3.3 Transportation/Traffic

This section presents the results of the transportation impact assessment conducted for the Facebook Campus Expansion Project. The information used for the analysis is based on current traffic volume and land use data provided by the City of Menlo Park and future-year travel demand modeling, traffic operations analysis, and review of site access and multi-modal impacts conducted by TJKM Transportation Consultants. The following conditions are evaluated as part of this study:

- Existing conditions
- Background conditions
- Background plus-Project conditions
- Cumulative 2040 existing General Plan conditions
- Cumulative 2040 existing General Plan plus-Project conditions
- Cumulative 2040 proposed General Plan conditions

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; the City's financial responsibility related to roadways, streets, intersections, and mitigation measures; signalization of the right-turn in/out driveway of the 1 Facebook Way entrance; impacts on Bayfront Expressway/State Route (SR) 84 (Bayfront Expressway); creation of a Transportation Demand Management program; impacts on bicyclists and pedestrians from mitigation measures; bicycle and pedestrian traffic and circulation in North Fair Oaks; and traffic in North Fair Oaks, the Belle Haven neighborhood, on Willow Road, and on Middlefield Road.

Existing Conditions

Regulatory Setting

The following transportation plans, policies, and regulations guide transportation planning in Menlo Park:

Metropolitan Transportation Commission: The Metropolitan Transportation Commission (MTC) was created by the California legislature in 1970 as the transportation planning, coordinating, and financing agency for the nine-county Bay Area. It is responsible for prioritizing regional transportation projects through the Regional Transportation Improvement Project (RTIP) for state as well as federal funding. This prioritization is accomplished through coordination with local agencies and congestion management agencies (CMAs) and a demonstration of need, feasibility, and conformance with federal and local transportation policies.

City of Menlo Park General Plan: The current City of Menlo Park General Plan (General Plan) Circulation Element was adopted in 1994. Circulation and transportation goals and policies in the City's current adopted Circulation Element include the following:

> **Goal II-A:** To maintain a circulation system using the Roadway Classification System that will provide for the safe and efficient movement of people and goods throughout Menlo Park for residential and commercial purposes.

Policy II-A-1: Level of service D (40 seconds average stopped delay per vehicle) or better shall be maintained 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.

Policy II-A-2: The City should attempt to achieve and maintain average travel speeds of 14 miles per hour (Level of Service D) or better on El Camino Real and other arterial roadways controlled by the state and 46 miles per hour (Level of Service D) or better on US 101. The City shall work with the California Department of Transportation (Caltrans) to achieve and maintain average travel speeds and intersection levels of service consistent with standards established by the San Mateo County Congestion Management Program.

Policy II-A-4: New development shall be restricted or required to implement mitigation measures in order to maintain the levels of service and travel speeds specified in Policies II-A-1 through II-A-3.

Policy II-A-8: New development shall be reviewed for its potential to generate significant traffic volumes on local streets in residential areas and required to mitigate potential significant traffic problems.

Goal II-B: To promote the use of public transit.

Policy II-B-1: The City shall consider transit modes in the design of transportation improvements and the review and approval of development projects.

Policy II-B-2: As many activities as possible should be located within easy walking distance of transit stops, and transit stops should be convenient and close to as many activities as possible.

Goal II-C: To promote the use of alternatives to the single occupant automobile.

Policy II-C-1: The City shall work with all Menlo Park employers to encourage the use of alternatives to the single-occupant automobile in their commute to work.

Policy II-C-2: The City shall provide information to existing and new Menlo Park employers to assist their employees in identifying potential carpools, transit alternatives, and other commute alternatives.

Policy II-C-6: The City shall, to the degree feasible, assist Menlo Park employers in meeting the Average Vehicle Ridership (AVR) targets established by the Bay Area Air Quality Management District.

Policy II-C-7: Commuter shuttle service between the industrial work centers and the Downtown Transportation Center should be maintained and improved, within fiscal constraints. The City shall encourage SamTrans and other agencies to provide funding to support shuttle services.

Goal II-D: To promote the safe use of bicycles as a commute alternative and for recreation.

Policy II-D-2: The City shall, within available funding, work to complete a system of bikeways within Menlo Park.

Policy II-D-4: The City shall require new commercial and industrial development to provide secure bicycle storage facilities onsite.

Goal II-E*:* To promote walking as a commute alternative and for short trips.

Policy II-E-1: The City shall require all new development to incorporate safe and attractive pedestrian facilities onsite.

Policy II-E-2: The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right-of-way.

Policy II-E-3: Appropriate traffic control shall be provided for pedestrians at intersections.

Policy II-E-4: The City shall incorporate appropriate pedestrian facilities, traffic control, and street lighting within street improvement projects to maintain or improve pedestrian safety.

Complete Streets Policy: Adopted in 2013, the Complete Streets Policy of the City of Menlo Park expresses the City's desire and commitment to create and maintain streets that will accommodate safe, comfortable, and convenient travel for all categories of users and abilities through a comprehensive, integrated transportation network. The policy calls for all relevant departments and agencies of the City to work toward making Complete Streets practices a routine part of everyday project operations, approaches, and programs. Additionally, Complete Streets infrastructure should be considered for incorporation into all significant construction, reconstruction, or street alterations within the city.

Comprehensive Bicycle Development Plan: The 2005 Menlo Park Comprehensive Bicycle Development Plan provides a blueprint for a citywide system of bike lanes, bike routes, bike paths, bicycle parking, and other related facilities to allow for safe, efficient, and convenient bicycle travel within the city and to regional destinations in the Bay Area. The purpose of the plan is to build on the success of previous bicycle infrastructure improvements by enhancing and expanding the existing bikeway network, connecting gaps, addressing constrained areas, and providing for greater local and regional connectivity.

Neighborhood Traffic Management Plan: Established in 2004, the Neighborhood Traffic Management Plan is intended to provide consistent citywide policies for neighborhood traffic management and ensure equitable and effective solutions that enhance the safety and livability of neighborhoods in Menlo Park. The document provides instruction for residents in identifying appropriate neighborhood traffic management measures, such as driver education, enforcement, and physical improvements that can be utilized in addressing specific neighborhood traffic issues.

Sidewalk Master Plan: The 2009 City of Menlo Park Sidewalk Master Plan serves as a guide for the allocation of capital, maintenance, administrative, and matching funds for sidewalk facilities. The primary purpose of the plan is to prioritize sidewalk installation by providing an inventory of existing gaps in the city's walkway network and identifying opportunities to close those gaps. The plan applies prioritization criteria to establish rankings for sidewalk segments into areas of high, medium, and low need.

Transportation Impact Fee: The City of Menlo Park initiated a transportation impact fee (TIF) in 2009 to help fund transportation improvements that are needed in conjunction with new development. The intent of the fee is to maintain adequate service levels as new development places a strain on existing roadway capacity. TIFs ensure that development pays a proportional fair share of the cost of the transportation infrastructure deemed necessary and reasonably related to accommodating the impact of development in Menlo Park. A TIF was introduced by the City of Menlo Park, with the purpose of helping to fund needed transportation improvements when new development occurs in Menlo Park. The TIF may be used only for building new arterial streets, sidewalks, bicycle lanes, and other physical enhancements to the city's multi-modal transportation network. The City updates TIF rates for various land uses each year according to the *Engineering News-Record* (ENR) Construction Cost Index percentage change for San Francisco.

San Mateo County Comprehensive Bicycle and Pedestrian Plan: The 2011 San Mateo County Comprehensive Bicycle and Pedestrian Plan designates Pedestrian Focus Areas and a Countywide Bikeway Network. The plan identifies El Camino Real as the corridor in the county with the highest densities of population and employment and, thus, pedestrian activity. The plan notes that the high level of through movement along this corridor necessitates the need for bicycle and pedestrian improvements. Although biking, walking, and transit percentages in San Mateo County are lower than

the averages for the Bay Area, Menlo Park has one of the highest percentages of commuters who commute by bicycle in the Bay Area. In 2000, this figure was 3.7 percent (three times the Bay Area average); it rose to 7.2 percent of workers in 2006–2008.

Transportation Demand Management Guidelines: The City of Menlo Park Transportation Demand Management (TDM) Guidelines provide options for the City to encourage the use of innovative strategies that mitigate the traffic impact of new development projects. Allowable TDM measures identified in the guidelines include, but are not limited to:

- Charges for employees who need parking
- Employer-subsidized transit tickets
- Preferential parking for carpools/vanpools
- Employer shuttles
- Parking cash-outs
- Shared parking

El Camino Real/Downtown Specific Plan: The El Camino Real/Downtown Specific Plan (Specific Plan) focuses on new development in downtown Menlo Park and the adjacent El Camino Real corridor, an area with a host of mixed uses that is well served by transit. The Specific Plan encourages transit and non-motorized modes to reduce reliance on single-occupant vehicles, minimize congestion, limit the amount of land dedicated to parking, and reduce greenhouse gas (GHG) emissions. The Specific Plan envisions the following:

- A vehicular system that accommodates local traffic on El Camino Real
- An integrated pedestrian network of expansive sidewalks, promenades, and paseos along El Camino Real and within downtown Menlo Park
- A bicycle network that builds on existing plans and integrates more fully with downtown and proposed public space improvements in the area
- Modified parking rates for private development, based on current industry standards

ConnectMenlo General Plan Update: The City of Menlo Park is currently developing an updated General Plan, referred to as the ConnectMenlo Land Use and Mobility Update (ConnectMenlo). ConnectMenlo focuses on proposed modifications to the Land Use and Circulation Elements as well as zoning provisions to implement any land use changes in the Bayfront Area (formerly M-2 area) between US 101 and Bayfront Expressway. The draft ConnectMenlo Circulation Element addresses transportation issues throughout the city. Goals, policies, and programs in the proposed Circulation Element describe a variety of strategies and requirements to improve mobility and address congestion citywide. Although the following summary is provided for context, the proposed ConnectMenlo policies have not been adopted by the City. The Project is therefore evaluated in this environmental impact report (EIR) according to the City's current goals and policies. ConnectMenlo would refine the City's General Plan Circulation Element goals to identify the following mobility goals:

- Provide a safe transportation system that accommodates all modes of transportation and adequate emergency vehicle access
- Increase the accessibility and use of streets by pedestrians, bicyclists, and transit riders
- Increase mobility options to reduce traffic congestion, GHG emissions, and commute travel time

- Improve Menlo Park's overall health, wellness, and quality of life through transportation enhancements
- Support local and regional transit that is efficient, frequent, convenient, and safe
- Provide a range of transportation choices for the Menlo Park community
- Utilize innovative strategies to provide efficient and adequate vehicle parking

ConnectMenlo includes a proposed update to the City's street classifications that would establish and promote the suitability of streets for various travel modes and land uses. The proposed street classifications would include the following changes:

- Arterial streets would be given four different classifications: Boulevards, Thoroughfares, Main Streets, and Avenues. Each of the new arterial classifications would accommodate all travel modes, but specific travel modes would be designated as "high priority" or "medium priority" for each type of classification, Thoroughfares would designate motor vehicle travel as "high priority," while all other modes would be "medium priority." Main Streets would designate pedestrian travel as "high priority," while all other modes would be "medium priority." Boulevards would establish equal "high priority" status for pedestrian, transit, and motor vehicle travel, while bicycle travel would be "medium priority." Avenues would designate bicycle and pedestrian travel as "high priority," while all other modes would be "medium priority."
- Collector streets would be given two different classifications: Mixed-Use Collectors and Neighborhood Collectors. Bicycle and pedestrian circulation would be designated as "high-priority" travel modes on both types of collector streets, while motor vehicles would be "medium-priority." Transit would be designated as a "low-priority" on collector streets.
- Local streets would be classified as Neighborhood Connectors, Bicycle Boulevards, and Local Access Streets. Bicycle and pedestrian circulation would be designated as "high priority" for each new type of local street classification. Motor vehicles would be "medium priority," and transit would "low priority."

Near the Project site, the following streets would be classified as "currently proposed" under the draft ConnectMenlo Circulation Element:

- Willow Road, east of US 101 between the US 101 southbound ramps and Bayfront Expressway, would be classified as a Boulevard. West of US 101, Willow Road would be classified as a Mixed-Use Avenue between the US 101 southbound ramps and Middlefield Road and as a Neighborhood Collector between Middlefield Road and Alma Street.
- Chilco Street would be classified as a Mixed-Use Collector (north of Hamilton Avenue) and as a Neighborhood Collector (south of Hamilton Avenue).
- Constitution and Jefferson Drives would be classified as Mixed-Use Collector Streets.
- Hamilton Avenue would be classified as a Bicycle Boulevard (west of Chilco Street), as a Neighborhood Collector (east of Chilco Street to Willow Road), and as a Mixed-Use Collector (east of Willow Road).
- O'Brien Drive would be classified as a Mixed-Use Collector between Willow Road and University Avenue.

The ConnectMenlo draft Circulation Element identifies the following proposed bikeway segments near the Project site:

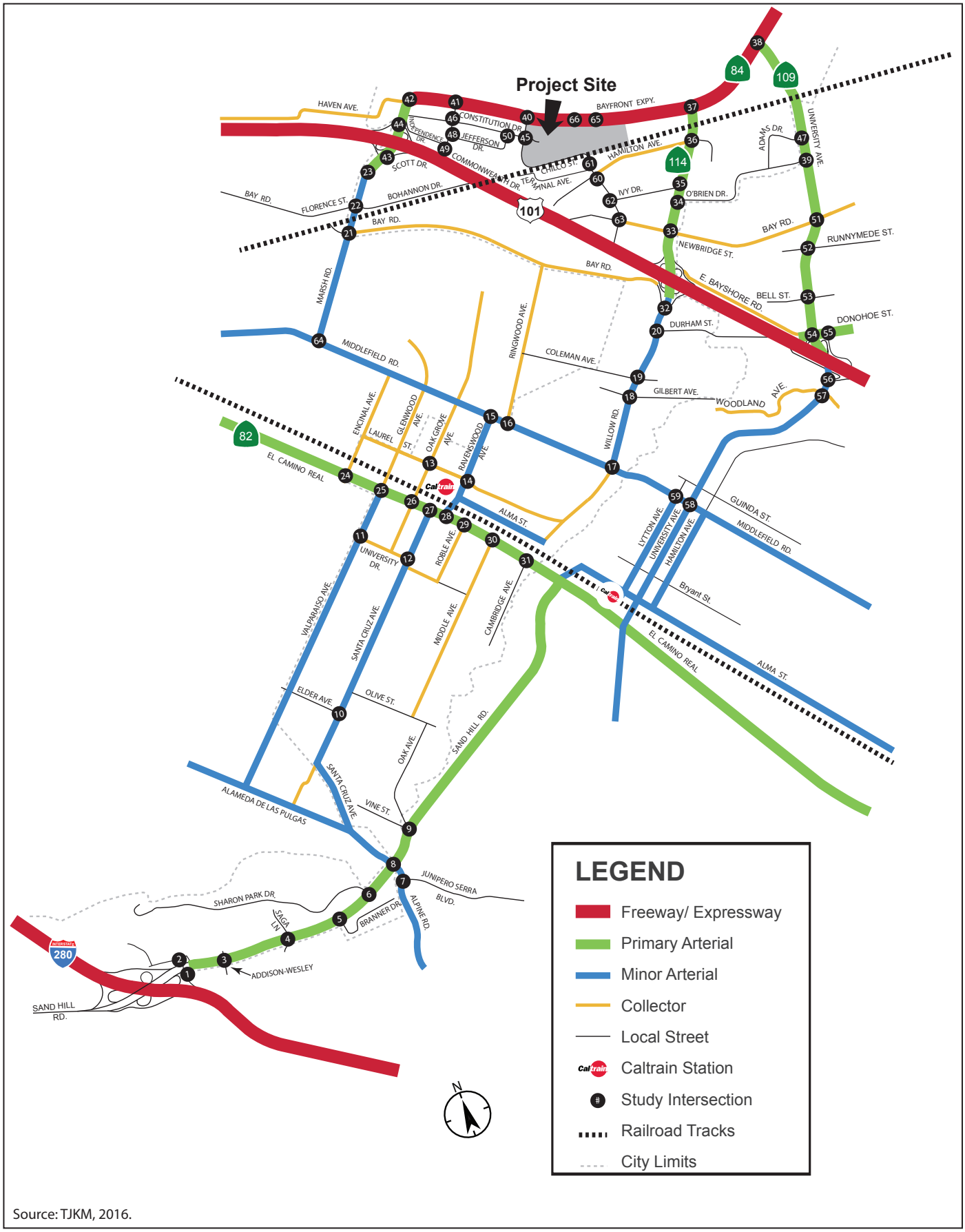
- Proposed Class III bicycle route on Hamilton Avenue, between Willow Road and an existing bicycle/pedestrian overcrossing of US 101 that connects with neighborhoods west of US 101 via Bay Road and Ringwood Avenue.
- Proposed Class II bicycle lanes on Chilco Street from Hamilton Avenue to the Dumbarton Rail Corridor, connecting with existing bicycle lanes on Chilco Street north of the Dumbarton Rail Corridor.
- Proposed Class II bicycle lanes on O'Brien Drive between Willow Road and University Avenue.
- Proposed Class I bicycle path on segments of the San Francisco Bay Trail (Bay Trail), on the north side of Bayfront Expressway.
- Proposed Class II bicycle lanes on segments of Oak Grove Avenue and El Camino Real near the Caltrain station.

Study Intersections and Roadway Segments

This study was prepared according to the methodology required by the City of Menlo Park's Transportation Impact Analysis (TIA) Guidelines. For the analysis, the City selected 64 study intersections that the Project may affect. Study intersection locations are illustrated in Figure 3.3-1.

The following study intersections were evaluated:

1 Sand Hill Road eastbound and Interstate (I) 280 northbound off-ramp
2 Sand Hill Road westbound and I-280 northbound on-ramp
3 Sand Hill Road and Addison-Wesley
4 Saga Road and Sand Hill Road
5 Branner Drive and Sand Hill Road
6 Sharon Park Drive and Sand Hill Road
7 Alpine Road/Santa Cruz and Junipero Serra Boulevard
8 Santa Cruz Avenue and Sand Hill Road
9 Oak Avenue/Vine Road and Sand Hill Road
10 Santa Cruz Avenue and Elder Avenue
11 Valparaiso Avenue and University Drive
12 Santa Cruz Avenue and University Drive (south)
13 Oak Grove Avenue and Laurel Street
14 Ravenswood Avenue and Laurel Street
15 Middlefield Road and Ravenswood Avenue
16 Middlefield Road and Ringwood Avenue
17 Middlefield Road and Willow Road
18 Willow Road and Gilbert Avenue



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-1
Existing Roadway Network and Study Intersections
Facebook Campus Expansion Project Draft EIR

19 Willow Road and Coleman Avenue
20 Willow Road and Durham Street
21 Marsh Road and Bay Road
22 Marsh Road and Bohannon Drive
23 Marsh Road and Scott Drive
24 El Camino Real and Encinal Avenue
25 El Camino Real and Glenwood Avenue
26 El Camino Real and Oak Grove Avenue
27 El Camino Real and Santa Cruz Avenue
28 El Camino Real and Ravenswood Avenue
29 El Camino Real and Roble Avenue
30 El Camino Real and Middle Avenue
31 El Camino Real and Cambridge Avenue
32 Willow Road and Bay Road
33 Willow Road and Newbridge Street
34 Willow Road and O'Brien Drive
35 Willow Road and Ivy Drive
36 Willow Road and Hamilton Avenue
37 Willow Road and Bayfront Expressway
38 Bayfront Expressway and University Avenue
39 University Avenue and O'Brien Drive
40 Bayfront Expressway and Chilco Street
41 Bayfront Expressway and Chrysler Drive
42 Bayfront Expressway and Marsh Road
43 Marsh Road and US 101 southbound (SB)
44 Marsh Road and US 101 northbound (NB)
45 Chilco Street and Constitution Drive
46 Chrysler Drive and Constitution Drive
47 University Avenue and Adams Drive
48 Chrysler Drive and Jefferson Drive
49 Chrysler Drive and Independence Drive
50 Jefferson Drive and Constitution Drive
51 University Avenue and Bay Road (East Palo Alto)
52 University Avenue and Runnymede Street (East Palo Alto)
53 University Avenue and Bell Street (East Palo Alto)

54 University Avenue and Donohoe Street (East Palo Alto)
55 US 101 NB ramps and Donohoe Street (East Palo Alto)
56 University Avenue and US 101 SB ramps (Eat Palo Alto)
57 University Avenue and Woodland Avenue (East Palo Alto)
58 University Avenue and Middlefield Road (Palo Alto)
59 Middlefield Road and Lytton Avenue (Palo Alto)
60 Chilco Street and Hamilton Avenue
61 Chilco Street and Terminal Avenue
62 Chilco Street and Ivy Drive
63 Chilco Street and Newbridge Street
64 Marsh Road and Middlefield Road (Atherton)

In addition, impacts on average daily traffic (ADT) on local roadway segments were analyzed, based on City of Menlo Park criteria. The City selected 87 study segments (consisting of roughly 30 arterial street segments, 50 collector street segments, and seven local street segments) along portions of the following 38 streets:

- Adams Drive
- Alameda de las Pulgas
- Alma Street
- Alpine Road
- Avy Avenue
- Bay Road
- Bohannon Drive
- Cambridge Avenue
- Chilco Drive
- Chrysler Drive
- Constitution Drive
- Crane Street
- Encinal Avenue
- Glenwood Avenue
- Hamilton Avenue
- Ivy Drive
- Junipero Serra Boulevard
- Lauren Street
- Linfield Avenue
- Marsh Road
- Menlo Avenue
- Middle Avenue
- Middlefield Road
- Newbridge Street
- Oak Grove Avenue
- O'Brien Drive
- Olive Street
- Ravenswood Avenue
- Ringwood Avenue
- Sand Hill Road
- Santa Cruz Avenue
- Scott Drive
- Sharon Park Drive
- Sharon Road
- University Drive
- Valparaiso Drive
- Waverly Street
- Willow Road

Routes of Regional Significance

The analysis of study intersections and study segments includes the following facilities, which are designated as Routes of Regional Significance by the San Mateo County Congestion Management Program (CMP). The applicable standards for the CMP facilities are summarized below.

