space and therefore was exempt from this analysis.

would be potentially significant. Many interdependent factors, including density, mix of land uses, and availability of transportation options, affect the amount and distance a person might drive. The average daily VMT per employee within the project site's TAZ is higher than the citywide average, indicating that the project site is located in an area with a less balanced jobs-housing ratio that is further from other land uses, and with fewer options for ways of travel relative to other parts of the city.

The TDM plan would need to achieve a 40 percent reduction in vehicle trips/VMT for the office component to reduce the Base Level alternative's impacts to less-than-significant levels. Proposed TDM measures and corresponding estimated VMT reductions are described in this section and summarized in Table 6.C.

Table 6.C: TDM Measures and Estimated Vehicle Miles Traveled Reduction for Office Uses

TDM Measure (CAPCOA ID)[a]	Range of VMT Reduction[b]	Applied VMT Reduction Rate for Proposed Project[c]
Bicycle Parking (SDT-7)	0.625%	0.625%
Pedestrian Network Improvements (SDT-1)	0% to 2%	2%
Commute Trip Reduction Marketing (TRT-7)[d]	0.8% to 4%	4%
Total	---	6.63%

Source: California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures, August 2010.
Notes: "--" indicates value not applicable.
[a] CAPCOA ID references the strategy as identified in the CAPCOA Quantifying Greenhouse Gas Mitigation Measures document.
[b] Range of vehicle miles traveled reduction obtained from CAPCOA.
[c] Vehicle miles traveled reduction rate determined based on the estimated level of adoption and aggressiveness of implementation of a given strategy and account for the implementation of other TDM program elements so as not to overestimate vehicle miles traveled reduction for the overall program.
[d] The vehicle miles traveled reduction rate selected is based on the anticipated effectiveness of the commute reduction strategies being promoted and the assumption that 100% of residents are eligible. Commute trip reduction marketing elements include: on-site amenities, transit information, on-site transportation kiosk, and programs to support commute alternatives.

As shown in Table 6.C, implementation of the TDM plan would result in an estimated reduction of about six percent the vehicle miles traveled generated by the proposed office use. The TDM measures relevant to the office use includes:

- On-site bicycle parking. Having accessible, secure, and convenient places to store bicycles encourages employees to bike to and from the project site. The project will include short-term bicycle parking on-site.
- Pedestrian network improvements. Having a complete and connected pedestrian network encourages employees to walk to and from the project site. The project will add new sidewalks with street trees along the Constitution Drive and Independence Drive frontages and provide a pedestrian plaza with internal circulation around the apartment and office buildings.
- Commute trip reduction marketing. Information sharing and marketing are important components to successful vehicle trip reduction strategies. The project will appoint a transportation coordinator for trip planning assistance and provide information on commuting options to employees, among other services.

Given that the TDM plan would need to achieve a 40 percent reduction in vehicle miles traveled and the TDM plan as currently proposed would achieve an approximately six percent reduction, the VMT generated by the proposed office use would result in a ***potentially significant*** **(PS)** impact. The City's Zoning Ordinance requires that the TDM plan be guaranteed to achieve a minimum required 20 percent reduction in vehicle trips, as evidenced by annual reporting provided to the satisfaction of the City's Transportation Manager. TDM measures are required to be replaced by appropriate substitute measures if the intended trip reduction is not achieved in any reporting year. While implementation of additional TDM measures, such as an on-site care sharing program, a subsidized or discounted transit program, and encouraging telecommuting or alternative work schedules could further reduce the VMT generated by the proposed office use, there is a limit to the effectiveness and VMT reduction potential associated with TDM. According to information provided in the CAPCOA report, the maximum project VMT reduction for developments within a compact infill location,[6] such as the project site, is 40 percent. Given that implementation of even the most aggressive TDM plan would achieve a maximum 40 percent reduction in VMT, the VMT generated by the proposed office use would result in a ***significant and unavoidable*** **(SU)** impact.

