3.3 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 Menlo Park use the City of Menlo Park's (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, the passage of 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 (non-driving transportation modes such as walking and biking). 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]. The transportation analysis in this EIR complies with the City's TIA Guidelines, which require use of the City's VMT threshold for CEQA transportation impact analysis.

Adoption of a local VMT threshold requires City Council approval and on June 23, 2020, the City Council 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. On January 11, 2022 the City Council approved changes to the local VMT thresholds, and this EIR uses these updated thresholds. Per the TIA Guidelines, the TIA includes both an assessment of VMT impacts using the current 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 an analysis of LOS for local planning purposes, that information is summarized in the Non-CEQA Analysis at the end of this section of this EIR.

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1 Menlo Park, City of. 20222. Transportation Impact Analysis Guidelines Update, Staff Report (Pg227-255). Website: https://beta.menlopark.org/files/sharedassets/public/agendas-and-minutes/city-council/2022-meetings/agendas/20220111-city-council-agenda-packet.pdf (accessed March 18, 2022)

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. December 18.

The information in this chapter is based on travel demand modeling, analyses, and identification of mitigations, if any, developed by Hexagon Transportation Consultants, 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), the City of East Palo Alto, and the City/County Association of Governments of San Mateo County (C/CAG). The technical appendices are included in Appendix 3.3, Transportation, of this EIR. The appendices include the LOS analysis summary, turning movement volumes, intersection lane configurations, and intersection and roadway LOS results.

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. Applicable issues that were identified include Project-related trip generation, distribution, and assignment; an expanded list of study intersections; multimodal transportation analysis for school routes; need for Dumbarton Rail Analysis; creation of a Transportation Demand Management program; mitigation measures; impacts on residents of East Palo Alto; and the project's fair share contribution as part of mitigation measures.

Existing Conditions

Environmental Setting

This section describes the existing conditions for transportation facilities in the vicinity of the site, including roadway network, transit service, and pedestrian and bicycle facilities.

Existing Roadway Network

Regional access to the Project Site is provided via US 101 and SR 84. Major arterials in the Project Site vicinity include Willow Road, University Avenue, and Marsh Road. Local access to the Project Site is currently provided on Hamilton Avenue, Willow Road, and Adams Court. These roadways are described below. Many streets in the study area run at a diagonal compared to the ordinal directions. For the purposes of this study, US 101 and all parallel streets are considered to run north to south. Conversely, University Avenue 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 followed by the Federal Highway Administration (FHWA) category.

Bayshore Freeway (US 101) is a north-south freeway in the vicinity of the Project Site with a posted speed limit of 65 miles per hour (mph). US 101 extends northward through San Francisco and southward through San Jose. Within Menlo Park and East Palo Alto, US 101 has three general-purpose travel lanes, one high-occupancy vehicle (HOV) lane, and one auxiliary lane in each direction. Access to and from the Project Site is provided via full-access interchanges at Willow Road and at University Avenue. The Willow Road interchange is partly in Menlo Park and East Palo Alto, and the University Avenue interchange is in East Palo Alto.

Bayfront Expressway (SR 84) is a six-lane expressway that extends along the eastern edge of Menlo Park with a posted speed limit of 50 mph near the Project Site. SR 84 extends southward across the Dumbarton Bridge into Alameda County and northward through San Mateo County. Bayfront Expressway provides access to the Project Site via Willow Road and University Avenue. In the vicinity of the Project Site, Bayfront Expressway does not have any on-street parking or sidewalks. The San Francisco Bay trail runs parallel to Bayfront Expressway along the west side of Bayfront Expressway south of Willow Road, and along the east side of Bayfront Expressway north of Willow Road.

Willow Road (SR 114) is a four-lane east-west boulevard (primary arterial) that serves as a border between Menlo Park and East Palo Alto in some sections, while the majority of the roadway is within the city limits of Menlo Park. Willow Road extends from Alma Street in the west to Bayfront Expressway in the east. Bike lanes are provided on Willow Road between Bayshore Expressway and Bay Road south of US 101. There are no sidewalks currently present along the north side of the road between Hamilton Avenue and Ivy Drive (but sidewalks along this segment would be installed as part of the development project currently under construction along the northern edge of Willow Road at this location) and no on-street parking is allowed on the road. In the vicinity of the Project Site, Willow Road is designated as State Route 114 with posted speed limit of 40 mph. Direct access to the Project Site would be provided off Willow Road.

University Avenue (SR 109) is an east-west four-lane boulevard (primary arterial) that extends from Stanford University in Palo Alto to Bayfront Expressway in Menlo Park. East of Notre Dame Avenue, University Avenue is a state route with a posted speed limit of 35 mph. Within Menlo Park and East Palo Alto, University Avenue is a four-lane divided roadway with no on-street parking. West of Bay Road, University Avenue has continuous sidewalks on both sides of the street. Between Bay Road and Purdue Avenue, University Avenue has a sidewalk on only one side of the street. Class II bicycle lanes exist on University Avenue starting just east of Donohoe Street and extending to the location of the future loop road. Between the future loop road and Bayfront Expressway, there is a bike lane on the south side of University Avenue and a separate bikeway on the north side of University Avenue. The posted speed limit on University Avenue east of Notre Dame Avenue is 25 mph.

Marsh Road is an east-west, four-lane primary arterial in the Proposed Project area, extending from SR 84/Bayshore Expressway in the west to Middlefield Road in the east. Marsh Road is a part of the state highway between Bayfront Expressway and the US 101 southbound ramp. The posted speed limit in the Proposed Project area is 35 mph. Sidewalks are present on both sides of Marsh Road between Bayshore Expressway and Scott Drive. A Class III bike route is designated between Bay Road and Scott Drive. On-street parking is permitted on the north side of Marsh Road between Fair Oaks Avenue and Rolison Road.

Hamilton Avenue is a north-south, two-lane collector street in the Proposed Project area, extending from Market Place in the north to a cul-de-sac in the south near Hamilton Court. The posted speed limit in the Proposed Project area is 25 mph. Sidewalks are present on both sides of Hamilton Avenue north of Willow Road and crosswalks are provided at major intersections. Sidewalks are missing south of Willow Road, but this section would be removed as part of the project. Bicycle facilities are only provided at the intersection of Willow Road and Hamilton Avenue. On-street parking is permitted on both sides of Hamilton Avenue between Willow Road and Carlton Avenue and on the west side of the road north of Carlton Avenue.

O'Brien Drive is a north-south, two-lane collector street in the Proposed Project area, extending from Willow Road in the north to University Avenue in the south. The posted speed limit in the Proposed Project area is 30 mph. Sidewalks are missing on most road segments, but pedestrian crosswalks are provided at some intersections. Bicycle facilities are not provided. On-street parking is permitted along certain segments of O'Brien Drive. Access to the Project Site would be provided via a new public right-of-way through the southern portion of the Project Site on O'Brien Drive.

Ivy Drive is a north-south, two-lane divided roadway in the Proposed Project area, extending from Ringwood Avenue in the north to Willow Road. The Menlo Park City Library parking and entrance area interrupts Ivy Drive, making the roadway discontinuous. The posted speed limit is 25 mph. Sidewalks are present on both sides of Ivy Drive. Pedestrian crosswalks are provided at the intersections closest to the City Library and at the traffic circle near Ringwood Avenue. Bicycle facilities are not provided. On-street parking is permitted on both sides of Ivy Drive. Access to the Project Site is provided via Willow Road.

Bay Road is a north-south, two-lane to four-lane collector street in the Proposed Project area, extending from Cooley Landing in the south to Saratoga Avenue in the north. Bay Road restarts west of US 101 at Willow Road and continues northward to its termination near Fourteenth Avenue. The posted speed limit in the Project Site vicinity is 25 mph. Sidewalks are present on both sides between Saratoga Avenue and Menalto Avenue and between Ralmar Avenue and Pulgas Avenue. Sidewalks are present on the west side of Bay Road between Menalto Avenue and Ralmar Avenue. Sidewalks are not provided south of Pulgas Avenue. Crosswalks are provided at major intersections. A Class III bicycle route is designated in the northbound direction between Fordham Street and Gloria Way. On-street parking is permitted on both sides of Bay Road between Saratoga Avenue and Newbridge Street and south of Gloria Way. On-street parking is permitted on the east side of the road between Newbridge Street and Gloria Way.

Newbridge Street is a north-south, two-lane roadway in the Proposed Project area, extending from Pierce Road in the north to Bay Road in the south. The posted speed limit is 25 mph. Sidewalks are present on both sides of Newbridge Street, and crosswalks are provided at major intersections. A Class III bicycle route is designated in the northbound direction between Bay Road and Menalto Avenue. On-street parking is permitted on the west side of Newbridge Street between Bay Road and Poplar Avenue and on both sides on most segments north of Poplar Avenue. Access to the Project Site is provided via Willow Road.

Chilco Street is a two-lane connector street in the Proposed Project area, extending from Bayshore Freeway in the west to Windermere Avenue in the east. The posted speed limit is 25 to 40 mph. Sidewalks are present on both sides of Chilco Street between Windermere Avenue and the Menlo Park Fire District Station No. 77. A sidewalk is present on the south side of Chilco Street between Constitution Drive and Bayfront Expressway. A Class IV separated bikeway is present along Chilco Street between the fire station and Constitution Drive. Class II bike lanes are provided on both sides between Constitution Drive and Bayfront Expressway and in the westbound direction between Constitution Drive and the fire station. On-street parking is permitted on both sides of Chilco Street between Windermere Avenue and Hamilton Avenue.

E. Bayshore Road is a north-south, two-lane to four-lane roadway in the Proposed Project area, extending from Saratoga Avenue to San Antonio Road, where it transitions into Bayshore Parkway. E. Bayshore Road is interrupted by Donohoe Street between Euclid Avenue and Cooley Avenue. The posted speed limit in the Proposed Project vicinity is 25 mph. A sidewalk is present on the west side between Saratoga Avenue and Menalto Avenue. Crosswalks are provided at signalized intersections. A Class III bicycle route is designated on E. Bayshore Road between Pulgas Avenue and Embarcadero Road. In the Proposed Project vicinity, on-street parking is permitted on the west side of E. Bayshore Road on most segments.

Existing Bicycle and Pedestrian 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 in Figure 3.3-1, Existing Bicycle Facilities.

The San Francisco Bay Trail, a Class I bike trail, runs parallel to University Avenue east of Purdue Avenue. The path provides connections to the East Bay, East Palo Alto, and Redwood City. Class I bike paths are also located on Bayfront Expressway, between Marsh Road and Marshlands Road across the Dumbarton Bridge; and recreational trails at Bedwell Bayfront Park, Facebook along Hacker Way, and on the Bay Trail near the Ravenswood Preserve.

Class II facilities (bike lanes) are provided on Willow Road between Bayshore Expressway and Bay Road west of US 101; University Avenue between Donohoe Street and Bayfront Expressway; Chilco Street on both sides between Constitution Drive and Bayfront Expressway; and Bay Road on the west side of US 101.

Class III facilities (bike routes) are provided on Bay Road in the northbound direction between Fordham Street and Gloria Way; Newbridge Street in the northbound direction between Bay Road and Menalto Avenue; E. Bayshore Road between Pulgas Avenue and Embarcadero Road; and Hacker Way.

Class IV facilities (protected bike lanes) are provided on Willow Road between the US 101 NB and SB ramps and on Chilco Street between Menlo Park Fire District Station No. 77 and Constitution Drive.

Overall, the existing bicycle facilities in the Proposed Project vicinity provide some connection for bicycles along major thoroughfares.

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. The Project Site is located in a commercial and industrial area, and pedestrian facilities are very limited. There are no sidewalks along any of the surrounding local streets including Adams Court, Adams Drive, and O'Brien Drive. Sidewalks are provided only along the south side of University Avenue between Notre Dame Avenue and Purdue Avenue. Sidewalks are available on both sides of University Avenue for a small section between Notre Dame Avenue and Kavanaugh Drive. South of Kavanaugh Drive, a sidewalk is available only along the north side of University Avenue.

Crosswalks are found on one or more approaches at some of the signalized study intersections. Signalized intersections along Willow Road between Newbridge Street and Hamilton Avenue have crosswalks across all approaches. The intersections on University Avenue at Notre Dame Avenue and at Kavanaugh Drive have crosswalks only on the east and west approaches, respectively. The intersection at University Avenue/O'Brien Drive does not have crosswalks. The intersection of University Avenue and Bay Road has crosswalks on all approaches.

Crosswalks are only available at one of the unsignalized intersections in the vicinity of the Project Site. The all-way stop-controlled intersection at Adams Drive and O'Brien Drive has crosswalks on all approaches. The two unsignalized intersections of Adams Drive/Adams Court and University Avenue/Adams Drive do not have crosswalks.

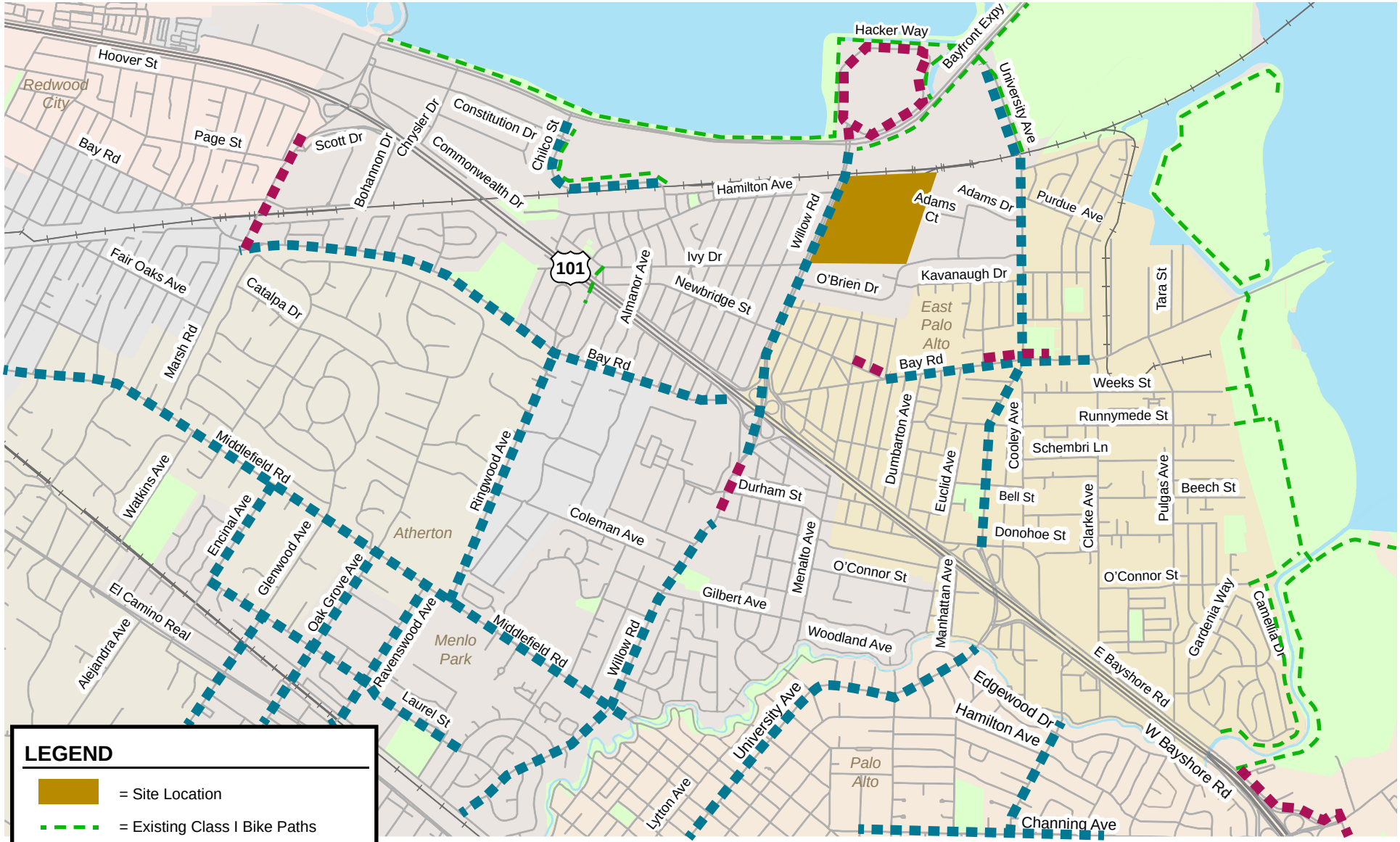

Figure 3.3-1
Existing Bicycle Facilities

Existing Transit Service

Existing transit service to the Project Area is provided by the San Mateo County Transit District (SamTrans), AC Transit, and the Menlo Park Shuttle Service. The bus routes that provide services near the Project Site in 2019 prior to the start of the Covid-19 pandemic are shown in Figure 3.3-2, Existing Transit Facilities, and described in Table 3.3-1. Services are shown that have a bus stop within ¼ mile of the Project Site, which is considered the typical walking distance for bus services.

Analysis Scope and Methodology

For purposes of disclosing potential transportation impacts, projects in Menlo Park use the City's current TIA Guidelines to ensure compliance with both State and local requirements.[4] Up 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 use of more active transportation (bicycles and walking). OPR identified VMT as the required transportation metric.

The City updated its Transportation Impact Analysis Guidelines in July 2020 to include guidelines on evaluating VMT. The local VMT threshold was subsequently modified by the City Council on January 11, 2022 and those thresholds are included in this analysis. Therefore, this analysis evaluates VMT impacts using local VMT thresholds included in the updated TIA Guidelines for purposes of determining potentially significant environmental impacts.

VMT is the total miles of travel by personal motorized vehicles (cars and light trucks) that a project is expected to generate in a day. VMT measures the full distance of personal motorized vehicle-trips that originate or end within the project. Heavy duty trucks are not included in the VMT modeling. According to OPR guidelines, the VMT of heavy-duty trucks can be excluded from analysis under SB 743.

The project VMT was estimated using the City's travel demand model. The model estimates the Proposed Project's effect on total daily VMT in accordance with the City's TIA Guidelines. The evaluated daily VMT accounts for the entire distance of a trip associated with the Proposed Project. For example, the entire length of a trip made by an employee coming from and returning to their home would be captured in the daily VMT analysis. The model is used to estimate average daily VMT within the City's transportation analysis zones (TAZs) and to determine VMT thresholds for residential and commercial land uses that are identified in the City's TIA Guidelines. Per the City VMT guidelines adopted in July 2020, mixed-use projects will have each component analyzed independently against the appropriate thresholds. As recommended by OPR's *Technical* Advisory on VMT evaluation, internal capture will be credited for mixed-use projects. The project proposes office and accessory uses[5] (e.g. meeting and collaboration space), residential, hotel, retail, restaurant, entertainment, and park land uses.

The Menlo Park travel demand model encompasses the nine Bay Area counties divided into thousands of 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 well as surrounding TAZs.

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

5 Accessory uses could include the following types of spaces: meeting/collaboration space, orientation space, training space, event space, incubator space, a business partner center, an event building (including pre-function space, collaboration areas, and meeting/event rooms), a visitor center, product demonstration areas, film studio, gathering terraces and private gardens, and space for other Meta accessory uses. Accessory uses could occur in spaces located anywhere throughout the Campus District.

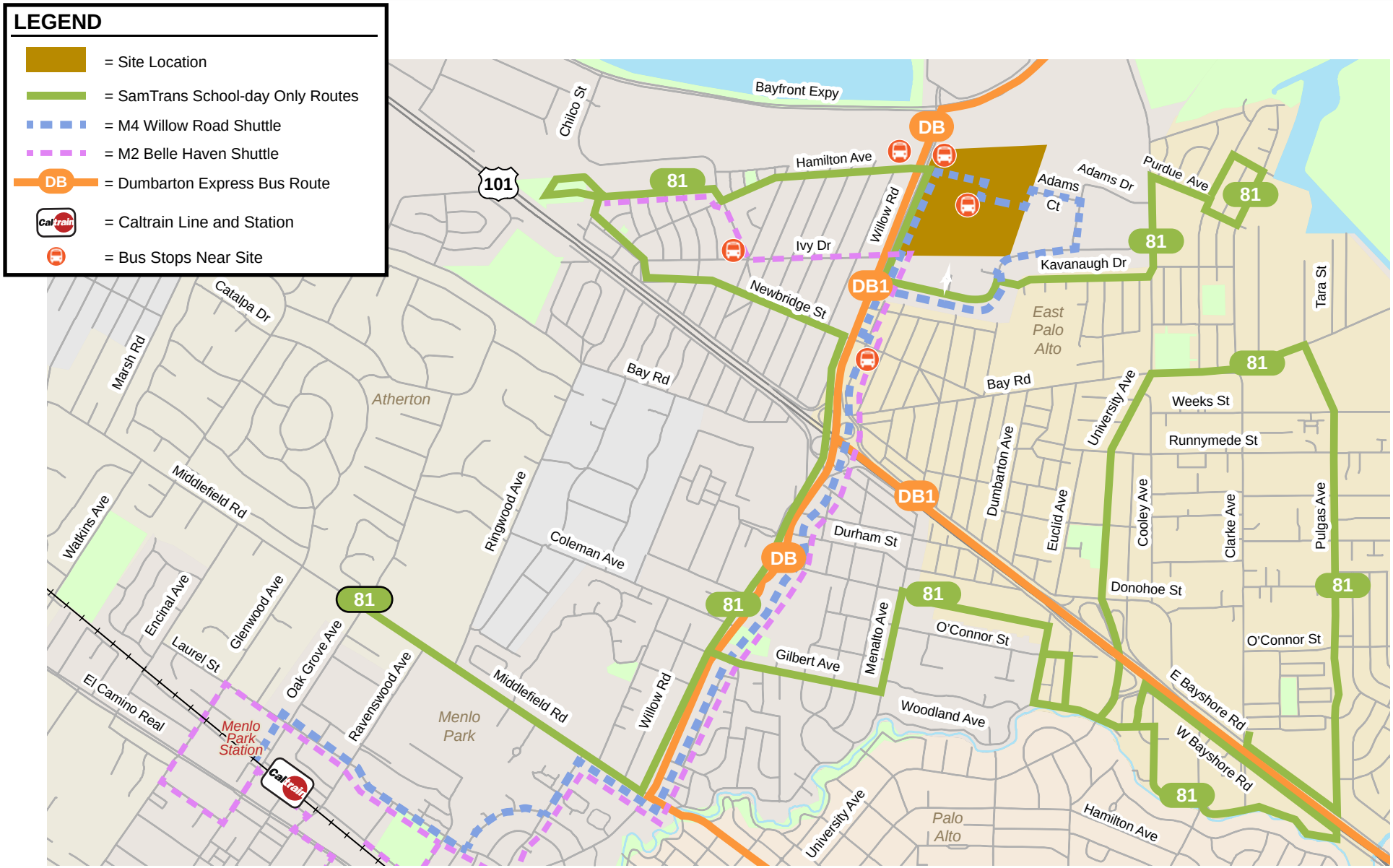


Figure 3.3-2
Existing Transit Services

Table 3.3-1. Existing Transit Service

Bus Route	Route Description	Travelled Roadways	Weekday Hours of Operation	Headway
Dumbarton Express Line DB	Union City BART to Stanford University	Dumbarton Bridge, Bayfront Expressway, Willow Road, Middlefield Road	5:20 AM - 8:45 PM	15 - 75 min
Dumbarton Express Line DB1	Union City BART to Stanford Research Park	Dumbarton Bridge, Bayfront Expressway, Willow Road, US 101	5:25 AM - 8:35 PM	15 - 65 min
SamTrans Route 81	Menlo-Atherton High School to Clarke & Bayshore	Middlefield Road, Willow Road, University Avenue, Pulgas Avenue, Kavanaugh Drive, Hamilton Avenue	6:45 AM - 9:10 AM 3:25 PM - 4:10 PM	55 - 95 min
M2 Belle Haven Shuttle	Menlo Park Senior Center to Partridge & Kennedy	Middlefield Road, Willow Road, Ivy Drive, Chilco Street, Terminal Avenue	6:40 AM - 5:45 PM	90 - 120 min
M4 Willow Road Shuttle	Menlo Park Caltrain Station to Adams Court	Willow Road, O'Brien Drive, Hamilton Avenue, Hamilton Court, Adams Court	7:00 AM - 10:00 AM 3:20 PM - 6:15 PM	45 - 90 min

Notes:
Approximate weekday operation hours and headways during peak commute periods in the Project Area, as of 2019, prior to Covid-19.

Regulatory Setting

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) and US 101.

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[6], which covers the 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 reductions 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

[6] California Department of Transportation. . Transportation Impact Study Guide. May 2020.

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 uses in Menlo Park is "Plan Bay Area 2050" adopted by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) in 2021 (see below). However, Plan Bay Area 2050 has been challenged in court, and this analysis also references Plan Bay Area 2040.

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, the 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[7]. 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). 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.[8]

Regional Regulations

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

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 2050 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 2021. Under Plan Bay Area 2050's strategies, just under half of all Bay Area households would live within one half-mile of frequent transit by 2050, with this share increasing to over 70% for households with low incomes. Transportation and environmental strategies

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

[8] OPR. 2018, op. cit.

that support active and shared modes, combined with a transit-supportive land use pattern, are forecasted to lower the share of Bay Area residents that drive to work alone from 50% in 2015 to 33% in 2050. Greenhouse gas emissions from transportation would decrease significantly as a result of these transportation and land use changes, and the Bay Area would meet the state mandate of a 19% reduction in per capita emissions by 2035.

Under the previous Plan Bay Area 2040, to meet the greenhouse gas reduction targets, that 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 County (C/CAG) 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. The CMP is required to be consistent with the MTC planning process that includes regional goals, policies, and projects for the RTIP. In order to monitor attainment of the CMP, the C/CAG adopted the roadway LOS 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, most of the intersections are within the Cities of Menlo Park and East Palo Alto city limits and are subject to the more stringent standards implemented by the Cities.

The CMP also requires new development projected to generate 100 or more peak hour trips to implement Travel Demand Management (TDM) measures that would reduce project impacts. The Proposed Project would generate more than 100 peak hour trips. Based on the requirements of the C/CAG, the project would be required to develop and implement TDM measures to reduce vehicle trips.

San Mateo County Comprehensive Bicycle and Pedestrian Plan. The San Mateo County Comprehensive Bicycle and Pedestrian Plan was developed by C/CAG 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 regulations guiding transportation planning in the city.

Menlo Park General Plan. Transportation-related policies are included in the Circulation Element of the 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 and policies for Menlo Park adopted to avoid or mitigate environmental impacts 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 bicyclists 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 pedestrian, 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 Transportation Master Plan (following completion; until such time the Comprehensive Bicycle Development Plan, Sidewalk Master Plan and the El Camino Real/Downtown Specific Plan represent the City's proposed walking and bicycling networks).
>
> **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 Transportation Master Plan (following completion; until such time the Comprehensive Bicycle Development Plan and the El Camino Real/Downtown Specific Plan represent the City's proposed bicycle network).

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., vehicle miles traveled (VMT) per service population or other efficiency metric) 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 service population (or other efficiency metric) vehicle miles traveled.

Policy CIRC-3.2 Greenhouse Gas Emissions. Support development, transportation improvements, and emerging vehicle technology that help reduce per capita (or other efficiency metric) greenhouse gas emissions.

Policy CIRC-3.3 Emerging Transportation Technology. Support efforts to fund emerging technological transportation advancements, including connected and autonomous vehicles, emergency vehicle pre-emption, sharing technology, electric vehicle technology, electric bikes and scooters, and innovative transit options.

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-5: Support local and regional transit that is efficient, frequent, convenient, and safe.

Policy CIRC-5.2 Transit Proximity to Activity Centers. Promote the clustering of as many activities as possible within easy walking distance of transit stops, and locate any new transit stops as close as possible to housing, jobs, shopping areas, open space, and parks.