Level-of-service (LOS) standards for CMP roadway segments:

- Bayfront Expressway from US 101 to Willow Road, LOS D
- Bayfront Expressway from Willow Road to University Avenue, LOS E
- Bayfront Expressway from University Avenue to the Alameda county line, LOS F
- SR 109 (University Avenue) from SR 84 to Kavanaugh Drive, LOS E
- SR 114 (Willow Road) from US 101 to SR 84, LOS E
- US 101, from Whipple Avenue to Santa Clara county Line, LOS F

LOS standards for CMP intersections:

- Bayfront Expressway from and University Avenue (SR 109), LOS F for the a.m. and p.m. peak hours
- Bayfront Expressway from and Willow Road (SR 114), LOS F for the a.m. and p.m. peak hours
- Bayfront Expressway from and Marsh Road, LOS F for the a.m. and p.m. peak hours

Vehicle Miles Traveled

In 2013, the California legislature passed Senate Bill 743, which requires changes to the guidelines for implementing the California Environmental Quality Act (CEQA) with respect to the analysis of transportation impacts. The latest draft guidelines and technical advisory[1] documents were issued by the Governor's Office of Planning and Research (OPR) on January 20, 2016. The proposed changes identify vehicle miles traveled (VMT) as the most appropriate metric for evaluating a project's transportation impacts. VMT is simply the miles traveled by vehicles in a specified area in a specified time period. It provides a metric that can evaluate both the amount and distance of vehicular travel. VMT is an important metric in the evaluation and management of travel and congestion on both a regional as well as a local level. For example, VMT is a key factor in determining GHG emissions from transportation sources because the level of travel activity is a determinant of energy use.

VMT was selected because it can better assess multi-modal transportation strategies, impacts of land uses near transit, and it is already used in CEQA to evaluate GHG emissions and air quality impacts. Although local agencies may continue to measure vehicle LOS for planning purposes, Senate Bill 743 directs a different measure for the evaluation of environmental impacts under CEQA. To address GHG policy goals, an analysis of VMT associated with development activity may yield a more relevant analysis tool than intersection or roadway LOS alone. The combination of VMT and LOS allows congestion, traffic operations, and GHG issues to be addressed. Furthermore, reducing VMT per capita is a stated target in Plan Bay Area, a policy document adopted by the Association of Bay Area Governments and the MTC in July 2013.

[1] Governor's Office of Planning and Research. 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA; Implementing Senate Bill 743 (Steinberg, 2013).* January 20. Available: https://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf.

In anticipation of the expected implementation of Senate Bill 743, this document includes an estimation of Project VMT on a per capita basis (based on number of employees) and a comparison with the regional average. As described above, VMT is a measure of the number of miles traveled by vehicles for a proposed development or area. VMT per capita is the VMT of the development or area divided by the population and the number of employees or jobs in the development or area.

Environmental Setting

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

Roadway Network

The General Plan designates a roadway classification system for the existing roadway network in the city. It includes Freeway/Expressway, Primary Arterial, Minor Arterial, Collector, and Local. The existing roadway network that serves the study area is shown in Figure 3.3-1. The ConnectMenlo draft Circulation Element has proposed modifications to the street classification system, as described in the Regulatory Setting section, above. Detailed descriptions for key roadways are provided below.

Bayfront Expressway (SR 84)—Bayfront Expressway is a six-lane, east–west expressway that connects the peninsula with the east via the Dumbarton Bridge. Within the city of Menlo Park, it connects Marsh Road with the Dumbarton Bridge. On-street parking is not permitted on Bayfront Expressway, and the speed limit is 50 mph. A segment of the Bay Trail accommodates bicycle and pedestrian circulation adjacent to Bayfront Expressway.

Marsh Road—Marsh Road is an east–west roadway that connects Bayfront Expressway with Middlefield Road and US 101. Marsh Road has six motor vehicle lanes between Bayfront Expressway and US 101 and four motor vehicle lanes between US 101 and Fair Oaks Avenue. Marsh Road narrows to two lanes between Fair Oaks and Middlefield Road. There are no bicycle lanes on Marsh Road.

Chilco Street—Chilco Street is an east–west roadway with two motor vehicle lanes that connects Bayfront Expressway with the adjacent Belle Haven neighborhood. Bicycle lanes are provided on the portion of Chilco Street between Bayfront Expressway and the Dumbarton Rail Corridor. There were no sidewalks on the portion of Chilco Street between Constitution Drive and the Dumbarton Rail Corridor at the time this document was prepared.

Willow Road (SR 114)—Willow Road is an east–west roadway that connects Bayfront Expressway with US 101 and Middlefield Road. Between Bayfront Expressway and US 101, Willow Road is a Major Arterial with four motor vehicle lanes and bicycle lanes. Between US 101 and Middlefield Road, Marsh Road is a Minor Arterial with two motor vehicle lanes and bicycle lanes.

University Avenue (SR 109)—University Avenue is a four-lane, east–west Arterial Street that connects Bayfront Expressway with US 101 via East Palo Alto and US 101 with El Camino Real via downtown Palo Alto. Bicycle lanes are provided on University Avenue between Bayfront Expressway and Middlefield Road, except for a gap where University Avenue approaches and crosses US 101.

US 101 (Bayshore Freeway)—US 101 is an eight-lane, north–south freeway that runs between Los Angeles, California, and Olympia, Washington, and a major regional freeway on the San Francisco Peninsula. It connects Menlo Park with the other cities on the peninsula. There is one high-occupancy vehicle (HOV) lane in both directions through Menlo Park. Two interchanges serve Menlo Park (at Willow Road and Marsh Road).

Middlefield Road—Middlefield Road is a north–south Minor Arterial with two to four motor vehicle lanes that connects Mountain View, Palo Alto, Menlo Park, Atherton, and Redwood City. Bicycle lanes are provided on segments of Middlefield Road within Menlo Park.

El Camino Real (SR 82)—El Camino Real is a north–south Primary Arterial that connects San José with San Francisco. It enters Menlo Park north of Sand Hill Road as a six-lane arterial, becomes a four-lane arterial near downtown Menlo Park, and exits the city as a five-lane arterial (three southbound lanes and two northbound lanes) north of Encinal Avenue. There are no bicycle lanes on El Camino Real.

I-280 (Junipero Serra Freeway)—I-280 is an eight-lane, north–south freeway that connects San José with San Francisco. There is one HOV lane in both directions through Menlo Park. One interchange serves Menlo Park at Sand Hill Road.

Sand Hill Road—Sand Hill Road is an east–west Primary Arterial that connects El Camino Real with I-280.

Bicycle Facilities

Menlo Park has an existing bicycle network with connections to neighboring city facilities. The bicycle network contains a variety of facilities, labeled according to California's system of bikeway classification.

- Class I Bikeway – Bike paths within exclusive rights-of-way, sometimes shared with pedestrians
- Class II Bikeway – Bike lanes for bicycle use only that are striped within the paved area of roadways
- Class III Bikeway – Bike routes that are shared with motor vehicles on the street. Class III bikeways may be defined by a wide curb lane and/or use of a shared-use arrow stencil marking on the pavement, known as a "sharrow"
- Class IV Bikeway – Cycle tracks or separated bikeways that contain dedicated rights of way with physical separation, such as grade separation, flexible posts, or on-street parking

Bicycle lanes are provided on Willow Road, University Avenue, and a short portion of Chilco Street between Bayfront Expressway and the Dumbarton Rail Corridor. However, the Marsh Road, Willow Road, and University Avenue interchanges contain no bicycle facilities, and the lack of such connections may discourage bicycle trips between the Project site and destinations west of US 101, including the Caltrain station and downtown Menlo Park.

One existing bicycle and pedestrian connection toward Caltrain and the retail center of Menlo Park is provided via a bicycle/pedestrian bridge that crosses US 101 at Ringwood Avenue between the Belle Haven and Flood Park neighborhoods. The Bay Trail borders Bayfront Expressway. Existing bicycle network facilities that serve the study area are shown in Figure 3.3-2.

Pedestrian Facilities

The City's General Plan contains policies that support maintaining the existing pedestrian infrastructure and providing safe, efficient, and equitable use of streets by pedestrians through good roadway design. There is an additional policy in the General Plan that requires all new development to incorporate safe and attractive pedestrian facilities onsite.

Pedestrian facilities are limited, with many streets in the area bordering the Project site having partial or no sidewalks. The only street segment with sidewalks on both sides of the street is on the Marsh Road overpass at US 101. The Dumbarton Rail Corridor and US 101 also limit pedestrian access and isolate the Project site and Belle Haven neighborhood from the rest of the community.

Transit Service

Existing service directly serving the Project site includes the following:

- The private Facebook Shuttle travels to and from the Facebook Campus on Willow Road and Bayfront Expressway to the Menlo Park Caltrain station using Willow Road. The service operates on approximately 60-minute headways with service between 6:30 a.m. and 7:00 p.m. Long-distance shuttles provide direct service to the Facebook Campus from areas near where employees live.
- AC Transit's DB and DB1 Dumbarton Express routes cross the Dumbarton Bridge, with stops near the Project site on Willow Road. Both routes provide service between Menlo Park and the Union City Bay Area Rapid Transit (BART) station, with different operational hours.

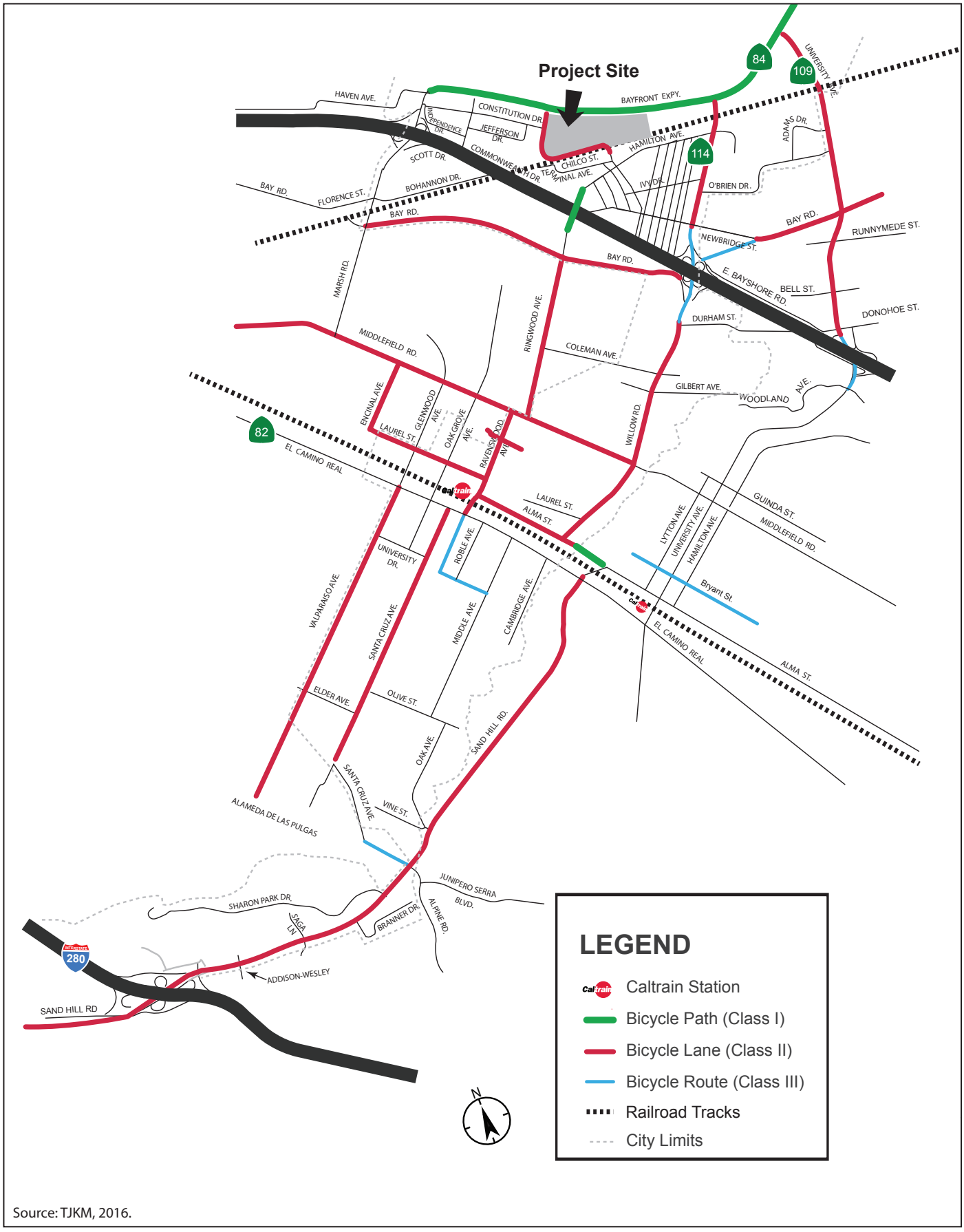
Additional transit service in the vicinity that does not directly serve the Project site includes the following bus routes:

- SamTrans provides bus service to areas south of the Project site with Route 270, Route 276, and several SamTrans shuttle routes. Route 270 serves Marsh Road and Haven Avenue and serves as a connection to the Redwood City Transit Center and Caltrain. Route 276 terminates at Marsh Road and serves the Redwood City Caltrain station. The Marsh Road Shuttle and Willow Road Shuttle, operated by the City of Menlo Park, connect several offices in the area with the Menlo Park Caltrain station via Marsh Road and Willow Road, respectively.
- The City of Menlo Park Midday Shuttle serves the Menlo Park Senior Center, located south of the Dumbarton Rail Corridor, and travels to several retail areas in downtown Menlo Park. SamTrans Route 281 terminates at the Onetta Harris Community Center, located just south of the Dumbarton Rail Corridor. The route connects downtown Palo Alto and the Stanford Shopping Center.

Caltrain services the Menlo Park station with three types of commuter rail service: Local, Limited Stop, and Baby Bullet. During peak hours, Caltrain runs Local and Limited Stop service every 6 to 54 minutes, with an average interval of 32 minutes. For northbound service, three Baby Bullet trains operate during the evening peak; southbound trains have Baby Bullet service during the morning peak. Caltrain allows residents to connect with job centers around the Silicon Valley as well as San Francisco and San José.

Additional SamTrans bus routes operate within the city limits. These routes fall under three categories: routes that connect Caltrain stations, routes that connect Caltrain and BART stations, and school-day-only routes. The following routes provide service to Caltrain stations:

- Route 270: Serves the area near Marsh/Haven and Bayfront Expressway; travels to Redwood City Transit Center
- Route 276: Travels to Redwood City Transit Center, Kaiser Hospital, and Redwood City Hall via Marsh/Haven/Bayfront Expressway
- Route 281: Serves the Palo Alto Transit Center at downtown Palo Alto Caltrain station, University Village Shopping Center, and Onetta Harris Community Center
- Route 286: Connects to Menlo-Atherton High School, Menlo Park Caltrain station, and La Entrada Middle School
- Route 296: Serves Menlo Park Caltrain station, VA Medical Center, Redwood City Caltrain station, Sequoia High School, and East Palo Alto
- Route 297: Connects to University Village Shopping Center, VA Medical Center, Palo Alto Transit Center, and Redwood City Transit Center



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-2
Existing Bicycle Network
Facebook Campus Expansion Project Draft EIR

Existing Traffic Volumes and LOS

Daily Traffic Volumes on Study Segments

Existing daily traffic volumes on study segments are shown in Appendix 3.3-2, including the name and number of each segment, segment boundaries, the jurisdiction in which it is located, and the current street classification (Primary Arterial, Minor Arterial, Collector, or Local). Key findings, based on a review of existing daily traffic volumes at study segments, as applicable by street classification, are as follow:

- **City Arterials**: City arterial streets that carry more than 18,000 daily vehicles include Willow Road (41,200 daily vehicles between Coleman Avenue and Durham Street), Marsh Street (32,700 daily vehicles between Bohannon and Scott Drive), Sand Hill Road (30,800 daily vehicles between Sharon Park Drive and Santa Cruz Avenue), Ravenswood Avenue (24,600 daily vehicles between El Camino Real and Alma Street), and Middlefield Road (19,700 daily vehicles between Willow Road and Ravenswood Avenue). Arterial streets that carry fewer than 18,000 daily vehicles include segments of Santa Cruz Avenue, where volumes range from 7,000 to just over 15,000 daily vehicles, and Alameda de las Pulgas, which carries 12,500 vehicles near Santa Cruz Avenue.
- **City Collectors**: Four out of 50 collector study segments exceed 9,000 daily vehicles under existing conditions. The majority of collector study segments carry between 3,000 and 9,000 daily vehicles.
- **Local Streets**: Six out of the seven local street study segments carry more than 1,350 daily vehicles under existing conditions, with volumes ranging from 1,600 daily vehicles on Cambridge Avenue to 3,200 daily vehicles on Ivy Drive; the seventh local street segment, Adams Drive, currently carries just under 1,300 daily vehicles.

Study Intersections

Figures 3-3.3 through 3.3-5 illustrate the existing lane configurations and traffic controls at each study intersection. Figures 3.3-6 through 3.3-8 illustrate the peak-hour vehicle turning movement volumes at each study intersection under existing conditions.

Intersection LOS Definitions

The operational performance of a roadway network is commonly described with the term "level of service," or LOS. LOS is a qualitative description of operating conditions, ranging from LOS A (free-flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). The LOS analysis methods outlined in the *Highway Capacity Manual* (Transportation Research Board 2010) were used in this study. This methodology provides for more reliable analysis of actual intersection operations by incorporating elements such as the signal timing plan, the effects of pedestrians on signal phase duration, traffic volume peaking characteristics, motorist behavioral characteristics, and others.

The 2010 *Highway Capacity Manual* is used to assess intersection operations and define impacts. It also allows mitigation measures to be defined, such as lengthening or adding turning lanes, modifying the signal phasing or timing, or other options. The *Highway Capacity Manual* methods for calculating LOS for signalized and unsignalized intersections are described below.

Signalized Intersections: Traffic operations at signalized intersections are evaluated using the LOS method described in the 2010 *Highway Capacity Manual*. A signalized intersection's LOS is based on the weighted average control delay, measured in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration.