The Base Level alternative proposes to provide an approximately 10,000 square foot child care facility. According to the City's TIA Guidelines, local serving public facilities where the new or added square footage is 10,000 square feet or less would be exempt from VMT analysis. With the exemption, it is expected that the size of the space would have a less than significant impact. Additionally, consistent with OPR guidance,[7] increasing access to common goods and services, such as child care, is identified as a potential measure to reduce project-generated VMT. Therefore, the Base Level alternative's child care facility is exempt from further analysis and this impact would be ***less than significant*** **(LTS)*.***

6.2.2.3 Air Quality

Development of the Base Level alternative would result in demolition and construction activity within the project site, although the construction period would be slightly less with the reduced project size. Similar to the proposed project, this alternative would result in an increase in pollutant and odor concentrations during the construction period and would generate dust, exhaust, and organic emissions related to construction; therefore, implementation of ConnectMenlo Final EIR Mitigation Measure AQ-2b1 (Project Mitigation Measure AIR-1) would also be required to reduce construction-period air quality impacts. Similar to the proposed project, this alternative would result in development of residential and office uses, but would also add child care uses, on the project site and would result in an increase in operational vehicle trips compared to existing conditions (see Table 6.A), and therefore would result in an increase in mobile source pollutants within the City,

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6 A compact infill location setting refers to a project located on an existing site within the central city or inner-ring suburb with high-frequency transit service. These sites are typically 5 to 15 miles outside of a regional central business district with building heights ranging from two to four stories, a grid street network, constrained parking supply, and low to moderate parking pricing. Transit service typically includes rail service within two miles and bus service at 15 minute peak headways or less.

7 Governor's Office of Planning and Research. 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. Available online at: www.opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf (accessed December 2, 2020). December.

although to a lesser extent than the proposed project. Additionally, the Base Level alternative would locate residential uses on the same site as the proposed project, and therefore would continue to expose future residents of the project site to toxic air contaminants. Additionally, the Base Level alternative would locate a child care center use on the site. However, operational health risks are based on existing off-site mobile and stationary sources surrounding the site and their health risk impact on future receptors on the site. Therefore, the risk at the project site would be the same for any future receptors. Demolition and construction activity associated with the Base Level alternative would still result in a construction-period health risk to off-site receptors. Therefore, implementation of Project Mitigation Measure AIR-2 would be required to reduce construction-period health risk impacts. With implementation of the Base Level alternative, impacts on air quality would be ***less than significant with mitigation*** **(LTS/M)**, similar to but less than the proposed project.

6.2.2.4 Greenhouse Gas Emissions

Development of the Base Level alternative would result in demolition and construction activity within the project site, although the construction period would be slightly less with the reduced project size. Similar to the proposed project, this alternative would result in an increase in construction-period GHG emissions; however, implementation of ConnectMenlo Final EIR Mitigation Measure AQ-2b1 (Project Mitigation Measure AIR-1) would ensure that this less-than-significant impact is reduced to the extent feasible. Similar to the proposed project, this alternative would result in development of residential and office uses, but would also add child care uses on the project site and would result in an increase in operational vehicle trips compared to existing conditions (see Table 6.A), and therefore would result in an increase in mobile source emissions within the City, although to a lesser extent than the proposed project. As discussed in Section 4.4, Greenhouse Gas Emissions, mobile source and energy emissions account for approximately 97 percent of emissions associated with the proposed project. Therefore, despite the increase in nonresidential space, the Base Level alternative would continue to have a less-than-significant impact related to operational GHG emissions as daily vehicle trips would be reduced by approximately 49 percent (shown in Table 6.A) and the proposed building would be less than half the size than the building included in the proposed project. With implementation of the Base Level alternative, impacts on greenhouse gas emissions would be ***less than significant*** **(LTS)**, similar to but less than the proposed project.

6.2.2.5 Noise

Under the Base Level alternative, noise at the project site would increase above that already occurring on the project site, although to a lesser extent than under the proposed project due to the reduction in residential units. Increased traffic noise would also occur, but to a lesser degree than under the proposed project. This impact would be less than significant under both the proposed project and the Base Level alternative. In addition, similar to the proposed project, the Base Level alternative would locate residential, office, and childcare land uses in an area that is generally considered an acceptable or conditionally acceptable noise environment for these uses, and implementation of Project Mitigation Measure NOI-1 would be required. Noise generated by children playing outdoors as part of the childcare center use would be similar to noise generated by the residential and nonresidential outdoor spaces associated with the proposed project. With implementation of the Base Level alternative, impacts related to noise would be ***less than significant with mitigation*** **(LTS/M),** similar to but less than the proposed project.