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

Policy CIRC-6.3 Shuttle Service. Encourage increased shuttle service between employment centers and the Downtown Menlo Park Caltrain station.

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 Office (O) zoning district and the Residential Mixed Use District (R-MU). The Zoning Ordinance requires the development and implementation of a Transportation Demand Management (TDM) plan:

Chapters 16.43.100 and 16.45.090 Transportation Demand Management. As stated in Chapters 16.43.100 (applicable to the O Office District) and 16.45.090 (applicable to the R-MU Residential Mixed Use District) 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 main Project Site.

The Transportation Demand Management Program Guidelines[9] 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.

- Pursuant to the City's Zoning Ordinance, eligible TDM measures may include but are not limited to those listed below.
- 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;
- Paid parking;
- 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 nonresidential 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.
- Pursuant to the City's Zoning Ordinance, measures receiving TDM credit shall be:
- Documented in a TDM plan developed specifically for each project and noted on Project Site plans, if and as appropriate;

[9] 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 15.

- 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;
- 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.

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

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, and 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 that need to be implemented are recommended by City staff at the request of the community.

Transportation Master Plan. The Transportation Master Plan identifies appropriate projects to enhance the transportation network and prioritizes projects based on need for implementation. It includes an update to the City's Bicycle and Sidewalk Plans.

Transportation Impact Fee. The City of Menlo Park initiated 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 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.

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. 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.

Significance Criteria

The Proposed Project would result in a significant effect related to transportation if it would:

- Conflict with an applicable plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Exceed an applicable VMT threshold of significance;
- Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g farm equipment); or
- Result in inadequate emergency access.

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 development potential that is proposed at the Project Site as part of the city-wide analysis.

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 to add travel lanes 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. Wider roadways also result in a degradation of pedestrian and bicycle facilities. 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, including background traffic growth and regional traffic growth outside the control of the City. 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 and result in increased delay to peak hour motor vehicle traffic, 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 (for development impact fees under AB 1600) 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 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 was adopted by the City Council on November 17, 2020. The identified roadway improvements would not fully mitigate the intersection impacts identified in the ConnectMenlo Final EIR.

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 to add travel lanes 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 the new development potential under ConnectMenlo would generate new transit riders, bicyclists, and pedestrians. Implementation of ConnectMenlo and other existing City standards and regulations would include goals, policies, and programs that provide for an integrated network of bicycle and pedestrian facilities as well as for the needs of transit users. Further, future development would be concentrated on sites either already developed and/or in close proximity to existing development, and would be served by existing transit, bicycle, and pedestrian infrastructure. However, much of the anticipated development under the proposed project would occur in the Bayfront Area, including properties located east of US 101 that are not adequately connected to the pedestrian and bicycle circulation network locally or west of US 101, and properties bordering existing streets such as

Constitution Drive that lack continuous sidewalks. Therefore, the ConnectMenlo 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 (pursuant to AB 1600) had not yet been prepared, the City could not guarantee improvements, and no additional mitigation measures were feasible and available. For these reasons, implementation of ConnectMenlo would not provide adequate pedestrian or bicycle facilities to connect to the area-wide circulation system and impacts were considered significant and unavoidable. Subsequently, the City's TIF program was 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. The identified bicycle and pedestrian improvements would not be fully funded by the TIF, and therefore the ConnectMenlo impact would remain significant and unavoidable.

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 (pursuant to AB 1600) 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 to 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. While the ConnectMenlo Final EIR did include an evaluation of VMT impacts for information purposes for decision makers to consider, 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 used in that EIR 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. Additionally, future development would be concentrated on sites that are already developed where impacts related to incompatible traffic related land uses would not likely occur. Therefore, 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 and other City standards and regulations would include policies that would ensure efficient circulation and adequate access are provided in the city, which would help facilitate emergency response. Additionally, future development would be concentrated on sites that are already developed where impacts related to inadequate emergency access would not likely occur. 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.

Proposed Project

As discussed in Chapter 2.0, Project Description, the Proposed Project would redevelop an approximately 59-acre industrial site plus two parcels north of Willow Road[10] (collectively, the Project Site) as a mixed-use development. The Proposed Project would demolish all existing onsite buildings and landscaping on the 59-acre portion of the Project Site and construct new buildings, provide open space areas, and install infrastructure within a new Residential/Shopping District, Town Square District, and Campus District. In addition, the Proposed Project would alter two parcels (Hamilton Avenue Parcels North and South[11]) to accommodate realignment of Hamilton Avenue at Willow Road for Project Site access.

The Proposed Project would provide up to 1.6 million sf of space for office and accessory use (consisting of up to 1.25 million sf of office uses and the balance (350,000 square if office use is maximized) of accessory uses) and up to 200,000 sf of commercial/retail space. The Proposed Project would also include up to 1,730 multi-family housing units, an up to 193-room hotel, and open spaces, including publicly accessible parks (e.g. 3.5 acre publicly accessible park, elevated linear park, town square, and dog park).

The Project Site would be bisected by a new north–south street (Main Street) and an east–west street, which would provide access to all three districts. It would include a circulation network for vehicles, bicycles, and pedestrians, inclusive of both public rights-of-way and private streets, that would be generally aligned to an east-to-west and a north-to-south grid. The Proposed Project would also alter parcels north of the industrial site, across Willow Road, on both the east and west sides of Hamilton Avenue (Hamilton Avenue Parcels North and South) to support realignment of the Hamilton Avenue right-

[10] For transportation analysis, "North/South" is aligned to be parallel to US 101. Hence, Willow Road and University Avenue are considered east-west streets, whereas Hamilton Road and Bayfront Expressway are considered north-south streets.

[11] Hamilton Avenue Parcels North and South consider Hamilton Avenue an east to west street, which differs from the compass directions used for the transportation analysis discussion.

of-way and provide access to the new elevated park. This would require demolition and reconstruction of an existing service station (Chevron gas station) and potentially an increase in 1,000 sf on Hamilton Avenue Parcel South and enable the potential addition of up to 6,700 sf of retail uses at the existing neighborhood shopping center on the Hamilton Avenue Parcel North. A total of 7,700 sf could be added to the Hamilton Avenue Parcels.

Trip Generation

Trip generation estimates for the mixed-use development are based on standard trip generation rates published in the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition manual[12]. Below is a general discussion of the trip generation estimation methodology (see Table 3.3-2). Detailed trip generation analysis is provided in Appendix 3.3, Transportation, of this EIR.

Gross Proposed Project Trips

A description of the source of trip generation rates for each land-use is provided below:

- ***Office***. Initial trip estimates for office and accessory uses are based on "ITE Land Use code 710: General Office Building".
- ***Residential.*** The trip estimate is based on the "ITE Land Use code 221: Multifamily Housing (Mid-Rise)", which includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three to ten levels. Some of the apartments are designated as senior housing, which could have a lower trip rate. Thus, the trip generation estimate for the apartments is conservative.
- ***Retail.*** Trip estimates are based on "ITE Land Use code 820: Shopping Center", which includes several types of retail uses like restaurants, movie theaters, bowling alleys etc. that are typically present in shopping centers.
- ***Hotel.*** Trip estimates are based on "ITE Land Use code 310: Hotel".
- ***Publicly Accessible Park.*** Trip estimates are based on "ITE Land Use code 488: Soccer Complex". The programmatic design of the park has not been determined. In order to provide a conservative estimate of potential traffic generation and allow for flexible programming for the project through the project review process, it is assumed that the park will have play structures and open field areas for warm-ups or casual play.

Transportation Demand Management (TDM)

The City of Menlo Park requires all new developments in the R-MU and O zoning districts to reduce their trip generation by 20 percent from standard trip generation rates via TDM strategies. The City has in practice applied the 20 percent reduction after crediting for any trip reductions based on a project's proximity to complimentary land uses, alternative transportation facilities, as well as reductions based on a project's mixed-use characteristics (see Appendix 3.3, Transportation, of this EIR). As implemented by the City, this TDM ordinance is applied to daily trips, AM peak hour trips, and PM peak hour trips.

[12] The ITE *Trip Generation,* 11th Edition was published in September 2021, after this analysis had commenced.

Table 3.3-2. Trip Generation Estimates - Project Buildout (Main Project Site)

Land Use	ITE Land Use Code[1]	Size	Unit	Daily Rate[1]	Daily Total	AM Peak Hour Rate[1]	AM Peak Hour IN	AM Peak Hour OUT	AM Peak Hour Total	PM Peak Hour Rate[1]	PM Peak Hour IN	PM Peak Hour OUT	PM Peak Hour Total
Campus District													
Office	710	6,950	emps	3.28	22,796	0.37	2,135	437	2,572	0.40	556	2,224	2,780
TDM Reductions [2]					*(4,559)*		*(765)*	*(137)*	*(902)*		*(171)*	*(939)*	*(1,110)*
Office Trip Cap [2]					**18,237**		**1,370**	**300**	**1,670**		**385**	**1,285**	**1,670**
Residential/Shopping and Town Square Districts													
Residential	221	1,730	d.u.	5.44	9,411	0.36	162	461	623	0.44	464	297	761
Retail	820	200	ksf	37.75	7,550	0.94	117	71	188	3.81	366	396	762
Hotel	310	193	rooms	8.36	1,613	0.47	54	37	91	0.60	59	57	116
Publicly Accessible Park[3]	488	3	fields	71.33	214	0.99	2	1	3	16.43	32	17	49
Subtotal					18,788		335	570	905		921	767	1,688
TDM Reductions [4]					*(3,762)*		*(67)*	*(112)*	*(179)*		*(245)*	*(206)*	*(451)*
***Residential/Shopping and Town Square* Districts Trips (MU)**					**15,026**		**268**	**458**	**726**		**676**	**561**	**1,237**
Project Trips *after* TDM Reductions (Office + MU)					33,263		1,638	758	2,396		1,061	1,846	2,907
Retail Pass-By Reductions [5]					*(1,026)*		*0*	*0*	*0*		*(92)*	*(96)*	*(188)*
Total New Trips Generated by the Project					**32,237**		**1,638**	**758**	**2,396**		**969**	**1,750**	**2,719**
Existing Trip Generation Credit [6]					(11,700)		(699)	(286)	(985)		(250)	(555)	(805)
Net New Trips Generated on Roadway Network					**20,537**		**939**	**472**	**1,411**		**719**	**1,195**	**1,914**

Notes

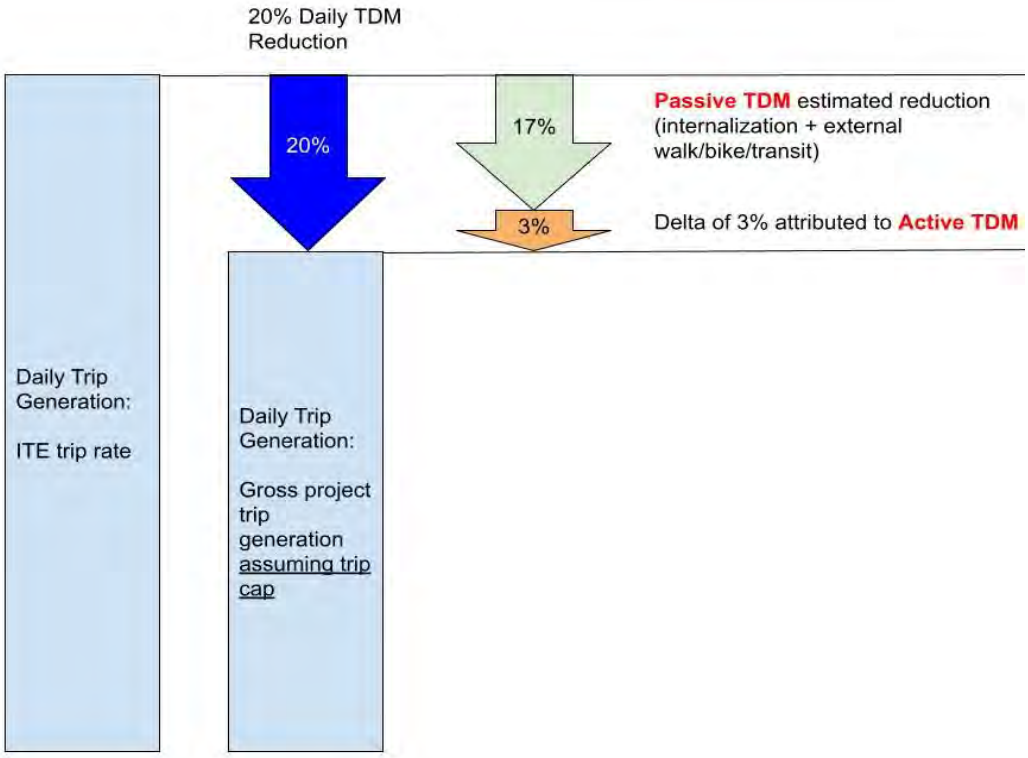
d.u. = dwelling unit, ksf = 1,000 s.f., emps = employees

1. Daily, AM, and PM peak hour average rates published in ITE Trip Generation Manual, 10th Edition, 2017 were used for each land use.
2. Office trip generation and TDM reductions reflect the proposed daily, AM and PM peak hour trip caps.
3. The publicly accessible park is assumed to be programmable. ITE Land Use "Soccer Field" is analyzed as a proxy. Number of soccer fields was estimated based on the size of a standard soccer field. The programmatic design of the park has not been determined. In order to provide a conservative estimate of potential traffic generation, it is assumed that the park will have play structures and open field areas for warm-ups or casual play. The park is planned for approximately 3.5 acres. Number of soccer fields on 3.5 acres of land was estimated based on the size of a standard soccer field.
4. The applicant proposes a TDM plan that achieves 20% trip reduction for the Residential/Shopping and Town Square Districtsfor all daily, AM and PM peak hours. This trip reduction includes reductions due to Project's location efficiency and Project mixed-use characteristics (i.e. internalization).
5. Pass-by trip reduction is based on the average pass-by trip reduction rate published in the ITE Trip Generation Handbook, 3rd Edition. Hexagon assumes no pass-by trip reduction during the AM peak hour and half of the PM peak pass-by reduction for daily trip generation.
6. Existing Use trip estimates based on driveway counts conducted over three days in September 2019 per Facebook Willow Traffic Counts Memorandum, Fehr & Peers, March 26, 2020. 8-9 AM in the AM peak period and 4-5 PM in the PM peak period have been considered as peak hours since they have the highest trips.

Per the Willow Village Adjustment Request: Transportation Demand Management, submitted by the applicant team, the applicant is proposing the following regarding TDM:

- For the Campus District, the applicant proposes a daily trip cap of 18,237 trips, and a trip cap of 1,670 trips during the AM and PM peak hours.
    - The daily trip cap represents a 20 percent reduction from gross ITE trip generation (see Figure 3.3-3).
    - The peak hour trip cap represents a 35-40 percent reduction from gross ITE trip generation.
- For the Residential/Shopping and Town Square Districts, the applicant proposes a 20 percent reduction from gross ITE trip generation for daily, and a 20 percent and 27 percent reduction from gross ITE trip generation during the AM and PM peak hours of commute, respectively.

Figure 3.3-3. Graphical Representation of How the Transportation Analysis Modeled Daily Trip Generation for All Land Uses



Note: the TDM program would achieve a higher reduction, but only a 3% reduction from active TDM measures is needed to achieve a 20% reduction off of gross trip generation estimated using ITE trip generation rates (see discussion above).

TDM Monitoring

The City incorporates monitoring requirements into project conditions. The project's TDM plan is anticipated to be monitored annually to ensure effectiveness of the TDM plan. The details of the TDM monitoring plan will be developed as part of CDP, and will detail frequency and duration of monitoring for each land use, as well as the methodology to conduct monitoring. The monitoring plan will also specify corrective measures if the TDM plan is not achieving its stated effectiveness.

Net Project Trip Generation

The project trip generation assumes the applicant's proposed TDM plans for the Campus District as well as for the Residential/Shopping and Town Square Districts. It should be noted that the trip reductions due to the applicant proposed TDM plans already accounted for trip reductions due to the Proposed Project's location efficiency, as well as internal capture due to the Proposed Project's mixed use nature (see Appendix 3.3, Transportation, of this EIR).

As shown in Table 3.3-2, the proposed project trips generated by the proposed land uses after accounting for the proposed TDM plans at the main Project Site would be 33,263 daily trips, 2,396 AM peak hour trips, and 2,907 PM peak hour trips.

Net project trip generation represents the number of new project trips added to the surrounding roadway network. The following categories of trips are credited from the site-specific trip cap to derive the net project trip generation.

Pass-By

The retail uses would attract some of their customers from people who are passing by the site on Willow Road or Bayfront Expressway heading towards their destination. These customers would not need to make a separate vehicle trip to come to the Project Site. Such vehicle trips are categorized as pass-by trips as they are not new trips generated on the roadway network and should be credited from the project trip generation. A pass-by trip reduction for retail trips was applied based on the average pass-by reduction rate published in the ITE Trip Generation Handbook, 3rd Edition. Pass-by data are typically available only for the PM peak hour. Hexagon assumed no pass-by trip reduction for the AM peak hour and half of the PM peak pass-by trip reduction for daily trip generation.

Existing Uses

Trips associated with the existing uses on the Project Site were credited against the new trip generation. The trips generated by the existing buildings on the site were estimated based on driveway counts conducted over three days in September 2019 per Facebook Willow Traffic Counts Memorandum, Fehr & Peers, March 26, 2020. The existing uses on the site generated an average of 11,700 trips daily, including 985 trips in the AM peak hour (699 inbound and 286 outbound trips), and 805 trips in the PM peak hour (250 inbound and 555 outbound trips).

As shown in Table 3.3-2, the net Proposed Project trips generated by the main Project Site on the roadway network would be 20,537 daily trips, including 1,411 AM peak hour trips (939 inbound trips and 472 outbound trips), and 1,914 PM peak hour trips (719 inbound trips and 1,195 outbound trips). As shown in Table 3.3-3, the net trips generated by the Hamilton Parcels are estimated to be 218 daily trips, including 6 AM peak hour trips (3 inbound trips and 3 outbound trips), and 18 PM peak hour trips (9 inbound trips and 9 outbound trips).[13]

[13] The Hamilton Parcels are located within C-2-S zoning, which does not require implementation of a TDM Plan. Therefore, no TDM reductions were applied.

Table 3.3-3. Trip Generation Estimates - Project Buildout (Hamilton Parcels)

			Daily		AM Peak Hour				PM Peak Hour			
Land Use	**ITE Code[1]**	**Size**	**Rate**	**Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
General Retail	820	7.7	37.75	291	0.94	4	3	7	3.81	14	15	29
External Walk, Bike, and Transit[2]		ksf		*(28)*		*(1)*	*0*	*(1)*		*(1)*	*(1)*	*(2)*
Retail Pass-By Reduction (34%)[3]				*(45)*		*0*	*0*	*0*		*(4)*	*(5)*	*(9)*
Net Project Trips on Project Network				**218**		**3**	**3**	**6**		**9**	**9**	**18**

Notes:

ksf = 1,000 square feet

[1]Daily, AM, and PM peak hour average rates published in *ITE Trip Generation Manual, 10th Edition, 2017* were used for each land use.

[2]External walk, bike, and transit reduction developed using *US EPA Mixed Use Trip Generation Model v.4, 2010*.

[3]Pass-by trip reduction is based on the average pass-by trip reduction rate published in the ITE Trip Generation Handbook, 3rd Edition. Hexagon assumes no pass-by trip reduction during the AM peak hour and half of the PM peak pass-by reduction for daily trip generation.

Project Impacts

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

TRA-1. The Proposed Project would not conflict with an applicable plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. (LTS)

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 3.3-4; therefore, impacts would be ***less than significant*** **(LTS).**

Table 3.3-4. Project Compliance with Applicable Transportation-Related Plans, Ordinances, and Policies

Plan/Ordinance/Policy	Proposed Project Consistency
Plan Bay Area 2040 and 2050[14]	***Consistent.*** The Proposed Project would be consistent with the Plan Bay Area 2040 and 2050 goals and performance targets for transportation system effectiveness. Specifically, the Proposed Project would increase non-auto mode share. The Proposed Project is mixed-use and would develop a new office, residential, retail, hotel, and public park, 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 and 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 CMP roadway LOS and freeway segment capacity standard. As summarized in the TIA, the Proposed Project would contribute to deficiencies in CMP intersections and freeway segments near the Project Site. The Project would pay TIF and fair-share payments to address its contribution to these deficiencies. These are no longer CEQA thresholds and this analysis is provided for informational and planning purposes only. The Proposed Project would generate more than 100 peak-hour trips. Therefore, it is required to implement a TDM Plan, which it has proposed to do as shown in Table 3.3-5 and Table 3.3-6.

[14] Plan Bay Area 2050 was adopted by the MTC and ABAG in October 2021; however, the 2050 plan has been challenged in court. This EIR evaluates both Plan Bay Area 2040 and Plan Bay Area 2050.

Plan/Ordinance/Policy	Proposed Project Consistency
San Mateo County Comprehensive Bicycle and Pedestrian Plan	
Policy 2.6: Serve as a resource to county employers and residents on promotional information and resources related to bicycling and walking.	***Consistent***. The Proposed Project would implement TDM plans for the Campus District and mixed-use components that include measures such as an online kiosk with transportation information, carpool/vanpool matching services, bike storage and lockers, showers/changing rooms, subsidized transit tickets (Caltrain), shuttle program, and preferential carpool parking. As such, the Proposed Project would serve as a resource to employers and residents 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	
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 secure short- and long-term on-site parking.
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. Within the Project Site, pedestrian walkways would be incorporated around the buildings to connect the Project Site with the public streets.
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. The Proposed Project includes a subgrade pedestrian, bicycle, and tram connection between the Project Site and the Meta Bayfront Campus known as the Willow Road Tunnel. It also proposes high visibility crosswalks, wider sidewalks, wider medians, increased pedestrian crossing time, curb ramps, bulbouts, bike signals, bikes lanes and protected bike lanes in the vicinity of the Project Site. The Proposed Project also would include an elevated park across Willow Road that would provide pedestrians and bicyclists grade-separated access between the Belle Haven community and the Project site.

Plan/Ordinance/Policy	Proposed Project Consistency
	The Proposed Project would make no change to existing public transit facilities. However, by adding vehicle trips and increasing delay at intersections along bus routes, it would increase bus travel time. Bus services that would be affected in the vicinity of the Project Site include bus routes (DB, M2 Belle Haven Shuttle, M4 Willow Road Shuttle, SamTrans Route 81) along Willow Road, University Avenue, and O'Brien Drive. There are planned intersection improvements on the corridor that would improve intersections and reduce bus delay. However, the bus delay would still be higher than existing conditions. SamTrans and the City of Menlo Park do not have any standards for transit delay.
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 Project Site.
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 Transportation Master 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 parking. The Proposed Project would provide safe and convenient access for pedestrians and improve pedestrian safety through design efforts. Within the Project Site, pedestrian walkways and bicycle facilities would be incorporated around the main Project Site to connect the Project Site with the public streets.
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. The Proposed Project would add high visibility crosswalks, wider sidewalks, wider medians, increased pedestrian crossing time, curb ramps, and bulbouts at intersections along Willow Road.
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.
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 service population or other efficiency metric) 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	***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, impacts on VMT would be considered less than significant with mitigation (implementation of a TDM program achieving 19% active TDM trip reduction) for the residential land use, and less than significant for the other land uses (office, retail, and hotel). Impacts on safety would be considered less than significant. The Proposed Project would implement TDM plans to provide trip reduction measures and reduce vehicle traffic in and around the Project Site. The Proposed Project would provide shuttle, bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single occupancy vehicles.

Plan/Ordinance/Policy	Proposed Project Consistency
improvements in proportion with the scale of Proposed Projects; and facilitate appropriate or adequate response times and access for emergency vehicles.	
Circ-3.1: Vehicle Miles Traveled. Support development and transportation improvements that help reduce per service population (or other efficiency metric) vehicle miles traveled.	***Consistent.*** The Proposed Project would be mixed-use and would locate employees near residential and commercial uses, reducing the demand for travel by single occupancy vehicles. The Proposed Project would also develop and implement TDM plans to provide trip reduction measures and reduce vehicle traffic in and around the Project Site. In addition, the Proposed Project would provide shuttle, bicycle and pedestrian facilities, which would also help to reduce the demand for travel by single occupancy vehicles.
Circ-3.2: Greenhouse Gas Emissions. Support development, transportation improvements, and emerging vehicle technology that help reduce per capita (or other efficiency metric) 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.
Circ-3.3: Emerging Transportation Technology. Support efforts to fund emerging technological transportation advancements, including connected and autonomous vehicles, emergency vehicle pre-emption, sharing technology, electric vehicle technology, electric bikes and scooters, and innovative transit options.	***Consistent.*** The Proposed Project would provide electric vehicle charging stations on site.
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.	***Consistent.*** The Proposed Project is evaluated for compliance with the Level of Service policy. As summarized in the TIA, some intersections surrounding the Project Site would exceed the applicable LOS level under existing, near term, near term plus Project, and cumulative conditions. However, the Project would pay the TIF and fair-share payments and/or construct improvements to address its contribution to these deficiencies. Further, LOS is no longer a CEQA threshold, and this analysis is provided for informational purposes.
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 TDM plans and provide shuttle, 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.

Plan/Ordinance/Policy	Proposed Project Consistency
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 TDM plans 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.
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 TDM plans 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.
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 multiple bicycle and pedestrian connections. It would include a network of new paths for pedestrian access throughout all three districts, including sidewalks and internal intersection crossings. The pedestrian walkways and bicycle facilities would be incorporated around the Project Site to connect to the public streets and would be constructed to increase visibility of people walking and improve traffic safety. The Proposed Project also would include an elevated park across Willow Road that would provide pedestrians and bicyclists grade-separated access between the Belle Haven community and the Project site.
Circ-5.2: Transit Proximity to Activity Centers. Promote the clustering of as many activities as possible within easy walking distance of transit stops, and locate any new transit stops as close as possible to housing, jobs, shopping areas, open space, and parks.	***Consistent.*** The Proposed Project is mixed-use and would develop a new office, residential, retail, hotel, and public park. It is located within ¼ mile of bus stops servicing the Dumbarton Express Lines, SamTrans Route 81, and Menlo Park Belle Haven and Willow Road shuttles.
Circ 6.3: Shuttle Service. Encourage increased shuttle service between employment centers and Downtown Menlo Park Caltrain Station.	***Consistent.*** The Proposed Project would develop and implement a TDM plan to provide trip reduction measures and encourage the use of public transit. These measures include an online kiosk which will provide information on nearby transit services and subsidized transit tickets.
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 TDM plans that include measures encouraging employees to walk, bike, carpool, and use transit.
City of Menlo Park Municipal Code, Sections 16.43.100 and 16.45.090	***Consistent.*** The Proposed Project would develop and implement TDM plans that reduce vehicle trips to at least 20 percent below standard generation rates for uses on the Project Site and include measures such as: an online kiosk with transportation information, carpool services, long-term bicycle parking spaces in secured bike storage rooms, short-term bicycle parking spaces outdoors, subsidized transit tickets, showers and changing rooms, shuttle services, and new sidewalks with street trees along the Proposed Project's internal streets.

Plan/Ordinance/Policy	Proposed Project Consistency
	The City Council will determine whether the Project as proposed is consistent with the Code sections and can be approved as proposed or will require additional TDM.
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, modifications are identified 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.