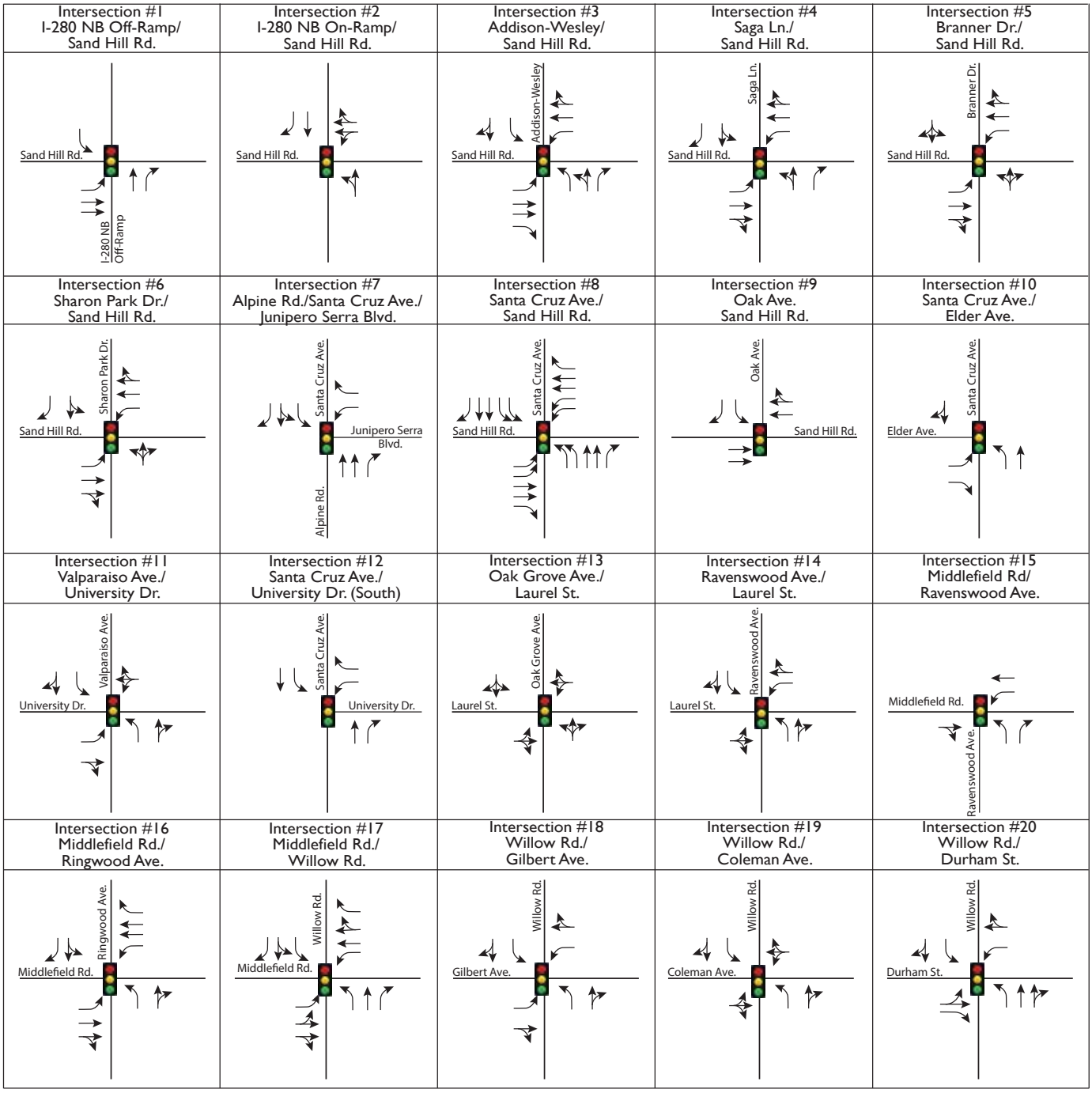
Table 3.3-1 summarizes the relationship between the control delay and LOS for signalized intersections.

Table 3.3-1. LOS Definitions for Signalized Intersections

Level of Service	Description
A	Very low control delay (up to 10 seconds per vehicle). Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop, causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase does not serve queued vehicles and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop; the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation. Arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Unsignalized Intersections: The LOS for unsignalized intersections (side-street or all-way stop-controlled intersections) is also defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. For side-street stop-controlled intersections, delay is calculated for each stop-controlled movement and uncontrolled left turns, if any, from the main street. At side-street stop-controlled intersections, delay and LOS are reported for the worst movement. At all-way stop-controlled intersections, delay and LOS are reported based on the intersection average, including all approaches.

Table 3.3-2 summarizes the relationship between delay and LOS for unsignalized intersections. Delay ranges for unsignalized intersections are lower than those for signalized intersections because drivers expect less delay at unsignalized intersections.



Source: TJKM, 2016.

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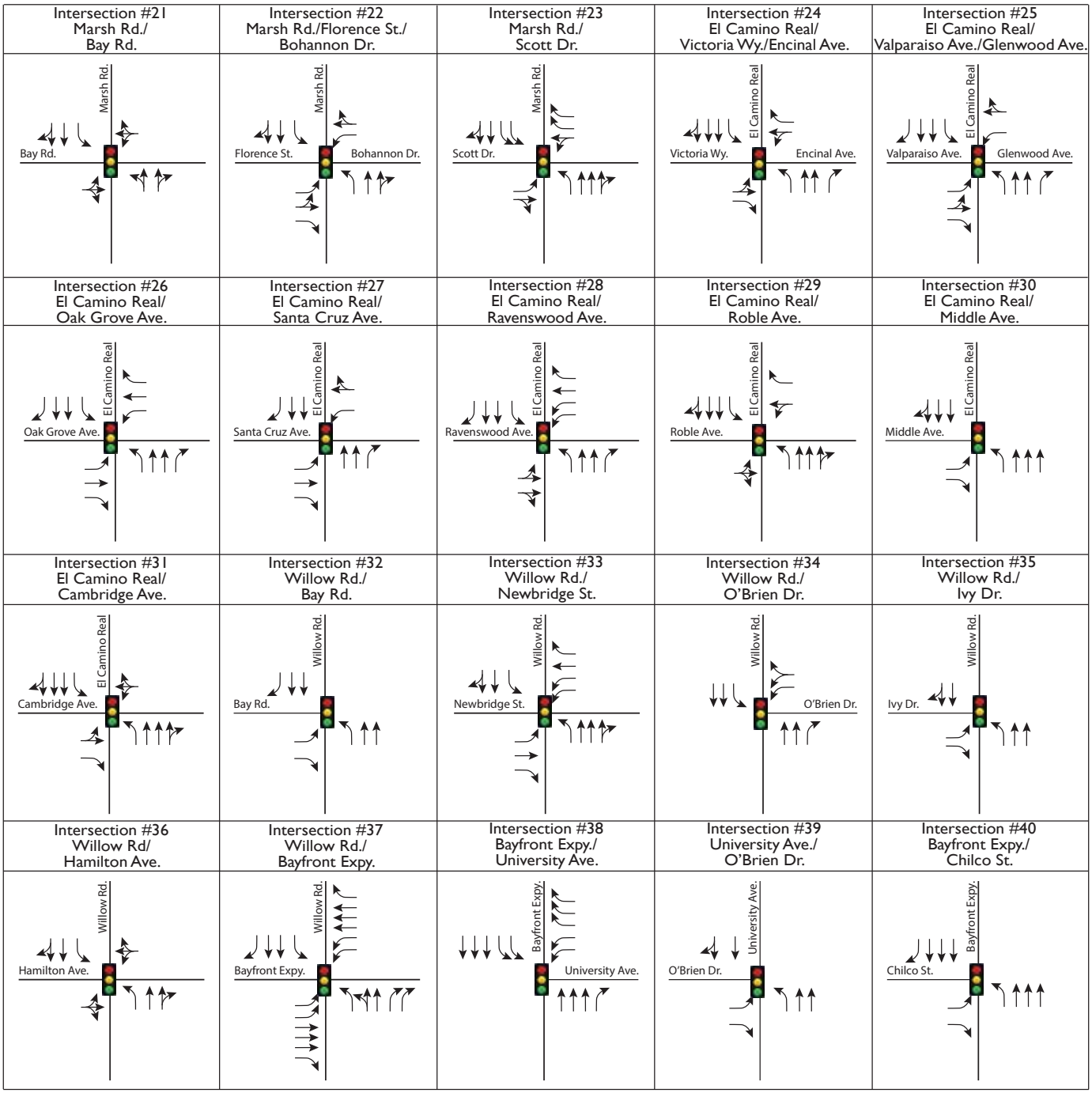
Figure 3.3-3
Existing Lane Geometry and Signal Controls
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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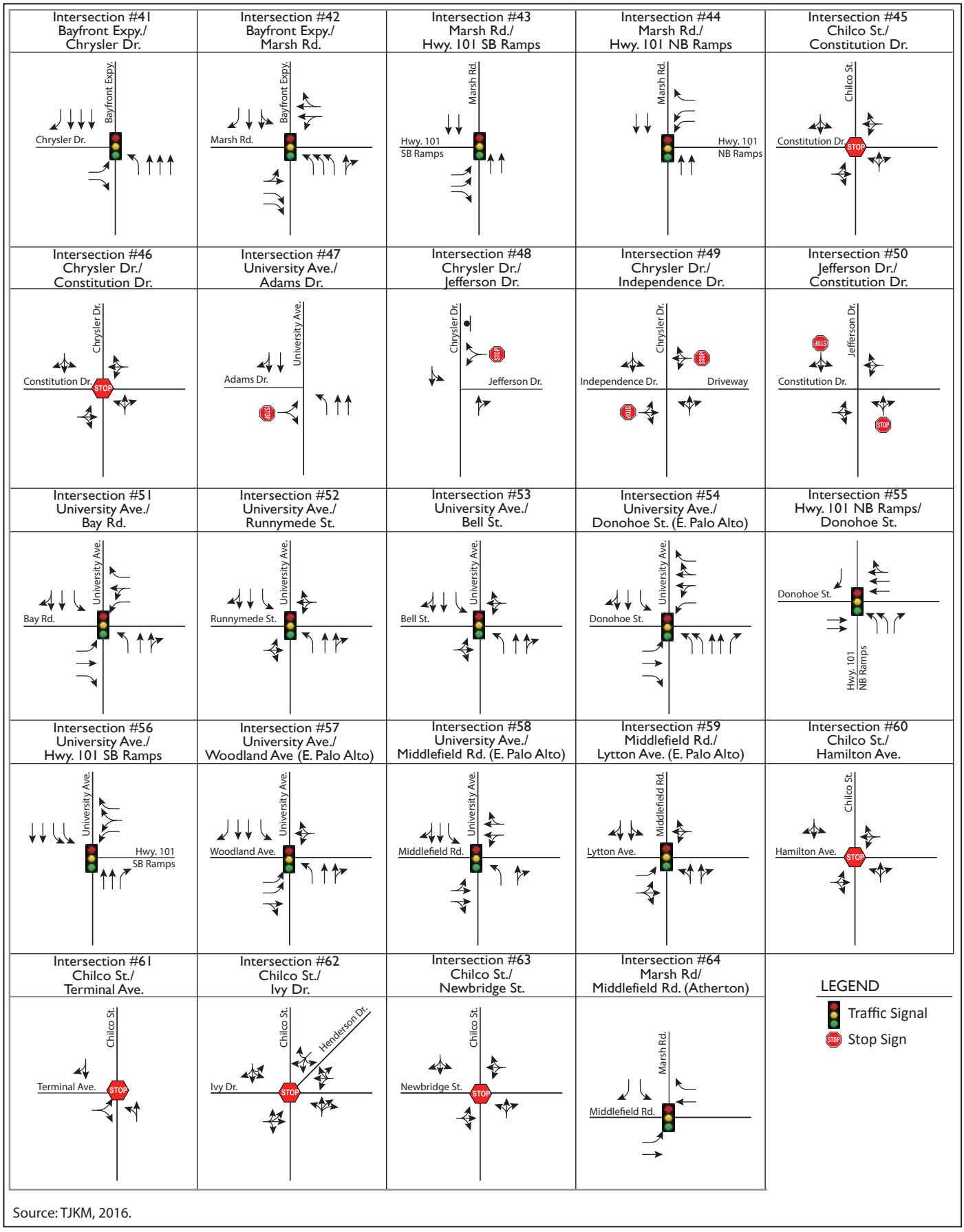
Figure 3.3-4
Existing Lane Geometry and Signal Controls
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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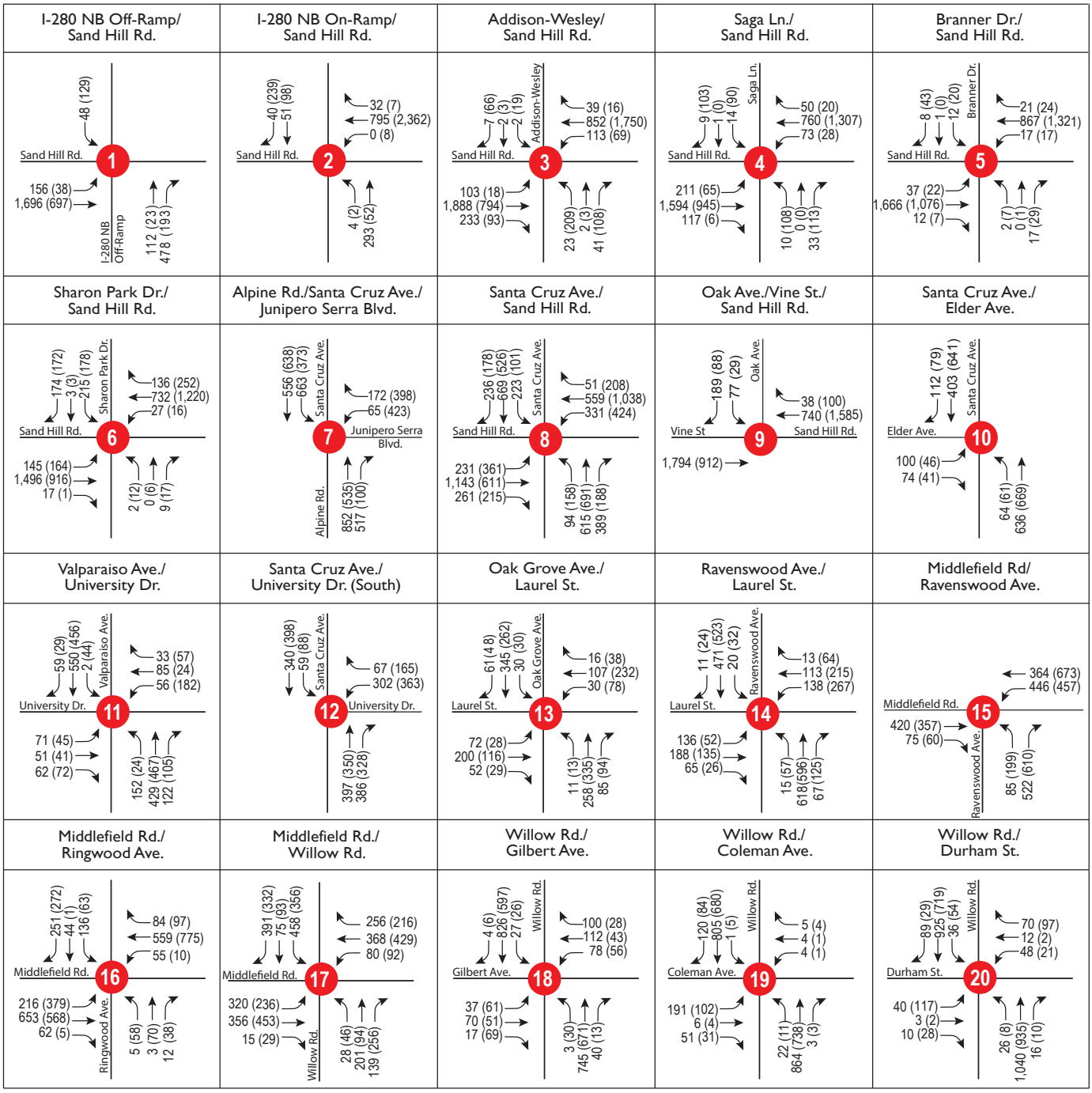
Figure 3.3-5
Existing Lane Geometry and Signal Controls
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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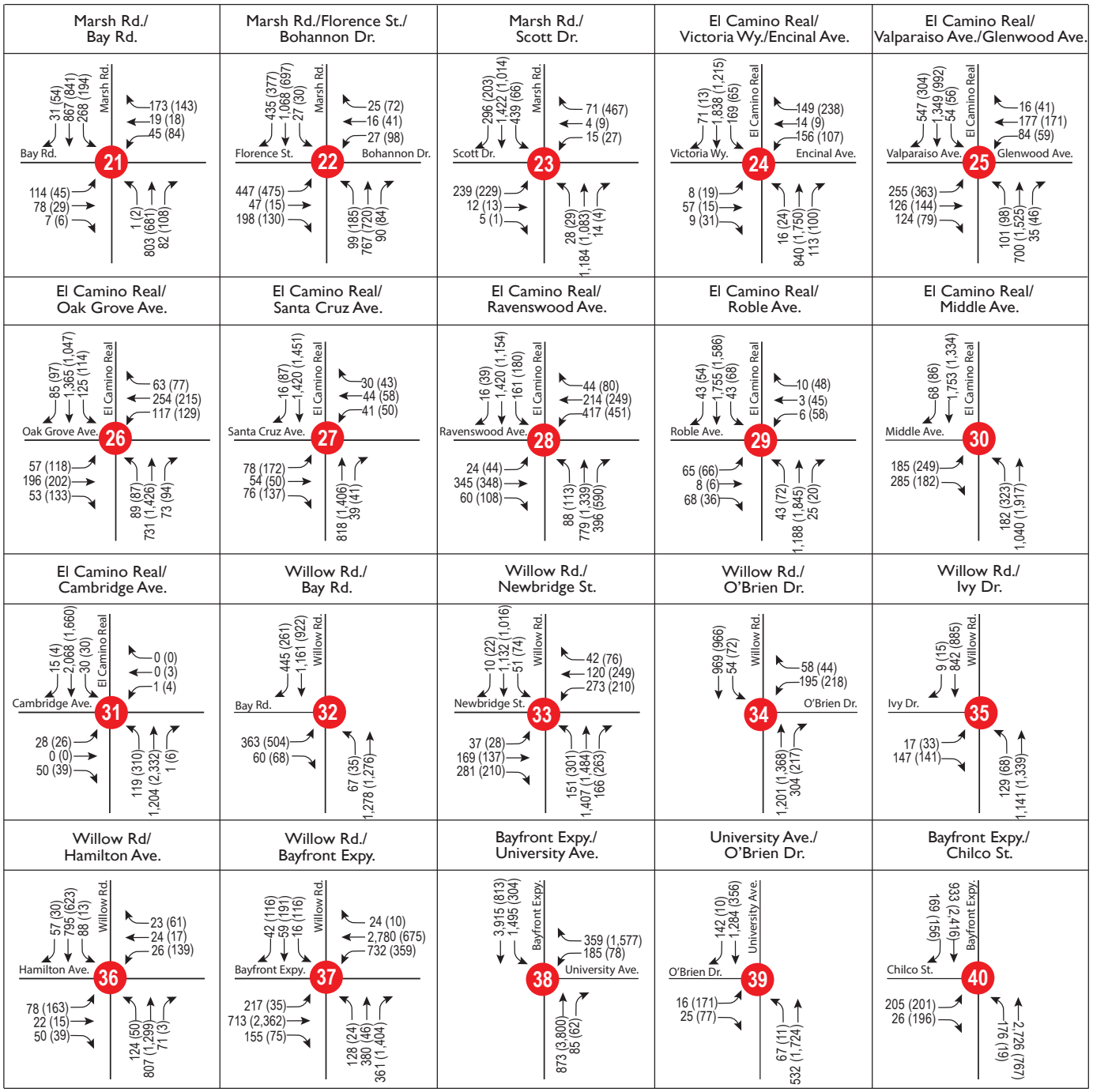
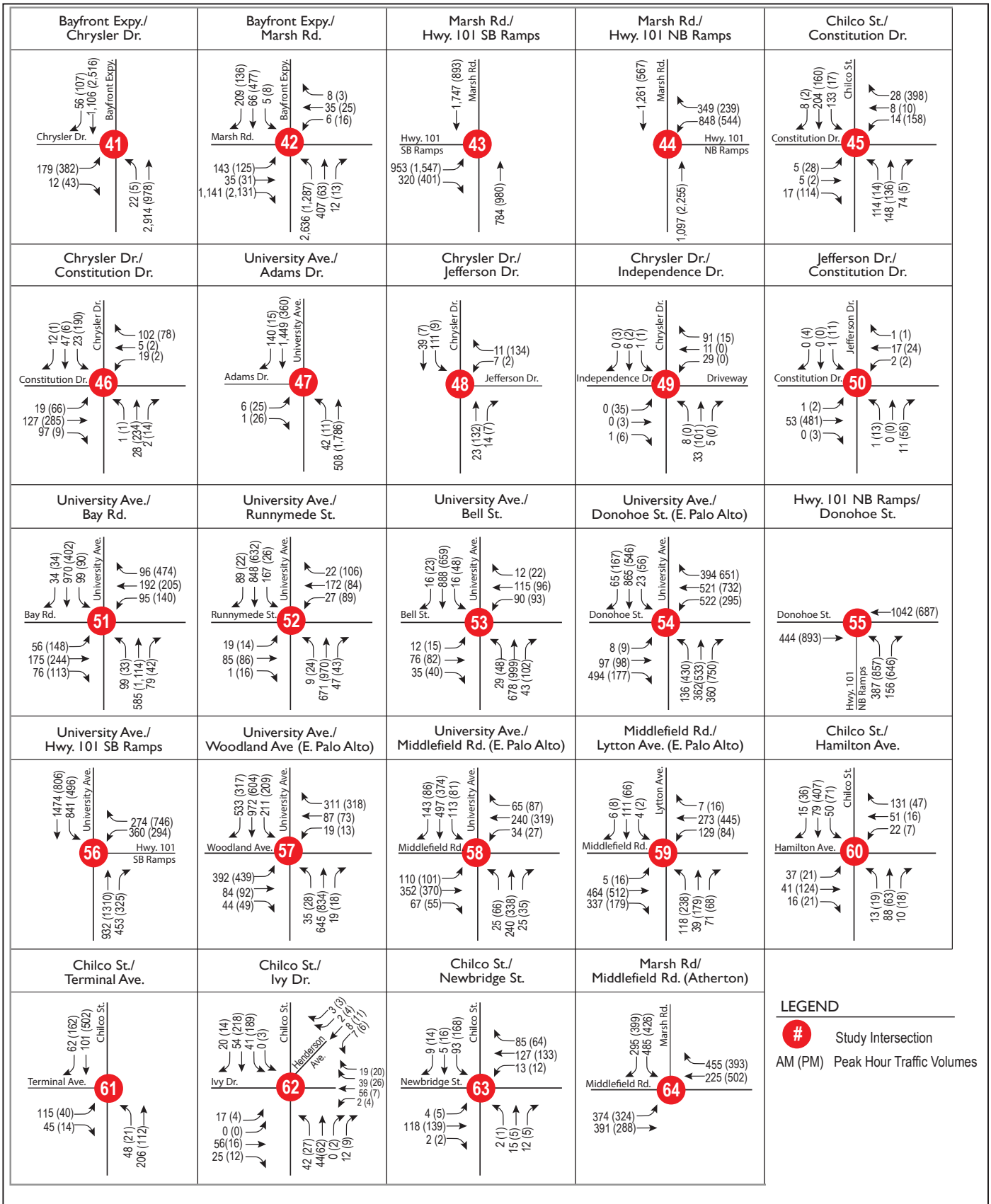
Figure 3.3-6
Existing Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-7
Existing Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-8
Existing Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR

Table 3.3-2. LOS Definitions for Stop-controlled Intersections

Level of Service	Description
A	Very low control delay (less than 10 seconds per vehicle for each movement subject to delay).
B	Low control delay (greater than 10 and up to 15 seconds per vehicle for each movement subject to delay).
C	Acceptable control delay (greater than 15 and up to 25 seconds per vehicle for each movement subject to delay).
D	Tolerable control delay (greater than 25 and up to 35 seconds per vehicle for each movement subject to delay).
E	Limit of tolerable control delay (greater than 35 and up to 50 seconds per vehicle for each movement subject to delay).
F	Unacceptable control delay (in excess of 50 seconds per vehicle for each movement subject to delay).

Existing Conditions Intersection LOS Findings

The existing operations of the study intersections were evaluated for the highest 1-hour volume during the weekday morning and evening peak periods. The City of Menlo Park provided turning movement counts for each study intersection as well as signal timing sheets for each signalized study intersection where available. Turning movement counts for vehicles, bicycles, and pedestrians were conducted during typical weekday a.m. and p.m. peak periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., respectively) at the study intersections in fall 2014. Appendix 3.3-3 includes all data sheets for the collected vehicle, bicycle, and pedestrian counts. Detailed LOS calculations are contained in Appendix 3.3-4. Traffic operations for each study intersection were evaluated under existing conditions for the weekday a.m. and p.m. peak hour, based on the turning movement count data. Existing lane configurations, signal timings, and peak-hour turning movement volumes were used to calculate the levels of service for the study intersections during each peak hour.

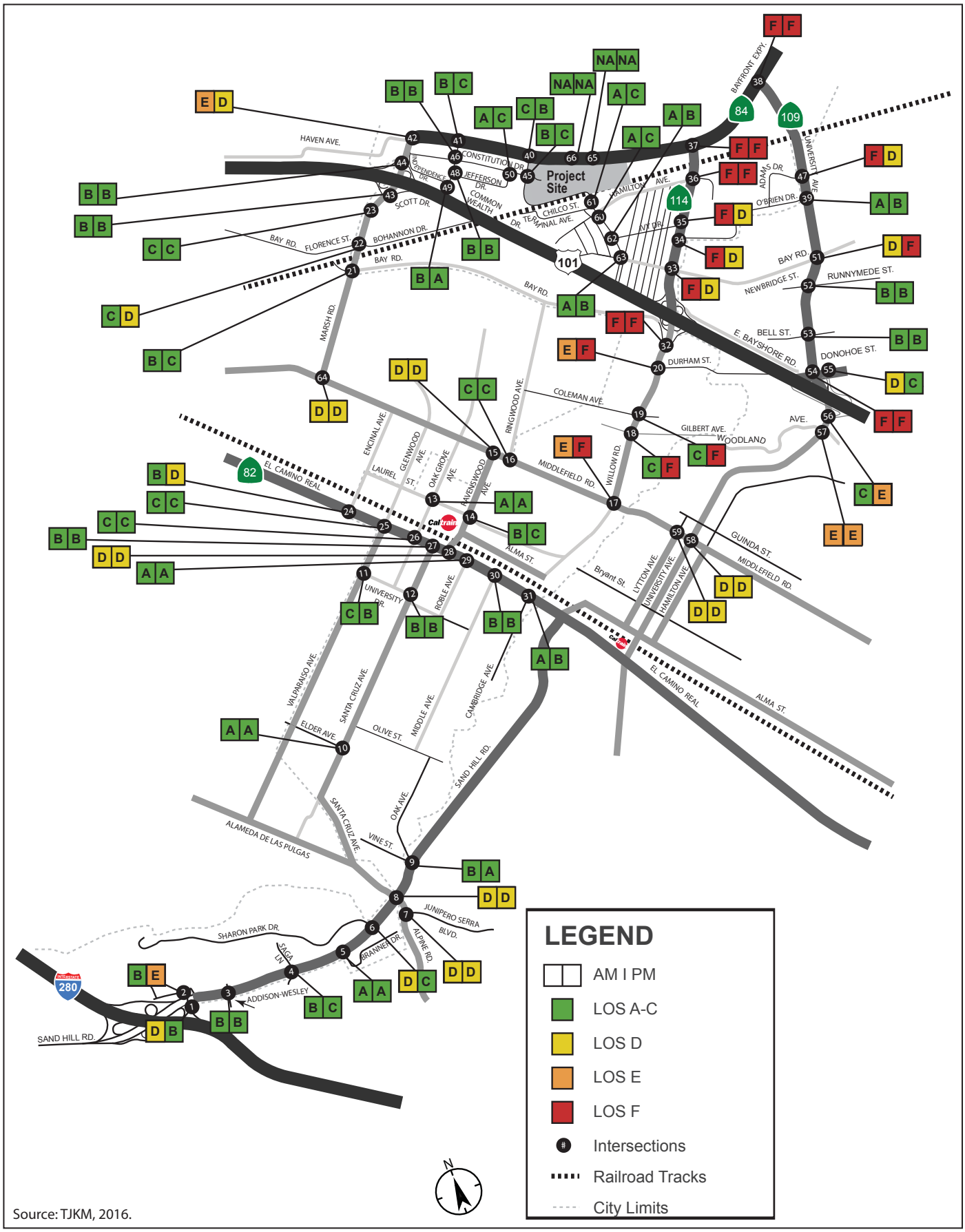
Figure 3.3-9 illustrates the peak-hour LOS for each study intersection under existing conditions. Average delay at each intersection is summarized in the detailed tables provided in Appendix 3.3-1. According to the LOS analysis, the following 18 study intersections operate unacceptably under existing conditions during the a.m. and/or p.m. peak hours, as described below:

- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand due to both upstream and downstream congestion that is not reflected in the peak-hour traffic volume counts at this location and, thus, results in additional delay that is not measured by the VISTRO calculations.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.

- Willow Road and Durham Street (#20) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Bay Road (#32) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Newbridge Street (#33) – a.m.
    - During the a.m. peak hour, this finding reflects unserved demand due to upstream and downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
    - During the a.m. peak hour, this finding reflects unserved demand due to upstream and downstream queues (southbound approaching the US 101 ramps).
- Willow Road and Ivy Drive (#35) – a.m.
    - During the a.m. peak hour, this finding reflects unserved demand due to upstream and downstream queues (southbound approaching the US 101 ramps).
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
    - During the p.m. peak hour, this finding reflects unserved demand that affects northbound right-turn movements.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
    - During the a.m. peak hour, this finding reflects unserved demand that affects westbound left-turn movements.
- Marsh Road and Bayfront Expressway (#42) – a.m.
- University Avenue and Adams Drive (#47) – a.m.
    - LOS at this stop-controlled intersection reflects delay due to the low-volume side street where it approaches the stop sign.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 southbound ramps (#56) – p.m.
- University Avenue and Woodland Avenue (#57) – a.m. and p.m.

Environmental Impacts

This section describes the impact analysis for the Project related to transportation. It discusses the methods that were used to determine the impacts of the Project and lists the thresholds that were used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-9
Intersection LOS – Existing Conditions
Facebook Campus Expansion Project Draft EIR

Thresholds of Significance

Appendix G of the CEQA Guidelines includes significance criteria for potential transportation impacts. These include criteria related to whether a project would result in one of the following:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, bicycle and pedestrian paths, and mass transit.
- Conflict with an applicable CMP, including, but not limited to, LOS standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities.

The Project analysis includes facilities within the jurisdiction of the Menlo Park, Atherton, East Palo Alto, Palo Alto, and Caltrans. The transportation items of the CEQA Guidelines checklist are addressed through these local, regional, and state guidelines. As such, the appropriate standard of significance is applied to respective intersections, roadway segments, or Routes of Regional Significance, as defined in the section below.

Transportation Impact Criteria

The City of Menlo Park, Town of Atherton, City of East Palo Alto, City of Palo Alto, and Caltrans each have transportation impact guidelines and standards of significance. The transportation items of the CEQA Guidelines checklist are addressed through these local, regional, and state guidelines. The Project analysis includes City of Menlo Park, Town of Atherton, City of East Palo Alto, City of Palo Alto, and Caltrans facilities. As such, the appropriate standard of significance is applied to respective intersections, roadway segments, or Routes of Regional Significance. The following standards of significance are prescribed by the City of Menlo Park, Town of Atherton, City of East Palo Alto, City of Palo Alto, and Caltrans. Additionally, the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* from the Governor's Office of Planning and Research defines potential thresholds for assessing VMT, as described below. Impacts would be potentially significant if the conditions described below were to occur.

City Arterial Intersections. Project traffic increment causes an intersection that operates at LOS D or better to reach LOS E or F, increases average vehicle delay by more than 23 seconds, or increases vehicle delay for the most critical movements at an arterial intersection that operates at LOS E or F prior to the addition of Project traffic by more than 0.8 second.

Local Approaches to State-Controlled Intersections. Project traffic increment causes an intersection that operates at LOS D or better to reach LOS E or F, increases average vehicle delay by more than 23 seconds, or increases vehicle delay for the most critical movements at an arterial intersection that operates at LOS E or F prior to the addition of Project traffic by more than 0.8 second.

Other City Intersections (Collector and Local Streets). Project traffic increment causes an intersection that operates at LOS C or better to reach LOS D, E, or F; increases average vehicle delay by more than 23 seconds; or increases vehicle delay for the most critical movements at a collector or local street intersection that operates at LOS E or F prior to the addition of Project traffic by more than 0.8 second.

State- (Caltrans) Controlled Intersections. At state-controlled intersections that currently operate at LOS D or better, the Project would have an impact if the cumulative analysis were to indicate that the combination of the Project and future cumulative traffic demand would result in the intersections operating at an LOS that would violate the adopted standard and the Project would increase control delay at the intersections by 4 seconds or more. For intersections that operate at LOS E or F, the Project would have an impact if the cumulative analysis were to indicate that the combination of the Project and future cumulative traffic demand would increase average control delay at the intersection by 4 seconds or more.

Atherton Intersections. At Town of Atherton–controlled intersections that currently operate at LOS D or better, the Project would have an impact if the Project traffic increment were to result in an intersection LOS of E or F or, if the LOS is currently E or F, increase the critical worst-approach delay by 4 seconds or more.

Palo Alto and East Palo Alto Intersections. At Palo Alto and East Palo Alto–controlled intersections that currently operate at LOS D or better, the Project would have an impact if LOS were to deteriorate to E or F or, if the LOS is currently E or F, the average control delay for critical movements were to deteriorate by 4 seconds or more and the critical volume-to-capacity (v/c) ratio value increase by 0.01 or more.

Routes of Regional Significance. LOS standards for freeway segments are based on the San Mateo City and County Association of Governments (C/CAG) impact criteria from the 2015 CMP. According to the CMP, for a freeway segment that is currently in compliance with the adopted LOS standard, a project would have an impact if it were to cause the segment to operate at an LOS that would violate the adopted standard. Additionally, a project would have an impact if the cumulative analysis were to indicate that the combination of the Project and future cumulative traffic demand would result in the segment operating at an LOS that would violate the adopted standard. An impact could also occur if the Project were to increase traffic demand on a freeway segment's capacity by 1 percent or more or cause the freeway segment's v/c ratio to increase by 1 percent. If the freeway segment is not in compliance with the adopted LOS standard, the Project would have an impact if it were to add traffic demand equal to 1 percent or more of the capacity of the segment or cause the freeway segment's v/c ratio to increase by 1 percent.

City Arterials. The existing ADT is (1) greater than 18,000 (90 percent of capacity) and the net increase in Project-related ADT is 100 or more trips, (2) the ADT is greater than 10,000 (50 percent of capacity) but less than 18,000 and Project-related traffic increases the ADT by 12.5 percent or the ADT becomes 18,000 or more, or (3) the ADT is less than 10,000 and Project-related traffic increases the ADT by 25 percent.

City Collectors. The existing ADT is (1) greater than 9,000 (90 percent of capacity) and the net increase in Project-related ADT is 50 or more trips, (2) the ADT is greater than 5,000 (50 percent of capacity) but less than 9,000 and Project-related traffic increases the ADT by 12.5 percent or the ADT becomes 9,000 or more, or (3) the ADT is less than 5,000 and Project-related traffic increases the ADT by 25 percent.

Local Streets. The existing ADT is (1) greater than 1,350 (90 percent of capacity) and the net increase in Project-related ADT is 25 or more trips, (2) the ADT is greater than 750 (50 percent of capacity) but less than 1,350 and Project-related traffic increases the ADT by 12.5 percent or the ADT becomes 1,350, or (3) the ADT is less than 750 and Project-related traffic increases the ADT by 25 percent. For City of Palo Alto–controlled local streets, Project-related traffic increases the Traffic Infusion on Residential Environment (TIRE) index by 0.1 or more.

Bicycle and Pedestrian Facilities. The Project would not provide adequate pedestrian or bicycle facilities that would connect with the area's circulation system; vehicles would cross pedestrian facilities on a regular basis that have inadequate designs and/or warning systems, causing safety hazards; or the Project design would increase the potential for bicycle/vehicle conflicts. In addition, the Project would include elements that would conflict with applicable bicycle and pedestrian polices.

Transit. The Project would generate a substantial increase in the number of transit riders, riders who could not be adequately serviced by existing transit services, or the Project would generate demand for transit services in an area that is more than 0.25 mile from existing transit routes. In addition, the Project would include elements that would conflict with applicable transit polices.

VMT. The Project would result in VMT per employee that would exceed a level 15 percent below existing VMT per employee for the region. For purposes of this analysis, because the Project Sponsor would draw employees from much of the Bay Area, the nine-county Bay Area region is considered for the regional average. Data from the 2013 Plan Bay Area environmental impact report were used to determine regional average VMT per employee.

Impacts Not Evaluated in Detail

Air traffic impacts were not evaluated because the Project does not contain elements that would result in a change to air traffic patterns.

Methods for Analysis

Travel Demand Modeling Methodology

Menlo Park Model: A new citywide travel demand model, the Menlo Park Model (MPM), was developed for purposes of developing traffic forecasts for the Project and the ConnectMenlo General Plan Update. The MPM is based on the latest C/CAG model, which was received on July 19, 2015. Three model years of the C/CAG model were obtained (2013, 2020, and 2040), and the same land use data category, modeling technical assumptions, time of day, and regional origin/destination travel patterns that were used in the C/CAG model were maintained in the MPM model to ensure consistency with regional forecasts.

Zonal details in the Menlo Park city area were enhanced by nesting them within the C/CAG model's refined traffic analysis zones (TAZs) to guarantee interoperability between the new TAZ structure and the regional model's TAZs. The City provided the new TAZ boundary definition. The number of TAZs within city boundaries increased from 24 in the C/CAG model to 80 in the MPM. The new TAZ structure provides the detailed information required to support the traffic analysis in the General Plan Circulation

Element Update and the Project. The General Plan land use data in the refined TAZs were provided by the City. The General Plan land use data were converted into C/CAG model land use classifications by assuming the same allocation percentages as in the parent C/CAG TAZ. For example, if the single-family household (SFHH) to multi-family household (MFHH) ratio was 60/40 in the parent C/CAG TAZ, the same 60/40 ratio was used to allocate total households (HH) into SFHH and MFHH in all MPM TAZs that were nested within this parent C/CAG TAZ.

The enhancement of network details for local streets in the study area was based on the latest MTC Travel Model Two (TM2) network. The roadway network in the MTC TM2 network was developed from the TomTom (previously TeleAtlas) North America routable network database. The key link attributes required for demand modeling, such as facility type, area type, and link class, were coded to be consistent with the C/CAG model.

Dynamic Traffic Assignment

A well-known issue with static traffic assignment in traditional travel demand models is the overestimation of link volumes because physical congestion was not represented in vehicle routing. It is not unusual to see unrealistic v/c ratios, sometimes greater than 1.5, in future conditions. This overestimation issue is especially problematic during peak-hour congestion because not all trips can reach their destinations during the peak hour. A new Dynamic Traffic Assignment (DTA) methodology that simulates the progression of vehicles in a network, with physical congestion explicitly considered, provides a more realistic forecast of vehicle routing under peak-hour congestion. Vehicles reroute when a link is blocked; hence, the v/c ratios rarely exceed 1. Thus, in addition to the C/CAG time-of-day models, a DTA model for a.m./p.m. peak-hour conditions was developed to enhance the modeling of vehicle speed and VMT under congested conditions on local streets. A subarea extraction procedure was conducted to obtain a citywide trip table that contains origin/destination trips between MPM TAZs and external stations and is consistent with regional origin/destination travel patterns in the C/CAG model. The citywide trip tables were then assigned, using the DTA peak-hour model, to obtain peak-hour link volumes.