6.3 MAXIMUM BUILDOUT ALTERNATIVE

The following provides a description of the Maximum Buildout alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated environmental impacts of the Maximum Buildout alternative to the environmental impacts associated with the proposed project. The discussion includes a determination of whether or not the Maximum Buildout alternative would reduce, eliminate, or create new significant environmental impacts and would or would not meet the objectives of the project.

6.3.1 Principal Characteristics

Under the Maximum Buildout alternative, the project site would be redeveloped with the maximum residential and nonresidential buildout potential allowed at the bonus level in the R-MU-B zoning district. The bonus-level of development allows for a density of up to 100 dwelling units per acre, a FAR of up to 225 percent for residential uses and 25 percent for nonresidential uses, and a maximum height of up to 85 feet in exchange for providing community amenities. As such, the approximately 4.83-acre project site could be developed with up to 483 dwelling units (approximately 473,091 square feet of gross residential floor area) and up to approximately 52,565 square feet of nonresidential floor area, with a maximum gross floor area of approximately 525,656 square feet.

Under this alternative, the project site would be redeveloped with approximately 473,091 gross square feet of residential use (up to 483 units, or the same number as the proposed project) and up to 52,565 square feet (50,465 square feet more than the proposed project) of nonresidential uses, including an approximately 10,000 square-foot child care center and up to 42,565 square feet of office uses. A total of 483 rental units would be located within two seven-story buildings, one of which would front to Constitution Drive and the other of which would front to Jefferson Drive. Similar to the proposed project, residential units would consist of a mix of studio, junior one-bedroom, one-bedroom, two-bedroom, and three-bedroom units similar in size to the proposed project. No townhomes would be included. Up to 15 percent of the total units, or 73 units, would be affordable, consistent with the City's BMR Housing Program and similar to the proposed project.

Under the Maximum Buildout alternative, Building Site TH1 would be developed with an approximately 52,565-square-foot building that would front to Constitution Drive and contain the child care center and office uses. The child care center would be located at the ground level and would include an outdoor play area situated internally to the site, away from adjacent roadways.

Approximately 505 parking spaces, consisting of one parking space per residential unit and two spaces per 1,000 square feet of office uses, would be provided within a ground floor parking garage within each building. Mechanical parking systems may be utilized to provide the required number of vehicle parking spaces within the parking garage constraints. Site access and infrastructure improvements would be similar to the proposed project.

The total square footage of open space would be reduced compared to the proposed project and would comply with City requirements; approximately 13,142 square feet of publicly-accessible open space (6.25 percent of the total site) would be provided.

6.3.2 Analysis of the Maximum Buildout Alternative

The potential impacts associated with the Maximum Buildout alternative are described below. Under the Maximum Buildout alternative, the project site would be developed with a mix of residential and office/child care center uses, consistent with the zoning, although with more nonresidential square footage as compared to the proposed project. The community amenity value may also increase with the increased nonresidential square footage. The Maximum Buildout alternative would achieve all of the project objectives to a similar degree as the proposed project. This alternative would provide affordable and market rate housing, contribute to electrification within the city, construct a high-quality-aesthetic project, and provide communities amenities. However, as described below, the Maximum Buildout alternative would require implementation of the same mitigation measures as those required for the proposed project, and would result in a new ***significant and unavoidable*** **(SU)** impact, compared to the impacts of the proposed project.

6.3.2.1 Population and Housing

Under the Maximum Buildout alternative, similar to the proposed project, the project site would be developed with the same number of residential uses, but would have additional nonresidential space compared to the proposed project. The Maximum Buildout alternative would contribute the same number of residential units planned for and anticipated by ConnectMenlo as the proposed project, although there may be additional housing demand generated by the increased nonresidential square footage. Therefore, the Maximum Buildout alternative would be consistent with the mix and intensity of development contemplated by ConnectMenlo. Similar to the proposed project, the Maximum Buildout alternative would add to the supply of market rate and affordable housing and would moderate displacement pressures to some degree by relieving market pressures on existing housing stock, although to a slightly lesser degree than the proposed project since substantially more office square footage would be developed. Similar to the proposed project, impacts related to population and housing would be **less than significant (LTS)** with implementation of the Maximum Buildout alternative.