Table 3.3-5. C/CAG Checklist: Large Non-Residential (Office) (500+ ADT, 50,000+ sq. ft.), Non-Transit Proximate

Category	Measure	Provided by Project (Y/N)	C/CAG Point Value	C/CAG Estimated Trip Reduction
Required TDM Measures (Non-Transit Proximate)				
Parking Management for Ridesharing	Free/Preferential Parking for Carpools	Y	1	1.0%
TDM Management and Admin	TDM Coordinator/Contact Person	Y	1	0.5%
	Actively Participate in Commute.org, or Transportation Management Association (TMA) Equivalent	Y	8	6.5%
	Certified participation in Commute.org, or equivalent program such as TMA	Y [1]	*2*	*4.0%*
	Commute assistance and ride-matching	Y	*4*	*1.0%*
	Guaranteed Ride Home	Y	*1*	*0.5%*
	Orientation, Education, Promotional Programs and/or Materials	Y	*1*	*1.0%*
Shuttles, Transit & Ridesharing	Carpool or Vanpool Program	Y	3	2.0%
	Transit or Ridesharing Passes/Subsidies	Y	8	10.0%
	Pre-Tax Transportation Benefits	Y	3	1.0%
Active Transportation	Secure Bicycle Storage	Y	1	1.0%
	Showers, Lockers, and Changing Rooms for Cyclists	Y	2	2.0%
Site Design Initiatives	Design Streets to Encourage Bike/Ped Access	Y	1	1.0%
Required TDM Measures Total (Non-Transit Proximate)			**28**	**25.0%**

Category	Measure	Provided by Project (Y/N)	C/CAG Point Value	C/CAG Estimated Trip Reduction
Additional TDM Measures (Non-Transit Proximate)				
Employee Programs	Flex Time, Compressed Work Week, Telecommute	Y	5	5.0%
Transit, Shuttles & Ridesharing	Car Share On-Site	Y	3	1.0%
	Land Dedication or Capital Improvements for Transit	Y	6	3.0%
	Bus Pullout Space	Y	*2*	*1.0%*
	Visual/Electrical Improvements (i.e. Lighting, Signage)	Y	*2*	*1.0%*
	Other (i.e. Micromobility Parking Zone, TNC Loading Zone)	Y	*2*	*1.0%*
	Shuttle Program/Shuttle Consortium/Fund Transit Service	Y	5	10.0%
Active Transportation	Bike/Scooter Share On-Site	Y	2	1.0%
	Gap Closure	Y	5	7.0%
Site Design Initiatives	Bike Repair Station	Y	1	0.5%
	Pedestrian Oriented Uses & Amenities on Ground Floor	Y	4	3.0%
Additional TDM Measures Total (Non-Transit Proximate)			**31**	**30.5%**
Required & Additional TDM Measures Total			**59**	**55.5%**
C/CAG Trip Reduction Target				**35%**

Notes:

1. A TDM coordinator will provide the TDM services for the office and accessory uses within the Campus District. This includes providing commute assistance and ride-matching, providing Guaranteed Ride Home, and supplying orientation, education, and promotional programs and/or materials.

Table 3.3-6. C/CAG Checklist: Large Residential (500+ ADT, 50+ units), Non-Transit Proximate

Category	Measure	Provided by Project (Y/N)	C/CAG Point Value	C/CAG Estimated Trip Reduction
Required TDM Measures (Non-Transit Proximate)				
Parking Management for Ridesharing	Free/Preferential Parking for Carpools	Y	1	1.0%
TDM Management and Admin	TDM Coordinator/Contact Person	Y	1	0.5%
	Actively Participate in Commute.org, or Transportation Management Association (TMA) Equivalent	Y	6	5.0%
	Certified participation in Commute.org, or equivalent program such as TMA	Y	*2*	*4.0%*
	Commute assistance and ride-matching	Y	*4*	*1.0%*
Shuttles, Transit & Ridesharing	Transit or Ridesharing Passes/Subsidies	Y	8	10.0%
Active Transportation	Secure Bicycle Storage	Y	1	1.0%
Site Design Initiatives	Design Streets to Encourage Bike/Ped Access	Y	1	1.0%
Required TDM Measures Total (Non-Transit Proximate)			**18**	**18.5%**
Additional TDM Measures (Non-Transit Proximate)				
Employee Programs	Delivery Amenities	Y	1	1.0%
Transit, Shuttles & Ridesharing	Car Share On-Site	Y	3	1.0%
	Land Dedication or Capital Improvements for Transit	Y	6	3.0%
	Bus Pullout Space	Y	*2*	*1.0%*
	Visual/Electrical Improvements (i.e. Lighting, Signage)	Y	*2*	*1.0%*
	Other (i.e. Micromobility Parking Zone, TNC Loading Zone)	Y	*2*	*1.0%*
Active Transportation	Bike/Scooter Share On-Site	Y	2	1.0%
	Gap Closure	Y	5	7.0%
Site Design Initiatives	Bike Repair Station	Y	1	0.5%
	Pedestrian Oriented Uses & Amenities on Ground Floor	Y	4	3.0%
Additional TDM Measures Total (Non-Transit Proximate)			**22**	**16.5%**
Required & Additional TDM Measures Total			**40**	**35.0%**
C/CAG Trip Reduction Target				**35%**

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 Ordinance 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 Proposed 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. Within the Project Site, pedestrian walkways and bicycle facilities would be incorporated.

The Proposed Project would promote bicycle use by providing long-term and short-term bicycle parking spaces and showers/changing rooms. 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.

The proposed amendment to the ConnectMenlo Circulation Element merely allows for updates to the Proposed Project's site-specific circulation plan. The amendment would establish locations for new street connections to the surrounding roadway network, as well as the locations of public rights-of-way and the proposed multi-use pathway (in lieu of the paseo from the adopted Zoning Map) within the main Project Site. With the amendment to the Circulation Element, the Proposed Project will encourage alternative forms of transportation, including walking and biking, by providing internal public rights of way and a multi-use pathway that connect residential units with office uses. For these reasons, the Proposed Project would be consistent for CEQA purposes with applicable plans, ordinances, and policies addressing the circulation system and this impact would be ***less than significant*** **(LTS)**.

TRA-2. The Proposed Project would exceed an applicable VMT threshold of significance. (LTS/M)

This section discusses the Proposed Project's impacts related to VMT. As discussed in more detail below, implementation of the Proposed Project as modeled for the transportation analysis (i.e., assuming only 3 percent active TDM) would exceed the applicable residential VMT threshold of significance. Implementation of a TDM program as discussed below would fully mitigate the impact. This impact would be less than significant with mitigation (LTS/M)**.**

Per the City of Menlo Park VMT guidelines adopted in July 2020 and updated in January 2022, mixed-use projects will have each component analyzed independently against the appropriate thresholds. The Project proposes office, residential, hotel and retail land uses. OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA* recommends that VMT analysis for a mixed-use project should account for internal capture. Internal capture is defined as walking, bicycling, and tram trips between the various types of land use within the Project. By reducing external vehicle trips, internal capture reduces VMT for a mixed-use project in comparison to single-use developments. The project proposes office, residential, hotel and retail land uses. Each of the Project's land uses' VMT threshold of significance is listed below:

- An office project is considered to have a significant impact on VMT if the project's VMT exceeds a threshold of 15 percent below the regional average VMT per employee.
- A residential project is considered to have a significant impact on VMT if the project's VMT exceeds a threshold of 15 percent below the regional average VMT per capita.
- Hotel and retail projects are considered to have a significant impact on VMT if the project results in a net increase in total City VMT.

It should be noted that the City's VMT guidelines exempt local serving retail projects (defined as 50,000 square feet or less) from carrying out a VMT analysis. However, this project exceeds that size.[15]

VMT Evaluation Methodology

Travel Demand Model

Project VMT is defined as the total distance traveled by vehicles traveling to and from the Proposed Project over a typical day. In order to estimate VMT for the various land use components, the citywide travel demand forecast model was used. The citywide model is the best available model to represent travel within the City of Menlo Park, and serves as the primary forecasting tool for the City. The model is a mathematical representation of travel within the nine Bay Area counties, as well as the Santa Cruz, San Benito, Monterey and San Joaquin counties. The base model structure was developed by the Metropolitan Transportation Commission (MTC) and further refined by the City/County Association of Governments and Santa Clara Valley Transportation Authority for use within San Mateo County and Santa Clara County. The City further refined this model for application with Menlo Park to add more detail to the zone structure and transportation network. The model has a base year of year 2019 (see Appendix 3.3, Transportation, of this EIR for the model's calibration and validation memo).

There are four main components of the model: 1) trip generation, 2) trip distribution, 3) mode choice, and 4) trip assignment. The model uses socioeconomic inputs (i.e., population, income, employment) aggregated into geographic areas, called transportation analysis zones (TAZ) to estimate travel within the model area. There are 80 TAZs within the model to represent the City of Menlo Park. The model was used to estimate the Proposed Project's effect on VMT in accordance with the City's VMT guidelines.

VMT Evaluation

The most readily available long-range forecast year is the year-2040 conditions, which assumes the buildout of the City of Menlo Park General Plan and any pending General Plan Amendments, the buildout of the pending developments in the City of East Palo Alto (as of December 2020), and regional growth projected by the Association of Bay Area Governments (ABAG), modified by VTA/C/CAG for model land use inputs. Therefore, the project's VMT analysis was conducted under year-2040 conditions.

Office and Residential

According to the City's VMT guidelines, office land use is evaluated based on a daily VMT per employee metric. Using the model, this metric is calculated only for home-based work trips, per OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA. Based on the latest citywide travel demand model, the regional average office VMT is 15.9 per employee. Therefore, City's office VMT impact threshold, at 15% below regional average, would be 13.6 daily VMT per employee.

According to City VMT guidelines, the evaluation of residential land use is based on a daily VMT per capita metric. Using the model, this metric is calculated only for home-based trips, per OPR's technical advisory. Based on the latest citywide travel demand model, regional average residential VMT is 13.1 per capita. Therefore, the City's residential VMT impact threshold, at 15% below regional average, would be 11.2 daily VMT per capita.

[15] The VMT for the main Project Site was evaluated. The reconstruction of the service station would not increase VMT, and the modest increase in retail square footage at Hamilton Avenue Parcel North would be operated as a separate project and would be substantially below the City's threshold. Therefore, VMT was not studied for the reconstruction of the service station and the potential increase in square footage at Hamilton Parcel North.

Office and residential land uses were evaluated using the city-wide model. For the Campus District, the applicant proposed a daily trip cap of 18,237 trips, which would be 20% below the gross ITE trip generation estimate. The model was adjusted to account for the proposed trip cap. As shown in Table 3.3-7, the project's Campus District land use would generate VMT at the City's VMT impact threshold and would thus not have a VMT impact.

Table 3.3-7. Office and Residential VMT Analysis Summary

Land Use	Regional Average	VMT Threshold	Project VMT	VMT Impact	Additional TDM Mitigation needed to eliminate VMT impact
Office[1]	15.9	13.6	13.6	No	-
Residential[2]	13.1	11.2	13.3	Yes	16%

Notes:
All data referenced the latest Menlo Park citywide travel demand forecasting model.
[1]VMT for office land uses is reported in VMT per employee
[2] VMT for residential land uses is reported in VMT per capita

For the residential land use, trip generation was adjusted to account for the Project's expected 2.03 people per unit compared to the ITE average of 2.46 people per unit. The VMT analysis also accounted for the applicant proposed TDM Plan for the mixed-use district. The TDM Plan proposed a 20% trip reduction from gross ITE trip generation through a combination of passive TDM measures and active TDM measures. Passive TDM measures include the project's proximity to complementary land uses, proximity to alternative transportation infrastructure, and the project's mixed-use nature. As discussed in Appendix 3.3, Transportation, of this EIR, it is estimated that the passive TDM measures would achieve a 17% trip reduction from the gross ITE trip generation. Active TDM measures include TDM programs to be implemented to further promote alternative modes of travel. These TDM measures generally include providing transit, biking, and carpooling information to residents, assisting in ride-matching programs for residents, and could also include transit subsidies and other measures. To represent the applicant proposed 20% trip reduction goal and given that passive TDM measures are assumed to achieve a 17% trip reduction, the balance of 3% (20%-17%) trip reduction due to active TDM measures was assumed for the VMT analysis.

The Project's residential land use would require a 16% reduction in VMT to mitigate the significant VMT impact. The VMT analysis, as discussed above, already assumed 3% trip reduction due to active TDM measures. Therefore, mitigation of the VMT impact would require implementing a TDM Plan for the residential component that achieves at least 19% (3% + 16%) trip reduction via active TDM measures (see Figure 3.3-3 above) or increases the effectiveness of passive TDM measures. According to the Project's proposed TDM Plan dated July 2021 and attached in Appendix 3.3, Transportation, of this EIR, the proposed active TDM measures for the residential component could achieve at least a 19% reduction in trips, with an estimated reduction between 11% and 36%[16]. This range represents the potential low to high range of effectiveness of the proposed TDM measures, as calculated by research data from the California Air Pollution Control Officers Association (CAPCOA). This range depends on how each TDM measure is eventually implemented. Therefore, it is feasible for the Project to mitigate its residential VMT impact by implementing its proposed TDM Plan.

[16] Willow Village TDM Plan. Prepared for Peninsula Innovation Partners. Fehr & Peers, Inc. July 2021

The Proposed Project would exceed the applicable VMT threshold of significance for the residential land use. As shown in Table 3.3-7, the Proposed Project's residential land use VMT is estimated to be 13.3 daily miles per capita, which would exceed the VMT threshold and result in a VMT impact. The mitigation measure TRA-2 identified below would fully mitigate this impact.

Mitigation Measure TRA-2: The residential land use of the Project Site will be required to implement a TDM Plan achieving a 36% reduction from gross ITE trip generation rates (for the Proposed Project, this reduction equals 6,023 daily trips). Should a different number of residential units be built, the total daily trips will be adjusted accordingly. The required residential TDM Plan will include annual monitoring and reporting requirements on the effectiveness of the TDM program. The Project applicant submitted a draft residential TDM Plan, which contained specific measures that would meet this trip reduction requirement. The draft TDM Plan is subject to City review and approval . If the annual monitoring finds that the TDM reduction is not met, the TDM coordinator will be required to work with City staff to detail next steps to achieve the TDM reduction. With the implementation of the required residential TDM Plan, the residential VMT impact would be **less than significant with mitigation (LTS/M)**.

Hotel

Hotel land uses are not explicitly represented in the model. Therefore, the hotel rooms and jobs expected for the Proposed Project are accounted for separately. Hotel employees are represented in the model by service employees. To reflect trips by hotel patrons, residential land use was used as a proxy, as it most closely resembles the behavior pattern of a hotel guest. Trip making characteristics for these proxy residential land uses were restricted to offices and restaurants/shops to mimic patron activities at a typical business hotel (home-based work and home-based shopping trips). Other types of trip-making typical to an actual home such as school trips generally are not applicable to hotel guests. Given the model would only explicitly represent hotel employee VMT without this adjustment, this proxy evaluation provides a conservative analysis as it attributes more VMT (hotel guest VMT) to the Proposed Project. This methodology is undertaken only for VMT purposes.

Project Study Area

Based on consultation with the City and applicant, the hotel is expected to have a service area of approximately three (3) miles in radius. This means that most of the destinations of hotel patrons are expected to be within three miles of the hotel. While some trips are expected to be longer than three miles, the majority of the change in VMT is expected to occur within this three-mile radius. The evaluated daily VMT includes the entire length of the trip even when it extends beyond the three-mile radius.

Scenario Evaluation

The hotel VMT analysis was conducted using the City's transportation model. To evaluate the effect of the hotel component on total daily VMT, the analysis compared two scenarios: 1) with project, and 2) with project without the hotel component (or the "no hotel" scenario).

It was assumed that new hotels would not increase trips overall but would reorient existing trips. Therefore, when hotel trips were added in one zone, they must be subtracted from other zones. This process was represented in the model by redistribution of the hotel attractions from nearby existing hotels. Eleven comparable hotels were found within the area for this redistribution effort (see Figure 3.3-4, Locations of Comparable Hotel Land Use). The proposed hotel would be located within very close proximity to major employment in the Bayfront area, such that hotel patrons may enjoy shorter travel distances to their business destinations. Its location within a mixed-use project, including complementary retail space, also would allow hotel patrons to shop/dine within walking distance.

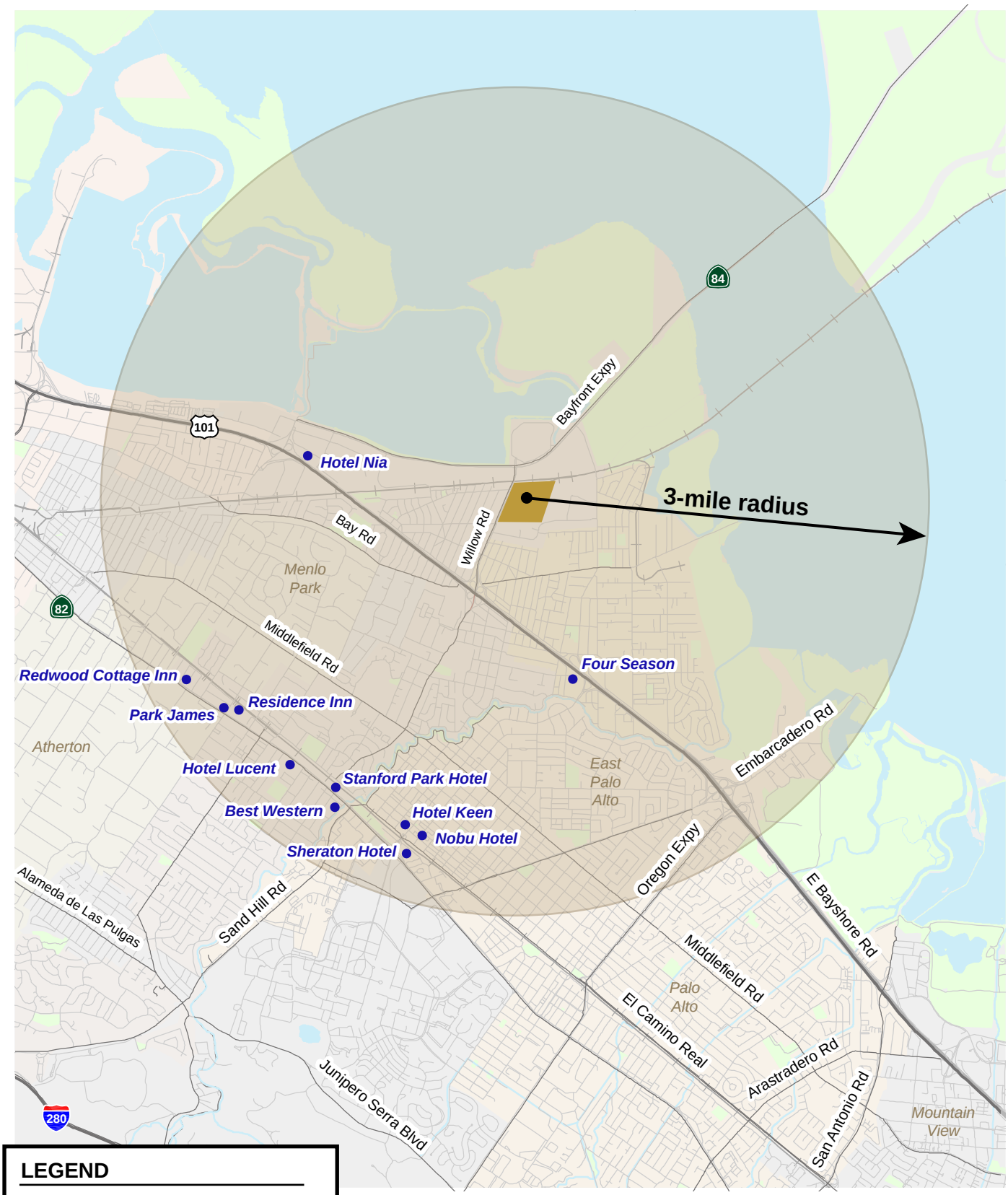


Figure 3.3-4
Locations of Comparable Hotel Land Use

Service employees were coded in the model under "no hotel" conditions for the zones representing the eleven existing hotels. Under the "with-project" model run, service employees at these zones were shifted to the project zone. According to the project applicant, the hotel would have 210 employees. Thus, approximately 19 service employees were shifted from each of the existing zones to the project zone under the "with-project" model run.

The zones representing the eleven existing hotels do not include any residential land use as a proxy for hotel patrons under the "no hotel" scenario. Thus, residential dwelling units were first added to these zones under the "no hotel" model run, so that under the "with-project" model run, shifting these residential land uses to the project zone would still maintain the same model-wide total land uses. Approximately 270 households were needed at the project zone in addition to the 210 service employees under the "with-project" model run for the model to compute trip generation roughly equivalent to the daily trip generation estimated for the hotel component based on ITE rates. Therefore, under the "no hotel" model run, 270 households were evenly distributed to the eleven zones with existing hotels. It should be noted that the project's proposed TDM plan is accounted for in the daily trip generation estimates.

VMT Evaluation

The total daily VMT generated by land uses within a three-mile radius was compared under the "no hotel" and "with project" scenarios. As shown in Table 3.3-8, the proposed hotel component of the project was shown to slightly reduce the total daily VMT generated by land uses within a three-mile radius of the Project Site. Since the proposed hotel would be located within very close proximity to major employment in the Bayfront area, hotel patrons would enjoy shorter travel distances to their business destinations. It's location within a mixed-use project, including complementary retail space, also would allow hotel patrons to shop/dine within walking distance.

Table 3.3-8. Hotel VMT Analysis Summary

	3-Mile Radius Area of Project Site		
	No Hotel Conditions[2]	**With Project Conditions[2]**	**%Change**
Total Daily VMT[1]	6,656,914	6,629,443	-0.4%

Notes:

[1]Total daily VMT includes VMT generated by all trips having at least one-trip-end in the analysis area, as estimated by the citywide travel demand model.
[2]"No hotel conditions" represent conditions with the Proposed Project except the hotel component. "With project conditions" represent conditions with the Proposed Project including the hotel component.

Because the proposed hotel component of the Project would not cause an increase in total VMT generated within the analysis area, it is concluded that the proposed hotel component of the Project would have a less than significant impact on vehicle miles travelled.

Retail

The project has two areas of retail development. The main Project Site includes up to 200,000 s.f. of retail space within a mixed use development. North of Willow Road, as a result of the proposed Hamilton Avenue realignment, the two retail parcels adjacent to Hamilton Avenue at the intersection with Willow Road ("Hamilton Avenue Parcels") would be reconfigured. The Project proposes to increase the total retail square footage at the Hamilton Avenue parcels by up to 7,700 s.f. to approximately 23,400 s.f. Because the retail at the Hamilton Avenue Parcels will require a separate use permit and would be operated as a separate retail use from the retail uses at the main Project Site, the Hamilton Avenue Parcels retail is evaluated separately from the retail component of the main Project Site. According to the City's VMT policy, local serving retail (defined as having total square footage less than 50,000 s.f.) would be exempt from a VMT analysis. The Project's proposed net 7,700 s.f. of potential retail development at the Hamilton Avenue Parcels would thus be exempt from VMT analysis. The discussion below is focused on the 200,000 s.f. of retail space at the main Project Site.

Project Study Area

Based on the types of retail being proposed as well as nearby comparable retail stores, it is expected that the proposed retail would have a service area of approximately five (5) miles in radius. The 5-mile radius service area was selected based on engineering judgement, as it would cover most of Menlo Park, Palo Alto, as well as downtown Redwood City, and would include a mix of retail shops and restaurants comparable to the three cities. Assuming equal services, it is expected that people would patronize the closer store or restaurant. The five-mile radius service area also means that most of the destinations of the Project's retail patrons are expected to be within five miles of the project. While some trips are expected to be longer than five miles, the majority of the change in VMT is expected to occur within this five-mile radius.

Scenario Evaluation

The retail VMT analysis was conducted using the City's transportation model. To evaluate the effect of the retail component on total daily VMT, the analysis compared two scenarios: 1) with project, and 2) with project without the retail component (or the "no retail" scenario).

Similar to the hotel evaluation methodology discussed above, retail employees were redistributed from existing retail locations for the purpose of the VMT analysis. Six (6) comparable retail sites were found within the area for this redistribution effort (see Figure 3.3-5, Locations of Comparable Retail Land Use).

Retail employees were coded in the model under "no retail" conditions for the zones representing the six existing retail sites. Under the "with-project" model run, retail employees at these zones were shifted to the project zone. The retail land use is expected to generate 571 employees based on the City's default retail employees-per-square-foot conversion rate (1 employee per 350 square feet). Retail employees were shifted from each of the existing zones to the project zone under the "with-project" model run. The number of retail employees shifted from each existing zone was proportionally based on each zone's existing retail employment size (see Figure 3.3-6, Retail Employment Shifts for VMT Analysis).