The MPM model is suitable for forecasting realistic peak-hour traffic volumes, travel speeds, and travel times on local roadways and intersections under future congested conditions within the city sphere of influence. The MPM model can also produce VMT information for the entire trip length, as required by Senate Bill 743 guidelines, because the trip generation, distribution, and mode choice models were created for the regional scale.

Analysis Scenarios

The conditions outlined below were analyzed as part of the Draft EIR.

Existing Conditions – This scenario evaluates current conditions, using traffic data collected by the City of Menlo Park in fall 2014. At that time, Buildings 10–19 were partially occupied, and Building 20 was not yet occupied. For purposes of this Draft EIR, however, trips generated by Buildings 10–19 and Building 20 at full occupancy are included under background conditions.

Background Conditions – This scenario describes the anticipated change in transportation conditions, based on the net change in travel patterns anticipated to result from approved but not-yet-constructed or fully occupied developments in Menlo Park at the time of the existing conditions assessment. This includes additional trips that would be generated by Buildings 10–20 and Building 23 at full occupancy, based on approved trip caps for the existing Facebook Campus.

Background plus-Project Conditions – This scenario evaluates potential transportation impacts that would result from the Project, based on the Project description provided in Chapter 2. The evaluation of traffic impacts was based on the proposed net increase in the number of allowable peak-hour and daily vehicle trips under the proposed trip cap.

Cumulative 2040 Existing General Plan Conditions – This scenario evaluates transportation conditions that would result from buildout to the maximum development potential under the current adopted General Plan in 2040. This scenario includes previously approved development on the Project site (same as in background conditions) as well as additional development potential under the current General Plan.

Cumulative 2040 Existing General Plan plus-Project Conditions – This scenario evaluates potential cumulative transportation impacts that would result from the Project in 2040, assuming full buildout, under the current adopted General Plan. The evaluation of traffic impacts was based on the proposed net increase in the number of allowable peak-hour and daily vehicle trips under the proposed trip cap.

Cumulative 2040 Proposed General Plan Conditions – This scenario evaluates potential cumulative transportation impacts that would result from the Project in 2040 with maximum buildout under the proposed update to the General Plan (ConnectMenlo) in 2040 (including the Project).

Background Conditions

This section evaluates baseline conditions for the Project and assumes that all approved projects in Menlo Park will be constructed, along with expected land use and traffic growth in the region to 2020, including full occupancy of existing Facebook Buildings 10–20 and Building 23.

Table 3.3-3 summarizes the anticipated number of residents and jobs, based on approved residential and non-residential development in Menlo Park under background conditions. The net change in jobs under background conditions also assumes full occupancy of existing Facebook Buildings 10–20 and Building 23.

Table 3.3-3. Menlo Park – Background Growth from Approved Projects

Analysis Scenario	Dwelling Units	Residents	Non-residential Development (gsf)	Jobs
Existing Conditions	13,100	32,900	14,600,000	30,900
Background Conditions	14,380	36,200	16,000,000	36,800
Net Increase (background conditions)	***1,280***	***3,300***	***1,400,000***	***5,900***

Approved Trip Generation for Existing Facebook Buildings

Traffic growth under background conditions includes approved vehicle trips that can be generated by Buildings 10–20 and Building 23 at full occupancy. Given the trip caps that were approved when Buildings 10–20 were entitled and permitted trips for Building 23, a maximum of 25,402 daily vehicle trips may be generated by Buildings 10–20 and Building 23 at full occupancy, including 3,117 a.m. peak-hour vehicle trips and 3,432 p.m. peak-hour vehicle trips. Existing buildings at both campuses generated 1,171 a.m. peak-hour and 1,299 p.m. peak-hour trips when the existing conditions traffic data were collected (prior to occupancy of Building 20). Therefore, the growth in traffic generated by approved trips under background conditions includes the net remaining vehicle trips that could be generated by Buildings 10–20 and Building 23 at full occupancy (approximately 2,000 additional vehicle trips during both peak hours, as summarized in Table 3.3-4).

Table 3.3-4. Approved Vehicle Trip Generation for Existing Facebook Buildings at Full Occupancy

Existing Buildings	A.M. Peak Hour	P.M. Peak Hour	Daily
Approved Vehicle Trips			
Buildings 10–19	*1,820*	*1,820*	*15,000*
Building 20	*772*	*772*	*6,634*
Building 23	*525*	*840*	*3,768*
Total Approved Vehicle Trips	**3,117**	**3,432**	**25,402**
Existing Conditions Trip Generation	1,171	1,299	10,500
Net Approved Vehicle Trips (background conditions)	***1,946***	***2,133***	***14,902***

Planned Transportation Improvements

The following transportation projects are planned and funded for construction in Menlo Park under background conditions:

- Willow Road and US 101 Interchange: Planned reconstruction of the Willow Road/US 101 interchange, including future signalized intersections at the junction of the ramps and Willow Road. It is anticipated that the Project would be completed by 2018.
- Bayfront Expressway and Chilco Street: Planned installation of a second northbound left-turn lane and a longer right-turn lane in conjunction with bicycle lane modifications and crosswalk installation across the south leg of the intersection.
- Bayfront Expressway and Chrysler Drive: Planned installation of a second northbound left-turn lane and a longer right-turn lane in conjunction with crosswalk installation across the south leg of the intersection.
- Bayfront Expressway and Marsh Road: Planned installation of a third eastbound right-turn lane.

Traffic Volumes and LOS

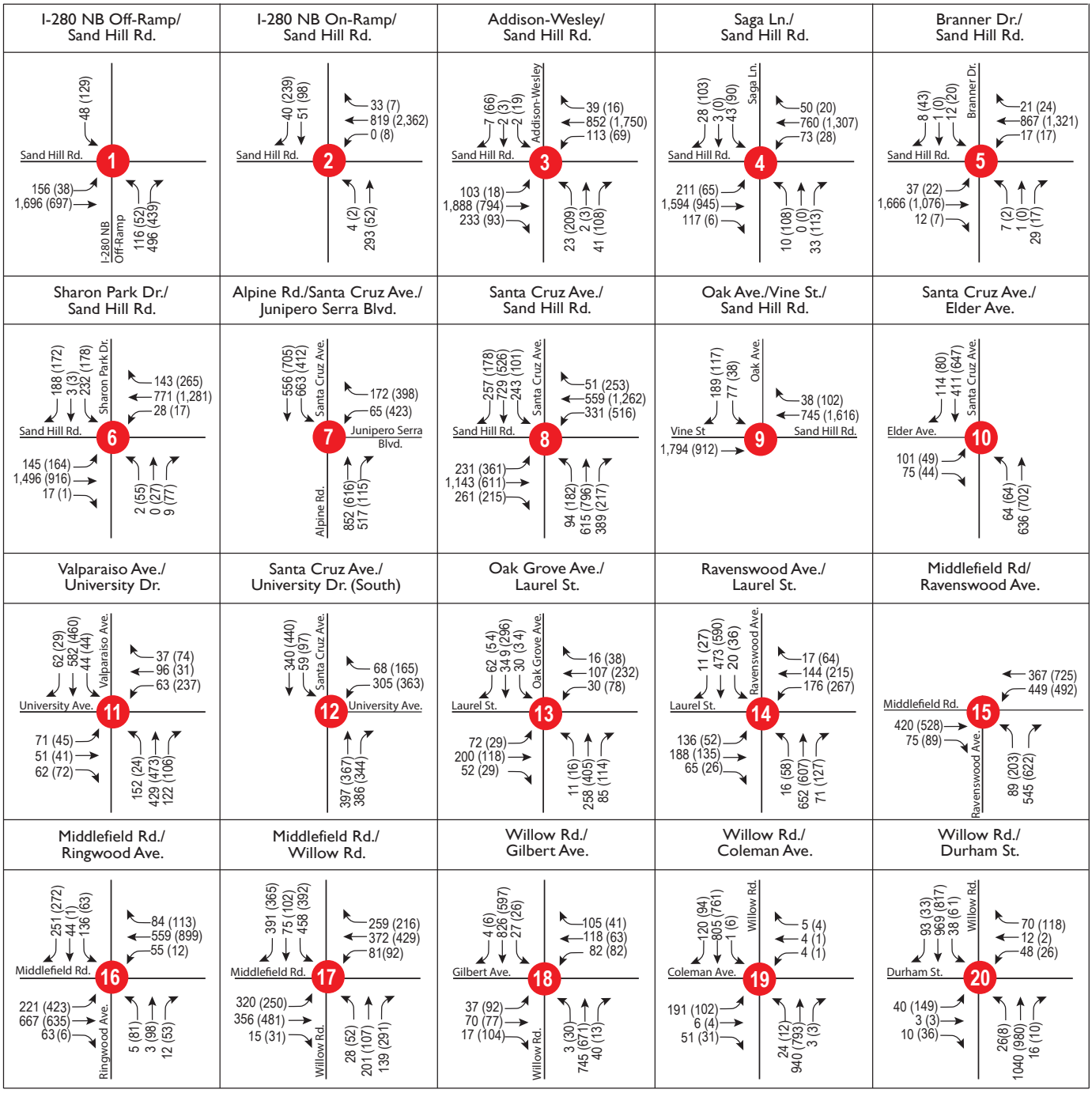
Daily Traffic Volumes

Forecast daily traffic volumes on study segments under background conditions are shown in Appendix 3.3-2, which contains tables that show the existing and forecast traffic volumes for each study segment under all scenarios. Daily traffic volumes under background conditions are shown in the column headed "forecast background." This column shows the volumes on study segments after Menlo Park's approved projects have been constructed. In addition, this scenario reflects traffic that is expected to be added in the region between 2013 and 2020. By comparing this column with existing volumes, the growth related to these background projects can be seen.

Peak-Hour Traffic Volumes

Forecasts of peak-hour traffic volumes under background conditions at each study intersection were based on anticipated changes in peak-hour traffic volumes resulting from approved projects in Menlo Park. Utilizing the MPM model, this forecast also incorporates anticipated changes in the jobs/housing balance in adjacent cities and throughout the region by 2020 that affect peak-hour traffic patterns.

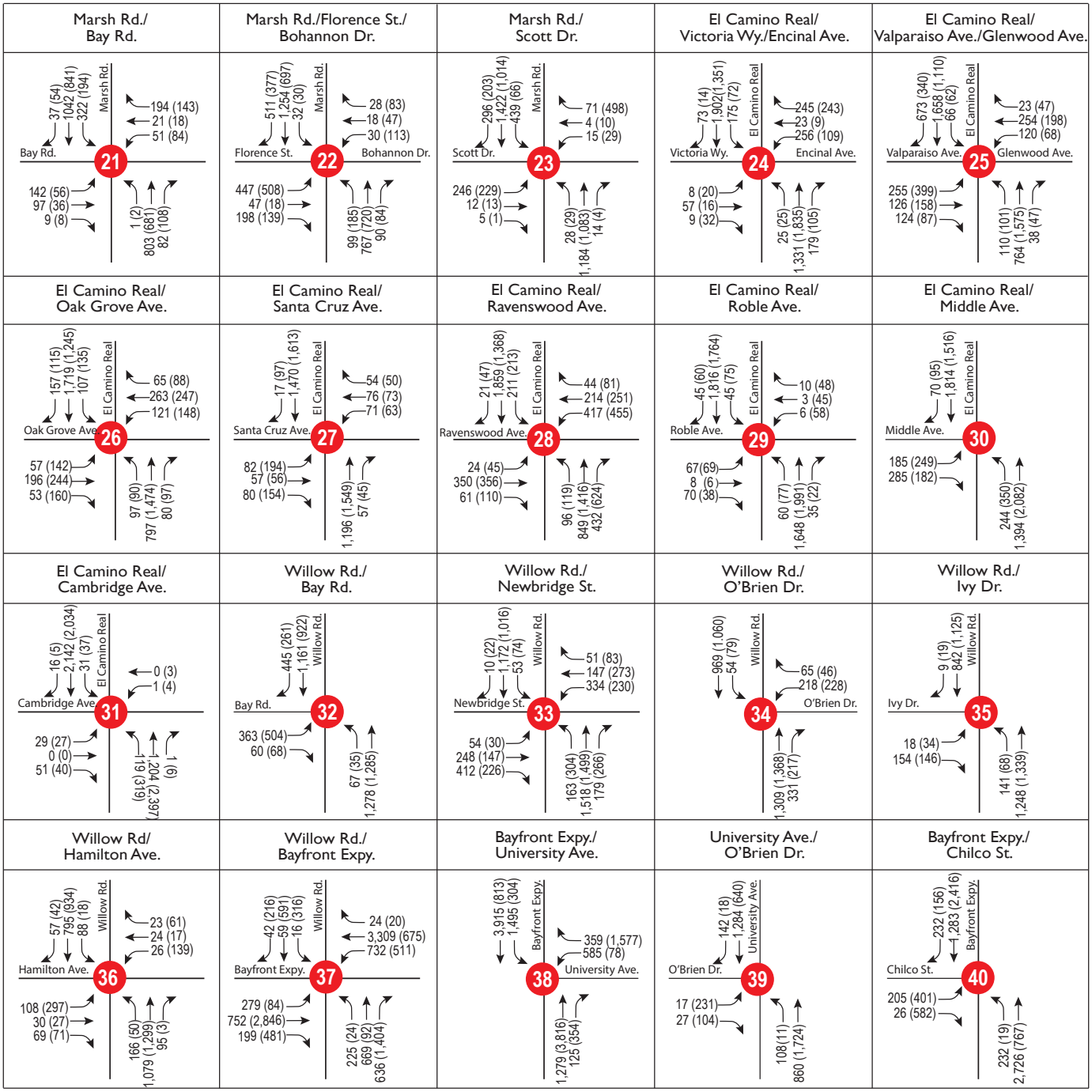
Figures 3.3-10 through 3.3-12 illustrate forecast peak-hour vehicle turning movement volumes under background conditions at each study intersection.



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

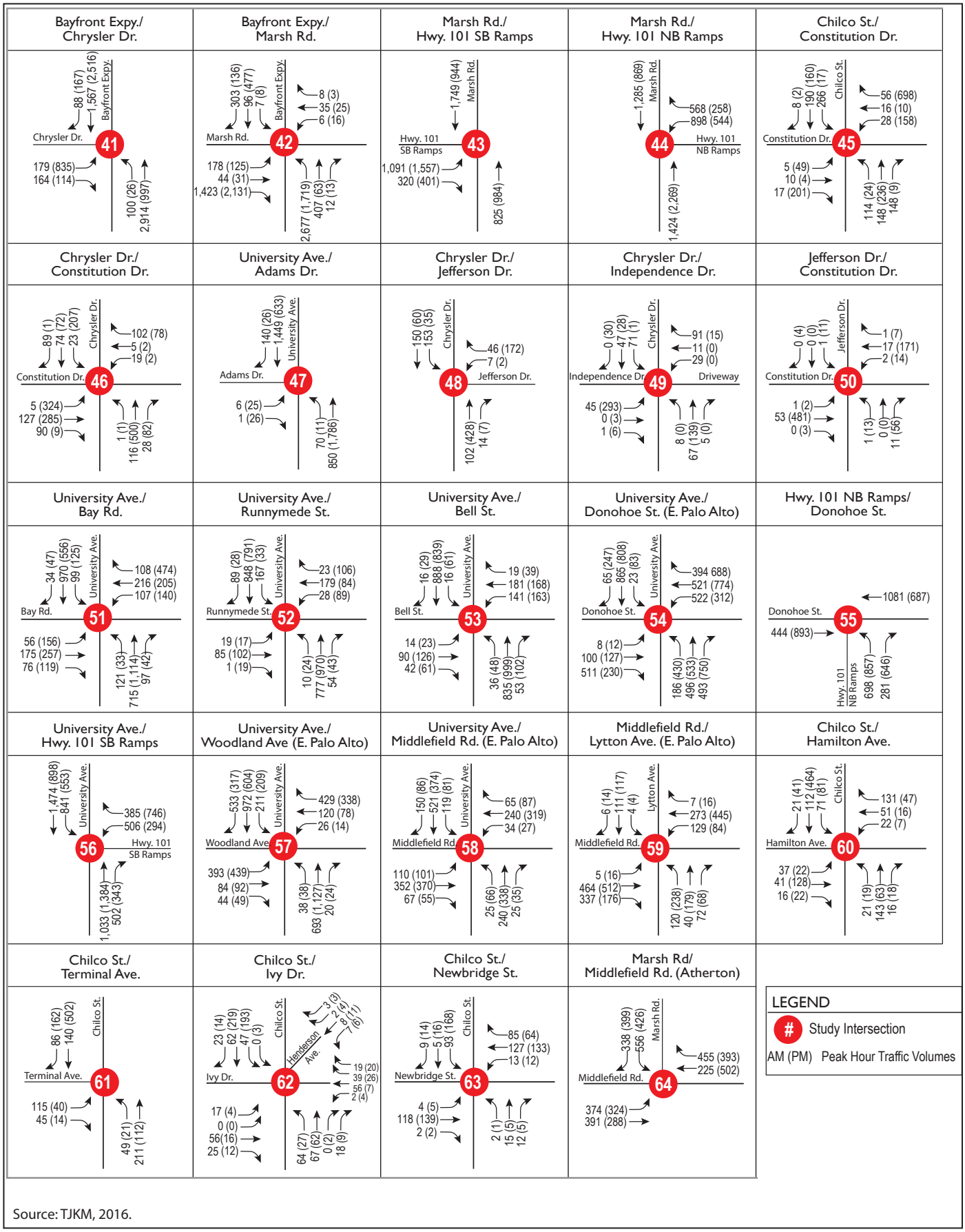
Figure 3.3-10
Background Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-11
Background Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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Figure 3.3-12
Background Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR

Background Conditions Intersection LOS Findings

Figure 3.3-13 illustrates the peak-hour LOS for each study intersection under background conditions without the Project. Average delay for each intersection is summarized in Appendix 3.3-1. The following 21 study intersections would operate unacceptably under background conditions:

- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Middlefield Road and Ravenswood Avenue (#15) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Durham Street (#20) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Bay Road (#32) – a.m. and p.m.
    - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour, and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).
- Willow Road and Newbridge Street (#33) – a.m.
    - During the a.m. peak hour, this finding reflects delay from downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during both peak hours.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
    - During the p.m. peak hour, this finding reflects unserved demand that affects northbound right-turn movements.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
    - During the a.m. peak hour, this finding reflects unserved demand that affects westbound left-turn movements.
- Chilco Street and Constitution Drive (#45) – p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.

- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 southbound ramps (#56) – a.m. and p.m.
- University Avenue and Woodland Avenue (#57) – a.m. and p.m.
- Middlefield Road and Lytton Avenue (#59) – p.m.
- Bayfront Expressway and Building 20 entrance (#65) – p.m.

Of these 21 locations, 17 are consistent with the operating levels identified under existing conditions. The other four intersections that degrade to unacceptable levels with added traffic under background conditions are Middlefield Road and Ravenswood Avenue (#15), Chilco Street and Constitution Drive (#45), Middlefield Road and Lytton Avenue (#59), and Bayfront Expressway and Building 20 entrance (#65).