6.3.2.2 Transportation

Under the Maximum Buildout alternative, the project site would be developed with the same number of residential uses as the proposed project, although the amount of nonresidential office space would substantially increase and a child care center use would also be added. The transportation and circulation changes under the Maximum Buildout alternative, including the site access and infrastructure improvements, would be similar to the proposed project. Therefore, the Maximum Buildout alternative would result in the same ***less-than-significant*** **(LTS)** impacts related to design hazards and emergency vehicle access as the proposed project. Vehicle trip generation associated with the Maximum Buildout alternative and related VMT and policy conflicts are further discussed below, and, unlike the proposed project, would result in a new ***significant and unavoidable*** **(SU)** impact related to VMT.

Trip Generation. The travel demand for the Maximum Buildout alternative was estimated for weekday daily and weekday AM and PM peak periods. The vehicle trip generation estimates for the proposed residential and nonresidential space were calculated using the trip generation rates from the most recent ITE Trip Generation Manual.[8]

The ITE Trip Generation Manual does not provide data on trip reductions (pass-by/walk-in or internalized trips[9]) for the child care center uses. Therefore, consistent with ITE and in an effort to provide a conservatively high estimate of the trip generation potential associated with these uses, vehicle trip reductions were not taken to account for pass-by/walk-in or internalized trips. Consistent with the Menlo Park TIA Guidelines,[10] vehicle trip reductions were taken to account for the proposed TDM plan[11] and existing uses. The resulting trip generation, along with a comparison of the net new vehicle trips generated under the Maximum Buildout alternative and the proposed project, is provided in Table 6.D.

Table 6.D: Maximum Buildout Alternative - Net New Vehicle Trips Comparison to Proposed Project

Project Scenario	Size	Daily	AM Peak Hour	PM Peak Hour
Existing Uses				
Office Building (ITE Code 710)	30,179 sf	(702)	(84)	(83)
General Light Industrial (ITE Code 110)	72,033 sf	(150)	(21)	(19)
Maximum Buildout Alternative				
Residential (ITE Code 221)	483 du	2,626	174	213
Office Building (ITE Code 710)	42,565 sf	415	49	49
Child Care Center (ITE Code 565)	10,000 sf	1,110	110	112
Maximum Buildout Alternative Subtotal		4,153	333	373
TDM Plan: 20%		(831)	(67)	(75)
Maximum Buildout Alternative Total		3,322	266	298
Net New Vehicle Trips				
Maximum Buildout Alternative (Maximum Buildout Alternative Total minus Existing Uses)	--	2,975	229	263
Proposed Project	--	2,772	114	96
Difference (Maximum Buildout Alternative minus Proposed Project)	--	203 7% Increase	115 101% Increase	167 174% Increase

Source: *ITE Trip Generation Manual, 10th Edition* (2018).
du = dwelling units
sf = square feet

8 Institute of Transportation Engineers. 2018, op. cit.

9 Internal trip capture, or internalization, refers to the portion of trips generated by a mixed-use development that both begin and end within the development. This alternative would include a mix of uses and would likely result in some internal trip capture. This analysis applies the single land use rates without adjustment and can therefore be considered conservative.

10 Menlo Park, City of. 2020, op. cit.

11 Hexagon Transportation Consultants, Inc. 2019, op. cit.

As shown in Table 6.D, the Maximum Buildout alternative would generate 2,975 net new vehicle trips on a daily basis, 229 net new vehicle trips during the weekday AM peak hour, and 263 net new vehicle trips during the weekday PM peak hour. Because of the addition of the office space and child care center compared to the proposed project, the Maximum Buildout alternative would result in 7, 101, and 174 percent more vehicle trips as compared to the proposed project on a daily, weekday AM peak hour basis, and weekday PM peak hour basis, respectively.

Applicable Plans, Ordinances, and Policies. As part of the City's entitlement process, the Maximum Buildout alternative would be required to comply with existing regulations, including General Plan policies and zoning regulations. The Maximum Buildout alternative would be reviewed in accordance with the City's Public Works Department Transportation Program standards and guidelines, and the department would provide oversight-engineering review to ensure that the project is constructed according to City specifications.