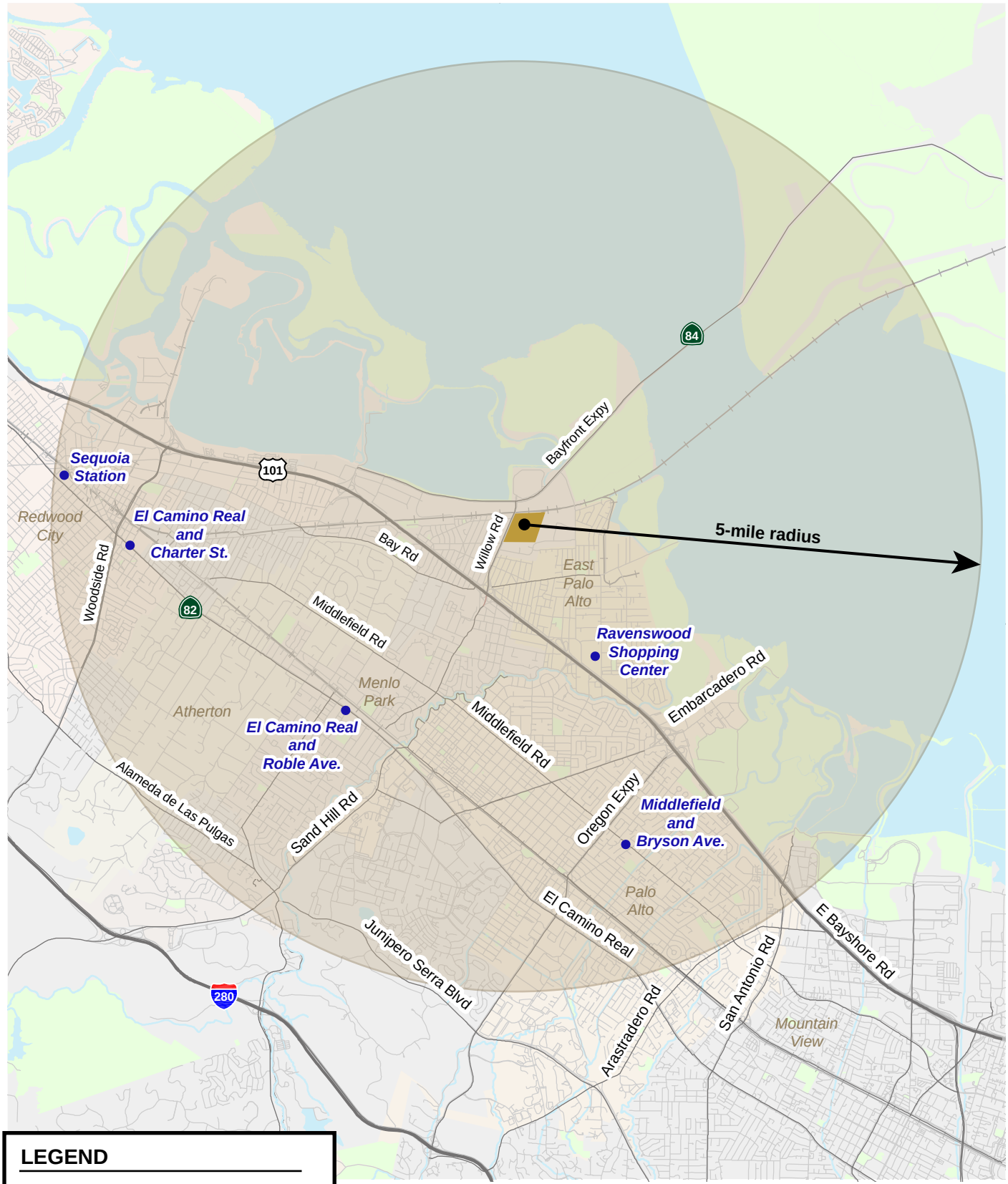


Figure 3.3-5
Locations of Comparable Retail Land Use

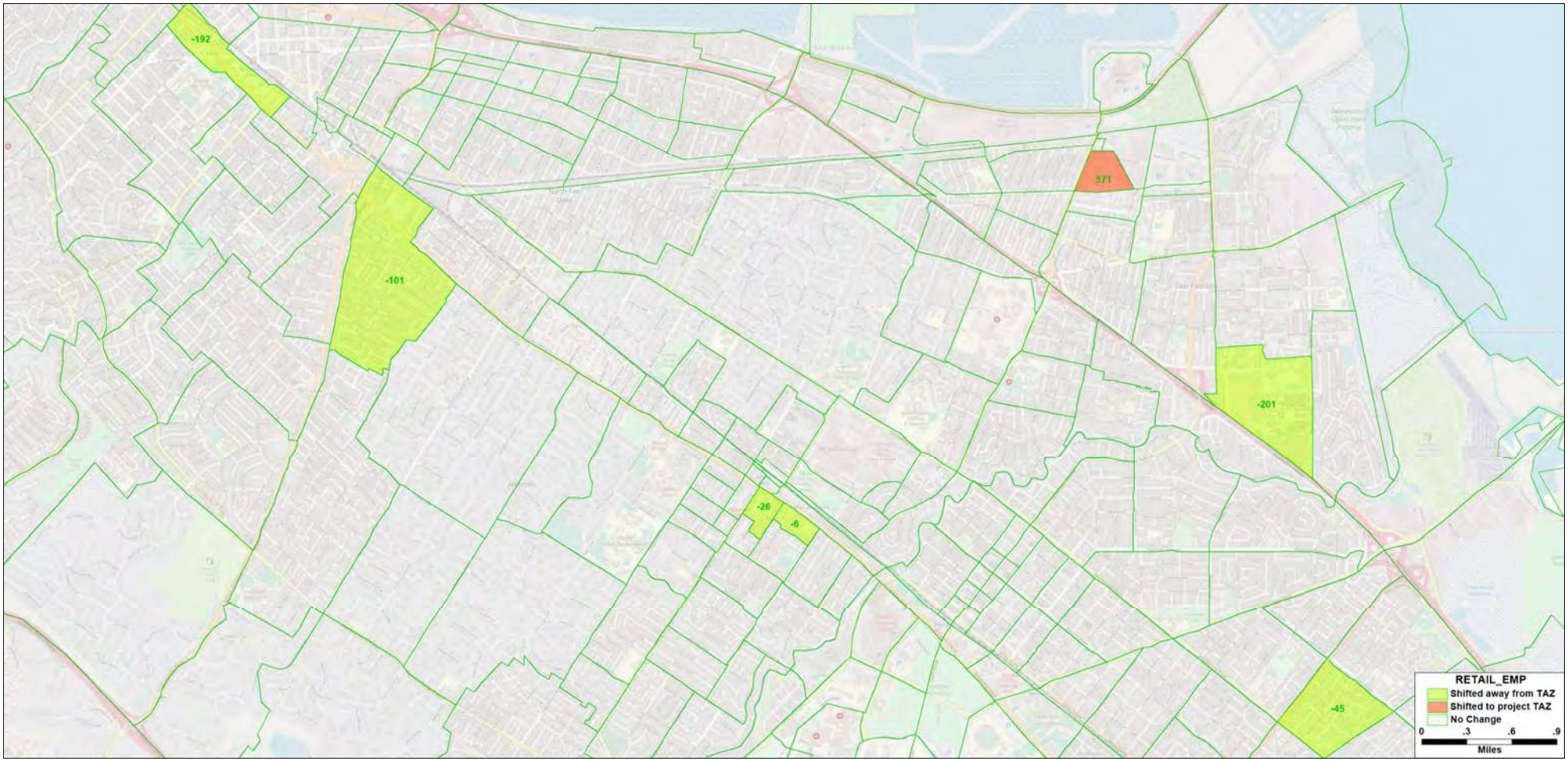


Figure 3.3-6
Retail Employment Shifts for VMT Analysis

VMT Evaluation

The total daily VMT generated by land uses within a five-mile radius was compared under the "no retail" and "with project" scenarios. As shown in Table 3.3-9, the proposed retail component of the project was shown to slightly reduce the total daily VMT generated by land uses within a five-mile radius of the Project Site. Since the proposed retail space would be located in close proximity to the Belle Haven neighborhood, a large number of offices and life sciences buildings in the Bayfront area, as well as the project's proposed residential land uses, the proposed retail component would provide retail stores closer to homes for nearby residents and closer to jobs for nearby workers.

Because the proposed retail component of the Project would not cause an increase in total VMT generated by the analysis area, it is concluded that the proposed retail component of the Project would have a less than significant impact on vehicle miles travelled.

Table 3.3-9. Retail VMT Analysis Summary

	5-Mile Radius Area of Project Site		
	No Retail Conditions[2]	**With Project Conditions[2]**	**%Change**
Total Daily VMT[1]	14,360,590	14,334,067	-0.2%

Notes:
[1]Total daily VMT includes VMT generated by all trips having at least one-trip-end in the analysis area, as estimated by the citywide travel demand model.
[2]"No retail conditions" represent with the Proposed Project except the retail component. "With project conditions" represent with the Proposed Project, including the retail component.

Event VMT

The Campus District would consist of up to 1.6 million square feet of space for office and accessory uses, consisting of up to 1.25 million sf of office uses and the balance (350,000 sf if office uses were maximized) of accessory uses[17]. In addition to serving as a gathering space for the surrounding campuses, the applicant proposes to host approximately 55 events per year, that would attract majority non-Menlo Park Meta workers and/or guests. Ten of these events are envisioned as large-sized events with attendance varying between 2,500 and 5,000 people. 15 of these events are envisioned as medium-sized events with attendance varying between 1,000 and 2,500 people. The remaining 30 events would be small-sized events with attendance lower than 1,000 people. It is anticipated that the small-sized events would generate a minimal number of trips that would not exceed the proposed Campus District trip cap. The Project is proposing an allowance of up to 25 exceptions to the trip cap for days when there are medium-size or large-size events. Due to the limited number of events that would exceed the proposed trip cap, it is deemed that such events are not typical conditions and do not require a VMT analysis for CEQA purposes. This impact would be ***less than significant***.

[17] Accessory uses could include the following types of spaces: meeting/collaboration space, orientation space, training space, event space, incubator space, a business partner center, an event building (including pre-function space, collaboration areas, and meeting/event rooms), a visitor center, product demonstration areas, film studio, gathering terraces and private gardens, and space for other Meta accessory uses. Accessory uses could occur in spaces located anywhere throughout the Campus District.

While some of these events could potentially generate substantial traffic that could affect intersection operations in the Project area, specific event details are not known. While congestion is not a CEQA impact, the Project would be required, as a condition of Project approval, to submit event traffic plans for large events for City approval to demonstrate measures that would be taken to minimize the events' effect on roadway traffic conditions.

TRA-3. The Proposed Project would substantially increase hazards due to a design feature or incompatible uses. (LTS/M)

This section discusses the potential of the Proposed Project to substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g farm equipment). As described below, the Proposed Project includes a design feature that could increase hazards. The mitigation measure discussed below would fully mitigate this impact. Therefore, the impact would be ***less than significant with mitigation (LTS/M)*****.**

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 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 would reconfigure the intersection of Willow Road and Hamilton Avenue, would add a new intersection – Willow Road and Park Street, and would add a new roundabout on O'Brien Drive, which would provide access to the Project Site. The Proposed Project would add high visibility crosswalks, wider sidewalks, wider medians, increased pedestrian crossing time, and curb ramps at intersections along Willow Road. 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.

The proposed project includes a design feature that could increase hazards. While the driveway designs generally comply with applicable standards and would not present hazards, the Project's proposed eastern driveway at the "North Garage" would be directly adjacent to a sharp roadway curve. The roadway curve would restrict sight distance to approximately 50 feet, which would provide inadequate sight distance for vehicles exiting the garage (See Appendix 3.3, Transportation, of this EIR).

Mitigation Measure TRA-3: Revise the North Garage access design to provide adequate sight distance for the eastern driveway or incorporate other design solutions to reduce hazards to the satisfaction of the Public Works Director. Potential solutions that would reduce hazards to a less than significant level include restricting the eastern driveway to inbound vehicles only or prohibiting exiting left turns, modifying landscaping or relocating the driveway to the west to allow for adequate sight distance for exiting vehicles, or installing an all-way stop or signal. With one of these improvements, as approved by the Public Works Director, this potentially significant impact would be **less than significant with mitigation (LTS/M)**.

TRA-4. The Proposed Project would not result in inadequate emergency access. (LTS)

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 1 mile north 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.

Emergency response vehicles would access the Project Site from the intersections on Willow Road, O'Brien Drive, and Adams Court and would use the internal roadway network. Emergency response vehicles would access the Campus District buildings via Emergency Vehicle Access Easements along the perimeter and through the secure Campus District.

The project proposes five primary loading docks at three buildings in the Campus District. Deliveries for other buildings in the Campus District would use on-street loading zones or the loading docks at other buildings. A grocery loading bay would be located within the parking garage of building RS2 (See Appendix 3.3, Transportation, of this EIR). Trucks would enter the garage via Willow Road, back into the diagonal loading bay near the grocery store and exit the garage via West Street. Rideshare and other delivery vehicles would use the provided on-street parking and loading spaces (Appendix 3.3, Transportation, of this EIR). The on-street parking and loading spaces would be located throughout the interior of the Project Site and would not be expected to create queuing issues onto Willow Road.

In addition to serving as a gather space for the surrounding campuses, the applicant proposes to host approximately 55 events per year, with a majority of non-Menlo Park Meta workers and/or guests. Ten of these events are envisioned as large-sized events with attendance varying between 2,500 and 5,000 people. 15 of these events are envisioned as medium-sized events with attendance varying between 1,000 and 2,500 people. The remaining 30 events would be small-sized events with attendance lower than 1,000 people. It is anticipated that the small-sized events would generate a minimal number of trips that would not exceed the proposed Campus District trip cap. The Project is proposing an allowance of up to 25 exceptions to the trip cap for days when there are medium-size or large-size events. The Project would be required, as a condition of Project approval, to submit event traffic plans for large events for City approval to demonstrate measures that would be taken to minimize the events' effect on roadway traffic conditions and ensure adequate emergency vehicle access.

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

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 hazards, and

emergency access. The residential land uses of the Proposed Project would exceed the applicable residential vehicle miles travelled threshold. The residential land uses would implement TDM measures to mitigate its individual impact to **less than significant (LTS/M)** and would be consistent with Connect Menlo.

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 Transportation 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[18], 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. An efficiency-based threshold 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.

The Proposed Project would be consistent with the development assumptions included in ConnectMenlo. 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, and is expected to reduce VMT per capita and VMT per employee within the study area where the Project Site is located. Consistent with the findings of the ConnectMenlo Final EIR, the Proposed Project, in combination with cumulative projects, would have a **less-than-significant (LTS/M)** cumulative impact with mitigation 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 City specifications.

[18] OPR. 2018, op. cit.

Assuming implementation of Mitigation Measure TRA-3, this Project, in combination with cumulative projects, consistent with the findings of the ConnectMenlo Final EIR, would have a **less-than-significant (LTS)** cumulative impact with respect to hazards 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. As mentioned above, the Project would be required, as a condition of Project approval, to submit event traffic plans for large events for City approval to demonstrate measures that would be taken to minimize the events' effect on roadway traffic conditions and ensure adequate emergency vehicle 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.

Non-CEQA Analysis

Intersection Level of Service (LOS) Analysis

The findings of the intersection LOS compliance analysis are summarized 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 3.3, Transportation, of this EIR.

As stated above, LOS is no longer a CEQA threshold. However, the General Plan and City's TIA Guidelines require that the TIA also analyze LOS for local planning purposes (per General Plan Program Circ-3.A Transportation Impact Metrics):

Supplement Vehicle Miles Traveled (VMT) and greenhouse gas emissions per service population (or other efficiency metric) metrics with Level of Service (LOS) in the transportation impact review process, and utilize LOS for identification of potential operational improvements, such as traffic signal upgrades and coordination, as part of the Transportation Master Plan.

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. The TIA identifies measures that could be applied as conditions of approval that would bring operations back to pre-Project levels. 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 the LOS goals of Circulation Policy 3.4. Implementation of any such measures would require review and approval by City decision makers.

Intersection Level of Service Standards and Adverse Effect Criteria

City of Menlo Park Definition of Adverse Effect

The following thresholds are from the City of Menlo Park's TIA Guidelines and the Proposed Project's compliance with local policies was evaluated based on these thresholds.

- A project is considered potentially noncompliant with local policies if the addition of project traffic causes an intersection on a collector street operating at LOS "A" through "C" to operate at an unacceptable level (LOS "D," "E" or "F") or have an increase of 23 seconds or greater in average vehicle delay, whichever comes first. Potential noncompliance shall also include a project that causes an intersection on arterial streets or local approaches to State controlled signalized intersections operating at LOS "A" through "D" to operate at an unacceptable level (LOS "E" or "F") or have an increase of 23 seconds or greater in average vehicle delay, whichever comes first.
- A project is also considered potentially noncompliant if the addition of project traffic causes an increase of more than 0.8 seconds of average delay to vehicles on all critical movements for intersections operating at a near-term LOS "D" through "F" for collector streets and at a near-term LOS "E" or "F" for arterial streets. For local approaches to State controlled signalized intersections, a project is considered to be potentially noncompliant if the addition of project traffic causes an increase of more than 0.8 seconds of delay to vehicles on the most critical movements for intersections operating at a near-term LOS "E" or "F."

State (Caltrans) Controlled Intersections Definition of Adverse Effect

For signalized intersections involving two state routes, the proposed project is considered potentially non-compliant with local policies if for any peak hour:

- The level of service degrades from an acceptable LOS D or better under existing conditions to an unacceptable LOS E or F under existing plus project conditions, and the average delay per vehicle increases by four seconds or more, or
- The level of service is an unacceptable LOS E or F under existing conditions and the addition of project trips causes an increase in the average control delay at the intersection by four seconds or more.

City of East Palo Alto Definition of Adverse Effect

The following thresholds are used in East Palo Alto, and the proposed project's compliance with local policies was evaluated based on these thresholds:

At a signalized intersection, the project is considered to have an adverse effect if it:

- Causes operations to degrade from LOS D (or better) to LOS E or F; or
- Exacerbates LOS E or F conditions by both increasing critical movement delay by four or more seconds and increasing volume-to-capacity ratio (V/C ratio) by 0.01 at an intersection evaluated using the TRAFFIX software; or
- Increases the V/C ratio by > 0.01 at an intersection that exhibits unacceptable operations, even if the calculated LOS is acceptable; or
- Causes planned future intersections to operate at LOS E or F.

At an unsignalized intersection, the proposed project is considered to have an adverse effect if it:

- Causes operations to degrade from LOS D or better to LOS E or F; or
- Exacerbates LOS E or F conditions by increasing control delay by five or more seconds; and
- Causes volumes under project conditions to exceed the Caltrans Peak-Hour Volume Warrant Criteria.

Near-Term (2025) Plus Project Intersection Levels of Service

The results of the intersection level of service analysis under near term (2025) plus project conditions are summarized in Table 3.3-10 and 3.3-11. The Willow Road corridor and 101/University Avenue interchange were analyzed using the Simtraffic microsimulation model as described in Appendix 3.3, Transportation, of this EIR. The microsimulation model indicates that the intersections would experience capacity issues where the demand cannot be served by the intersections. Oversaturated conditions would operate at LOS F and are indicated using 'OVERSAT' in the tables below. Vistro and Traffix were used to calculate critical delay and volume to capacity ratio at the Willow Road and 101/University Avenue intersections, respectively. The intersection LOS calculation sheets are included in Appendix 3.3, Transportation, of this EIR. Under near-term plus project conditions, the following intersections (see Figure 3.3-7, Near-Term [2025] Plus Project Intersection Level of Service Summary) would be non-compliant with the TIA Guidelines during either the AM or the PM peak hour as compared to near term conditions:

1. Marsh Road and Bayfront Expressway (AM peak hour)

13. Chilco Street and Hamilton Avenue (PM peak hour)

16. Willow Road and Bayfront Expressway (AM peak hour)

17. Willow Road and Hamilton Avenue (AM and PM peak hours)

18. Willow Road and Park Street (AM and PM peak hours)

21. Willow Road and Newbridge Street (AM and PM peak hours)

23. Willow Road and US 101 Southbound Ramps (AM peak hour)

24. Willow Road and Bay Road (AM peak hour)

30. O'Brien Drive and Kavanaugh Drive (AM and PM peak hours)

32. Adam's Drive and O'Brien Drive (AM and PM peak hours)

39. University Avenue and Bay Road (PM peak hour)

42. University Avenue and Donohoe Street (AM peak hour)

43. US 101 Northbound Off-Ramp and Donohoe Street (AM and PM peak hours)

44. Cooley Avenue and Donohoe Street (AM and PM peak hours)

45. University Avenue and US 101 Southbound Ramps (AM peak hour)

47. E. Bayshore Road and Donohoe Street (AM and PM peak hours)

Bold indicates intersections that already (i.e., without the Proposed Project) operate unacceptably under near-term conditions.

Table 3.3-10. Near-Term (2025) Intersection Levels of Service (Menlo Park)

				Near-Term (2025) Conditions								
				No Project		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
1	Marsh Road & Bayfront Expressway*	AM	Signal	52.0	D	**56.2**	**E**	**4.2**	**5.4**	50.2	D	-
	Haven Avenue Southbound			***71.2***	***E***	***70.6***	***E***	***<4***	***<0.8***			
		PM	Signal	34.9	C	38.7	D	<4	4.7	38.9	D	-
	Haven Avenue Southbound			***66.9***	***E***	***65.6***	***E***	***<4***	***<0.8***			
2	Marsh Road & US 101 Northbound Off-Ramp	AM	Signal	23.1	C	39.0	D	15.9	25.1			
		PM		15.8	B	16.8	B	<4	1.6			
3	Marsh Road & US 101 Southbound Off-Ramp	AM	Signal	20.7	C	20.7	C	<4	<0.8			
		PM		17.6	B	17.6	B	<4	<0.8			
4	Marsh Road & Scott Drive	AM	Signal	20.3	C	20.5	C	<4	<0.8			
		PM		15.9	B	15.9	B	<4	<0.8			
5	Marsh Road & Bohannon Drive/Florence Street	AM	Signal	40.0	D	41.6	D	<4	2.3			
		PM		36.3	D	37.3	D	<4	2.2			
6	Marsh Road & Bay Road	AM	Signal	23.6	C	25.2	C	<4	2.8			
		PM		18.7	B	19.1	B	<4	<0.8			
7	Chrysler Drive & Bayfront Expressway	AM	Signal	9.1	A	9.4	A	<4	<0.8			
		PM		17.3	B	18.3	B	<4	1.5			
8	Chilco Street & Bayfront Expressway	AM	Signal	23.7	C	25.6	C	<4	5.3			
		PM		34.1	C	35.9	D	<4	4.5			
9	MPK 21 Driveway & Bayfront Expressway	AM	Signal	7.3	A	7.4	A	<4	<0.8			
		PM		13.7	B	15.0	B	<4	1.4			

				Near-Term (2025) Conditions								
				No Project		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
10	MPK 20 Driveway (east) & Bayfront Expressway	AM	Signal	7.3	A	7.5	A	<4	<0.8			
		PM		9.7	A	9.4	A	<4	<0.8			
11	Chrysler Drive & Constitution Drive	AM	Signal	**59.8**	**E**	**55.1**	**E**	**<4**	**<0.8**			
		PM		28.5	C	30.4	C	<4	1.6			
12	Chilco Street & Constitution Drive/MPK 22 Driveway[2]	AM	Signal	24.8	C	24.6	C	<4	<0.8			
		PM		**42.9**	**D**	**54.3**	**D**	**11.4**	**11.4**			
13	Chilco Street & Hamilton Avenue	AM	AWSC	10.5	B	10.8	B	<4	<0.8	*Traffic signal potentially feasible*		
		PM		19.0	C	**38.0**	**E**	**19.0**	**19.0**			
14	Ravenswood Avenue & Middlefield Road	AM	Signal	43.1	D	44.9	D	<4	3.0			
		PM		17.6	B	17.9	B	<4	<0.8			
15	Ringwood Avenue & Middlefield Road	AM	Signal	13.2	B	13.7	B	<4	<0.8			
		PM		15.2	B	15.4	B	<4	<0.8			
16	Willow Road & Bayfront Expressway*[1]	AM	Signal	**OVER SAT**	**F**	**OVERSAT**	**F**	**14.0**	**6.7**	***No feasible Improvement***		
		PM		**OVER SAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
17	Willow Road & Hamilton Avenue[1]	AM	Signal	**OVER SAT**	**F**	**OVERSAT**	**F**	**44.1**	**54.0**	***No feasible Improvement***		
	Hamilton Avenue Southbound			***64.9***	***E***	***>120***	***F***	***117.9***	***<0.8***			
	Main Street Northbound			***83.3***	***F***	***113.7***	***F***	***30.4***	***>120***			
		PM	Signal	**OVER SAT**	**F**	**OVERSAT**	**F**	**>120**	**>120**	***No feasible Improvement***		

				Near-Term (2025) Conditions								
				No Project		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
	Hamilton Avenue Southbound			***>120***	***F***	***>120***	***F***	***>120***	***<0.8***			
	Main Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***>120***			
18	Willow Road & Park Street (future intersection)[1]	AM	Signal	Project Intersection		**OVERSAT**	**F**	**36.8**	**53.0**	***No feasible Improvement***		
		PM				**OVERSAT**	**F**	**17.5**	**23.1**			
19	Willow Road & Ivy Drive[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**20.9**	**46.6**			
	Ivy Drive Southbound	*AM*		***88.2***	***F***	***75.0***	***E***	***<4***	***<0.8***			
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**50.1**	**70.9**			
	Ivy Drive Southbound	*PM*		***68.4***	***E***	***66.1***	***E***	***<4***	***<0.8***			
20	Willow Road & O'Brien Drive[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	O'Brien Drive Northbound			***72.6***	***E***	***66.4***	***E***	***<4***	***<0.8***			
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	O'Brien Drive Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
21	Willow Road & Newbridge Street[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**40.3**	**49.7**	**OVERSAT**	**F**	
	Newbridge Street Southbound			***69.3***	***E***	***104.2***	***F***	***34.9***	***43.0***	***79.6***	***F***	***9.0***
	Newbridge Street Northbound			***>120***	***F***	***>120***	***F***	***4.4***	***64.0***	*42.1*	*D*	*<0.8*
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**	**OVERSAT**	**F**	
	Newbridge Street Southbound			***60.8***	***E***	***59.1***	***E***	***<4***	***1.5***	***74.5***	***E***	***26.0***
	Newbridge Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***	*51.3*	*D*	*<0.8*

				Near-Term (2025) Conditions								
				No Project		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
22	Willow Road & US 101 Northbound Ramps[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**11.5**			
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
23	Willow Road & US 101 Southbound Ramps[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**18.3**	**<0.8**	***No feasible Improvement***		
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
24	Willow Road & Bay Road[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**38.3**	**OVERSAT**	**F**	
	Bay Road Southbound			***104.3***	***F***	***>120***	***F***	***31.7***	***31.7***	*27.0*	*C*	*<0.8*
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**6.6**	**6.7**	**OVERSAT**	**F**	
	Bay Road Southbound			*49.2*	*D*	*53.5*	*D*	*4.3*	*4.3*	*23.9*	*C*	*<0.8*
25	Willow Road & Hospital Plaza/Durham Street[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	VA Medical Center Southbound			***73.2***	***E***	***69.5***	***E***	***<4***	***<0.8***			
	Durham Street Northbound			***93.6***	***F***	***79.6***	***E***	***<4***	***<0.8***			
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	VA Medical Center Southbound			***72.2***	***E***	***70.2***	***E***	***<4***	***<0.8***			
	Durham Street Northbound			***84.6***	***F***	***79.8***	***E***	***<4***	***<0.8***			
26	Willow Road & Coleman Avenue	AM	Signal	25.1	C	23.9	C	<4	<0.8			
		PM		11.0	B	10.8	B	<4	<0.8			

				Near-Term (2025) Conditions								
				No Project		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
27	Willow Road & Gilbert Avenue	AM	Signal	20.0	C	19.9	B	<4	<0.8			
		PM		13.0	B	12.4	B	<4	<0.8			
28	Willow Road & Middlefield Road	AM	Signal	**62.3**	**E**	**62.5**	**E**	**<4**	**<0.8**			
	Middlefield Road Southbound			***69.8***	***E***	***70.1***	***E***	***<4***	***<0.8***			
	Middlefield Road Northbound			***67.7***	***E***	***67.7***	***E***	***<4***	***<0.8***			
		PM	Signal	34.5	C	34.7	C	<4	<0.8			
	Middlefield Road Southbound			*34.5*	*C*	*34.7*	*C*	*<4*	*<0.8*			
	Middlefield Road Northbound			*34.3*	*C*	*34.7*	*C*	*<4*	*<0.8*			
29	O'Brien Drive/Loop Road & Main Street/O'Brien Drive (future intersection)	AM	Rdbt	Project Intersection		7.4	A	7.4	7.4			
		PM				9.2	A	9.2	9.2			
30	O'Brien Drive & Kavanaugh Drive	AM	AWSC	12.7	B	**107.7**	**F**	**95.0**	**95.0**	*Traffic signal potentially feasible*		
		PM		**29.6**	**D**	**73.7**	**F**	**44.1**	**44.1**			
31	Adams Drive & Adams Court	AM	TWSC	11.5	B	11.6	B	<4	<0.8			
		PM		11.9	B	11.9	B	<4	<0.8			
32	Adams Drive & O'Brien Drive	AM	TWSC	17.6	C	**62.5**	**F**	**44.9**	**44.9**	*Traffic signal potentially feasible*		
		PM		**34.0**	**D**	**>120**	**F**	**>120**	**>120**			
33	University Avenue & Bayfront Expressway*	AM	Signal	13.9	B	12.1	B	<4	<0.8			
		PM		**105.8**	**F**	**108.7**	**F**	**<4**	**3.0**			

* Denotes CMP Intersection

				Near-Term (2025) Conditions								
				No Project		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]

AWSC - All Way Stop Control; TWSC - Two Way Stop Control; Rdbt - Roundabout

[1] Average delay is reported for signalized and AWSC intersections. For TWSC intersections, the delay for the worst stop-controlled movement is reported

"OVERSAT" indicates that the SimTraffic microsimulation model indicates that the intersection would experience capacity issues where the demand cannot be served by the intersection. Oversaturated intersections would operate at LOS F.

[1]Intersections were analyzed using Synchro/SimTraffic software due to the close proximity of these intersections. Changes in average delay and critical delay calculated using Vistro.

[2]The intersection is not considered as non-compliant under background plus project conditions because the critical movement of the local approach shifts with the addition of project traffic.

Bold indicates substandard level of service

Bold	indicates noncompliance. The project exceeds thresholds in the City of Menlo Park's TIA Guidelines. These are not CEQA thresholds.