Background plus-Project Conditions

Project Components

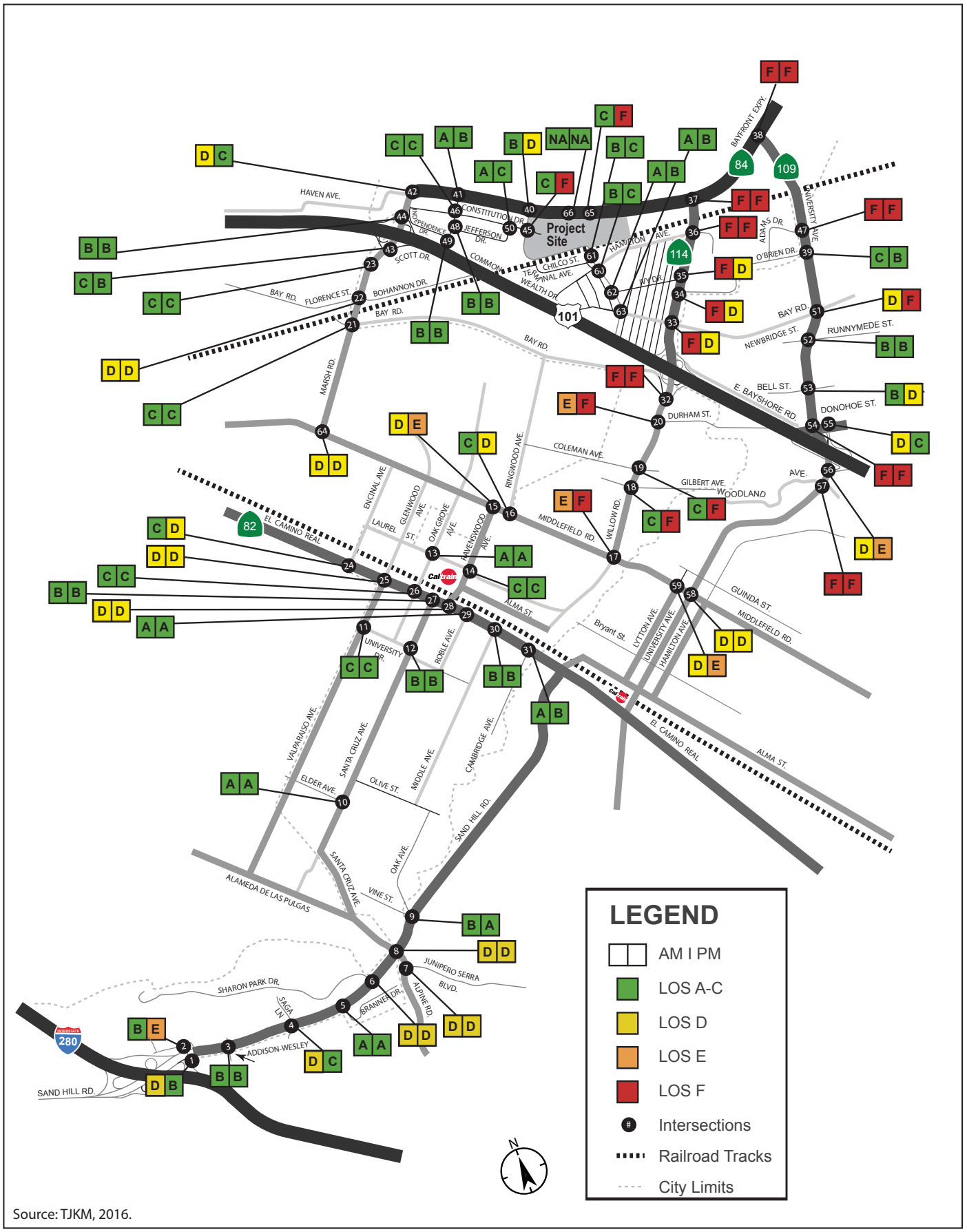
The Project location, site plan, and characteristics are described in Chapter 2 *Project Description*, including detailed descriptions of the site access, circulation, and parking components. The Project Sponsor has identified vehicular, transit, bicycle, and pedestrian routes within the Project site as well as emergency vehicle access routes that would link with Building 20 and ultimately Buildings 10–19, allowing employees and vehicles to circulate within the overall Campus.

The Project site is located in Menlo Park and bounded by Bayfront Expressway to the north, Chilco Street to the west and south, and Facebook Building 20 to the east. Regional highways that provide access to the Project site include US 101, approximately 0.3 mile to the southwest, and SR 84, immediately adjacent to the north. The Menlo Park Caltrain station is located approximately 2 miles south of the Project site, providing weekday service from San Francisco to Gilroy and weekend service from San Francisco to San José.

The existing Facebook Campus consists of Buildings 10–19, located north of SR 84, and Building 20, located adjacent to the Project site to the east. Buildings 10–19 can accommodate approximately 6,600 employees, while Building 20 can accommodate approximately 2,800 employees at full occupancy. The Project would replace other existing buildings with two new office buildings (Buildings 21 and 22) and a limited-service hotel. Building 21 would accommodate 3,400 employees, and Building 22 would accommodate 3,000 employees. One existing office building (Building 23) would remain.

The Project site is currently accessible from one all-way stop sign–controlled driveway at the intersection of Chilco Street and Constitution Drive. There is also an emergency vehicle access point between the eastern end of the Project site and the adjacent Building 20. The Project would provide additional motor vehicle access by installing a signalized intersection on Bayfront Expressway, adjacent to proposed Building 21. In addition, the existing right-turn-only intersection from Bayfront Expressway to Building 20 would provide access to the Project site.

A proposed bicycle/pedestrian bridge over Bayfront Expressway would allow for public access to the Bay Trail and Bedwell Bayfront Park (Bayfront Park) from the Project Site and the Belle Haven neighborhood. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented by the Project Sponsor as a separate project.



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-13
Intersection LOS – Background Conditions
Facebook Campus Expansion Project Draft EIR

Facebook currently offers shuttle bus service to its employees, including long-distance regional service and service to/from nearby Caltrain stations. A shuttle stop would be located on the north side of Building 21.

A TDM program would be implemented as part of the Project. The TDM program would be designed to provide alternatives to single-occupancy automobile travel to and from the Project site as well as between the Project site and the existing Facebook Campus. Facebook currently implements a TDM program, which has evolved over time to respond to employee preferences and will continue to evolve to meet the trip caps, at its existing facilities. Key ongoing elements included in the TDM program are listed below.

- Subsidized Caltrain Go-Passes and Caltrain station shuttles.
- Employee commuter shuttle bus services/intern shuttles.
- Campus bike-share program for employees.
- Bicycle amenities, such as bike shops, lockers, a towel service, bicycle pumps, self-repair stations, and loaner bikes.
- Vanpool program for groups of employees to share rides to and from work.
- Educational and promotional events to encourage employees to use alternative modes of travel.
- Rideshare program that allows users to find other drivers or passengers who are traveling along the same route.
- Emergency ride home for employees.
- Car-share service on Campus.
- Electric vehicle parking.

Proposed Parking Supply Ratio

The existing parking supply for Buildings 10–19 includes approximately 3,450 spaces in surface lots; Building 20 has approximately 1,710 parking spaces. The Project would provide 3,533 additional parking spaces, as summarized in Table 3.3-5, thereby increasing the total parking supply to 8,693 parking spaces for Buildings 10–23 and the proposed hotel. The proposed parking supply for each of the office buildings equates to a parking supply ratio of 3.16 motor vehicle parking spaces per thousand gross square feet (gsf) of building space.

Project Trip Cap

Buildings 10–19 and Building 20 are currently subject to vehicle trip caps, with a monitoring and enforcement policy that limits the number of morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak-period and daily vehicle trips to and from each of these respective sites. The vehicle trip caps for Buildings 10–19 and Building 20 were developed and approved during prior entitlement processes. The City of Menlo Park continuously monitors compliance to ensure conformance, based on counts at all Facebook driveways and outlined in the respective approvals. At the time this document was prepared (April 2016), Facebook was in compliance with the trip caps at Buildings 10–19 and Building 20.

Table 3.3-5. Proposed Motor Vehicle Parking Supply

Location	Motor Vehicle Parking Spaces	Building Size (gsf)	Parking Spaces per 1,000 gsf
Existing Parking to Remain			
Building 10–19	3,450	1,000,000	3.45
Building 20	1,710	433,555	3.94
Total (existing to remain)	*5,160*	*1,433,555*	*3.60*
Project Parking			
Building 21	1,476	512,900	2.88
Building 22	1,294	449,500	2.88
Building 23	518	180,100	2.88
Hotel	245	174,800	1.40
Project Total	***3,533***	***1,317,300***	***2.68***
Total Facebook Campus (with Project)	**8,693**	**2,750,855**	***3.16***

As part of the Project, the Project Sponsor is proposing to implement a vehicle trip cap and monitoring program for the Project (Buildings 21, 22, and the proposed hotel) that would incorporate the existing vehicle trip cap at Building 20 and permitted vehicle trip generation for Building 23. The proposed vehicle trip cap is based on a rate of 0.394 vehicle trip per Facebook employee during each 2-hour peak commute period and up to 2.273 daily vehicle trips per employee, consistent with the trip caps for Buildings 10–20. The trip generation rates for Facebook employees account not only for trips generated by the employees but also trips generated by typical numbers of contractors, interns, visitors, delivery personnel, and other non-Facebook workers.

Building 23 is not currently subject to a trip cap; however, a permitted level of traffic generation was previously identified, based on the building's prior use that allowed up to 3,745 daily vehicle trips, 525 a.m. peak-hour vehicle trips, and 840 p.m. peak-hour vehicle trips. In developing the proposed combined trip cap for the Project and Buildings 20 and 23, the Project Sponsor reduced the number of peak-hour vehicle trips generated by Building 23 to 425 during both peak hours. The trip cap also includes up to 1,784 daily vehicle trips that could be generated by the proposed hotel and up to 140 peak-hour vehicle trips, consistent with the Institute of Transportation Engineers (ITE) trip generation rates for a 200-room hotel. As proposed, the combined trip cap for the Project and Buildings 20 and 23 would allow up to:

- 4,499 vehicle trips during the 2-hour morning peak period (7:00 to 9:00 a.m.), including 3,100 a.m. peak-hour vehicle trips
- 4,511 vehicle trips during the 2-hour afternoon peak period (4:00 to 6:00 p.m.), including 3,100 p.m. peak-hour vehicle trips
- 26,438 daily vehicle trips

Buildings 10–19 are not included in the Project trip cap but remain subject to a separate trip cap for the buildings with prior approval.

Approved trip caps for Buildings 10–20 and permitted trips for Buildings 23 currently allow up to 25,128 daily vehicle trips, including 3,117 a.m. peak-hour vehicle trips and 3,432 p.m. peak-hour vehicle trips. Under the Project trip cap for Buildings 20–23 and the hotel, total allowable trip generation for both Campuses (Buildings 10–23 and the hotel) would increase to 41,457 daily vehicle trips, including 4,920 vehicle trips during both the a.m. and p.m. peak hours. The Project trip cap would, therefore, allow a net increase of 16,329 daily vehicle trips, including 1,803 a.m. peak-hour vehicle trips and 1,488 p.m. peak-hour vehicle trips.

Table 3.3-6 summarizes the proposed net increase in the number of allowable vehicle trips under the Project.

Table 3.3-6. Net Vehicle Trip Generation with Project

Existing and Proposed Trip Caps	A.M. Peak-Hour Vehicle Trips	P.M. Peak-Hour Vehicle Trips	Daily Vehicle Trips
Existing Vehicle Trip Caps (without Project)			
Buildings 10–19	1,820	1,820	15,000
Building 20	772	772	6,364
Building 23	525	840	3,764
Total Permitted Vehicle Trips (without Project)	*3,117*	*3,432*	*25,128*
Proposed Vehicle Trip Caps (with Project)			
Buildings 10–19	1,820	1,820	15,000
Buildings 20–23 and Hotel (with Project trip cap)	3,100	3,100	26,457
Total Permitted Vehicle Trips (with Project)	*4,920*	*4,920*	*41,457*
Net Vehicle Trips with Project	***1,803***	***1,488***	***16,329***

Given the amount of office space to be provided, the Project vehicle trip cap would equate to a rate of 1.88 peak-hour vehicle trips per 1,000 gsf of office space (excluding the 134 a.m. and 140 p.m. peak-hour trips that would be generated by the hotel site) during both the a.m. and p.m. peak hours. Similarly, the existing trip cap for Buildings 10–19 equates to a rate of 1.82 peak-hour vehicle trips per 1,000 gsf of office space during both the a.m. and p.m. peak hours.

The Project vehicle trip cap is based on a rate of 0.4 vehicle trip per employee, given the potential number of employees, during the 2-hour peak commute periods and 2.27 daily vehicle trips per employee. The existing trip cap allows 70 percent of the 2-hour trips to occur within a single 1-hour period, thus equating to 0.28 vehicle trip per employee during a single 1-hour period.

Background plus-Project Traffic Volumes and LOS

This section provides an analysis of background plus-Project traffic conditions, based on the maximum allowable vehicle trip generation under the trip cap. By utilizing the MPM model, the forecast accounts for the resulting change in both the local and regional balance of housing and jobs, which could affect travel patterns.

Daily Traffic Volumes and Roadway Segment Analysis

Daily traffic volumes with Project traffic, added to background conditions, are shown in Appendix 3.1-2. Given the City of Menlo Park criteria, the Project traffic would result in potentially significant impacts on 21 of the 87 roadway segments. The roadway segment volume thresholds do not reflect the true

capacity of each segment but, rather, a quality-of-life standard to minimize traffic added to residential streets. The affected segments include nine out of 30 arterial study segments, 10 out of 50 collector street study segments, and two out of seven local street study segments. The 21 affected study segments are located on the following 13 streets within Menlo Park:

- Adams Drive
- Alameda de las Pulgas
- Alpine Road
- Cambridge Avenue
- Constitution Drive
- Hamilton Drive
- Ivy Drive
- Marsh Road
- Middlefield Road
- Newbridge Street
- Oak Grove Avenue
- Sand Hill Road
- Santa Cruz Avenue

Peak-Hour Traffic Volumes

Peak-hour traffic volumes under background plus-Project conditions at each study intersection were forecast utilizing the MPM model and based on net peak-hour vehicle trip generation under the Project trip cap.

The following intersection improvements, which would be constructed as part of the Project, were incorporated into the LOS analysis:

- **Bayfront Expressway and Proposed Building 21 Entrance (Study Intersection #66):** A proposed signalized intersection on Bayfront Expressway, east of Chilco Street, that would provide additional motor vehicle access to the Project site. The proposed lane configuration would include one westbound left-turn lane and one eastbound right-turn lane from Bayfront Expressway for vehicles entering the Project site and two outbound lanes for vehicles exiting the Project site to Bayfront Expressway (one right-turn lane and one left-turn lane).

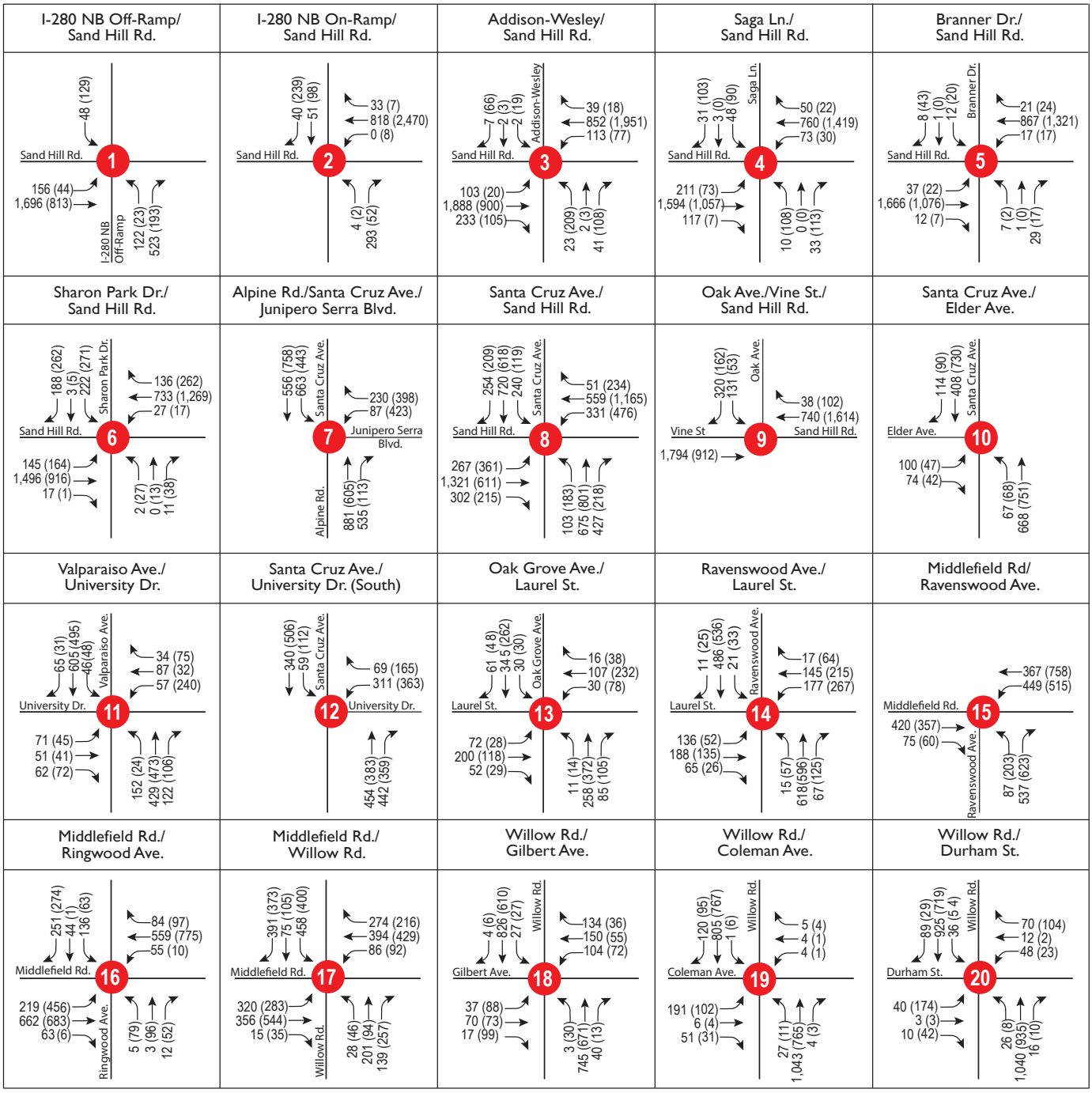
No modifications are proposed to the stop-controlled Chilco Street and Constitution Drive intersection (study intersection #45) under the Project. Lane configurations, signal timings, and pedestrian paths at the remaining study intersections would remain consistent with background conditions.

The anticipated net change in peak-hour traffic volumes at each study intersection under background plus-Project conditions was determined through use of the MPM model. This methodology takes into account the anticipated effect of the Project on regional and local travel patterns resulting from the change in the local and regional jobs/housing balance that would occur given the proposed increase in the number of jobs at the Project site.

Figures 3.3-14 through 3.3-16 illustrates the forecast peak-hour vehicle turning movement volumes at each study intersection under background plus-Project conditions. The forecast peak-hour traffic volumes reflect the anticipated net change that would result from the Project.

Background plus-Project Conditions Intersection LOS Findings

The peak-hour LOS for each study intersection under background plus-Project conditions is illustrated in Figure 3.3-17 and summarized in Appendix 3.3-1. The following 24 study intersections would operate unacceptably under background plus-Project conditions:



Source: TJKM, 2016.