The site access and infrastructure improvements provided under the Maximum Buildout alternative would be similar to the proposed project and would represent an overall improvement to bicycle and pedestrian access and circulation. Similar to the proposed project, the Maximum Buildout alternative would result in the construction of a public sidewalk and installation of street lighting to encourage a pedestrian friendly environment. Additionally, the Maximum Buildout would promote bicycle use by providing long-term and short-term bicycle parking spaces and a bike repair station. The Maximum Buildout alternative would meet the Zoning Ordinance requirements for vehicle and bicycle parking and implement TDM measures in an effort to reduce project-generated vehicle trips and encourage travel by other modes. Therefore, this impact would remain ***less than significant*** **(LTS)**.

Vehicle Miles Traveled. The VMT for the Maximum Buildout alternative is the same as under the proposed project for the residential component. The estimated average daily VMT per capita for residential land uses within the project site's TAZ is 16.0, which is about 17 percent above the threshold of significance of 13.7 VMT per capita. The estimated VMT does not account for the project's proposed TDM plan. Without any TDM measures, the residential use may cause substantial additional VMT, and impacts would be potentially significant. The minimum 20 percent reduction required by the City's TDM Program exceeds the threshold needed to be achieved to reduce the potentially significant VMT impact to less than significant. Implementation of the TDM plan would result in an estimated reduction of approximately 30 percent of the VMT generated by the Maximum Buildout alternative. The range of effectiveness for VMT reductions associated with the proposed TDM plan is based on information included in the CAPCOA report.[12] The quantification methods provided in the CAPCOA report are based on an extensive literature review. The selection of the applied VMT reduction rate is also informed by the TDM Encyclopedia, published by the Victoria Transport Policy Institute. The applied VMT reduction rate is based on the anticipated level of adoption and aggressiveness of implementation of a given strategy. The VMT reduction rate estimated for the TDM plan was determined based on a conservative estimate of the level of adoption and aggressiveness of implementation; therefore, the total VMT reduction is likely underestimated. Furthermore, the City's Zoning Ordinance requires that the TDM plan be

12 California Air Pollution Control Officers Association. 2010, op. cit.

guaranteed to achieve the intended reduction over the life of the development, as evidenced by annual reporting provided to the satisfaction of the City's Transportation Manager. TDM measures are required to be replaced by appropriate substitute measures if the intended trip reduction is not achieved in any reporting year. The minimum required 20 percent reduction in vehicle trips exceeds the threshold needed to reduce the potentially significant VMT impact to less than significant. For these reasons, as with the proposed project, and with implementation of the proposed TDM plan, the Maximum Buildout alternative would not exceed an applicable VMT threshold of significance. This impact would be ***less than significant*** **(LTS)** for the residential component of the Maximum Buildout alternative.

Because the office space exceeds 10,000 square feet in size, a VMT analysis is required.[13] The VMT for the office use under the Maximum Buildout alternative is the same as under the Base Level alternative. The estimated average daily VMT per employee for office land uses within the project site's TAZ is 21.0, which is 40 percent above the threshold of significance of 12.7 VMT per employee. The estimated VMT does not account for the project's proposed TDM plan. Implementation of the TDM plan would result in an estimated reduction of approximately six percent of the VMT generated by the Maximum Buildout alternative. The TDM plan would need to achieve a 66 percent reduction in VMT to reduce the project impacts to less-than-significant levels. Implementation of even the most aggressive TDM plan would achieve a maximum 40 percent reduction in VMT. For these reasons, even with implementation of the proposed TDM plan and additional TDM measures, the office component of the Maximum Buildout alternative would exceed an applicable VMT threshold of significance. This impact would be ***significant and unavoidable*** **(SU).**

The Maximum Buildout alternative proposes to provide an approximately 10,000 square foot child care facility. According to the City's TIA Guidelines, local serving public facilities where the new or added square footage is 10,000 square feet or less would be exempt from VMT analysis. With the exemption, it is expected that the size of the space would have a less than significant impact. Additionally, consistent with OPR guidance[14], increasing access to common goods and services, such as child care, is identified as a potential measure to reduce project-generated VMT. Therefore, the Maximum Buildout alternative's retail space is exempt from further analysis.