Table 3.3-11. Near-Term (2025) Intersection Levels of Service (East Palo Alto)

				Near-Term (2025) Conditions							
				No Project		with Project				With Improvement	
#	Intersection	Peak Hour	Traffic Control	Avg Delay (secs)[1]	LOS	Avg Delay (secs)[1]	LOS	Incr. in Avg/Crit Delay (sec)[1]	Incr. in Crit V/C	Avg Delay (secs)[1]	LOS
34	University Avenue & Purdue Avenue	AM	TWSC	19.7	C	29	D		0.118		
		PM		**>120**	**F**	**>120**	**F**	**3.8**	**-0.033**		
35	University Avenue & Adams Drive	AM	TWSC	**91.5**	**F**	**>120**	**F**	**0.4**	**0.084**		
		PM		**>120**	**F**	**>120**	**F**	**-2.8**	**-0.070**		
36	University Avenue & O'Brien Drive	AM	Signal	9.5	A	28.9	C	26.1	0.261		
		PM		15.4	B	30.5	C	16.7	0.275		
37	University Avenue & Notre Dame Avenue	AM	Signal	4.1	A	7.8	A	5.0	0.093		
		PM		9.4	A	10.2	B	1.4	0.012		
38	University Avenue & Kavanaugh Drive	AM	Signal	6.9	A	7.9	A	1.3	0.014		
		PM		15.1	B	16.5	B	1.6	0.015		
39	University Avenue & Bay Road	AM	Signal	52.4	D	54.7	D	6.7	0.046	40.4	D
		PM		**60.9**	**E**	**70.6**	**E**	**18.6**	**0.063**	**57.0**	**E**
40	University Avenue & Runnymede Street	AM	Signal	6.4	A	6.6	A	1.5	0.053		
		PM		8.8	A	8.8	A	-0.1	-0.009		
41	University Avenue & Bell Street	AM	Signal	11.7	B	11.6	B	0.0	0.006		
		PM		18.3	B	18.8	B	1.1	0.038		
42	University Avenue & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**7.1**	**0.017**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**3.0**	**0.008**		
43	US 101 Northbound Off-Ramp & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**71.7**	**0.171**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**56.4**	**0.130**		
44	Cooley Avenue & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**8.7**	**0.091**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**18.8**	**0.074**		
45	University Avenue & US 101 Southbound Ramps*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**7.8**	**0.019**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**1.6**	**0.004**		

				Near-Term (2025) Conditions							
				No Project		with Project				With Improvement	
#	Intersection	Peak Hour	Traffic Control	Avg Delay (secs)[1]	LOS	Avg Delay (secs)[1]	LOS	Incr. in Avg/Crit Delay (sec)[1]	Incr. in Crit V/C	Avg Delay (secs)[1]	LOS
46	University Avenue & Woodland Avenue*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**0.1**	**0.000**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**-7.8**	**-0.018**		
47	University Avenue & Middlefield Road	AM	Signal	34.8	C	34.8	C	0.0	-0.001		
		PM		35.3	D	35.4	D	0.2	0.007		
48	Lytton Avenue & Middlefield Road	AM	Signal	49.3	D	49.2	D	-0.1	-0.001		
		PM		**69.1**	**E**	**70.6**	**E**	**1.6**	**0.006**		
47	E. Bayshore Road & Donahoe Street*	AM	Signal	**OVERSAT**	**F**	**>120**	**F**	**5.7**	**0.013**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**>120**	**F**	**5.8**	**0.015**		
48	E. Bayshore Road & Holland Street	AM	TWSC	8.8	A	8.8	A	0.0	0.000		
		PM		10	A	10	A	0.0	0.000		
49	Saratoga Avenue & Newbridge Street	AM	TWSC	17.9	C	18.2	C	0.9	0.074		
		PM		22.0	C	21.0	C	0.0	-0.024		
50	E. Bayshore Road & Euclid Avenue*	AM	AWSC	**OVERSAT**	**F**	**OVERSAT**	**F**	**3.6**	**0.028**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**-2.5**	**-0.016**		
51	Clarke Avenue & E. Bayshore Road	AM	Signal	13.9	B	14	B	0.2	0.008		
		PM		10.7	B	12.5	B	1.7	0.031		
52	Puglas Avenue & E. Bayshore Road	AM	Signal	20.9	C	21.7	C	1.7	0.042		
		PM		33.1	C	37.6	D	5.7	0.034		

*Denotes a CMP intersection

AWSC - All Way Stop Control; TWSC - Two Way Stop Control

[1]Average delay is reported for signalized and AWSC intersections. For TWSC intersections, the delay for the worst stop-controlled movement is reported.

[2]Intersection is signalized under cumulative conditions.

"OVERSAT" indicates that the SimTraffic microsimulation model indicates that the intersection would experience capacity issues where the demand cannot be served by the intersection. Oversaturated intersections would operate at LOS F.

*Intersections were analyzed using Synchro/SimTraffic software due to the close proximity of these intersections. Changes in critical delay and v/c calculated using Traffix.

Bold indicates substandard level of service

Bold	indicates adverse effect

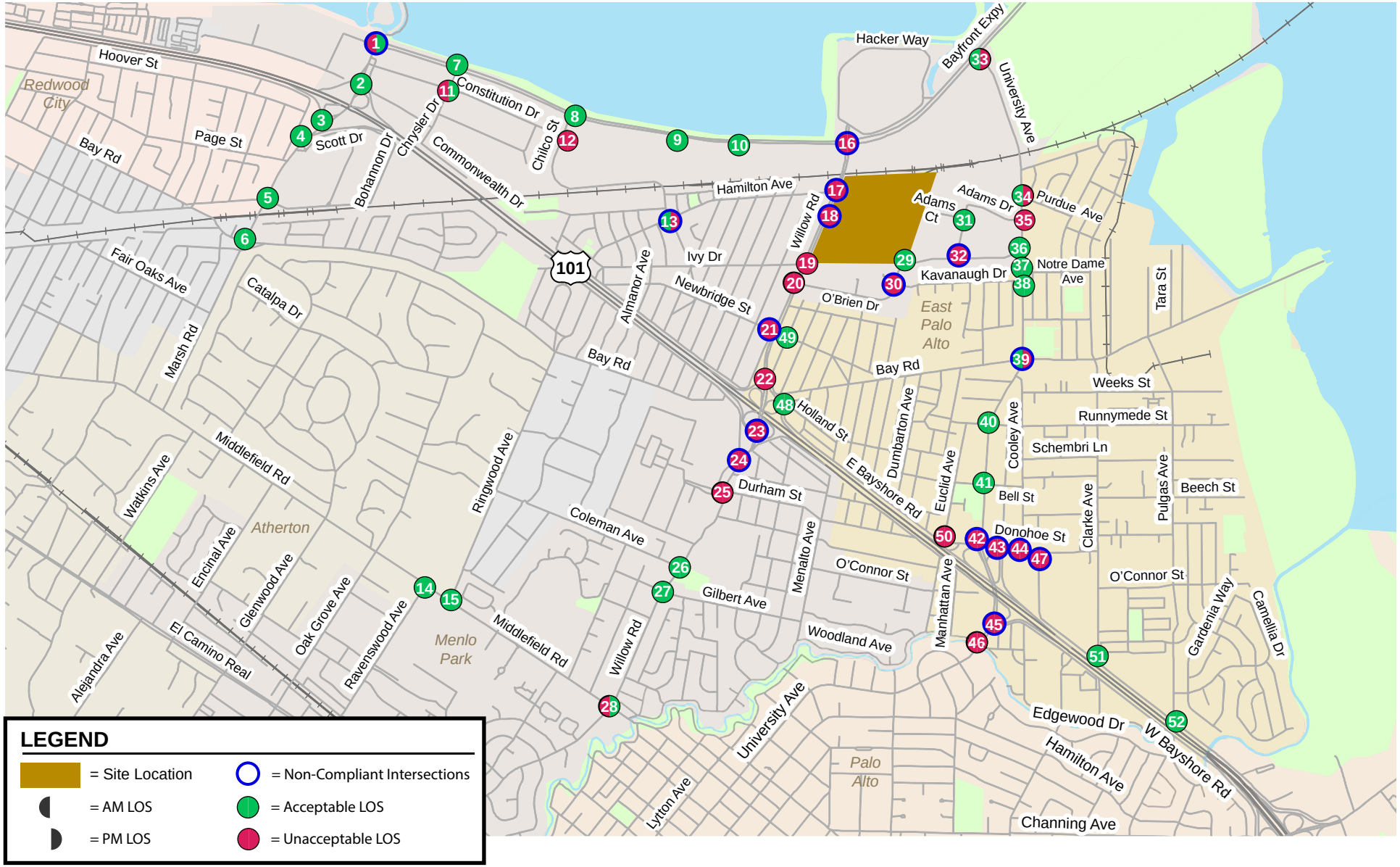


Figure 3.3-7
Near-Term (2025) Plus Project Intersection Level of Service Summary

It should be noted that at some intersections the average delay is shown to decrease with the addition of Project traffic. This occurs because the intersection delay is a weighted average of all intersection movements. When traffic is added to movements with delays lower than the average intersection delay, the average delay for the entire intersection can decrease. Furthermore, the congestion and queue spillback at an adjacent intersection can constrain the traffic volume at some intersections resulting in a small decrease in average delay.

Adverse Effects and Recommended Improvements

The intersection effects and recommended modifications to improve the intersections to pre-Project conditions or better are described below. It should be noted that the intersection analysis accounts for the Project's proposed trip reductions from gross ITE trip generation. The residential component's required TDM reduction to eliminate the VMT impact is partially accounted for as well (peak-hour trip generation assumed 10% active TDM reduction). The additional residential TDM reduction during the peak-hour resulting from the VMT impact mitigation would have resulted in approximately 50 (13 inbound and 37 outbound) fewer trips during the AM peak hour and 56 (34 inbound and 22 outbound) fewer trips during the PM peak hour. This level of trip reduction would not address any intersection adverse effects alone.

Marsh Road and Bayfront Expressway

This intersection is expected to operate at an acceptable LOS D during the AM peak hour and LOS C during the PM peak hour under near term conditions. The addition of Project traffic would cause the level of service at the intersection to worsen to an unacceptable LOS E during the AM peak hour. The intersection would operate at an acceptable LOS D during the PM peak hour. The deterioration of LOS from D to E constitutes non-compliance during the AM peak hour according to the thresholds established by the City of Menlo Park.

The recommended modification for this location is to modify the southbound approach to a shared left-through lane, shared through-right lane, and a right turn only lane. With this improvement, the intersection would operate acceptably at LOS D during both peak hours under near-term plus project conditions. This improvement is in Menlo Park's traffic impact fee (TIF) program. With implementation of these intersection modifications, the intersection would be in compliance with the TIA Guidelines and address the Proposed Project's share of the non- compliant operation.

Chilco Street and Hamilton Avenue

This intersection is expected to operate at an acceptable LOS B during the AM peak hour and LOS C during the PM peak hour under near term conditions. The addition of Project traffic would cause the level of service at the intersection to worsen to an unacceptable LOS E during the PM peak hour. The intersection would operate at an acceptable LOS B during the AM peak hour. The deterioration of LOS from C to E constitutes non-compliance during the PM peak hour according to the thresholds established by the City of Menlo Park.

Since the intersection currently operates as all-way-stop-controlled, potential modification to bring the intersection to pre-project conditions would be to signalize it. However, the intersection does not meet the signal warrant during either peak hour under near term plus project conditions. A traffic signal is not recommended for construction until signal warrants conducted with a future year's actual counts have been met. The recommended improvement includes conducting a signal warrant analyses for a period of five years after full Project completion to determine if a signal would be warranted and if warranted, install a new signal. This improvement is included in the City's TIF program.

Should the City pursue implementation of this improvement, the improvement would include new traffic signal and appropriate pedestrian and bicycle accommodation at this intersection including pedestrian countdown timers, Americans with Disabilities Act (ADA) compliant curbs, and bicycle detection loops. Signalization of this intersection could also encourage cut-through traffic along Chilco Street and on Hamilton Avenue when regional routes such as Bayfront Expressway, Willow Road or US 101 become congested. Potential traffic calming measures should also be considered in conjunction with a traffic signal if signal warrants are met in a future year.

With implementation of these intersection modifications (e.g. signal warrant analysis, potential signal installation, and related bicycle and pedestrian accommodations), the intersection would be in compliance with the TIA Guidelines which would address the Proposed Project's share of the non-compliant operation.

Willow Road Corridor

Willow Road between Bayfront Expressway and Hospital Plaza/Durham Street is expected to experience capacity issues due to unserved demand at the intersections. These intersections would operate unacceptably under near term conditions during both peak hours. With the addition of Project traffic, intersections along the corridor would continue to operate unacceptably during both peak hours.

The intersections of Willow Road and Bayfront Expressway and Willow Road and US 101 southbound ramps would experience an increase in delay of over four seconds with the addition of project traffic in the AM peak hour and PM peak hour, respectively, and would be non-compliant per Menlo Park's guidelines for state-controlled intersections.

The intersections of Hamilton Avenue and Newbridge Street at Willow Road would experience an increase in delay of over 0.8 seconds with the addition of project traffic on the local approach to the intersection in both peak hours and the intersection of Bay Road at Willow Road would experience an increase in delay of over 0.8 seconds with the addition of Project traffic on the local approach to the intersection during the AM peak hour and would be non-compliant per Menlo Park's guidelines. Willow Road and Park Street, which is a new intersection under project conditions is also assumed to be non-compliant during both peak hours due to unserved demand at this intersection as determined in the microsimulation model developed for this corridor and described in Appendix 3.3, Transportation, of this EIR.

The City of Menlo Park is implementing an adaptive traffic signal coordination system on the Willow Road corridor to improve traffic flow. Adaptive traffic control is a technology that automatically adjusts traffic signal timing based on actual traffic demand at an intersection. This measure will improve the intersection operations and could reduce the intersection delay. The reduction in delay due to adaptive signal coordination is not expected to bring the corridor intersections into compliance with the City's TIA guidelines or to substantially reduce the delay caused by the Project.

Physical intersection improvements (identified in the City's TIF program) that would improve intersection operations at the non-compliant intersections are:

- Willow Road and Newbridge Street - The TIF program proposes to modify the signal timing to a protected left-turn phasing operation on Newbridge Street, provide a leading left-turn phase on the southbound movement and a lagging left-turn phase on the northbound movement, and optimize signal timing. With implementation of these intersection modifications under project conditions, the critical movement delay would be reduced for the northbound movement to lower than no project conditions. However, the improvement would not address the southbound deficiency. Further improvements to address the southbound deficiency are not feasible.

- Willow Road and Bay Road – The TIF program proposes to modify the southbound approach at this intersection to two left-turn lanes and one right-turn lane and to modify the westbound approach to add a right-turn lane. With these improvements under project conditions, the critical movement delay at the local approach would be reduced to lower than no project conditions. This improvement would address the adverse effect on the intersection due to Project traffic. With implementation of these intersection modifications, the Willow Road and Bay Road intersection would be in compliance with the TIA Guidelines which would address the Proposed Project's share of the non- compliant operation. With implementation of the recommended improvements from the TIF program for the Willow Road and Bay Road intersection the deficiency attributable to the Proposed Project would be addressed. As mentioned previously, these improvements are included in the City's TIF program.
- The Metropolitan Transportation Commission (MTC) Dumbarton Forward project would restripe Bayfront Expressway to add bus-only lanes on the shoulders during peak periods and implement signal timing improvements. The bus-only lanes would generally help the progression of shuttles and buses along the corridor. The signal timing improvements are also assumed to help with the general progression along Bayfront. However, specific details are unknown at this time regarding the improvements at the Willow Road and Bayfront Expressway intersection. The improvements' effectiveness in addressing the Project traffic generated adverse effect on traffic operations at this intersection cannot be determined. Furthermore, since this project is not led by the City of Menlo Park, implementation cannot be guaranteed.

Physical improvements are considered infeasible due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel at the intersections of Willow Road and Bayfront Expressway, Willow Road and US 101 southbound ramps, Willow Road and Hamilton Avenue, and Willow Road and Park Street.

The TIF program also proposes multimodal improvements along this section of Willow Road. These include an eastbound Willow Road one-way Class IV separated bikeway between Hamilton Avenue and the US 101/Willow Road Interchange, a westbound Willow Road one-way Class IV separated bikeway between the Dumbarton Rail Corridor and the US 101/Willow Road Interchange, high-visibility crosswalks and pedestrian signals on all legs at the intersection of Willow Road and O'Brien Drive, Class II bicycle lanes on eastbound Willow Road from O'Keefe Street to Bay Road, and Class II bicycle lanes on westbound Willow Road from Bay Road to Durham Street.

Implementing recommended multi-modal facilities along the corridor (from the City's TIF program) could shift some motor vehicle traffic to alternative modes of travel and reduce congestion. With implementation of these multi-modal improvements, the intersection deficiencies could be further reduced and partially address the Proposed Project's share of the non- compliant operations along Willow Road.

O'Brien Drive and Kavanaugh Drive

This intersection is expected to operate at an acceptable LOS B during the AM peak hour and an unacceptable LOS D during the PM peak hour under near term conditions. With the addition of project traffic, the intersection would operate at an unacceptable LOS F during both peak hours. This constitutes non-compliance during both peak hours according to the thresholds established by the City of Menlo Park.

Since the intersection currently operates as all-way-stop-controlled, potential modification to bring the intersection to pre-project conditions would be to signalize it. The intersection would meet the MUTCD signal warrant during both peak hours under project conditions (See Appendix 3.3, Transportation, of this EIR). The intersection lane configuration would need to be modified to a westbound left-turn lane and

through lane, northbound left turn lane and right turn lane, and eastbound shared through-right lane. With this improvement, the intersection would operate acceptably at LOS B during the AM peak hour and LOS C during the PM peak hour under near term plus project conditions.

The recommended improvement to bring this intersection back to pre-Project conditions is the installation of the new traffic signal and appropriate pedestrian and bicycle accommodation. This includes the proposed Class II bicycle lanes along O'Brien Drive between Willow Road and University Avenue, pedestrian countdown timers, Americans with Disabilities Act (ADA) compliant curbs, and bicycle detection loops. However, a decision for signalization should not be made until signal warrants conducted with a future year's actual counts have been met. It is important to note that the intersection would be located approximately 300 feet west of the proposed roundabout at O'Brien Drive and Loop Road. Prior to a decision for signalizing this intersection, further analysis should be conducted to ensure that queues resulting from the signal would not back into the roundabout and cause a gridlock situation.

Alternatively, traffic calming measures could be installed to discourage the use of Kavanaugh Drive, which is a residential street, and encourage vehicles to use O'Brien Drive and Adam's Drive instead. Kavanaugh Drive is located within the City of East Palo Alto, and the City of Menlo Park does not have jurisdiction to install traffic calming along this street. Other measures such as peak period turning movement restrictions could be considered to discourage traffic from using Kavanaugh Drive and improve intersection operations.

Monitoring of traffic operations at this intersection for a period of five years after full Project completion should be conducted to determine if signalization or alternative improvements are needed. If warranted, implementation of the new traffic signal would address the Proposed Project's share of the non-compliant operation and bring the intersection into compliance with the TIA Guidelines. If the alternative measures are implemented, the intersection may or may not be brought into compliance with the TIA Guidelines and address the Proposed Project's share of the non-compliant operation.

Adams Drive and O'Brien Drive

This intersection is expected to operate at an acceptable LOS C during the AM peak hour and an unacceptable LOS D during the PM peak hour under near term conditions. With the addition of Project traffic, the intersection would operate at an unacceptable LOS F during both peak hours. This constitutes non-compliance during both peak hours according to the thresholds established by the City of Menlo Park.

Since the intersection currently operates as two-way-stop-controlled, potential modification to bring the intersection to pre-project conditions would be to signalize it. The intersection would meet the MUTCD signal warrant during the PM peak hour under project conditions (see Appendix 3.3, Transportation, of this EIR). The intersection lane configuration would need to be modified to a westbound shared left-right lane, southbound left-turn lane and through lane, and northbound shared through-right lane. With this improvement, the intersection would operate acceptably at LOS B during the AM peak hour and LOS C during the PM peak hour under near term plus project conditions.

The recommended improvement to bring this intersection back to pre-Project conditions is the installation of the new traffic signal and appropriate pedestrian and bicycle accommodations at this intersection and within the vicinity. This includes the proposed Class II bicycle lanes along O'Brien Drive between Willow Road and University Avenue, pedestrian countdown timers, Americans with Disabilities Act (ADA) compliant curbs, and bicycle detection loops.

The expected intersection operational issues under background plus project conditions would be due to the increased through traffic on O'Brien Drive between the Project Site and University Avenue. Menlo Park's TIF program identifies an improvement to signalize the nearby intersection at University Avenue and Adams Drive in East Palo Alto. This improvement may provide an alternative route for Project vehicles to access the Project Site via University Avenue.

Monitoring of traffic operations at this intersection for a period of five years after full Project completion should be conducted to determine if signalization or alternative improvements are needed. If warranted, implementation of the new traffic signal would address the Proposed Project's share of the non-compliant operation and bring the intersection into compliance with the TIA Guidelines. If the alternative measures are implemented, the intersection may or may not be brought into compliance with the TIA Guidelines and address the Proposed Project's share of the non-compliant operation.

University Avenue and Bay Road

This intersection is expected to operate at an acceptable LOS D during the AM peak hour and an unacceptable LOS E during the PM peak hour under near term conditions. With the addition of Project traffic, the intersection would continue to operate acceptably in the AM peak hour. In the PM peak hour, the increase in the average critical delay would be greater than four seconds. This constitutes non-compliance during the PM peak hour according to the thresholds established by the City of East Palo Alto.

Potential modification to bring the intersection to pre-Project conditions would be to add an exclusive eastbound right-turn lane and a second eastbound left-turn lane on University Avenue, add a second northbound left-turn lane on Bay Road, add a second westbound left-turn lane on University Avenue, and modify signal phasing. This is also a mitigation measure identified in the Ravenswood/4 Corners TOD Specific Plan Environmental Impact Report (February 22, 2013), which would be implemented under cumulative conditions. With this improvement under project conditions, the average delay at the intersection would be better than under near term no project conditions. Since this intersection is located within the City of East Palo Alto, the recommended measure to bring the intersection back to pre-Project conditions and address the Project's share of the non-compliant operation would be to make a fair share (34%) contribution towards this improvement. Fair share is calculated as the percentage of net project traffic generated divided by the overall cumulative traffic growth at this intersection. The Menlo Park TIF includes improvements at the University Avenue and Bay Road intersection, but not sufficient improvements to bring the intersection back to pre-Project conditions, as described above. However, the Project's fair share contribution towards this intersection would be calculated considering credit from its TIF payment.

US 101/University Avenue Interchange

The US 101/University Avenue interchange is expected to experience capacity issues due to unserved demand at the intersections in its vicinity including University Avenue and Donohoe Street, US 101 northbound off-ramp and Donohoe Street, Cooley Avenue and Donohoe Street, University Avenue and US 101 southbound ramps, University Avenue and Woodland Avenue, E. Bayshore Road and Donohoe Street, and E. Bayshore Road and Euclid Avenue. These intersections would operate unacceptably under near term conditions during both peak hours. With the addition of Project traffic, these intersections would continue to operate unacceptably during both peak hours. The increase in delay is expected to be greater than four seconds, and the increase in the volume to capacity ratio is expected to be greater than 0.01 under project conditions at University Avenue and Donohoe Street in the AM peak hour, US 101 northbound off-ramp and Donohoe Street during both peak hours, Cooley Avenue and Donohoe Street during both peak hours, E. Bayshore Road and Donohoe Street during both peak hours, and University Avenue and US 101 southbound ramps in the AM peak hour. This constitutes non-compliance according to the thresholds established by the City of East Palo Alto.

East Palo Alto plans to widen the northbound approach on Donohoe Street at the US 101 northbound off-ramp to accommodate four through lanes to improve the vehicular throughput at this intersection. This improvement will require median modifications and narrowing the southbound Donohoe Street approach to Cooley Avenue to include two through lanes and a full length left-turn lane. In addition, the traffic signals will be coordinated with adjacent traffic signals on Donohoe Street.

East Palo Alto also plans to install a new traffic signal at the US 101 northbound on-ramp and Donohoe Street and Bayshore Road and Euclid Avenue to coordinate with other closely spaced traffic signals along Donohoe Street. Along with new traffic signals, appropriate pedestrian and bicycle accommodation will be provided. This includes pedestrian countdown timers, Americans with Disabilities Act (ADA) compliant curbs, and bicycle detection loops. In order to align with the proposed driveway for the University Plaza Phase II site on the north side of Donohoe Street, the US 101 on-ramp will be shifted approximately 30 feet to the south. In addition, the northbound approach on Donohoe Street will be restriped to accommodate a short exclusive left-turn pocket (approximately 60 feet in length), a shared left-through lane, and a shared through-right lane. These improvements would require widening of the US 101 northbound on-ramp to accommodate two lanes that taper down to a single lane before this ramp connects with the loop on-ramp from eastbound University Avenue. A northbound right turn only will also be added to Bayshore Road and Euclid Avenue. Planned Donohoe Street improvements are included in Appendix 3.3, Transportation, of this EIR.

With these improvements, average delay at these intersections would be below that under near term conditions without the Project. Since this intersection is located within the City of East Palo Alto, the recommended improvement measure to bring the intersection/interchange back to pre-Project conditions and address the Project's share of the non- compliant operation would be for the Project sponsor to make a fair share contribution towards these improvements. Because the improvements in this corridor are all interconnected and dependent on each other to work, the recommended improvement measure would be for the Project sponsor to contribute its fair share to improvements at all six intersections in this corridor. Fair share is calculated as the percentage of net project traffic generated of the overall cumulative traffic growth at this intersection.

- Donohoe Street & Cooley Avenue: 10% fair share
- Donohoe Street & US 101 Northbound Off-Ramp: 24% fair share
- Donohoe Street & University Avenue: 31% fair share
- Donohoe Street & US 101 Northbound On-Ramp: 8% fair share
- Donohoe Street/Bayshore Road & Euclid Avenue: 2% fair share
- US 101 Southbound Ramps & University Avenue: 33% fair share

The Menlo Park TIF includes improvements at the University Avenue and Donohoe Street and University Avenue and US 101 southbound ramps intersections, which funding would go toward the planned coordinated system of intersections. The Project's fair share contribution towards these two intersections would be calculated considering credit from its TIF payment.

Cumulative (2040) Plus Project Intersection Levels of Service

The results of the intersection level of service analysis under cumulative (2040) plus project conditions are summarized in Tables 3.3-12 and 3.3-13. The intersection LOS calculation sheets are included in Appendix 3.3, Transportation, of this EIR. Under cumulative plus project conditions, the following intersections (see Figure 3.3-8, Cumulative [2040] Plus Project Intersection Level of Service Summary) would be non-compliant with City of Menlo Park TIA Guidelines and/or local polices during either the AM or the PM peak hour as compared to cumulative conditions. All of these intersections would already be operating at unacceptable levels of service under cumulative conditions.

5. Marsh Road and Bohannon Drive/Florence Street (AM peak hour)

13. Chilco Street and Hamilton Avenue (AM and PM peak hours)

18. Willow Road and Park Street (AM and PM peak hours)

19. Willow Road and Ivy Drive (PM peak hour)

21. Willow Road and Newbridge Street (AM and PM peak hours)

24. Willow Road and Bay Road (AM and PM peak hours)

25. Willow Road and Hospital Plaza/Durham Street (AM and PM peak hours)

30. O'Brien Drive and Kavanaugh Drive (AM peak hour)

32. Adam's Drive and O'Brien Drive (AM and PM peak hours)

43. US 101 Northbound Off-Ramp and Donohoe Street (AM and PM peak hours)

44. Cooley Avenue and Donohoe Street (PM peak hour)

45. University Avenue and US 101 Southbound Ramps (PM peak hour)

46. University Avenue and Woodland Avenue (AM and PM peak hours)

49. Saratoga Avenue and Newbridge Street (AM peak hour)

50. East Bayshore Road and Euclid Avenue (AM peak hour)

Bold denotes intersections that would be non-compliant under cumulative plus project conditions during either AM or PM peak hours but are compliant under near-term plus project conditions during both peak hours.