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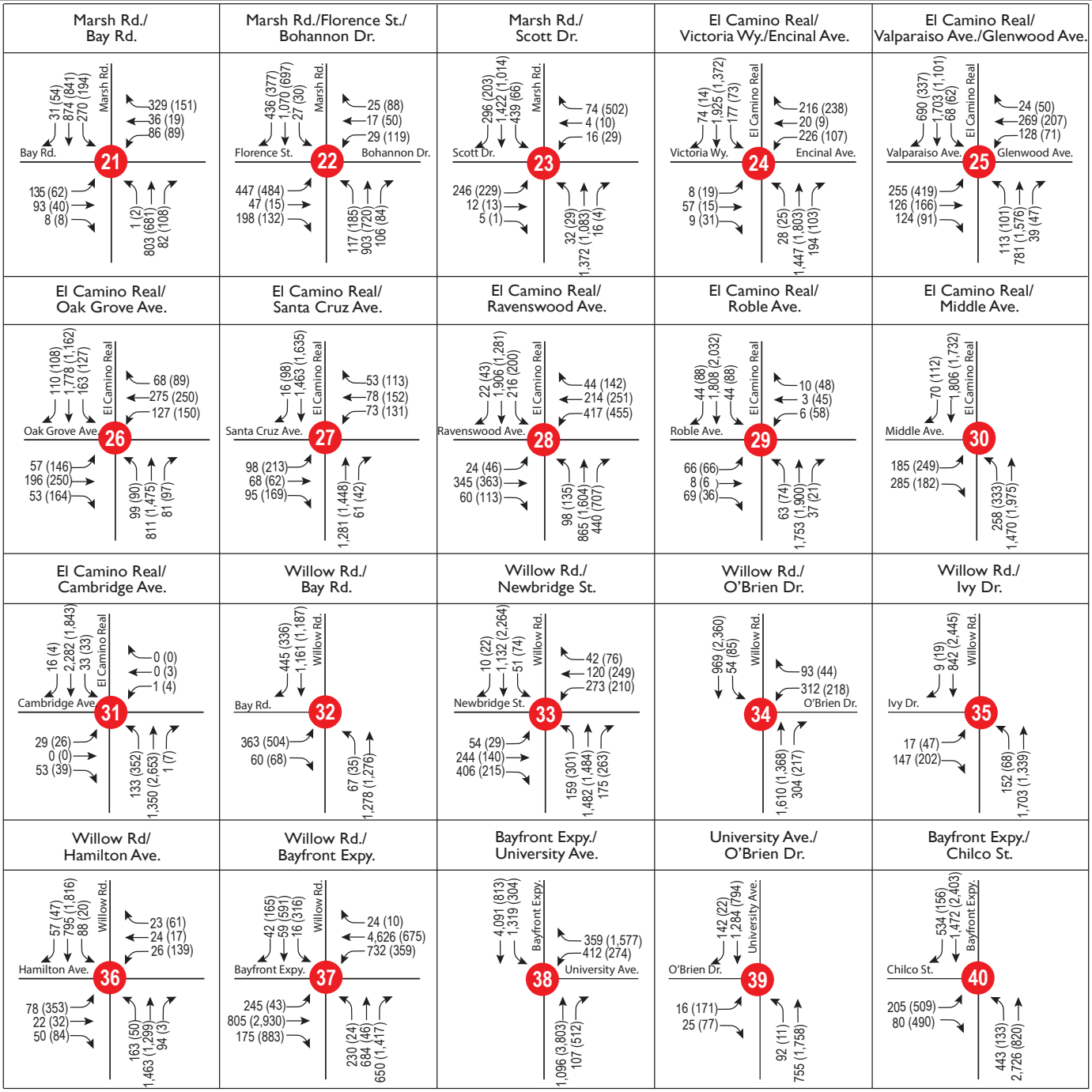
Figure 3.3-14
Background plus Project Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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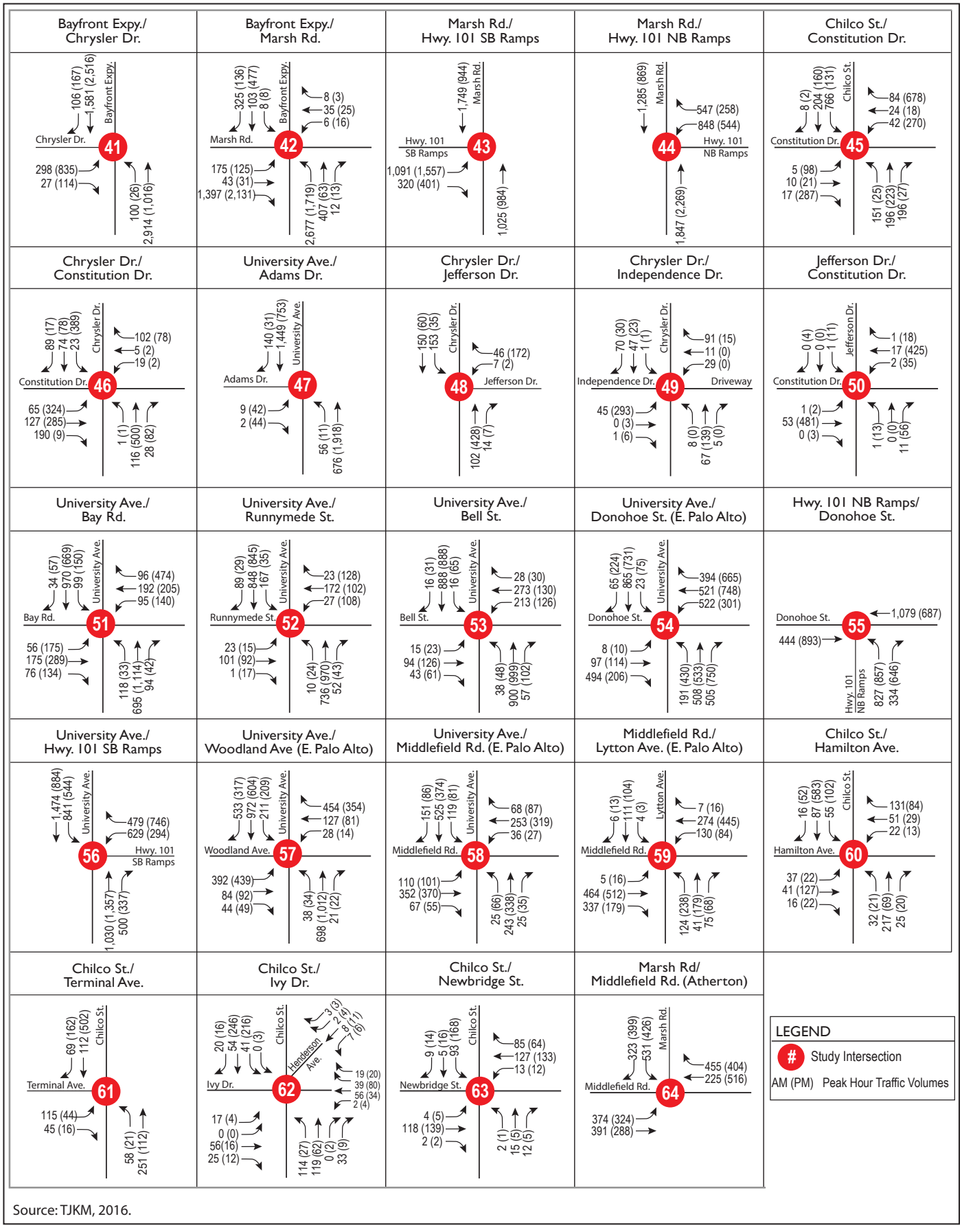
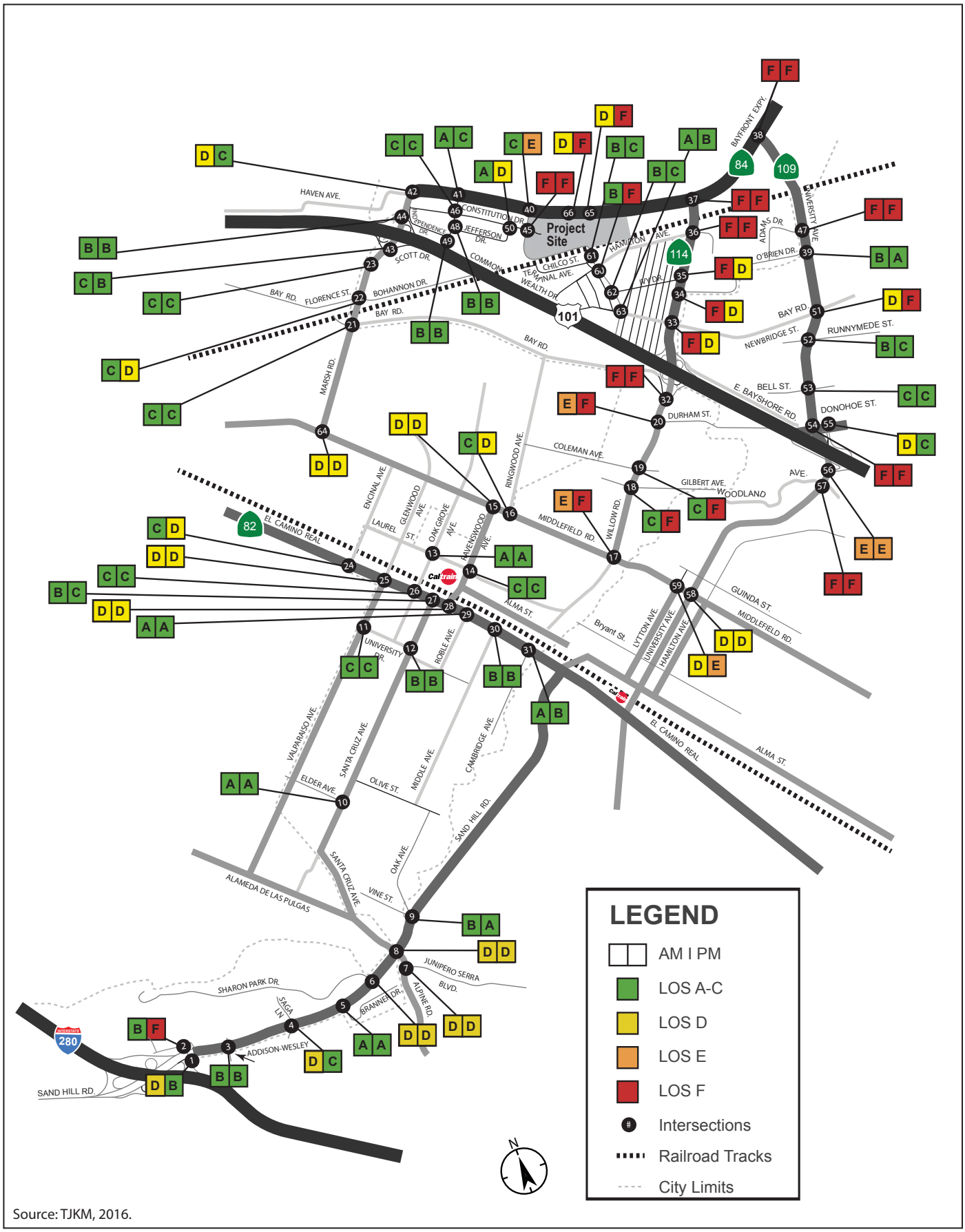
Figure 3.3-15
Background plus Project Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-16
Background plus Project Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-17
Intersection LOS – Background plus Project Conditions
Facebook Campus Expansion Project Draft EIR

- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Durham Street (#20) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- Willow Road and Bay Road (#32) – a.m. and p.m.
    - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour, and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).
- Willow Road and Newbridge Street (#33) – a.m.
    - During the a.m. peak hour, this finding reflects delay from downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
    - the LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
    - During the a.m. peak hour, this finding reflects unserved demand that affects the westbound left-turn movement.
- Chilco Street and Bayfront Expressway (#40) – p.m.
- Chilco Street and Constitution Drive (#45) – a.m. and p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.
- Jefferson Drive and Constitution Drive (#50) – p.m.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 Southbound Ramps (#56) – a.m. and p.m.

- University Avenue and Woodland Avenue (#57) – a.m. and p.m.
- Middlefield Road and Lytton Avenue (#59) – p.m.
- Chilco Street and Hamilton Avenue (#60) – p.m.
- Bayfront Expressway and Building 20 Entrance (#65) – p.m.
- Bayfront Expressway and Proposed Building 21 Entrance (#66) – p.m.

Of these 24 locations, 20 are consistent with the operating levels identified under background conditions. The other four intersections that degrade to unacceptable levels with added traffic from the Project are Chilco Street and Bayfront Expressway (#40), Jefferson Drive and Constitution Drive (#50), Chilco Street and Hamilton Avenue (#60), and Bayfront Expressway and the proposed Building 21 entrance (#66). In addition, the Chilco Street and Constitution Drive intersection (#45), which already operates unacceptably under background conditions during the p.m. peak hour, degrades to unacceptable LOS F during the a.m. peak hour with the addition of Project traffic.

Impacts and Mitigation Measures

Impact TRA-1: Impacts on Peak-Hour Traffic at Study Intersections under Background Plus-Project Conditions. Increases in traffic associated with the Project would result in increased delay during the peak hour, causing significant and unavoidable impacts on the operation of study intersections. (SU)

The Project is not anticipated to increase average vehicle delay to a level that would exceed the significance threshold at the locations listed below, which operate unacceptably; therefore, Project impacts on these intersections would be less than significant under background plus-Project conditions:

- Willow Road and Middlefield Avenue (#17)
- Willow Road and Gilbert Avenue (#18)
- Willow Road and Coleman Avenue (#19)
- Willow Road and Durham Street (#20)
- Willow Road and Bay Road (#32)
- Willow Road and Newbridge Street (#33)
- Willow Road and O'Brien Drive (#34)
- Willow Road and Ivy Drive (#35)
- University Avenue and Bay Road (#51)
- University Avenue and Donohoe Street (#54)
- Middlefield Road and Lytton Avenue (#59)

AM Peak Hour

During the a.m. peak hour, Project traffic would cause operations at the following intersections to degrade to a level that would be below their LOS standard, resulting in potentially significant impacts:

- Chilco Street and Constitution Drive (#45)
- Bayfront Expressway and Building 20 entrance (#65)

The intersections listed below would operate unacceptably during the a.m. peak hour under existing and background conditions. Project traffic would cause additional delay that would exceed the impact threshold, resulting in potentially significant impacts.

- Willow Road and Bayfront Expressway (#37)
- University Avenue and US 101 southbound ramps (#56)
- University Avenue and Woodland Avenue (#57)

At the following study intersections on Bayfront Expressway, potential impacts on westbound through movements would occur during the a.m. peak hour because of queue lengths at the westbound left-turn pocket that would exceed storage capacity, resulting in potentially significant impacts:

- Bayfront Expressway and the proposed Building 21 entrance (#66)

PM Peak Hour

During the p.m. peak hour, Project traffic would cause operations at the following intersections to degrade to a level that would be below their LOS standard, resulting in potentially significant impacts:

- Chilco Street and Bayfront Expressway (#40)
- Chilco Street and Constitution Drive (#45)
- Jefferson Drive and Constitution Drive (#50)
- Chilco Street and Hamilton Avenue (#60)
- Bayfront Expressway and Building 20 entrance (#65)
- Bayfront Expressway and the proposed Building 21 entrance (#66)

The following intersections would operate unacceptably under background conditions, and the addition of traffic associated with the Project during the p.m. peak hour would cause additional delay that would exceed the significance threshold, resulting in potentially significant impacts:

- Sand Hill Road and I-280 northbound on-ramp (#2)
- Willow Road and Hamilton Avenue (#36)
- Willow Road and Bayfront Expressway (#37)
- Bayfront Expressway and University Avenue (#38)
- University Avenue and Adams Drive (#47)
- University Avenue and US 101 southbound ramps (#56)

MITIGATION MEASURES. Two types of mitigation are provided to address potentially significant peak-hour impacts on study intersections, increase capacity, and reduce travel demand, as summarized below. Additional details on each measure follow later in this section. Mitigation Measure TRA-1.1 includes intersection and/or roadway capacity improvements to produce additional traffic capacity, where feasible, and mitigate peak hour LOS impacts. Mitigation Measure TRA-1.2 would reduce the share of allowable vehicle trips that could occur during a single peak hour to 50 percent of the 2-hour trip cap. If applied to both the Project and retroactively to the approved trip caps for Buildings 10-20, this measure could reduce the net peak hour vehicle trips under the Project by more than 75 percent. However, impacts on certain study intersections would remain ***significant and unavoidable***.

TRA-1.1 Provide Increased Traffic Capacity to Address Project Impacts on Peak-Hour LOS under Background Plus-Project Conditions. Mitigation Measure TRA-1.1 identifies potential measures to mitigate or reduce Project impacts, where feasible.

a. Sand Hill Road and I-280 northbound on-ramp (#2)

During the p.m. peak hour, the intersection of Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) operates unacceptably at LOS E under existing and background conditions, reflecting the delay experienced by westbound vehicles when approaching I-280. Traffic associated with the Project would increase average delay to approximately 19 seconds, exceeding the impact threshold of 4 seconds for Caltrans intersections. The increased delay could be mitigated by modifying signal timing during the p.m. peak hour to increase the allocation of green time to the westbound approach (by up to 10 seconds during the p.m. peak hour). However, as described below, this mitigation would not be necessary under background plus-Project conditions because Mitigation Measure TRA-1.2 (discussed below) would modify the Project trip cap to limit the number of vehicle trips that could occur during a single peak hour (see Mitigation Measure TRA-1.2).

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

b. Willow Road and Hamilton Avenue (#36)

During the p.m. peak hour, the intersection would be anticipated to operate unacceptably at LOS F under both background and background plus-Project conditions. Project traffic would increase delay and exceed the City threshold of 0.8 second for critical movements. The increase in delay reflects a forecast increase in left-turn volumes related to vehicles from the Project site traveling through residential neighborhoods via Chilco Street and Hamilton Avenue to by-pass eastbound delay on the segment of Bayfront Expressway where it approaches Willow Road.

Although the provision of an eastbound left-turn lane on Hamilton Avenue where it approaches Willow Road would reduce the delay, this potential mitigation is not recommend because it would encourage cut-through traffic via Chilco Street and Hamilton Avenue, potentially affecting the Belle Haven neighborhood. Therefore, to avoid facilitating the use of Chilco Street and Hamilton Avenue as cut-through routes in the adjacent residential neighborhood, mitigating this traffic impact is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. Other mitigation measures are discussed below (TRA-3.1 and TRA-3.2) to discourage cut-through traffic in the Belle Haven neighborhood. Mitigation Measure TRA-1.2 (also described below) would reduce the impact, but the net change in delay would still be likely to exceed the 0.8-second threshold for critical movements. The peak-hour traffic impact would remain ***significant and unavoidable***. (SU)

c. Bayfront Expressway and Willow Road (#37)

Given the applicable criteria for state-controlled intersections that operate at LOS E or F, a significant impact would occur if the combination of Project and future traffic would increase average delay by 4 seconds or more. The net change in average delay from existing conditions, under both background and background plus-Project conditions,

would exceed the 4-second threshold. Furthermore, the addition of Project trips would result in a net change between background and background plus-Project conditions that would also exceed the 4-second threshold.

During the a.m. and p.m. peak hours, approximately 70 percent of Dumbarton Bridge vehicle trips pass through this intersection (more than 4,500 vehicles during each peak hour under existing conditions). Similarly, the majority of allowable peak-hour vehicle trips to/from the Project site and Buildings 10–20 under the trip caps would also pass through this intersection because there are few viable alternative routes to/from most directions (particularly for trips to/from the south) and limited access points to both Campuses. As a result, the volume of conflicting movements at this intersection would increase significantly under background conditions because of the significant increase in conflicting movements. The addition of Project traffic would increase average delay by more than 80 seconds during the a.m. peak hour and more than 20 seconds during the p.m. peak hour, thereby exceeding the applicable impact threshold. Physical improvement options to expand approach capacity would be constrained given the proximity of the Dumbarton rail tracks and adjacent wetlands. Similarly, signal timing, which is necessary to accommodate the high volume of peak-direction traffic to/from the Dumbarton Bridge, would limit the viability of some mitigation options.

During the a.m. peak hour, the Project impact would be greatest in the northbound direction on Willow Road, affecting northbound through and northbound left-turn movements when approaching Bayfront Expressway from Willow Road. During the p.m. peak hour, the Project impact would be greatest in the eastbound direction on Bayfront Expressway when approaching the intersection with Willow Road because of the high volume of bridge approach traffic. In addition, during the p.m. peak hour, mitigation options at this intersection would ultimately be affected by downstream capacity limitations at the entrance to the Dumbarton Bridge.

Localized queuing and delays in the p.m. peak hour may be minimized by extending the eastbound right-turn pocket from Bayfront Expressway to Willow Road. The turn pocket should be extended toward the Building 20 entrance to maximize queue storage for motorists who wish to turn right to access US 101 south. Delays for p.m. peak-hour traffic as it approaches the Dumbarton Bridge could be reduced if a dedicated receiving lane were to be provided on Bayfront Expressway for northbound right-turn movements from Willow Road. Such a mitigation, if feasible, would allow both northbound right-turn and eastbound through movements to occur concurrently. However, the mitigation would not reduce net travel time for motorists when approaching the Dumbarton Bridge, given downstream capacity at the Bayfront Expressway and University Avenue intersection. Similarly, grade separation to allow conflicting movements to occur simultaneously, if feasible, could reduce the impact on approach delay directly at the intersection but would not reduce net travel time unless accompanied by similar measures at downstream intersections.

Increasing capacity between US 101 and the Dumbarton Bridge via the Marsh Road/US 101 interchange, to provide a viable alternate route to Willow Road, could reduce the impact, if feasible and if designed to accommodate vehicles to/from the south on US 101 without increasing travel time (compared with the travel time to Willow Road). Such improvements could include one additional northbound exit lane on US 101 between Willow Road and Marsh Road and a similar measure to accommodate southbound traffic when entering US 101 via the Marsh Road intersection.