6.3.2.3 Air Quality

Development of the Maximum Buildout alternative would result in demolition and construction activity within the project site, although the construction period would be incrementally longer in duration with the increased project size. Similar to the proposed project, this alternative would result in an increase in pollutant and odor concentrations during the construction period and would generate dust, exhaust, and organic emissions related to construction; therefore, implementation of ConnectMenlo Final EIR Mitigation Measure AQ-2b1 (Project Mitigation Measure AIR-1) would also be required to reduce construction-period air quality impacts. Similar to the proposed project, this alternative would result in development of residential and office uses, but would also add child care

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13 According to the City's TIA Guidelines, local serving commercial projects with 10,000 square feet or less are exempt from VMT analysis. The proposed project would include less than 10,000 square feet of commercial space and therefore was exempt from this analysis.

14 Governor's Office of Planning and Research. 2018, op. cit.

uses, on the project site and would result in an increase in operational vehicle trips compared to existing conditions (see Table 6.D), and therefore would result in an increase in mobile source pollutants within the City that would be greater than the proposed project. Additionally, the Maximum Buildout alternative would locate residential uses on the same site as the proposed project, and therefore would continue to expose future residents of the project site to toxic air contaminants. Additionally, the Maximum Buildout alternative would locate a child care center use on the site. However, operational health risks are based on existing off-site mobile and stationary sources surrounding the site and their health risk impact on future receptors on the site. Therefore, the risk at the project site would be the same for any future receptors. Demolition and construction activity associated with the Maximum Buildout alternative would still result in a construction-period health risk to off-site receptors. Therefore, implementation of Project Mitigation Measure AIR-2 would be required to reduce construction-period health risk impacts. With implementation of the Maximum Buildout alternative, impacts on air quality would be ***less than significant with mitigation*** **(LTS/M)** similar to but less than the proposed project.

6.3.2.4 Greenhouse Gas Emissions

Development of the Maximum Buildout alternative would result in demolition and construction activity within the project site, although the construction period would be incrementally longer in duration with the increased project size. Similar to the proposed project, this alternative would result in an increase in construction-period GHG emissions; however, implementation of ConnectMenlo Final EIR Mitigation Measure AQ-2b1 (Project Mitigation Measure AIR-1) would ensure that this less-than-significant impact is reduced to the extent feasible. Similar to the proposed project, this alternative would result in development of residential and office uses, but would also add child care uses, on the project site and would result in an increase in operational vehicle trips compared to existing conditions (see Table 6.D), and therefore would result in an increase in mobile source emissions within the City that would be greater than the proposed project. As discussed in Section 4.4, Greenhouse Gas Emissions, the project-specific thresholds for this analysis are based on the service population of the entire site, which includes residents and employees. Therefore, despite the increase in nonresidential space, the Maximum Buildout alternative would continue to have a less-than-significant impact related to operational GHG emissions as daily vehicle trips would increase by approximately 13 percent (shown in Table 6.D), but the service population on the site would be expected to increase in a linear fashion with the increase in nonresidential building space. As described above, under the Maximum Buildout alternative, the project site would be developed with up to 52,565 square feet of nonresidential uses, which is 50,465 square feet more than the proposed project, an increase of more than 1,000 percent. Therefore, because the Maximum Buildout alternative would include a significant higher service population than the proposed project with only a 13 percent increase in daily trips, impacts on greenhouse gas emissions would be ***less than significant*** **(LTS)**, similar to the proposed project.

6.3.2.5 Noise

Under the Maximum Buildout alternative, noise at the project site would increase above that already occurring on the project site, and to an incrementally greater extent than the proposed project due to the increase in nonresidential space and resulting increase in traffic-related noise. This impact would be less than significant under both the proposed project and the Maximum Buildout alternative. In addition, similar to the proposed project, the Maximum Buildout alternative would locate residential, office, and child care land uses in an area that is generally considered an acceptable or conditionally acceptable noise environment for these uses and implementation of Project Mitigation Measure NOI-1 would be required. Noise generated by children playing outdoors as part of the child care center use would be similar to noise generated by the residential and nonresidential outdoor spaces associated with the proposed project. With implementation of the Maximum Buildout alternative, impacts related to noise would be ***less than significant with mitigation*** **(LTS/M)**, similar to the proposed project.