It should be noted that at some intersections the average delay is shown to decrease with the addition of Project traffic. This occurs because the intersection delay is a weighted average of all intersection movements. When traffic is added to movements with delays lower than the average intersection delay, the average delay for the entire intersection can decrease. Furthermore, the congestion and queue spillback at an adjacent intersection can constrain the traffic volume at some intersections resulting in a small decrease in average delay.

Table 3.3-12. Cumulative (2040) Intersection Levels of Service (Menlo Park)

				Cumulative (2040) Conditions								
				GP Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
1	Marsh Road & Bayfront Expressway*	AM	Signal	**68.7**	**E**	**65.6**	**E**	**<4**	**<0.8**			
	Haven Avenue Southbound			***71.2***	***E***	***73.4***	***E***	***<4***	***<0.8***			
		PM	Signal	**65.0**	**E**	**77.9**	**E**	**12.9**	**12.5**			
	Haven Avenue Southbound			***67.7***	***E***	***67.7***	***E***	***<4***	***<0.8***			
2	Marsh Road & US 101 Northbound Off-Ramp	AM	Signal	**60.9**	**E**	**62.2**	**E**	**<4**	**1.5**			
		PM		22.9	C	22.8	C	<4	<0.8			
3	Marsh Road & US 101 Southbound Off-Ramp	AM	Signal	22.8	C	24.4	C	<4	2.0			
		PM		19.2	B	18.8	B	<4	<0.8			
4	Marsh Road & Scott Drive	AM	Signal	31.9	C	31.8	C	<4	<0.8			
		PM		17.9	B	18.1	B	<4	<0.8			
5	Marsh Road & Bohannon Drive/Florence Street	AM	Signal	**58.0**	**E**	**60.4**	**E**	**<4**	**4.9**	**56.7**	**E**	**<0.8**
		PM		52.5	D	53.6	D	<4	1.6	48.3	D	<0.8
6	Marsh Road & Bay Road	AM	Signal	**64.2**	**E**	**64.8**	**E**	<4	<0.8			
		PM		47.6	D	54.9	D	7.3	14.4			
7	Chrysler Drive & Bayfront Expressway	AM	Signal	13.1	B	12.8	B	<4	6.4			
		PM		39.5	D	36.3	D	<4	<0.8			
8	Chilco Street & Bayfront Expressway	AM	Signal	44.5	D	49.2	D	4.7	13.5			
	Chilco Street Eastbound			***112.4***	***F***	***108.9***	***F***	***<4***	***<0.8***			
		PM	Signal	**69.6**	**E**	**66.9**	**E**	**<4**	**<0.8**			

				Cumulative (2040) Conditions								
				GP Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
	Chilco Street Eastbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
9	MPK 21 Driveway & Bayfront Expressway	AM	Signal	5.7	A	5.6	A	<4	<0.8			
		PM		36.3	D	36.1	D	<4	<0.8			
10	MPK 20 Driveway (east) & Bayfront Expressway	AM	Signal	10.0	B	9.9	A	<4	<0.8			
		PM		18.7	B	18.8	B	<4	<0.8			
11	Chrysler Drive & Constitution Drive	AM	Signal	**>120**	**F**	**>120**	**F**	**<4**	**<0.8**			
		PM		**>120**	**F**	**>120**	**F**	**<4**	**<0.8**			
12	Chilco Street & Constitution Drive/MPK 22 Driveway[2]	AM	Signal	**52.9**	**D**	**51.1**	**D**	**<4**	**<0.8**			
		PM		**113.5**	**F**	**101.8**	**F**	**<4**	**<0.8**			
13	Chilco Street & Hamilton Avenue	AM	AWSC	24.5	C	**27.1**	**D**	<4	2.6	*Traffic signal potentially feasible*		
		PM		**>120**	**F**	**>120**	**F**	**24.7**	**24.7**			
14	Ravenswood Avenue & Middlefield Road	AM	Signal	49.7	D	49.7	D	<4	<0.8			
		PM		20.2	C	19.5	B	<4	<0.8			
15	Ringwood Avenue & Middlefield Road	AM	Signal	13.2	B	13.2	B	<4	<0.8			
		PM		21.0	C	21.1	C	<4	<0.8			
16	Willow Road & Bayfront Expressway*[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
17	Willow Road & Hamilton Avenue[1][2]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			

				Cumulative (2040) Conditions								
				GP Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
	Hamilton Avenue Southbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
	Main Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	Hamilton Avenue Southbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
	Main Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***>120***			
18	Willow Road & Park Street (future intersection)[1]	AM	Signal	Project Intersection		**OVERSAT**	**F**	**34.2**	**49.1**	***No feasible Improvement***		
		PM				**OVERSAT**	**F**	**17.2**	**23.1**			
19	Willow Road & Ivy Drive[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**46.2**	**98.7**	**OVERSAT**	**F**	
	Ivy Drive Southbound			***70.9***	***E***	***69.6***	***E***	***<4***	***<0.8***	***61.2***	***E***	***<0.8***
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**80.8**	**102.4**	**OVERSAT**	**F**	
	Ivy Drive Southbound			***68.1***	***E***	***71.7***	***E***	***<4***	***3.6***	*49.0*	*D*	*<0.8*
20	Willow Road & O'Brien Drive[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	O'Brien Drive Northbound			***>120***	***F***	***80.4***	***F***	***<4***	***<0.8***			
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	O'Brien Drive Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
21	Willow Road & Newbridge Street[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**25.9**	**74.2**	**OVERSAT**	**F**	
	Newbridge Street Southbound			***>120***	***F***	***108.8***	***F***	***<4***	***<0.8***	***>120***	***F***	***67.3***
	Newbridge Street Northbound			***>120***	***F***	***>120***	***F***	***101.4***	***>120***	***73.5***	***E***	***<0.8***

#	Intersection	Peak Hour	Traffic Control	Cumulative (2040) Conditions								
				GP Conditions		Project Conditions				With Improvement		
				Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**	**OVERSAT**	**F**	
	Newbridge Street Southbound			***84.3***	***F***	***>120***	***F***	***47.1***	***74.2***	***>120***	***F***	***>120***
	Newbridge Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***	*50.7*	*D*	*<0.8*
22	Willow Road & US 101 Northbound Ramps[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
23	Willow Road & US 101 Southbound Ramps[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
24	Willow Road & Bay Road[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**5.4**	**OVERSAT**	**F**	
	Bay Road Southbound			***>120***	***F***	***>120***	***F***	***30.3***	***30.3***	*27.8*	*C*	*<0.8*
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**	**OVERSAT**	**F**	
	Bay Road Southbound			***75.6***	***E***	***82.7***	***F***	***7.0***	***7.0***	*26.5*	*C*	*<0.8*
25	Willow Road & Hospital Plaza/Durham Street[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**11.0**	**OVERSAT**	**F**	
	VA Medical Center Southbound			***74.8***	***E***	***74.7***	***E***	***<4***	***<0.8***	***74.7***	***E***	***<0.8***
	Durham Street Northbound			***>120***	***F***	***>120***	***F***	***6.0***	***5.4***	***>120***	***F***	***<0.8***
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**1.3**	**OVERSAT**	**F**	
	VA Medical Center Southbound			***74.2***	***E***	***74.5***	***E***	***<4***	***<0.8***	***69.4***	***E***	***<0.8***
	Durham Street Northbound			***88.1***	***F***	***90.3***	***F***	***<4***	***2.8***	***59.9***	***E***	***<0.8***
26	Willow Road & Coleman Avenue	AM	Signal	34.9	C	34.3	C	<4	<0.8			

				Cumulative (2040) Conditions								
				GP Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
		PM		13.1	B	13.2	B	<4	<0.8			
27	Willow Road & Gilbert Avenue	AM	Signal	24.4	C	23.9	C	<4	<0.8			
		PM		14.2	B	14.1	B	<4	<0.8			
28	Willow Road & Middlefield Road	AM	Signal	**64.5**	**E**	**65.0**	**E**	**<4**	**<0.8**			
	Middlefield Road Southbound			***69.9***	***E***	***70.4***	***E***	***<4***	***<0.8***			
	Middlefield Road Northbound			***67.4***	***E***	***67.2***	***E***	***<4***	***<0.8***			
		PM	Signal	42.5	D	42.4	D	<4	<0.8			
	Middlefield Road Southbound			*42.1*	*D*	*42.2*	*D*	*<4*	*<0.8*			
	Middlefield Road Northbound			*40.6*	*D*	*40.8*	*D*	*<4*	*<0.8*			

				Cumulative (2040) Conditions								
				GP Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]
29	O'Brien Drive/Loop Road & Main Street/O'Brien Drive (future intersection)	AM	Rdbt	Project Intersection		8.8	A	8.8	8.8			
		PM				11.0	B	11.0	11.0			
30	O'Brien Drive & Kavanaugh Drive	AM	AWSC	**>120**	**F**	**>120**	**F**	**105.8**	**105.8**	*Traffic signal potentially feasible*		
		PM		**>120**	**F**	**>120**	**F**	**<4**	**<0.8**			
31	Adams Drive & Adams Court	AM	TWSC	20.1	C	17.8	C	<4	<0.8			
		PM		16.4	C	12.7	B	<4	<0.8			
32	Adams Drive & O'Brien Drive	AM	TWSC	**62.4**	**F**	**>120**	**F**	**>120**	**>120**	*Traffic signal potentially feasible*		
		PM		**>120**	**F**	**>120**	**F**	**>120**	**>120**			
33	University Avenue & Bayfront Expressway*	AM	Signal	14.8	B	13.3	B	<4	<0.8			
		PM		**>120**	**F**	**>120**	**F**	**<4**	**2.9**			

* Denotes CMP Intersection

AWSC - All Way Stop Control; TWSC - Two Way Stop Control; GP - General Plan; Rdbt = Roundabout

[1] Average delay is reported for signalized and AWSC intersections. For TWSC intersections, the delay for the worst stop-controlled movement is reported

"OVERSAT" indicates that the SimTraffic microsimulation model indicates that the intersection would experience capacity issues where the demand cannot be served by the intersection. Oversaturated intersections would operate at LOS F.

[1]Intersections were analyzed using Synchro/SimTraffic software due to the close proximity of these intersections. Changes in average delay and critical delay calculated using Vistro.

[2]The intersection is not considered as non-compliant under cumulative plus project conditions because the critical movement of the local approach shifts with the addition of project traffic.

Bold indicates substandard level of service

Bold indicates noncompliance. The project exceeds thresholds in the City of Menlo Park's TIA Guidelines. These are not CEQA thresholds.

Table 3.3-13. Cumulative (2040) Intersection Levels of Service (East Palo Alto)

				Cumulative (2040) Conditions							
				General Plan Conditions		with Project				With Improvement	
#	Intersection	Peak Hour	Traffic Control	Avg Delay (secs)[1]	LOS	Avg Delay (secs)[1]	LOS	Incr. in Avg/Crit Delay (sec)[1]	Incr. in Crit V/C	Avg Delay (secs)[1]	LOS
34	University Avenue & Purdue Avenue	AM	Signal	25.9	C	28	C	0.8	0.017		
		PM		37.1	D	40.8	D	4.2	0.031		
35	University Avenue & Adams Drive	AM	TWSC	**>120**	**F**	**>120**	**F**	**1.4**	**0.253**		
		PM		**>120**	**F**	**>120**	**F**	**-7.3**	**-0.130**		
36	University Avenue & O'Brien Drive	AM	Signal	21.1	C	43.1	D	29.3	0.245		
		PM		21.3	C	32.6	C	14.1	0.175		
37	University Avenue & Notre Dame Avenue	AM	Signal	8.0	A	10.6	B	3.1	0.070		
		PM		12.2	B	15.6	B	4.1	0.038		
38	University Avenue & Kavanaugh Drive	AM	Signal	26.8	C	17.5	B	-12.1	-0.110		
		PM		23.1	C	24.8	C	0.8	0.009		
39	University Avenue & Bay Road	AM	Signal	48.8	D	53.5	D	8.9	0.054		
		PM		**68.3**	**E**	**69.0**	**E**	**-1.9**	**-0.008**		
40	University Avenue & Runnymede Street	AM	Signal	9.7	A	11.7	B	11	0.075		
		PM		8.9	A	8.9	A	3.6	0.102		
41	University Avenue & Bell Street	AM	Signal	14.9	B	16.2	B	2	0.067		
		PM		26.4	C	34.8	C	13.4	0.069		
42	University Avenue & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**-1.4**	**-0.002**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**-4.9**	**-0.009**		
43	US 101 Northbound Off-Ramp & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**77.2**	**0.158**		
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**46.5**	**0.102**	***Corridor Improvement***	
44	Cooley Avenue & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**29.3**	**0.091**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**63.7**	**0.143**		

				Cumulative (2040) Conditions							
				General Plan Conditions		with Project				With Improvement	
#	Intersection	Peak Hour	Traffic Control	Avg Delay (secs)[1]	LOS	Avg Delay (secs)[1]	LOS	Incr. in Avg/Crit Delay (sec)[1]	Incr. in Crit V/C	Avg Delay (secs)[1]	LOS
45	University Avenue & US 101 Southbound Ramps*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**-2.0**	**-0.004**		
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**6.7**	**0.016**	***Corridor Improvement***	
46	University Avenue & Woodland Avenue*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**14.1**	**0.040**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**19.1**	**0.045**		
47	University Avenue & Middlefield Road	AM	Signal	36.3	D	36.2	D	0	0.007		
		PM		37.0	D	37.0	D	0.1	0.006		
48	Lytton Avenue & Middlefield Road	AM	Signal	50.8	D	50.8	D	0.1	0.001		
		PM		**88.7**	**F**	**90.0**	**F**	**1.6**	**0.004**		
47	E. Bayshore Road & Donahoe Street*	AM	Signal	**>120**	**F**	**>120**	**F**	**-22.4**	**-0.048**	***Corridor Improvement***	
		PM		**>120**	**F**	**>120**	**F**	**-5.3**	**-0.011**		
48	E. Bayshore Road & Holland Street	AM	TWSC	8.8	A	8.8	A	0.0	0.000		
		PM		10.0	A	10.0	A	0.0	0.000		
49	Saratoga Avenue & Newbridge Street	AM	TWSC	**>120**	**F**	**>120**	**F**	**9.8**	**0.061**	***No Feasible Improvement***	
		PM		**40.0**	**E**	28.6	D	**-2.2**	**-0.120**		
50	E. Bayshore Road & Euclid Avenue*	AM	AWSC	**OVERSAT**	**F**	**OVERSAT**	**F**	**53.8**	**0.057**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**-2.7**	**-0.009**		
51	Clarke Avenue & E. Bayshore Road	AM	Signal	14.1	B	14.2	B	0.2	0.014		
		PM		13.9	B	14.0	B	0.2	0.007		
52	Pulgas Avenue & E. Bayshore Road	AM	Signal	25.4	C	26.5	C	1.4	0.017		
		PM		48.1	D	47.3	D	-0.4	-0.002		

*Denotes a CMP intersection
AWSC - All Way Stop Control; TWSC - Two Way Stop Control

				Cumulative (2040) Conditions							
				General Plan Conditions		with Project				With Improvement	
#	Intersection	Peak Hour	Traffic Control	Avg Delay (secs)[1]	LOS	Avg Delay (secs)[1]	LOS	Incr. in Avg/Crit Delay (sec)[1]	Incr. in Crit V/C	Avg Delay (secs)[1]	LOS

[1]Average delay is reported for signalized and AWSC intersections. For TWSC intersections, the delay for the worst stop-controlled movement is reported.

[2]Intersection is signalized under cumulative conditions.
"OVERSAT" indicates that the SimTraffic microsimulation model indicates that the intersection would experience capacity issues where the demand cannot be served by the intersection. Oversaturated intersections would operate at LOS F.
*Intersections were analyzed using Synchro/SimTraffic software due to the close proximity of these intersections. Changes in critical delay and v/c calculated using Traffix.

Bold indicates substandard level of service

Bold indicates adverse effect

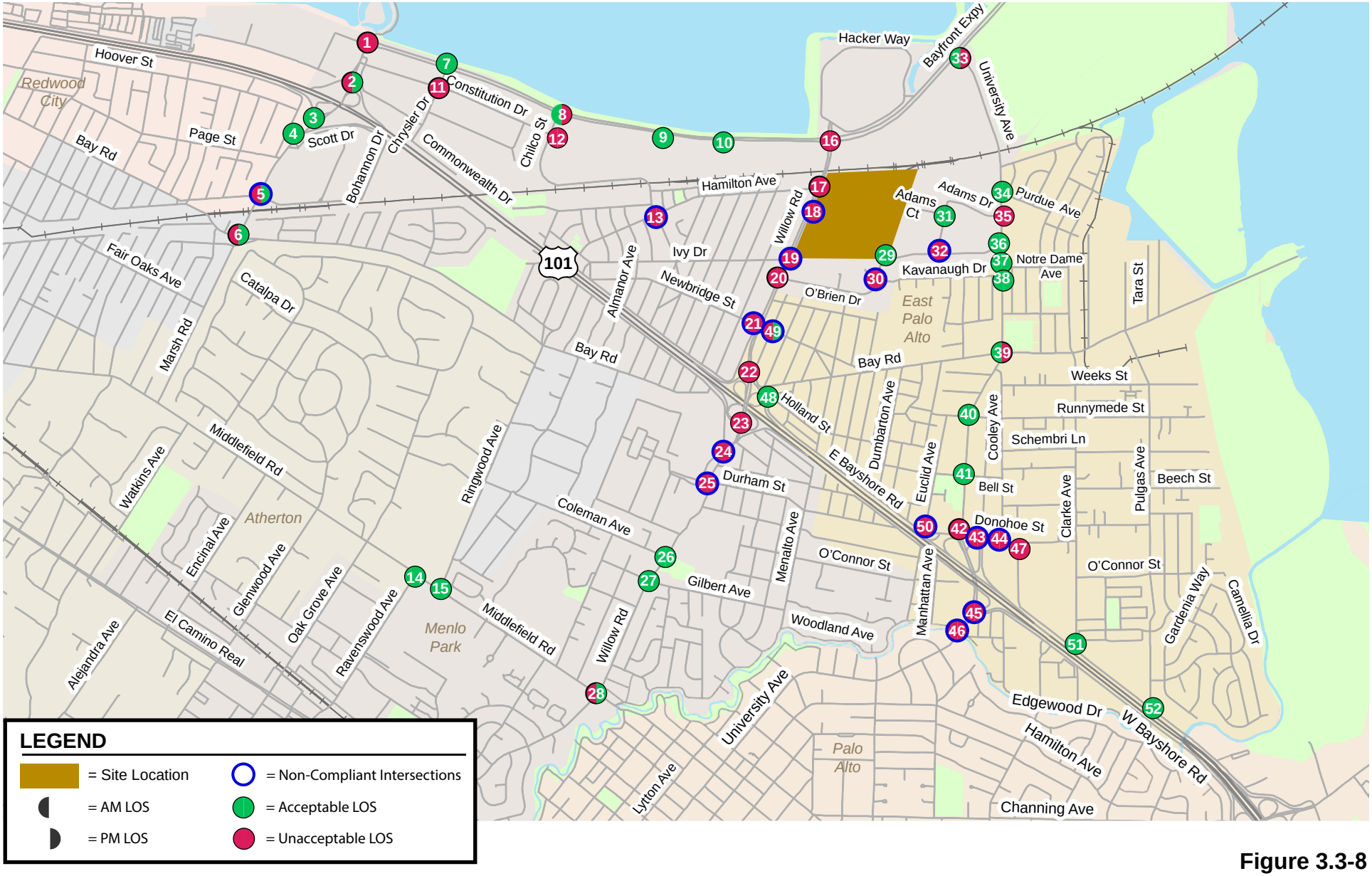


Figure 3.3-8
Cumulative (2040) Plus Project Intersection Level of Service Summary

Adverse Effects and Recommended Improvements

For intersections that are non-compliant under both near-term plus project conditions and cumulative plus project conditions, the recommended improvements proposed under near term plus project conditions would be sufficient to address cumulative non-compliance. Improvements for intersections that are non-compliant only under cumulative plus project conditions are described below.

Marsh Road and Bohannon Drive/Florence Street

This intersection is expected to operate at an unacceptable LOS E during the AM peak hour and an acceptable LOS D during the PM peak hour under cumulative conditions. The addition of Project traffic would cause the average critical delay to increase by more than 0.8 during the AM peak hour. The intersection would continue to operate at an acceptable LOS D during the PM peak hour. This constitutes non-compliance during the AM peak hour according to the thresholds established by the City of Menlo Park.

Modification of the westbound approach at this intersection to a left-turn lane, two through lanes, and a right-turn lane would improve the average delay to better than cumulative no project conditions. Menlo Park's TIF program proposes Class II buffered bike lanes along Marsh Road from Bay Road to Scott Road in both directions and the removal of on-street parking in the eastbound direction. The restriping of the vehicle travel lanes to include a westbound right-turn only lane and the proposed Class II buffered bike lane would require narrowing the travel lanes to 11 feet and removal of the median. While this is possible, removal of the median would require removing at least one tree as well as the signal pole in the median. Upgrades to at least one mast arm would be required to replace the removed median signal. Physical improvements at this intersection are considered infeasible due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel. The City's TIF program includes multi-modal improvements along the Marsh Road corridor such as Class II buffered bike lanes along Marsh Road from Bay Road to Scott Road, and installing sidewalks along the north-side of Marsh Road between Page Street and Bohannon Drive/Florence Street. Implementing recommended multi-modal facilities along the corridor (from the City's TIF program) could shift some motor vehicle traffic to alternative modes of travel and reduce congestion. With implementation of these multi-modal improvements, the intersection deficiencies could be further reduced and partially address the Proposed Project's share of the non-compliant operations at this intersection.

Willow Road and Ivy Drive

Willow Road and Ivy Drive is an intersection on the Willow Road Corridor, which is expected to experience capacity issues due to unserved demand at the intersections. This intersection would operate unacceptably under cumulative conditions during both peak hours. With the addition of Project traffic, it would continue to operate unacceptable during both peak hours. In the PM peak hour, the increase in the critical movement delay of the local approach would be greater than 0.8 seconds. This constitutes non-compliance during the PM peak hour according to the thresholds established by the City of Menlo Park.

The Menlo Park TIF proposes to install a right-turn overlap phase on southbound Ivy Drive and restrict eastbound Willow Road U-turns. This would improve the critical movement delay of the local approach to better than cumulative no project conditions. The Project is required to pay traffic impact fees according to the City's current TIF schedule.

Willow Road and Hospital Plaza/Durham Street

Willow Road and Hospital Plaza/Durham Street is an intersection on the Willow Road Corridor, which is expected to experience capacity issues due to unserved demand at the intersections. This intersection would operate unacceptably under cumulative conditions during both peak hours. With the addition of Project traffic, it would continue to operate unacceptably during both peak hours. In the AM and PM peak hour, the increase in the critical movement delay of the local approach would be greater than 0.8 seconds. This constitutes non-compliance during both peak hours according to the thresholds established by the City of Menlo Park.

The recommended improvement measure for this intersection is restriping northbound Durham Street as a shared left-through lane and right-turn lane, and adding a northbound right turn overlap phase. With this improvement, the critical movement delay of the local approach would improve to better than cumulative no project conditions in the AM peak hour. The PM peak hour would continue to be non-compliant. If this recommended improvement measure is implemented, the Project should contribute its fair share (25%) towards the improvement. Fair share is calculated as the percentage of net project traffic generated of the overall cumulative traffic growth at this intersection.

University Avenue and Woodland Avenue

University Avenue and Woodland Avenue is in the vicinity of the US 101/University Avenue interchange and is expected to experience capacity issues due to unserved demand at the intersections. This intersection would operate unacceptably under cumulative conditions during both peak hours. With the addition of Project traffic, it would continue to operate unacceptably during both peak hours. In the AM and PM peak hour, the increase in the average critical delay would be greater than four seconds and the increase in the volume to capacity ratio would be greater than 0.01. This constitutes non-compliance during both peak hours according to the thresholds established by the City of East Palo Alto.

The recommended Donohoe Street improvements (see Appendix 3.3, Transportation, of this EIR) at Euclid Avenue and at the US 101 northbound on-ramp would improve traffic flow on University Avenue and eliminate the queue spillback that extends from Donohoe Street past Woodland Avenue. While the University Avenue and Woodland Avenue intersection is expected to continue to operate at LOS F during both peak hours, the Donohoe Street improvements would reduce the average delay at the intersection below cumulative conditions without the Project. With these improvements, the intersection would comply with the City of East Palo Alto's level of service policy. As discussed under the background plus Project discussion above, the project would pay its fair share costs towards the intersection improvements at the 6 intersections of the University Avenue/Donohoe Street/US 101 corridor.

Saratoga Avenue and Newbridge Street

This intersection is expected to operate at an acceptable LOS F during the AM peak hour and an unacceptable LOS E during the PM peak hour under cumulative conditions. With the addition of Project traffic, the intersection average critical delay at the intersection would increase by four seconds and the volume to capacity ratio would increase by 0.01 during the AM peak hour. This constitutes as non-compliance during the AM peak hour according to the thresholds established by the City of East Palo Alto.

Since the intersection currently operates as two-way-stop-controlled, potential modification to bring the intersection to pre-project conditions would be to signalize it. The intersection would meet the MUTCD signal warrant during both peak hours under project conditions (see Appendix 3.3, Transportation, of this EIR). With this improvement, the intersection would operate acceptably at LOS C during the AM peak hour

and LOS B during the PM peak hour under cumulative plus project conditions. However, since the intersection is located only 200 feet south of Willow Road, signalization is not recommended. Short of signalization, no other improvements are feasible. Furthermore, given this intersection is located outside of the City of Menlo Park, the City cannot ensure implementation of any improvements. This intersection is also not listed with improvements in the City of East Palo Alto TIF.

Bayshore Road and Euclid Avenue

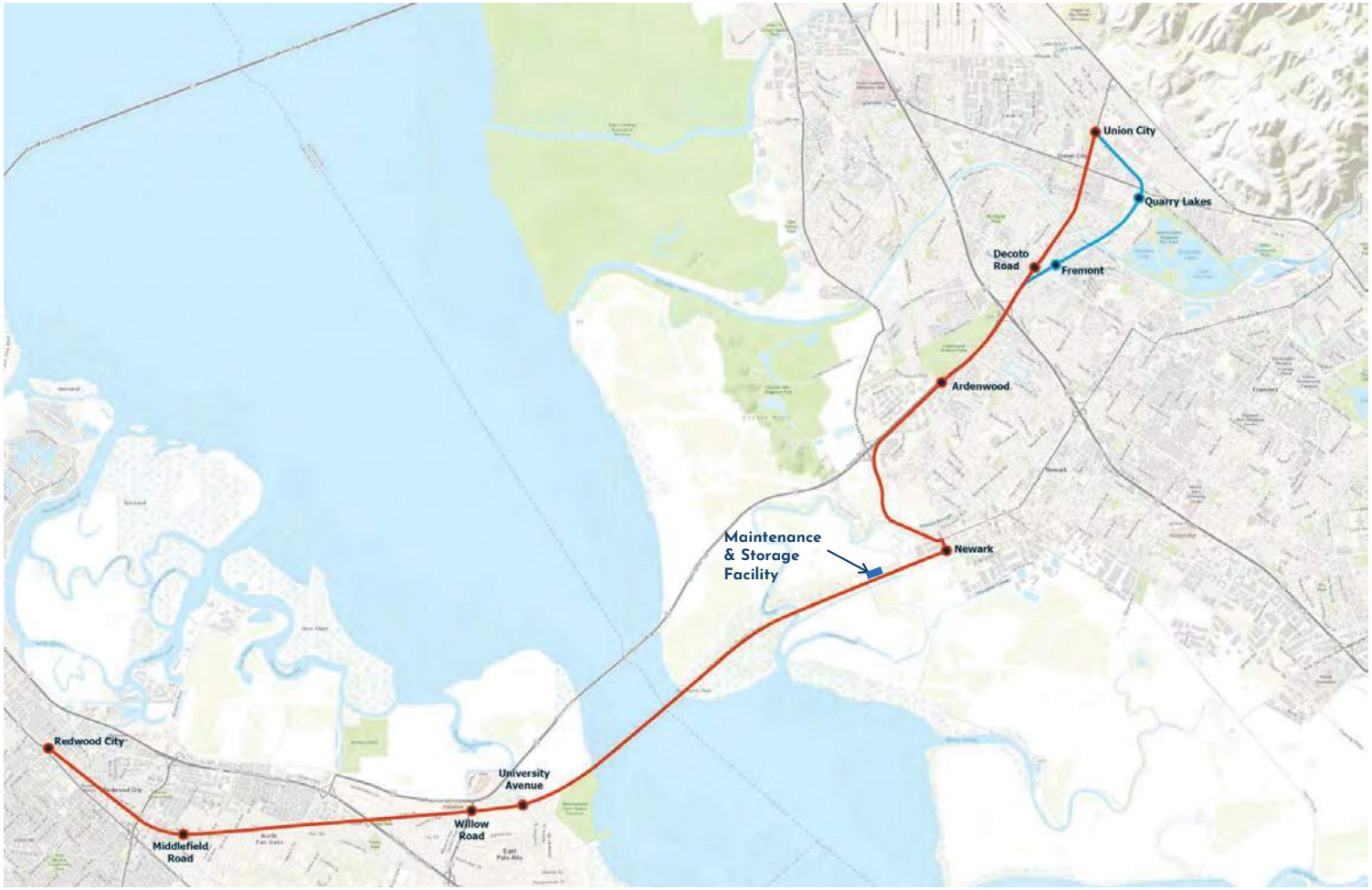
Bayshore Road and Euclid Avenue is in the vicinity of the US 101/University Avenue interchange and is expected to experience capacity issues due to unserved demand at the intersections. This intersection would operate unacceptably under cumulative conditions during both peak hours. With the addition of Project traffic, it would continue to operate unacceptably during both peak hours. In the AM peak hour, the increase in the average critical delay would be greater than four seconds and the increase in the volume to capacity ratio would be greater than 0.01. This constitutes non-compliance during the AM peak hour according to the thresholds established by the City of East Palo Alto.

Since the intersection currently operates as all-way-stop-controlled, potential modification to bring the intersection to pre-project conditions would be to signalize it and add a westbound right turn only lane. This improvement is included in the recommended Donohoe Street improvements (see Appendix 3.3, Transportation, of this EIR). The proposed improvements at Euclid Avenue and at the US 101 northbound on-ramp would improve traffic flow on University Avenue and eliminate the queue spillback that extends from Donohoe Street past Woodland Avenue. This would reduce the average delay at the intersection below cumulative conditions without the project. With these improvements, the intersection would be in compliance with the City of East Palo Alto's level of service policy. As discussed under the background plus project discussion above, the Project would pay its fair share costs towards the intersection improvements at the 6 intersections of the University Avenue/Donohoe Street/US 101 corridor, which includes the intersection at Bayshore Road and Euclid Avenue.

Cumulative (2040) Plus Project with Dumbarton Rail Intersection Levels of Service

Dumbarton rail service has not been designed, subjected to environmental review, approved, or funded. As a result, future Dumbarton rail service is speculative at this time and might or might not occur. If it does occur, capacity, frequency, ridership and other operational features are unknown at this time. As a result, any forecast of potential future traffic with Dumbarton rail service is speculative. The following analysis is provided for informational purposes to give the public and decision makers an idea of what impact Dumbarton rail might have on traffic based on a specific set of ridership assumptions. These impacts would occur instead of the impact identified above under Cumulative (2040) Plus Project Intersection Levels of Service.

Based on the *Dumbarton Rail Corridor Update* in March 2021, preliminary forecasts suggest that under 2040 conditions, the high-end ridership projections for the highest-ridership alternative would be around 24,300 riders per day. In comparison, the low-end ridership projections for the lowest-ridership alternative would be around 14,600 riders per day. As shown in Figure 3.3-9, Potential Dumbarton Rail Corridor Alignment, this highest ridership forecast would be realized over a potential corridor with 10 stations located between downtown Redwood City and the Union City BART station. It should be noted that this potential corridor includes a stop on Willow Road just north of the proposed Project Site. At the time of this study's initiation, the ability to park-and-ride at the stations along this potential corridor was not available.



San Mateo County TRANSIT DISTRICT

LEGEND

= Primary Alignment

= Alternative Alignment

LRT, BRT, & AVT Alignment

Note: Alignments and stations are being studied for technical feasibility in regards to engineering, operations, land use, city and agency coordination

Figure 3.3-9
Proposed Dumbarton Rail Corridor Alignment

This study assumed the highest ridership projections as well as no park-and-ride capability at the stations. More ridership along the Dumbarton Rail corridor would mean lower traffic volumes. Therefore, the assumptions of this study would equate to evaluating the largest potential reduction in traffic volumes assuming the operation of Dumbarton Rail service.

To represent the daily ridership in the model, daily travel between TAZs within a quarter-mile radius of the stations was reduced by 24,300 daily person-level driving trips, or roughly 19,000 daily vehicular-trips. During a one-hour peak hour, based on the highest ridership projections, the Dumbarton Rail corridor would reduce approximately 1,900 peak hour vehicular trips, of which approximately half of the trip reduction would occur within the study area. These trips are assumed to be between TAZ sets within a quarter-mile radius of different stations, as the stations are assumed to not contain park-and-ride capabilities. A quarter-mile radius from the stations represents walkable distances to the stations.

A cumulative with Dumbarton rail scenario was evaluated where the model assumed the operation of potential Dumbarton Rail service. The purpose of this scenario was to provide information on the possible effects of future Dumbarton Rail on the transportation network based on the assumptions made herein about such future service. The Dumbarton Rail was estimated to reduce the Proposed Project's vehicular trip generation by approximately 4%. A cumulative plus project with Dumbarton Rail scenario was compared against the cumulative with Dumbarton Rail scenario to inform the potential effects of the Project-generated traffic assuming potential Dumbarton Rail service. Assumptions included in the Dumbarton rail scenarios are detailed in Appendix 3.3, Transportation, of this EIR.

The results of the intersection level of service analysis under near cumulative (2040) plus project conditions with the Dumbarton rail are summarized in Tables 3.3-14 and 3.3-15. Compared to cumulative plus project conditions without the Dumbarton Rail, the delay at all of the intersections would improve with Dumbarton Rail. While the overall motor vehicle operations would experience reduced delay with Dumbarton Rail, when evaluating for intersection LOS compliance, the determination is based on the relative increase in delay due to the Project compared to no project conditions (cumulative conditions with Dumbarton Rail). Comparing "cumulative plus project with Dumbarton Rail" conditions to "cumulative plus project without Dumbarton Rail" conditions, the following study intersection would no longer be non-compliant:

25. Willow Road & Durham Street

The following additional study intersections would be non-compliant under cumulative plus project conditions with the Dumbarton rail as compared to cumulative plus project conditions without the Dumbarton Rail:

6. Marsh Road and Bay Road (AM peak hour)

11. Chrysler Drive and Constitution Drive (AM peak hour)

16. Willow Road and Bayfront Expressway (AM peak hour)

Under cumulative conditions with or without the Project, the road network is over saturated. Since the Dumbarton rail would reduce vehicular traffic (i.e. 1,900 peak hour trips) in the area due to the increase in transit mode share, the Menlo Park Travel Demand model assigns more Project-generated traffic at some intersections where vehicular capacity is now available. Menlo Park's level of service standards and adverse effect criteria are very stringent where a small change in traffic can trigger a non-compliance at an intersection. Therefore, the relative increase in delay due to the Project at some intersections between "cumulative with Dumbarton Rail" and "cumulative plus project with Dumbarton Rail" would be greater than the Menlo Park threshold, causing additional intersections to be non-compliant under cumulative plus project conditions with the Dumbarton rail.

Table 3.3-14. Cumulative (2040) With Dumbarton Rail Intersection Levels of Service (Menlo Park)

				Cumulative Conditions (With Dumbarton Rail)								
				No Project Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Critical Delay
1	Marsh Road & Bayfront Expressway*	AM	Signal	**68.5**	**E**	**65.3**	**E**	**<4**	**<0.8**			
	Haven Avenue Southbound			***70.5***	***E***	***71.7***	***E***	***<4***	***<0.8***			
		PM	Signal	**63.2**	**E**	**72.8**	**E**	**9.6**	**11.4**			
	Haven Avenue Southbound			***67.6***	***E***	***67.6***	***E***	***<4***	***<0.8***			
2	Marsh Road & US 101 Northbound Off-Ramp	AM	Signal	**60.7**	**E**	**61.9**	**E**	**<4**	**1.4**			
		PM		22.9	C	22.7	C	<4	<0.8			
3	Marsh Road & US 101 Southbound Off-Ramp	AM	Signal	22.8	C	22.6	C	<4	<0.8			
		PM		19.2	B	18.7	B	<4	<0.8			
4	Marsh Road & Scott Drive	AM	Signal	31.2	C	30.4	C	<4	<0.8			
		PM		17.8	B	17.8	B	<4	<0.8			
5	Marsh Road & Bohannon Drive /Florence Street	AM	Signal	**57.8**	**E**	**58.7**	**E**	**<4**	**2.7**	**55.1**	**E**	**<0.8**
		PM		51.5	D	53.1	D	<4	2.7	48.1	D	<0.8
6	Marsh Road & Bay Road	AM	Signal	54.5	D	**63.5**	**E**	**9.0**	**18.9**	***No feasible Improvement***		
		PM		47.9	D	51.2	D	<4	6.8			
7	Chrysler Drive & Bayfront Expressway	AM	Signal	13.0	B	12.5	B	<4	6.0			
		PM		38.3	D	33.5	C	<4	<0.8			
8	Chilco Street & Bayfront Expressway	AM	Signal	43.2	D	45.5	D	<4	7.3			

				Cumulative Conditions (With Dumbarton Rail)								
				No Project Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Critical Delay
	Chilco Street Eastbound			***116.3***	***F***	***108.8***	***F***	***<4***	***<0.8***			
		PM	Signal	**68.3**	**E**	**65.6**	**E**	**<4**	**<0.8**			
	Chilco Street Eastbound			*>120*	*F*	***>120***	***F***	***<4***	***<0.8***			
9	MPK 21 Driveway & Bayfront Expressway	AM	Signal	5.7	A	5.6	A	<4	<0.8			
		PM		36.3	D	36.1	D	<4	<0.8			
10	MPK 20 Driveway (east) & Bayfront Expressway	AM	Signal	10.1	B	9.9	A	<4	<0.8			
		PM		18.6	B	18.8	B	<4	<0.8			
11	Chrysler Drive & Constitution Drive	AM	Signal	**>120**	**F**	**>120**	**F**	**31.2**	**50.3**	***No feasible Improvement***		
		PM	Signal	**>120**	**F**	**>120**	**F**	**<4**	**<0.8**			
12	Chilco Street & Constitution Drive/MPK 22 Driveway[2]	AM	Signal	**50.1**	**D**	**53.9**	**D**	**<4**	**<0.8**			
		PM		**111.8**	**F**	**99.2**	**F**	**<4**	**<0.8**			
13	Chilco Street & Hamilton Avenue	AM	AWSC	23.6	C	24.3	C	<4	<0.8	*Traffic signal potentially feasible*		
		PM		**>120**	**F**	**>120**	**F**	**18.2**	**18.2**			
14	Ravenswood Avenue & Middlefield Road	AM	Signal	49.7	D	49.7	D	<4	<0.8			
		PM		20.3	C	19.5	B	<4	<0.8			
15	Ringwood Avenue & Middlefield Road	AM	Signal	13.2	B	13.2	B	<4	<0.8			
		PM		21.0	C	21.1	C	<4	<0.8			

				Cumulative Conditions (With Dumbarton Rail)								
				No Project Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Critical Delay
16	Willow Road & Bayfront Expressway*[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**5.3**	**<0.8**	***No feasible Improvement***		
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
17	Willow Road & Hamilton Avenue[1][2]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	Hamilton Avenue Southbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
	Main Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	Hamilton Avenue Southbound			***>120***	***F***	***>120***	***F***	***27.4***	***<0.8***			
	Main Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***>120***			
18	Willow Road & Park Street (future intersection)[1]	AM	Signal	Project Intersection		**OVERSAT**	**F**	**33.6**	**47.8**	***No feasible Improvement***		
		PM				**OVERSAT**	**F**	**16.2**	**21.7**			
19	Willow Road & Ivy Drive[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**52.0**	**105.8**	**OVERSAT**	**F**	
	Ivy Drive Southbound			***72.8***	***E***	***69.6***	***E***	***<4***	***<0.8***	***61.3***	***E***	***<0.8***
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**85.2**	**107.3**	**OVERSAT**	**F**	
	Ivy Drive Southbound			***65.2***	***E***	***71.7***	***E***	***6.5***	***7.9***	***60.4***	***E***	***<0.8***
20	Willow Road & O'Brien Drive[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	O'Brien Drive Northbound			***108.2***	***F***	***80.4***	***F***	***<4***	***<0.8***			
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			

				Cumulative Conditions (With Dumbarton Rail)								
				No Project Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Critical Delay
	O'Brien Drive Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
21	Willow Road & Newbridge Street[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**31.5**	**97.3**	**OVERSAT**	**F**	
	Newbridge Street Southbound			***115.1***	***F***	***108.8***	***F***	***<4***	***<0.8***	***>120***	***F***	***103.1***
	Newbridge Street Northbound			***>120***	***F***	***>120***	***F***	***>120***	***>120***	*23.2*	*C*	*<0.8*
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**	**OVERSAT**	**F**	
	Newbridge Street Southbound			***83.5***	***F***	***>120***	***F***	***42.8***	***67.4***	***>120***	***F***	***101.1***
	Newbridge Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***	*31.2*	*C*	*<0.8*
22	Willow Road & US 101 Northbound Ramps[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
23	Willow Road & US 101 Southbound Ramps[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
24	Willow Road & Bay Road[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**6.7**	**OVERSAT**	**F**	
	Bay Road Southbound			***>120***	***F***	***>120***	***F***	***36.1***	***36.1***	*27.6*	*C*	*<0.8*
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**	**OVERSAT**	**F**	
	Bay Road Southbound			***74.5***	***E***	***81.7***	***F***	***7.2***	***7.2***	*26.5*	*C*	*<0.8*
25	Willow Road & Hospital Plaza/ Durham Street[1]	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			

				Cumulative Conditions (With Dumbarton Rail)								
				No Project Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Critical Delay
	VA Medical Center Southbound			***74.7***	***E***	***74.7***	***E***	***<4***	***<0.8***			
	Durham Street Northbound			***>120***	***F***	***>120***	***F***	***<4***	***<0.8***			
		PM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**<4**	**<0.8**			
	VA Medical Center Southbound			***74.2***	***E***	***74.0***	***E***	***<4***	***<0.8***			
	Durham Street Northbound			***88.1***	***F***	***88.1***	***F***	***<4***	***<0.8***			
26	Willow Road & Coleman Avenue	AM	Signal	33.9	C	33.6	C	<4	3.4			
		PM		13.1	B	13.2	B	<4	<0.8			
27	Willow Road & Gilbert Avenue	AM	Signal	23.7	C	23.4	C	<4	<0.8			
		PM		14.1	B	13.9	B	<4	<0.8			
28	Willow Road & Middlefield Road	AM	Signal	**64.4**	**E**	**64.8**	**E**	**<4**	**0.8**			
	Middlefield Road Southbound			***69.8***	***E***	***70.0***	***E***	***<4***	***<0.8***			
	Middlefield Road Northbound			***67.4***	***E***	***67.2***	***E***	***<4***	***<0.8***			
		PM	Signal	42.5	D	42.3	D	<4	<0.8			
	Middlefield Road Southbound			*42.1*	*D*	*42.1*	*D*	*<4*	*<0.8*			
	Middlefield Road Northbound			*40.6*	*D*	*40.7*	*D*	*<4*	*<0.8*			
29	O'Brien Drive/Loop Road & Main Street/O'Brien Drive (future intersection)	AM	Rdbt	Project Intersection		8.4	A	8.4	8.4			
		PM				10.2	B	10.2	10.2			

				Cumulative Conditions (With Dumbarton Rail)								
				No Project Conditions		Project Conditions				With Improvement		
#	Intersection	Peak Hour	Traffic Control	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Delay	Incr. in Avg. Critical Delay	Avg. Delay (sec)[1]	LOS	Incr. in Avg. Critical Delay
30	O'Brien Drive & Kavanaugh Drive	AM	AWSC	**>120**	**F**	**>120**	**F**	**>120**	**>120**	*Traffic signal potentially feasible*		
		PM		**>120**	**F**	**>120**	**F**	**10.9**	**10.9**			
31	Adams Drive & Adams Court	AM	TWSC	18.9	C	17.3	C	<4	<0.8			
		PM		15.8	C	12.6	B	<4	<0.8			
32	Adams Drive & O'Brien Drive	AM	TWSC	**47.2**	**E**	**>120**	**F**	**>120**	**>120**	*Traffic signal potentially feasible*		
		PM		**>120**	**F**	**>120**	**F**	**>120**	**>120**			
33	University Avenue & Bayfront Expressway*	AM	Signal	14.7	B	13.1	B	<4	<0.8			
		PM		**>120**	**F**	**>120**	**F**	**<4**	**<0.8**			

* Denotes CMP Intersection

AWSC - All Way Stop Control; TWSC - Two Way Stop Control; GP - General Plan; Rdbt - Roundabout

[1] Average delay is reported for signalized and AWSC intersections. For TWSC intersections, the delay for the worst stop-controlled movement is reported

"OVERSAT" indicates that the SimTraffic microsimulation model indicates that the intersection would experience capacity issues where the demand cannot be served by the intersection. Oversaturated intersections would operate at LOS F.

[1]Intersections were analyzed using Synchro/SimTraffic software due to the close proximity of these intersections. Changes in average delay and critical delay calculated using Vistro.

[2]The intersection is not considered as non-compliant under cumulative plus project conditions because the critical movement of the local approach shifts with the addition of project traffic.

Bold indicates substandard level of service

Bold indicates noncompliance. The project exceeds thresholds in the City of Menlo Park's TIA Guidelines. These are not CEQA thresholds.

Table 3.3-15. Cumulative (2040) With Dumbarton Rail Intersection Levels of Service (East Palo Alto)

				Cumulative (2040) Conditions (Dumbarton Rail)							
				No Project		with Project				With Improvement	
#	Intersection	Peak Hour	Traffic Control	Avg Delay (secs)[1]	LOS	Avg Delay (secs)[1]	LOS	Incr. in Avg/Crit Delay (sec)[1]	Incr. in Crit V/C	Avg Delay (secs)[1]	LOS
34	University Avenue & Purdue Avenue	AM	Signal	25.9	C	22.3	C	-3.8	-0.071		
		PM		28.0	C	24.2	C	-3.6	-0.081		
35	University Avenue & Adams Drive	AM	TWSC	**>120**	**F**	**>120**	**F**	**1.5**	**0.322**		
		PM		**>120**	**F**	**>120**	**F**	**-6.9**	**-0.122**		
36	University Avenue & O'Brien Drive	AM	Signal	20.4	C	38.7	D	24.3	0.225		
		PM		20.1	C	31.4	C	14.4	0.176		
37	University Avenue & Notre Dame Avenue	AM	Signal	8.0	A	10.6	B	3.1	0.070		
		PM		11.3	B	14.8	B	4.1	0.036		
38	University Avenue & Kavanaugh Drive	AM	Signal	24.7	C	17.5	B	3.1	0.070		
		PM		22.7	C	23.5	C	4.4	0.039		
39	University Avenue & Bay Road	AM	Signal	47.4	D	52	D	8.4	0.056		
		PM		**64.0**	**E**	**67.7**	**E**	**3.7**	**0.012**		
40	University Avenue & Runnymede Street	AM	Signal	9.4	A	10.9	B	8.1	0.062		
		PM		8.9	A	8.9	A	3.5	0.100		
41	University Avenue & Bell Street	AM	Signal	14.9	B	15.9	B	1.6	0.055		
		PM		26.1	C	32.9	C	10.9	0.062		
42	University Avenue & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**4.6**	**0.011**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**-4.9**	**-0.009**		
43	US 101 Northbound Off-Ramp & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**77.2**	**0.158**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**48.9**	**0.108**		
44	Cooley Avenue & Donohoe Street*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**27.2**	**0.085**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**62.9**	**0.143**		

				Cumulative (2040) Conditions (Dumbarton Rail)							
				No Project		with Project				With Improvement	
#	Intersection	Peak Hour	Traffic Control	Avg Delay (secs)[1]	LOS	Avg Delay (secs)[1]	LOS	Incr. in Avg/Crit Delay (sec)[1]	Incr. in Crit V/C	Avg Delay (secs)[1]	LOS
45	University Avenue & US 101 Southbound Ramps*	AM	Signal	**OVERSAT**	**F**	**OVERSAT**	**F**	**-2.5**	**-0.005**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**7.0**	**0.017**		
46	University Avenue & Woodland Avenue*	AM	Signal	**OVERSAT**	**E**	**OVERSAT**	**E**	**14.1**	**0.040**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**12.0**	**0.028**		
47	E. Bayshore Road & Donahoe Street*	AM	Signal	**>120**	**F**	**>120**	**F**	**-8.8**	**-0.019**	***Corridor Improvement***	
		PM		**>120**	**F**	**>120**	**F**	**-4.9**	**-0.010**		
48	E. Bayshore Road & Holland Street	AM	TWSC	8.8	A	8.8	A	0.0	0.000		
		PM		10.0	A	10.0	A	0.0	0.000		
49	Saratoga Avenue & Newbridge Street	AM	TWSC	**>120**	**F**	**>120**	**F**	**4.7**	**0.075**	***No Feasible Improvement***	
		PM		**37.2**	**E**	25.0	D	-2.6	-0.103		
50	E. Bayshore Road & Euclid Avenue*	AM	AWSC	**OVERSAT**	**F**	**OVERSAT**	**F**	**42.4**	**0.062**	***Corridor Improvement***	
		PM		**OVERSAT**	**F**	**OVERSAT**	**F**	**-5.7**	**-0.016**		
51	Clarke Avenue & E. Bayshore Road	AM	Signal	14.1	B	14.2	B	0.1	0.008		
		PM		13.9	B	14.0	B	0.1	0.007		
52	Pulgas Avenue & E. Bayshore Road	AM	Signal	25.4	C	26.2	C	1.1	0.013		
		PM		47.4	D	47.2	D	0.2	0.001		

*Denotes a CMP intersection
AWSC - All Way Stop Control; TWSC - Two Way Stop Control

[1]Average delay is reported for signalized and AWSC intersections. For TWSC intersections, the delay for the worst stop-controlled movement is reported.

				Cumulative (2040) Conditions (Dumbarton Rail)							
				No Project		with Project				With Improvement	
#	Intersection	Peak Hour	Traffic Control	Avg Delay (secs)[1]	LOS	Avg Delay (secs)[1]	LOS	Incr. in Avg/Crit Delay (sec)[1]	Incr. in Crit V/C	Avg Delay (secs)[1]	LOS

"OVERSAT" indicates that the SimTraffic microsimulation model indicates that the intersection would experience capacity issues where the demand cannot be served by the intersection. Oversaturated intersections would operate at LOS F.

*Intersections were analyzed using Synchro/SimTraffic software due to the close proximity of these intersections. Changes in critical delay and v/c calculated using Traffix.

Bold indicates substandard level of service

Bold indicates adverse effect

Adverse Effects and Recommended Improvements

For intersections that are non-compliant under cumulative plus project conditions and cumulative plus project with Dumbarton rail conditions, the improvements proposed under cumulative plus project conditions would be sufficient to address cumulative non-compliance. Improvements for intersections that are non-compliant only under cumulative plus project with Dumbarton rail conditions are described below. As noted below, no additional feasible improvements are identified and the improvement measures identified below are for informational purposes only.

Marsh Road and Bay Road

This intersection is expected to operate at an acceptable LOS D during both peak hours under cumulative conditions with the Dumbarton rail. The addition of Project traffic would cause the intersection to operate at LOS E during the AM peak hour. The intersection would continue to operate at an acceptable LOS D during the PM peak hour. This constitutes non-compliance during the AM peak hour according to the thresholds established by the City of Menlo Park.

Physical improvements at this intersection are considered infeasible due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel. Menlo Park's TIF program proposes Class II buffered bike lanes along Marsh Road from Bay Road to Scott Road in both directions. The improvement may lead to an overall increase in bicycle mode share but would not offset the Project traffic.

Chrysler Drive and Constitution Drive

This intersection is expected to operate at an unacceptable LOS F during both peak hours under cumulative conditions with Dumbarton rail. With the addition of Project traffic, the average critical delay would increase by more than 0.8 seconds during the AM peak hour. The intersection would continue to operate acceptably during the PM peak hour. This constitutes non-compliance during the AM peak hour according to the thresholds established by the City of Menlo Park.

Physical improvements at this intersection are considered infeasible due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel.

Willow Road and Bayfront Expressway

Improvements for this intersection are discussed under the near term plus project section as part of the Willow Road corridor improvements, and is not repeated here.

Intersection Vehicle Queuing

The analysis of intersection levels of service was supplemented with a vehicle queuing analysis for intersection left-turning movements where the Proposed Project would add significant trips per lane in the vicinity of the Project Site and affect intersection operations. This analysis provides a basis for estimating future storage requirements at these intersections (see Table 3.3-16). Vehicle queues were estimated using the methodology described in Appendix 3.3, Transportation, of this EIR.

Locations where the estimated 95th percentile queues would exceed the available storage capacity for the movement are discussed below. Queuing issues are operational issues resulting from signal timing and queue storage provisions. Queuing issues are not considered a CEQA issue related to hazards.

Table 3.3-16. Intersection Vehicle Queuing Analysis

Intersection	Willow Road & Bayfront Expressway[3]		Willow Road & Ivy Drive[3]		Willow Road & Bay Road[3]		University Avenue & O'Brien Drive[4]			
Movement	**EBLT**		**EBLT**		**SBLT**		**EBLT**		**SBLT**	
Peak Hour Period	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Existing										
Cycle/Delay[1] (sec)	140	140	130	130	48	48	150	150	150	150
Lanes	1	1	1	1	1	1	1	1	1	1
Volume (vph)	195	88	49	44	352	241	110	6	32	185
95th% Queue (veh/ln)	24	5	4	3	16	7	8	1	3	13
95th% Queue (ft/ln)	600	125	100	75	400	175	200	25	75	325
Storage (ft/ ln)	300	300	125	125	250	250	125	125	50	50
Adequate (Y/N)	***N***	Y	Y	Y	***N***	Y	***N***	Y	***N***	***N***
Near-Term										
Cycle/Delay[1] (sec)	140	140	130	130	48	48	150	150	150	150
Lanes	1	1	1	1	1	1	1	1	1	1
Volume (vph)	210	151	81	80	406	283	110	6	33	185
95th% Queue (veh/ln)	27	8	8	5	23	11	8	1	4	13
95th% Queue (ft/ln)	675	200	200	125	575	275	200	25	100	325
Storage (ft/ ln)	300	300	125	125	250	250	125	125	50	50
Adequate (Y/N)	***N***	Y	***N***	Y	***N***	***N***	***N***	Y	***N***	***N***
Near-Term Plus Project										
Cycle/Delay[1] (sec)	140	140	130	130	48	48	150	150	150	150
Lanes	1	1	1	1	1	1	1	1	1	1
Volume (vph)	225	189	91	83	438	301	525	22	58	185
95th% Queue (veh/ln)	30	9	11	6	29	13	30	3	5	13
95th% Queue (ft/ln)	750	225	275	150	725	325	750	75	125	325
Storage (ft/ ln)	300	300	125	125	250	250	125	125	50	50
Adequate (Y/N)	***N***	Y	***N***	***N***	***N***	***N***	***N***	Y	***N***	***N***

Notes:
SB = southbound; EB = eastbound; L/T/R = shared left-through-right; RT = right turn movement; LT = left turn movement
[1] Vehicle queue calculations based on cycle length for signalized intersections and delay for the approach for unsignalized intersections.
[2] Assumes 25 feet per vehicle queued.
[3] 95th Percentile queue length used from Vistro software.
[4] 95th Percentile queue length developed using Poisson Distribution.