6.4 ALTERNATIVES CONSIDERED BUT NOT SELECTED FOR FURTHER ANALYSIS

During the Notice of Preparation comment period, the City received verbal and written suggestions for the identification and evaluation of alternatives to the proposed project (see Appendix A of this EIR). The following provides a description of various potential alternatives that were identified and considered, and the reasons why they were ultimately not selected for further evaluation in this EIR.

- **Off-Site Locations**. Although relocation of the proposed project to an area with low VMT could avoid the VMT impact of the project, an alternative location was not considered for analysis because the project sponsor does not own or would not feasibly otherwise be able to gain control of a suitable vacant site within the city. In addition, major objectives of the project include the development of housing within close proximity to a jobs center. An alternative location located outside of the Bayfront Area would fail to meet this and several objectives of the project and would not further the goals of the City's General Plan and Zoning Ordinance. Therefore, such an alternative was ultimately not selected for further analysis in the EIR.

- **Reduced Parking.** A reduced parking alternative, in which the number of on-site parking spaces would be reduced or eliminated, was also considered. As discussed in Section 4.2, Transportation, the City's Zoning Ordinance requires one parking space per residential unit and 2.5 parking spaces per 1,000 square feet nonresidential use. The proposed project already provides close to the minimum number of parking spaces required, with a total of 553 spaces. A reduction in the number of parking spaces on the site would not comply with the City's parking requirements, although a variance could be requested for a reduction in parking of up to 50 percent. Although reducing or eliminating parking on the site could further reduce VMT,[15] the project site is not located in a transit-rich area and such an alternative would likely result in secondary impacts through increased operational air quality and greenhouse gas emissions and safety impacts as area roadways would become more congested as drivers circle the site in search of parking. Therefore, such an alternative was ultimately not selected for further analysis in this EIR.

- **Additional Reduction in Residential Development.** The Base Level alternative discussed above addresses a potential reduced development scenario of approximately 70 percent fewer

15 The Governor's Office of Planning and Research (OPR) recommends reducing parking as one strategy to reduce VMT. Although numerous variables affect travel behavior, in general, people are less willing to drive as parking becomes less available. Numerous studies substantiate the relationship between vehicular parking and VMT. The relationship between willingness to drive and availability of parking is consistent with other factors that affect travel behavior mentioned in the EIR.

residential units but at the maximum base residential density permitted within the R-MU-B zoning district. Additional reductions in the total number of units on the site would not result in a substantial additional reduction or avoidance of any additional impacts of the project as most project impacts are location-based (i.e., located adjacent to a high-volume roadway). As discussed above, because the project site is located within a high-VMT area, any increase in development compared to existing conditions that is not also coupled with improvements to transit infrastructure within the area would likely result in an increase in VMT. Furthermore, an additional reduction in residential development would fail to further the goals of the City's General Plan and Zoning Ordinance to promote high density housing to complement nearby employment. Therefore, such an alternative was ultimately not selected for further analysis in this EIR.

- **All Affordable Housing or Senior Housing.** An alternative was considered that would result in the same development pattern as proposed by the project but all residential units would be affordable to low-income residents rather than a mix of affordable and market-rate units. Affordable units sometimes correlate to lower rates of vehicle ownership; thereby potentially reducing VMT. However, this cannot be guaranteed and lower rates of vehicle ownership were not assumed for the proposed project's BMR units. While the developer could choose to provide a 100 percent affordable housing project on the site, such an alternative would not reduce or avoid any impacts of the project as identified in this EIR. In addition, the site is not designated as an affordable housing site in any adopted planning or policy document.

  Similarly, an age-restricted senior housing development, where data supports that residents typically have a lower rate of vehicle ownership, would not be an appropriate use in this location as the site is not located in a transit-rich area. Furthermore, the site is located within a jobs-rich area and residential development in this location is anticipated to reduce the jobs/housing imbalance by locating more residents within proximity to existing professional service and office jobs. Therefore, such an alternative was ultimately not selected for further analysis in the EIR.