Eastbound Left-turn at Willow Road and Bayfront Expressway

The existing vehicle storage for the eastbound left turn pocket on Willow Road at Bayfront Expressway is 300 feet, which provides enough space for about 12 vehicles. Under existing conditions, the 95th percentile queue would exceed the storage of the left turn pocket by 12 vehicles in the AM peak hour. Under near-term conditions, the 95th percentile queue would exceed the storage length of the turn pocket by 15 vehicles during the AM peak hour and four vehicles during the PM peak hour. The Proposed Project would add three vehicles to the 95th percentile queue during the AM peak hour and PM peak hour. There is no room to extend the left turn pocket due to the emergency vehicle only lane cut in the median.

Eastbound Left-turn at Willow Road and Ivy Drive

The existing vehicle storage for the eastbound left turn pocket on Willow Road at Ivy Drive is 125 feet, which provides enough space for about 5 vehicles. Under existing conditions, the 95th percentile queue would be accommodated by the left turn pocket. Under near-term conditions, the 95th percentile queue exceeds the storage length of the turn pocket by three vehicles during the AM peak hour. The Proposed Project would add one vehicle to the 95th percentile queue during the AM peak hour and one vehicle during the PM peak hour. There is no room to further extend this left-turn.

Southbound Left-turn at Willow Road and Bay Road

The existing vehicle storage for the southbound left turn pocket on Willow Road at Bay Road is 250 feet, which provides enough space for about 10 vehicles. Under existing conditions, the 95th percentile queue would exceed the storage length of the left turn pocket by 6 vehicles. Under near-term conditions, the 95th percentile queue exceeds the storage length of the turn pocket by 13 vehicles during the AM peak hour and one vehicle during the PM peak hour. The Proposed Project would add six vehicles to the 95th percentile queue during the AM peak hour and three vehicles during the PM peak hour. Menlo Park's TIF has a project to add a second left-turn lane to this intersection, which would add additional storage for left-turning vehicles. The exact length of the addition will be determined during the design phase for the intersection improvement. Construction of the recommended improvement would reduce the queuing deficiency created by the Proposed Project.

Eastbound Left-turn and Southbound left-turn at University Avenue and O'Brien Drive

The existing vehicle storage for the eastbound left turn pocket on University Avenue at O'Brien Drive is 125 feet, which provides enough spaces for about 5 vehicles. Under existing conditions, the 95th percentile queue exceeds the storage length of the turn pocket by 3 vehicles during the AM peak hour. The Proposed Project would add 22 vehicles to the 95th percentile queue during the AM peak hour. There is no room to lengthen the eastbound left turn pocket.

The existing vehicle storage for the southbound left turn pocket on O'Brien Drive at University Avenue is 60 feet, which provides enough spaces for 2 vehicles. Under existing conditions, the 95th percentile queue exceeds the storage length of the turn pocket by one vehicle during the AM peak hour and 11 vehicles during the PM peak hour. The Project would add one vehicle to the 95th percentile queue during the AM peak hour. There would be no increase to the 95th percentile queue length during the PM peak hour. There is room to extend the left turn pocket to accommodate the estimated 95th percentile queue of 325 feet.

Menlo Park's Traffic Impact Fee (TIF) program identifies an improvement to signalize the nearby intersection at University Avenue and Adams Drive in East Palo Alto. This improvement may provide an alternative route for Project vehicles to access the Project Site via University Avenue, and alleviate potential queuing issues at this intersection.

Freeway Facilities Analysis

To determine the Proposed Project's potential freeway adverse effects, a select-zone analysis within the Menlo Park model was performed to estimate the increase in project traffic volume between existing conditions and near term with project conditions (Appendix 3.3, Transportation, of this EIR). Freeway segments that would experience a freeway adverse effect generated by the Proposed Project are identified below.

San Mateo County

As shown on Table 3.3-17, the Proposed Project would add traffic greater than 1% capacity to the following study freeway segments operating below its LOS standard:

- SR 84 – from Willow Road to Alameda County Line – PM Peak Hour
- SR 84 – from Alameda County Line to Willow Road – AM Peak Hour
- US 101 – between Santa Clara County Line and Whipple Avenue – AM & PM Peak Hours
- US 101 – from Whipple Avenue to SR 92 – PM Peak Hour
- US 101 – from SR 92 to Whipple Avenue – AM Peak Hour

Santa Clara County

As shown on Table 3.3-18, the Proposed Project would add traffic greater than 1% capacity to the following mixed-flow freeway segments operating below its LOS standard:

- US 101 – from SR 85 to Embarcadero Road – AM & PM Peak Hours
- US 101 – from Embarcadero Road to SR 85 – PM Peak hour

The Proposed Project would add traffic greater than 1% capacity to the following HOV freeway segment operating below its LOS standard:

- US 101 – from Oregon Expressway to Embarcadero Road – AM Peak Hour

Freeway Improvements

It should be noted that the near term plus project conditions model run assumed the US 101 express lane project in San Mateo County. Improvements to eliminate the adverse freeway effects on US 101 and on SR 84 within San Mateo County would require additional capacity improvements and/or additional TDM measures that would reduce peak-hour vehicle trip-making by more than 70%. San Mateo County currently has no plans to further improve US 101 beyond the identified express lane projects. There are also no identified plans to improve the Bayfront Expressway (SR 84) corridor. Such an aggressive TDM plan would also not be feasible.

Table 3.3-17. Freeway Analysis – San Mateo County

CMP Facility	Roadway Segment	Dir.	Pk Hr	LOS Standard	Capacity	Existing LOS	Near Term + Project LOS	Near Term + Project % Project Added
SR 84	US 101 to Willow Rd	SB	AM	D	1,100	C	C	0.0%
		SB	PM	D	1,100	B	D	2.2%
SR 84	Willow Rd to US 101	NB	AM	D	1,100	C	D	4.3%
		NB	PM	D	1,100	B	B	2.1%
SR 84	Willow Rd to University Ave	SB	AM	E	1,100	F	**F**	**0.9%**
		SB	PM	E	1,100	E	**F**	**4.0%**
SR 84	University Ave to Willow Rd	NB	AM	E	1,100	**F**	**F**	**3.2%**
		NB	PM	E	1,100	E	E	1.0%
SR 84	University Ave to Alameda County Line	SB	AM	F	2,100	**F**	**F**	**0.5%**
		SB	PM	F	2,100	**F**	**F**	**2.1%**
SR 84	Alameda County Line to University Ave	NB	AM	F	2,100	**F**	**F**	**1.7%**
		NB	PM	F	2,100	**F**	**F**	**0.5%**
US 101	Santa Clara County Line to Whipple Ave	NB	AM	F	2,300	**F**	**F**	**1.1%**
		NB	PM	F	2,300	**F**	**F**	**2.7%**
US 101	Whipple Ave to Santa Clara County Line	SB	AM	F	2,300	**F**	**F**	**2.3%**
		SB	PM	F	2,300	**F**	**F**	**1.4%**
US 101	Whipple Ave to SR 92	NB	AM	E	2,300	**F**	**F**	**0.7%**
		NB	PM	E	2,300	**F**	**F**	**1.6%**
US 101	SR 92 to Whipple Ave	SB	AM	E	2,300	**F**	**F**	**1.2%**
		SB	PM	E	2,300	**F**	**F**	**0.9%**
SR 109 (University Ave)	Kavanaugh Dr to SR 84	EB	AM	E	1,100	C	C	0.0%
		EB	PM	E	1,100	C	D	0.1%
SR 109 (University Ave)	SR 84 to Kavanaugh Dr	WB	AM	E	1,100	**F**	**F**	**0.1%**
		WB	PM	E	1,100	**F**	**F**	**0.0%**
SR 114 (Willow Rd)	US 101 to SR 84	EB	AM	E	1,100	B	B	9.6%
		EB	PM	E	1,100	B	B	9.6%
SR 114 (Willow Rd)	SR 84 to US 101	WB	AM	E	1,100	C	C	5.2%
		WB	PM	E	1,100	C	C	5.7%

Data referenced San Mateo County City/County Association of Governments *Congestion Management Program 2019.*
Bold indicates non-compliant LOS
box and BOLD indicates adverse effect

Table 3.3-18. Freeway Analysis – Santa Clara County

				Existing Conditions						Near Term + Project Conditions					
				Mixed-Flow			HOV Lane			Mixed Flow			HOV		
		Dir	Peak Hour	Capacity[1]	Volume (pc/hr/ln)[2]	LOS[2]	Capacity[1]	Volume (pc/hr/ln)[2]	LOS[2]	LOS	Project Added	% Capacity	LOS	Project Added	% Capacity
Freeway Segment															
US 101	SR 85 to N. Shoreline Blvd	NB	AM	9,200	1,512	**F**	1,650	1,751	E	**F**	**187**	**2.0%**	E	8	0.5%
			PM	9,200	1,358	**F**	1,650	1,635	D	**F**	**118**	**1.3%**	D	6	0.4%
US 101	N. Shoreline Blvd to Rengstorff Ave	NB	AM	6,900	1,660	**F**	3,300	1,730	D	**F**	**198**	**2.9%**	D	16	0.5%
			PM	6,900	1,298	**F**	3,300	1,683	D	**F**	**124**	**1.8%**	D	12	0.4%
US 101	Rengstorff Ave to San Antonio Ave	NB	AM	6,900	1,747	E	3,300	1,716	D	**F**	**208**	**3.0%**	D	17	0.5%
			PM	6,900	1,333	**F**	3,300	1,646	D	**F**	**132**	**1.9%**	D	14	0.4%
US 101	San Antonio Ave to Oregon Expwy	NB	AM	6,900	1,262	**F**	3,300	1,693	D	**F**	**232**	**3.4%**	D	12	0.4%
			PM	6,900	1,083	**F**	3,300	1,482	**F**	**F**	**152**	**2.2%**	**F**	**15**	**0.4%**
US 101	Oregon Expwy to Embarcadero Rd	NB	AM	6,900	1,367	**F**	1,650	1,693	**F**	**F**	**224**	**3.3%**	**F**	**19**	**1.1%**
			PM	6,900	1,271	**F**	1,650	1,588	**F**	**F**	**151**	**2.2%**	**F**	**16**	**0.9%**
US 101	Embarcadero Rd to Oregon Expwy	SB	AM	6,900	1,991	D	1,650	n/a	A	D	118	1.7%	C	11	0.7%
			PM	6,900	1,135	**F**	1,650	1,627	D	**F**	**190**	**2.8%**	D	17	1.0%
US 101	Oregon Expwy to San Antonio Ave	SB	AM	6,900	1,989	D	3,300	919	A	D	118	1.7%	B	11	0.3%
			PM	6,900	1,050	**F**	3,300	1,693	D	**F**	**191**	**2.8%**	D	17	0.5%
US 101	San Antonio Ave to Rengstorff Ave	SB	AM	6,900	1,890	E	3,300	780	A	E	104	1.5%	B	10	0.3%
			PM	6,900	1,125	**F**	3,300	1,610	D	**F**	**201**	**2.9%**	D	15	0.5%
US 101	Rengstorff Ave to N. Shoreline Blvd	SB	AM	6,900	1,976	D	3,300	1,369	C	D	101	1.5%	C	10	0.3%
			PM	6,900	1,072	**F**	3,300	1,508	D	**F**	**195**	**2.8%**	D	15	0.4%
US 101	N. Shoreline Blvd to SR 85	SB	AM	6,900	1,950	D	1,650	1,068	A	E	56	0.8%	A	4	0.3%
			PM	6,900	1,115	**F**	1,650	1,752	E	**F**	**93**	**1.3%**	E	7	0.4%

Notes:
HOV = high-occupancy vehicle; LOS = level of service
1. Capacity is based on the capacities cited in VTA's *Transportation Impact Analysis Guidelines* (2014).
2. Volume, and Level of service (LOS) on each segment are taken from VTA's *2018 CMP Monitoring Report*. VTA did not report volume and density for segments with speed above 75.2 mph.
Bold indicates a substandard level of service.
Outline indicates an adverse effect

Within Santa Clara County, Valley Transportation Authority's Valley Transportation Plan 2040 identifies freeway express lane projects along US 101 that would convert the existing HOV lanes to express lanes and add a second express lane in each direction. This improvement would increase the capacity of the freeway and would adequately address the freeway impacts.

The potential Dumbarton Rail corridor would slightly reduce the Project contribution to the identified adverse effects but would not eliminate any. Therefore, the Project's adverse effects on US 101 and on SR 84 freeway segments in San Mateo County would remain.

Roadway ADT Analysis

The roadway ADT analysis was conducted under cumulative with project conditions (See Appendix 3.3, Transportation, of this EIR). To determine net Project added traffic, a select zone analysis was conducted using the Menlo Park model under cumulative with project conditions and existing conditions. As shown on Table 3.3-19, the Project would generate non-compliance at the following roadway segments:

- Willow Road, east of Durham Street
- Willow Road, east of Blackburn Avenue
- Middlefield Road, south of Willow Road
- Marsh Road, east of Bohannon Drive
- O'Brien Drive, south of Willow Road
- O'Brien Drive, north of University Avenue
- Bay Road, north of Willow Road

Impact on Pedestrian, Bicycle and Transit Facilities

Pedestrian and Bicycle Facilities

The Proposed Project would include multiple pedestrian and bicycle connections between the Project Site and the surrounding roadway network and within the Project Site. The planned bicycle and pedestrian facilities within the Project Site are discussed in Appendix 3.3, Transportation, of this EIR.

The proposed pedestrian connections to the surrounding roadway network include crosswalks at the proposed signalized intersections on Willow Road at Main Street and Park Street that would connect the Project Site to the Belle Haven neighborhood. The proposed bicycle connections include connections to the existing class II bike lane along Willow Road via Park Street and Main Street. In addition, the Proposed Project includes an elevated park that would provide grade separated pedestrian and bicycle access between the Project site and the Belle Haven neighborhood.

Menlo Park's TIF program also proposes the following bicycle and pedestrian facilities in the immediate vicinity of the Project Site which would improve connections between the Project Site and the surrounding neighborhoods:

- Bicycle signals, cross-bike markings, high visibility crosswalks, and pedestrian improvements at the eastbound right-turn channelizing island at Willow Road and Bayfront Expressway
- Class III bike routes, wider sidewalks, and narrower median on Ivy Drive

Table 3.3-19. Roadway ADT Analysis

Roadway	Classification	Average Daily Traffic			Compliance Analysis	
		Existing [1]	Cumulative with Project	Net Increase in Project Traffic	Applicable Criteria	Compliant?
Willow Road, east of Durham Street	Avenue - Mixed Use	28,875	31,400	550	7.B.1(1)	**No**
Willow Road, east of Blackburn Avenue	Avenue - Mixed Use	22,962	24,050	410	7.B.1(1)	**No**
Middlefield Road, north of Willow Road	Avenue - Mixed Use	18,188	20,037	64	7.B.1(1)	Yes
Middlefield Road, south of Willow Road	Avenue - Mixed Use	21,058	23,687	285	7.B.1(1)	**No**
Marsh Road, east of Bohannon Drive	Mixed Use Collector	33,128	39,213	669	7.B.2(1)	**No**
Hamilton Avenue, south of Madera Avenue	Neighborhood Collector	2,866	3,589	265	7.B.2(3)	Yes
O'Brien Drive, south of Willow Road	Mixed Use Collector	7,409	13,942	2,600	7.B.2(2)	**No**
O'Brien Drive, north of University Avenue	Mixed Use Collector	4,635	16,232	6,457	7.B.2(3)	**No**
Adams Drive, north of University Avenue [2]	Mixed Use Collector	3,265	3,763	84	7.B.2(3)	Yes
Bay Road, north of Willow Road	Neighborhood Collector	6,362	12,637	841	7.B.2(2)	**No**

Notes:
[1] Average Daily Traffic data was obtained from the City of Menlo Park

[2] Average Daily Traffic was estimated using factors derived from ADT data and peak hour counts

Bold indicates a project-generated non-compliance for study roadway

- Wider median on the west leg of Willow Road and Ivy Drive, increased pedestrian crossing time, and high visibility crosswalks at the intersection
- Curb ramps, high visibility crosswalks, increased pedestrian crossing times, and bulbouts on the southeast and southwest corners at Willow Road and O'Brien Drive
- Sidewalks and class II bike lanes on both sides of Adams Drive between O'Brien Drive and University Avenue
- Sidewalks and class II bike lanes on both sides of O'Brien Drive between Willow Road and University Avenue
- Install class IV protected bike lanes along Willow Road

The Proposed Project also includes a subgrade pedestrian, bicycle, and tram connection between the main Project Site and the Meta West Campus. This connection would be known as the Willow Road Tunnel. The Willow Road Tunnel would extend between Facebook Way in the Meta West Campus and North Loop Road in the Willow Village Campus underneath Willow Road. The proposed design of the tunnel includes a sidewalk along the eastern edge, a two-way class I bike path which would connect the Bay Trail to the Project Site, and a two-way tram connection between the West Campus and the Project Site. The tunnel would not allow vehicular traffic other than the trams and the bicycle and pedestrian access would be open to the public similar to the existing tunnel between the East and West Campuses.

Pedestrian and Bicycle Access to Schools

Schools in the immediate vicinity of the Project Site include Mid-Peninsula High School, Open Mind School, Cesar Chavez Ravenswood Middle School, San Francisco 49ers Academy, Creative Montessori learning, Belle Haven School, TIDE Academy, and Costano Elementary School. Bicycle and pedestrian access to each school is described below:

- **Mid-Peninsula High School**. This school is located immediately west of the Project Site. Pedestrian and bicycle access from the Project Site to the school would be via Willow Road, which has continuous sidewalks along the south side, and existing Class II bicycle facilities on both sides of the road.
- **Open Mind School**. This school is located immediately west of the Project Site on O'Brien Drive. There are currently no sidewalks or bicycle facilities on O'Brien Drive between the school and the Project Site. The Project proposes a sidewalk that would connect the Project Site with the school's driveway, as part of the Project-proposed roundabout at the East Loop Road/O'Brien Drive location.
- **Cesar Chavez Ravenswood Middle School, San Francisco 49ers Academy, Creative Montessori Learning**. These schools are located on Bay Road between Willow Road and University Avenue. Pedestrian and bicycle access from the Project Site to these schools would be via Willow Road to Alberni Street and Ralmar Avenue. These streets have sidewalks along both sides. These are also residential streets with low vehicular speeds and volumes and therefore, bicycle friendly. Access to the San Francisco 49ers Academy and Creative Montessori is directly from Bay Road, which has sidewalks along both sides. Also, Bay Road has dedicated bicycle lanes.
- **Belle Haven School**. This school is located approximately 0.4 miles north of the Project Site. Pedestrian and bicycle access from the Project Site to this school would be via Ivy Drive or Hamilton Avenue. Pedestrian amenities include crosswalks and pedestrian push buttons at the

intersections of Willow Road and Ivy Drive and Willow Road and Hamilton Avenue, a continuous sidewalk along the south side of Willow Road, a continuous sidewalk along both sides of Ivy Drive and Hamilton Avenue between the school and the Project Site, and bulbouts on Hamilton Avenue. However, there are no designated bicycle facilities on Ivy Drive or Hamilton Avenue.

- **Costano Elementary School**. The school is located 0.2 miles south of the Project Site on University Avenue at Adams Drive. Pedestrian and bicycle access from the Project Site is via Adams Drive or O'Brien Drive. There are limited pedestrian connections between the Project Site and the school. Sidewalk facilities are lacking along O'Brien Drive and Adams Drive, and there are no crosswalks at University Avenue and O'Brien Drive or University Avenue and Adams Drive. Class II bicycle lanes and sidewalks are proposed along O'Brien Drive and Adams Drive in Menlo Park's TIF, which would improve bicycle and pedestrian access to the school. Implementation of this improvement from the TIF Program would reduce this potential effect on bicyclists and pedestrians from the proposed project.
- **Tide Academy**. This school is located approximately 1.2 miles north of the Project Site. Pedestrian and bicycle access from the Project Site to this school would be via Ivy Drive or Hamilton Avenue. Chilco Street, and Jefferson Drive. Pedestrian amenities include crosswalks and pedestrian push buttons at the intersections of Willow Road and Ivy Drive and Willow Road and Hamilton Avenue, a continuous sidewalk along the south side of Willow Road, a continuous sidewalk along both sides of Ivy Drive, Hamilton Avenue, Chilco Street, and Jefferson Drive between the school and the Project Site, and bulbouts on Hamilton Avenue. There are also designated bicycle facilities on Chilco Street and Jefferson Drive, however, there are no designated bicycle facilities on Ivy Drive or Hamilton Avenue.

Transit Facilities

The Proposed Project would provide tram stops and shuttle stops on the Project Site for use by Meta workers. Detailed description of the tram and shuttle service is provided in Appendix 3.3, Transportation, of this EIR.

The Proposed Project is expected to generate an increase in transit demand, which could be accommodated by the available capacity of the SamTrans bus service. The SamTrans routes 81, 281, 296, 397, Dumbarton Express Lines, M2 Belle Haven Shuttle, and M4 Willow Road shuttle serve the immediate vicinity of the project area with approximately 15 to 25-minute headways during the AM and PM peak commute hours. Bus stops are within a typical walking distance (one-quarter mile or 5 minutes) of the Project Site. The Proposed Project would make no change to existing public transit facilities. However, by adding vehicle trips and increasing delay at intersections along bus routes, it would increase bus travel time. Bus services that would be affected in the vicinity of the Project Site include bus routes (DB, M2 Belle Haven Shuttle, M4 Willow Road Shuttle, SamTrans Route 81) along Willow Road, University Avenue, and O'Brien Drive.

Proposed intersection improvements to reduce intersection delay include improvements at Willow Road and Ivy Drive, Willow Road and Hospital Plaza/Durham Street, Willow Road and Newbridge Street, Willow Road and Bay Road, O'Brien Drive and Kavanaugh Drive, and Adam's Drive and O'Brien Drive. These improvements would help to reduce some bus delay along these routes. The City's TIF includes installing Transit Signal Priority (TSP) for queue jumps by shoulder running buses on northbound and southbound Bayfront Expressway and allowing the use of the existing right turn lane for queue jump with TSP at Willow Road and O'Brien Drive. The timing and implementation of these TSP projects are not certain

The Caltrain electrification project would enable Caltrain to provide more frequent train service at the Menlo Park, Palo Alto, and Redwood City Caltrain stations. Caltrain predicts an initial capacity increase of over 30%. It is expected that the Caltrain electrification project would accommodate the potential increase in transit ridership generated by the Proposed Project.

Internal Site Access, Circulation, and Parking

Appendix 3.3, Transportation, of this EIR includes the analysis of the main Willow Village site as well as the Hamilton parcels. The site plan review evaluated the internal site's intersection operations, potential queuing issues, and general site access and circulation for the proposed seven new internal streets, 14 parking garage driveways, and 20 new intersections. The results of the level of service analysis show that the intersection of Driveway B & East Loop Road would operate at LOS D during the AM peak hour. Vehicles turning left out of Driveway B would be expected to experience an average delay of 31 seconds while waiting for a sufficient opening on East Loop Road. During the AM peak hour, approximately 101 vehicles (16 heading eastbound and 85 heading westbound) would be expected to exit the garage, which would be one to two vehicles per minute. Therefore, although exiting drivers would experience some wait time, operations at Driveway B are expected to be adequate. The results of the queuing analysis show that the intersection of Hamilton Avenue/Main Street & Willow Road is expected to have insufficient turn lane storage to accommodate the anticipated traffic volumes under near-term plus project conditions. However, it is assumed that vehicles would choose to instead enter the project site via Park Street. Hexagon recommends the following regarding the internal project circulation:

Circulation Related Recommendations

- To prevent southbound queues from spilling back onto Willow Road on Park Street and Main Street, Hexagon recommends coordinating the adjacent signals.

Sight Distance Related Recommendations

- As discussed under Mitigation Measure TRA-2, prior to issuance of the building permit for the North Garage, the applicant shall revise the access design to provide adequate sight distance for the eastern driveway or other design solutions to reduce hazards to a less than significant level, to the satisfaction of the Public Works Director. Potential solutions that would reduce hazards to a less than significant level include restricting the eastern driveway to inbound vehicles only or prohibiting exiting left turns, modifying landscaping or relocating the driveway to the west to allow for adequate sight distance for exiting vehicles, or installing an all-way stop or signal. If driveway A were restricted to inbound vehicles only, all outbound vehicles would use Driveway B, which would provide adequate sight distance for vehicles exiting the north office garage. Driveway B might need multiple exiting lanes to limit queuing inside the garage for exiting vehicles. Alternatively, Driveway A could be moved farther west on East Loop Road so that adequate sight distance could be provided.
- Prior to final design, the project applicant should ensure that landscaping and vegetation would not obstruct visibility at the parking garage driveways.
- Hexagon recommends including 30 feet of red curb on both sides of all garage driveways to prevent vehicles from parking and obstructing the vision of exiting drivers.
- If vehicles exiting the garages cannot see oncoming pedestrians on the sidewalk, Hexagon recommends installing warning signs to alert pedestrians when vehicles are exiting the garages.
- If any driveways are moved from their position on the current site plan, sight distance should be reevaluated.

Parking Garage Circulation Related Recommendations

- Prior to final design, it is recommended that all driveway widths meet the City's requirements.
- At garage driveways where gates and garage doors are proposed, Hexagon recommends conducting an operational analysis to ensure that gate opening and closing times would not create queuing issues or cause vehicles to spill onto the roadway network.
- Prior to final design, the residential parking on level P1 of building RS2 should be shown to be gated and separated from the retail parking on levels 1 and 2. In addition, the roll-up gate in building RS3 should be clearly shown to separate the retail parking in level B1 and the residential parking in level B2.
- It is recommended that all drive aisle and parking stall widths meet the City's requirements.
- It is recommended that adequate turnaround space is provided at all dead-end drive aisles.

Parking Related Recommendations

- If individual vehicles are not able to be retrieved in the tandem puzzle parking, the tandem spaces should be assigned to one residential unit.
- Prior to final design, Hexagon recommends that the required number of ADA and EV parking spaces be provided in all parking garages.

Pedestrian Related Recommendations

- Hexagon recommends that a crosswalk is provided at the intersection of Center Street & East Street and that midblock crosswalks are provided on Center Street and Park Street to reduce block size and improve pedestrian convenience.

Pedestrian Related Recommendations

- The Hamilton Avenue Parcels are located within the C-2-S zoning district, which per Menlo Park Municipal Code Section 16.37(7), will have parking requirements established by the planning commission for each development. The Hamilton Avenue Parcel North proposes total potential development up to 22,402 square feet and 93 spaces. The Hamilton Avenue Parcel South proposes total development of 5,760 s.f. and 13 spaces. It is recommended that the project applicant confirm that sufficient parking is provided for the proposed total development as part of future architectural control and use permit applications with the City.