- **No Net VMT Increase/No Net GHG Increase.** An alternative that would result in no net increase in VMT or GHG emissions would likely not be feasible without development and implementation of programs that would increase the availability of alternative modes of transit within the Bayfront Area as a whole. Such improvements cannot be developed and implemented by individual project sponsors. A no net VMT increase could also be achieved by either replacing the existing use with a similar use (i.e., an approximately 30,000-square-foot light industrial building and 15,000-square-foot office building) or by limiting the residential units included in a new project to be equal to the VMT generated by the existing use, which is estimated to be approximately 70 residential units. As discussed in the bullet above regarding an additional reduction in residential development, the potentially significant impacts associated with the proposed project are location-based, and would not be reduced to less-than-significant levels by reducing the amount of development. Therefore, such an alternative was ultimately not selected for further analysis in this EIR.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the above analysis, the No Project alternative would have the fewest impacts and would be the environmental superior alternative. Under CEQA, if the No Project alternative is the environmentally superior alternative, the EIR must identify an environmentally superior alternative from among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). While the No Project alternative would be environmentally superior in the technical sense in that contribution to the aforementioned impacts would not occur, it would also fail to achieve any of the project's objectives and would fail to further the goal and intent of the General Plan and Zoning Ordinance.

As discussed above and shown in Table 6.E below, both the Base Level and Maximum Buildout alternatives would result in new ***significant and unavoidable*** **(SU)** impacts related to VMT. Therefore, because both of these alternatives would result in a new significant impact that would not result from the proposed project, and because none of the identified impacts would be substantially reduced or avoided with implementation of these alternatives and the same mitigation measures as the proposed project would be required, the proposed project would be considered the environmentally superior alternative.

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Table 6.E: Proposed Project and Project Alternatives Impact Comparison

Environmental Impacts	Proposed Project (Without/With Mitigation)	No Project Alternative (Without/With Mitigation)	Base Level Alternative (Without/With Mitigation)	Maximum Buildout Alternative (Without/With Mitigation)
4.1 Population and Housing				
The proposed project would not induce substantial unplanned population growth, either directly or indirectly.	LTS	NI	<LTS	LTS
The proposed project would not displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere.	LTS	NI	LTS	>LTS
4.2 Transportation				
The proposed project would not conflict with an applicable plan, ordinance, or policy, including the congestion management program, addressing all components of the circulation system	LTS	NI	LTS	LTS
The proposed project would not exceed the applicable VMT threshold of significance.	LTS	NI	SU	SU
The proposed project would not substantially increase hazards due to a design feature or incompatible use.	LTS	NI	LTS	LTS
The proposed project would not result in inadequate emergency access.	LTS	NI	LTS	LTS
4.3 Air Quality				
The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	NI	LTS	LTS
Construction of the proposed project would generate air pollutant emissions that could violate air quality standards. (Impact AIR-1)	PS LTS/M	NI	<PS LTS/M	>PS LTS/M
Operation of the proposed project would expose future residents of the project site to toxic air contaminants. (Impact AIR-2)	PS LTS/M	NI	~PS LTS/M	>PS LTS/M
4.4 Greenhouse Gas Emissions				
The proposed project would not generate GHG emissions that may have a significant impact on the environment.	LTS	NI	LTS	LTS
The proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.	LTS	NI	LTS	LTS

Table 6.E: Proposed Project and Project Alternatives Impact Comparison

Environmental Impacts	Proposed Project (Without/With Mitigation)	No Project Alternative (Without/With Mitigation)	Base Level Alternative (Without/With Mitigation)	Maximum Buildout Alternative (Without/With Mitigation)
4.5 Noise				
The proposed project would locate residential land uses in an area that is considered a conditionally acceptable noise environment based on the City's Noise and Land Use Compatibility Guidelines for multi-family residential land uses. (Impact NOI-1)	PS LTS/M	NI	~PS LTS/M	~PS LTS/M
The proposed project would not generate excessive groundborne vibration or groundborne noise levels.	LTS	NI	<LTS	>LTS

Source: LSA (2020).

NI = No Impact
LTS = Less than significant
PS = Potentially significant
SU = Significant unavoidable
LTS/M = Less than significant with mitigation

~S = Similar to proposed project
<PS = Incrementally *less than* proposed project
>PS = Incrementally *greater than* proposed project

7.0 REPORT PREPARATION

7.1 REPORT PREPARERS

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