The Project Sponsor shall be required to design and construct a lengthened eastbound right-turn pocket and a dedicated receiving lane on Bayfront Expressway for northbound right-turn traffic. Because the improvements would be under Caltrans jurisdiction, the Project Sponsor would be required to coordinate with Caltrans for review and approval of the improvements. The potential mitigation options described above are not under the control of the City, and thus, the City cannot guarantee their implementation. In addition, with implementation of Mitigation Measure TRA-1.2 (described below), the net increase in the number of peak-hour vehicle trips resulting from the Project during the a.m. and p.m. peak hours would be reduced. However, the increased delay at this intersection would still be anticipated to exceed the significance threshold. Therefore, this impact would remain ***significant and unavoidable***. (SU)

d. Bayfront Expressway and University Avenue (#38)

Given the applicable criteria for state-controlled intersections that operate at LOS E or F, a significant impact would occur if the combination of Project and future cumulative traffic would increase average delay by 4 seconds or more. This intersection would be anticipated to operate at LOS F under existing, background, and background plus-Project conditions. The net change in average delay with the addition of Project traffic would not exceed the 4-second threshold. Therefore, Project trips would not significantly affect LOS, based strictly on the approach delay at the intersection. However, the Project would contribute to an increase in upstream delay, thereby affecting access to the Dumbarton Bridge, including increased eastbound delays where traffic would approach the Bayfront Expressway and Willow Road intersection under background plus-Project conditions. Given both the upstream and downstream capacity limitations on both sides of the Dumbarton Bridge corridor, including traffic congestion and capacity limitations on US 101 as well as I-880 on the east side of San Francisco Bay (Bay), peak-hour traffic volumes on the Dumbarton Bridge would not be anticipated to increase significantly. Instead, a greater portion of peak-hour traffic demand on the Dumbarton Bridge would be anticipated to occur outside of the peak hours, including some trips that would be delayed because of peak-hour congestion on connecting facilities. Grade separation that would allow conflicting movements to occur simultaneously, if feasible, would reduce delay where traffic would approach the intersection but could result in secondary impacts at downstream locations.

The Project Sponsor shall be required to initiate design concepts through a Project Study Report (PSR), or other appropriate development document, for potential future grade separation at this intersection. Because the intersection would be under Caltrans jurisdiction, the Project Sponsor would be required to coordinate with Caltrans and the City. This potential mitigation is not under the control of the City, and the impact would remain ***significant and unavoidable***. (SU)

e. Bayfront Expressway and Chilco Street (#40)

During the p.m. peak hour, the potential impact reflects increased eastbound delay on Bayfront Expressway where traffic approaches the Dumbarton Bridge due to an increase in conflicting northbound movements at Chilco Street under background plus-Project conditions. The analysis assumes that two left-turn lanes and a separate right-turn lane would be provided as planned and funded improvements. However, the intersection would be anticipated to continue to operate at an unacceptable LOS of E.

The provision of one additional eastbound lane (for a total of four through lanes) on Bayfront Expressway would mitigate the intersection impact but would not improve net vehicle delay at the approach to the Dumbarton Bridge unless accompanied by measures to reduce downstream delay. The mitigation is not be feasible given the downstream lane configurations and environmental constraints, including those related to the wetlands and marsh area north of Bayfront Expressway.

With implementation of Mitigation Measure TRA-1.2 (described below), the net increase in the number of vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. This intersection would be anticipated to operate acceptably at LOS D. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

f. Chilco Street and Constitution Drive (#45)

During the a.m. and p.m. peak hours, traffic volumes at this all-way stop-controlled intersection would increase significantly, because this intersection would serve as one of the two vehicle access points to the Project site. The intersection operates acceptably under existing conditions during both the a.m. and p.m. peak hours. The intersection would continue operating acceptably under background conditions during the a.m. peak hour but would operate unacceptably at LOS F during the p.m. peak hour, reflecting increased traffic with full occupancy of Building 23 under background conditions in combination with the additional traffic that would be generated by approved projects in the Bayfront (formerly M-2) area.

The Project would provide motor vehicle access to proposed Building 22, existing Building 23, and the proposed hotel via the Chilco Street and Constitution Drive intersection; direct motor vehicle access to proposed Building 21 would be provided from a proposed signalized intersection on Bayfront Expressway. Approximately 58 percent of the proposed parking supply would be accessed from the Chilco Street and Constitution Drive intersection. No changes to lane configurations or intersection control at the Chilco Street and Constitution Drive intersection are proposed as part of the Project. The Project would result in LOS F during the a.m. peak hour under background plus-Project conditions; southbound vehicle queues on Chilco Street, at the approach to the Project entrance, would extend onto Bayfront Expressway. During the p.m. peak hour, vehicles would experience significant delay when exiting the Project site; the delay would exceed the impact threshold. Although queuing at the intersection of Bayfront Expressway and Chilco Street in the a.m. peak hour is not considered an impact, based on the City's LOS criteria, it is a safety concern for the site. The improvements identified below were designed to mitigate this impact.

The proposed mitigation for peak-hour impacts at the intersection of Chilco Street and Constitution Drive would provide the following elements to accommodate inbound a.m. and outbound p.m. traffic movements:

- Installation of a traffic signal and signalized pedestrian crossings on all four legs of the intersection.

- Provision of three southbound lanes on the one-block segment of Chilco Street between Bayfront Expressway and Constitution Drive, including two southbound left-turn lanes to accommodate the volume of left-turning vehicles that would be entering the Project site. In addition, during the a.m. peak hour, the provision of "split-phase" signal operation on Chilco Street is recommended.
- Provision of a northbound left-turn lane on Chilco Street where it approaches Constitution Drive.
- Provision of two outbound lanes to Chilco Street for vehicles that would be exiting the Project site.

With implementation of this mitigation measure, the intersection would operate acceptably at LOS D during both peak hours. Bicycle lanes should be accommodated in the proposed improvements on Chilco Street, tying into the proposed improvements the Project Sponsor is constructing on Chilco Street as a separate project, and on Constitution Drive. These improvements are required to be operational prior to Building 22 occupancy. With these improvements, this impact would be reduced to a ***less-than-significant*** level. (LTS/M)

g. University Avenue and Adams Drive (#47)

Unacceptable LOS F occurs at this intersection under existing conditions, reflecting delay on the stop-controlled side street where it approaches University Avenue. Traffic volumes on Adams Drive where it approaches the stop sign are very low (i.e., 11 vehicle trips during the a.m. peak hour and 51 vehicles during the p.m. peak hour). Under background plus-Project conditions, the side-street approach volume is forecast to increase to 86 vehicles. However, traffic levels would remain below the threshold for warranting a traffic signal. Thus, a traffic signal is not recommended under background plus-Project conditions. The impact under background plus-Project conditions would therefore be ***significant and unavoidable***. (SU)

Installation of a traffic signal at this location would be recommended under 2040 cumulative conditions with the proposed General Plan. Therefore, if the proposed General Plan is adopted, this impact could be mitigated to less-than-significant levels (see Mitigation Measure TRA-13.1).

h. Jefferson Drive and Constitution Drive (#50)

During the p.m. peak hour, increased Project-related northbound traffic on Constitution Drive would result in an unacceptable LOS of D at one of the stop-controlled side-street approaches (i.e., the east leg of the intersection). This leg of the intersection is an existing driveway on the east side of the intersection that currently serves just 15 vehicle trips during the p.m. peak hour (primarily left turns by vehicles that exit the driveway toward Chilco Street), which is well below the level at which signalization would be considered. The volume on Jefferson Drive is similarly low, with a total of 69 vehicles turning right or left during the p.m. peak hour. The side-street approach volume from Jefferson Drive would operate at LOS C because the majority of approach vehicles would make a right turn toward Chilco Street and thus would not be delayed by northbound Project trips at this location. Therefore, because this impact would be limited to affecting a side-street driveway that serves just 15 vehicle trips during the p.m. peak hour, this impact would be ***less than significant***, and no mitigation is required. (LTS)

i. University Avenue and US 101 Southbound Ramps (#56)

During the a.m. peak hour, the intersection operates acceptably at LOS C under existing conditions and LOS D under background conditions. The addition of Project traffic would result in an unacceptable LOS of E during the a.m. peak hour at this Caltrans-controlled intersection in East Palo Alto. During the p.m. peak hour, the intersection currently operates unacceptably at LOS E under existing conditions; the net change under background plus-Project conditions would not exceed the 4-second threshold. Therefore this impact would be less than significant during the p.m. peak hour but potentially significant during the a.m. peak hour.

Mitigation Measure TRA-1.2 (described below) would reduce allowable net Project vehicle trip generation by more than 75 percent during the a.m. peak hour. This intersection would be anticipated to operate acceptably at LOS D during the a.m. peak hour. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

j. University Avenue and Woodland Avenue (#57)

During the a.m. peak hour, this intersection operates at LOS F under existing and background conditions. Under background plus-Project conditions, the increase in a.m. peak-hour delay compared with background conditions would exceed the applicable impact threshold for East Palo Alto intersections that operate at LOS F (i.e., delay to critical movements increases by more than 4 seconds and the critical v/c ratio increases by 0.01).

Provision of a dedicated right-turn lane on the westbound approach leg from Woodland Avenue would mitigate the impact. However, this potential mitigation is not recommend because it would encourage cut-through traffic via Woodland Avenue, potentially affecting the Willows neighborhood in Menlo Park and Woodland neighborhood in East Palo Alto. To avoid facilitating use of Woodland Avenue as a cut-through route, this potential mitigation is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. In addition, because the intersection is not within the city of Menlo Park, implementation of this potential mitigation cannot be guaranteed.

Mitigation Measure TRA-1.2 (described below) would reduce the allowable net Project vehicle trip generation by more than 75 percent during the a.m. peak hour; the net change in delay to critical movements would not exceed the thresholds described above. Therefore, with Mitigation Measure TRA-1.2, the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

k. Chilco Street and Hamilton Avenue (#60)

This all-way stop-controlled intersection, located within the Belle Haven neighborhood south of the Project site, would operate at an unacceptable LOS of F during the p.m. peak hour because a portion of Project vehicle trips would be anticipated to exit the site via Chilco Street southbound to Hamilton Avenue or other streets in the Belle Haven neighborhood to access Willow Road. Signalizing the intersection would improve LOS to an acceptable level.

Mitigation Measure TRA-1.2 (described below) would reduce allowable net Project vehicle trip generation during the p.m. peak hour, but this intersection would still be anticipated to operate unacceptably given the proximity to the Project entrance and the LOS standard

of C or better that applies to this intersection. However, any mitigation to improve traffic operations would encourage use of Chilco Street as a cut-through route, which conflicts with City of Menlo Park goals that aim to reduce cut-through traffic in residential neighborhoods. Therefore, to avoid facilitating use of Chilco Street and Hamilton Avenue as cut-through routes, mitigating this traffic impact by increasing capacity is not recommended, consistent with City policies that discourage cut-through traffic in residential neighborhoods. Other mitigation measures are discussed below (Mitigation Measure TRA-3.1 and TRA-3.2) to discourage cut-through traffic in the Belle Haven neighborhood. The peak-hour impact on intersection LOS is therefore ***significant and unavoidable***. (SU)

l. Bayfront Expressway and Facebook Building 20 Entrance (#65)

The intersection, which opened following the completion of Building 20 in 2015, would operate at LOS C during the a.m. peak hour and LOS F during the p.m. peak hour under background conditions. However, LOS would degrade to LOS E during the a.m. peak hour and LOS F during the p.m. peak hour under background plus-Project conditions.

During the a.m. peak hour, traffic in the single westbound left-turn lane from Bayfront Expressway (entering Building 20) would exceed storage capacity, resulting in delays for peak-direction traffic when traveling westbound on Bayfront Expressway. Provision of a two-lane left-turn pocket at the proposed adjacent entrance to the Project site at Building 21 would reduce the potential impact during the a.m. peak hour by allowing a portion of left-turn demand to use the adjacent intersection (see Mitigation Measure TRA-3.1).

During the p.m. peak hour, delay would increase for exiting eastbound vehicles traveling toward Willow Road under background plus-Project conditions. This would be caused by the high volume of eastbound vehicles traveling between the Project site and Willow Road via a short segment of Bayfront Expressway. Building 20 currently has a driveway to Willow Road that allows Project traffic to exit directly to Willow Road. Encouraging greater use of that driveway for outbound trips could help to reduce a portion of the eastbound traffic volume on Bayfront Expressway traveling toward Willow Road during the p.m. peak hour.

The a.m. peak hour impact would be reduced to less-than-significant levels by providing a two-lane westbound left-turn pocket at the adjacent intersection of Bayfront Expressway and the Building 21 entrance. However, the right-of-way along Bayfront Expressway is constrained by the wetlands located adjacent to the roadway; therefore, this mitigation measure may not be feasible. Alternatively, the Project Sponsor shall be required to conduct a micro-simulation evaluation as part of the proposal to install a new traffic signal at the proposed entrance to Building 21 and ensure that queues do not extend onto the Bayfront Expressway at either intersection (see Mitigation Measure TRA-1.1m, below). During the p.m. peak hour, the provision of one additional eastbound through lane on Bayfront Expressway would mitigate the impact but would not improve net vehicle delay where traffic approaches the Dumbarton Bridge unless accompanied by measures to reduce downstream delay. The mitigation may not be feasible given downstream capacity constraints. Furthermore, the intersection is under the jurisdiction of Caltrans; therefore, the City cannot guarantee that this improvement would be implemented.

Mitigation Measure TRA-1.2 (described below) would reduce net Project vehicle trip generation during both peak hours, but the increase in eastbound traffic on Bayfront Expressway between Chilco Street and Willow Road would still be anticipated to result in a significant impact on p.m. peak-hour LOS at this intersection. Therefore, the impact would remain ***significant and unavoidable***. (SU)

m. Bayfront Expressway and Proposed Building 21 Entrance (#66)

As part of the Project, this would be a signalized intersection, providing two outbound travel lanes, one inbound right-turn lane, and one inbound left-turn for vehicles entering the Project site from Bayfront Expressway. During the p.m. peak hour, the intersection would operate unacceptably at LOS F. During the a.m. peak hour, the intersection would operate acceptably, based on LOS, but the anticipated queue length for vehicles entering the site via the single proposed westbound left-turn lane (from Bayfront Expressway to the Building 21 entrance) would exceed storage capacity, resulting in delays for westbound through traffic on Bayfront Expressway.

The proposed mitigation to reduce a.m. peak-hour impacts on Bayfront Expressway and the Project impact at the entrance to Building 20 is the provision of a two-lane left-turn pocket for northbound vehicles that would enter Building 21 from Bayfront Expressway. However, the right-of-way along Bayfront Expressway is constrained by the wetlands located adjacent to the roadway; therefore, this mitigation measure may not be feasible. Alternatively, the Project Sponsor shall be required to conduct a micro-simulation evaluation as part of the proposal to install a new traffic signal at this location and ensure that queues do not extend onto Bayfront Expressway at either intersection (see Mitigation Measure TRA-1.1l, above) while maintaining an acceptable intersection LOS of D or better. With the proposed mitigation, if feasible, the impact would be ***less than significant*** during the a.m. peak hour.

During the p.m. peak hour, the provision of one additional eastbound through lane on Bayfront Expressway would mitigate the impact but would not improve net vehicle delay where traffic approaches the Dumbarton Bridge unless accompanied by measures to reduce downstream delay. This potential mitigation is unlikely to be feasible given downstream capacity constraints.

Mitigation Measure TRA-1.2 (described below) would reduce net Project trip generation by more than 75 percent during the a.m. peak hour and more than 90 percent during the p.m. peak hour; the volume of inbound and outbound vehicle trips via the proposed Building 21 driveway would be reduced by approximately 30 percent during both peak hours. With Mitigation Measure TRA-1.2, the impact would be ***less than significant*** during the p.m. peak hour. Because the feasibility of the a.m. peak-hour mitigation described above has not yet been confirmed, the impact would remain ***significant and unavoidable.*** (SU)

TRA-1.2: Reduce the Peak-Hour Share of Allowable Vehicle Trips under the Trip Cap for Both the Project Site and Buildings 10–19 to No More than 50 Percent of Allowable Vehicle Trips during Each 2-Hour Peak Commute Period. The Project trip cap, as proposed, would allow up to 69 percent of vehicle trips within each 2-hour peak commute period to enter or exit the site within a single peak hour. Similarly, the approved vehicle trip caps for Buildings 10–20 currently allow up to 70 percent of permitted vehicle trips within each 2-hour peak commute period to occur within a single hour.

The proposed mitigation would reduce the maximum number of allowable peak-hour vehicle trips to no more than 50 percent of the 2-hour peak-period vehicle trip cap for both the Project site and Buildings 10–19. Table 3.3-7 compares potential peak 1-hour vehicle trips under the Project with the proposed mitigation. As shown, the proposed mitigation would reduce the total volume of allowed peak-hour vehicle trips to the Project site and Buildings 10–19 by 28 percent.

Table 3.3-7. Proposed Mitigation Measure TRA-1.2 – Reduction in Peak-Hour Vehicle Trip Cap

Existing and Proposed Vehicle Trip Caps	Project Vehicle Trip Cap (including Buildings 10–19)		Vehicle Trip Cap with Mitigation TRA-1.2	
	Two-hour Trip Cap	Peak-Hour Trips	Two-hour Trip Cap	Peak-Hour Trips
Buildings 10–19	2,600	1,820	2,600	1,300
Buildings 20–23 and Hotel (with Project trip cap)	4,511	3,100	4,511	2,255
Total Vehicle Trip Caps (with Project)	**7,111**	**4,920**	**7,111**	**3,555**
Portion of 2-hour trip cap within one peak hour		*69%*		*50%*
Peak-hour vehicle trip reduction with mitigation (total of Buildings 10–19, 20–23, and hotel)				28%

Table 3.3-8 compares net peak-hour vehicle trip generation under the Project with the proposed mitigation. As shown, the Project would generate 1,803 a.m. and 1,488 p.m. peak-hour vehicle trips. With this mitigation, the net increase in the number of peak-hour vehicles resulting from the Project would be reduced to 438 a.m. and 123 p.m. peak-hour vehicle trips. The proposed mitigation would, therefore, reduce the net increase in the number of peak-hour vehicle trips resulting from the Project by more than 75 percent during the a.m. peak hour and more than 90 percent during the p.m. peak hour.

Table 3.3-8. Net Peak-Hour Vehicle Trip Comparison with Mitigation Measure TRA-1.2

Existing and Proposed Vehicle Trip Caps	A.M. Peak-Hour Vehicle	P.M. Peak-Hour Vehicle
Existing Vehicle Trip Caps (without Project)		
Buildings 10–19	1,820	1,820
Building 20	772	772
Building 23	525	840
Total Permitted Vehicle Trips (without Project)	*3,117*	*3,432*
Proposed Vehicle Trip Caps (with Project)		
Buildings 10–19	1,820	1,820
Buildings 20–23 and Hotel (with Project trip cap)	3,100	3,100
Total Permitted Vehicle Trip (with Project)	*4,920*	*4,920*
Net Vehicle Trips with Project (unmitigated)	***1,803***	***1,488***
Proposed Vehicle Trip Caps (with Mitigation TRA-1.2)		
Buildings 10–19	1,300	1,300
Buildings 20–23 and Hotel	2,255	2,255
Total Vehicle Trip Caps (with MitigationTRA-1.2)	*3,555*	*3,555*
Net Peak-Hour Vehicle Trips with Project and Mitigation TRA-1.2	***438***	***123***
Percent Reduction in Peak-Hour Project Vehicle Trips	***76%***	***91%***

Table 3.3-9 compares the rate of vehicle trip generation per 1,000 gsf of office space, with and without the proposed mitigation, with that of a typical suburban general office and corporate headquarters site. As shown, typical suburban office and corporate headquarter sites generate between 1.41 and 1.56 peak-hour vehicle trips per 1,000 gsf. Without the mitigation, the Project would generate up to 1.88 peak-hour vehicle trips per 1,000 gsf. With the mitigation, the Project would generate up to 1.37 vehicle trips per 1,000 gsf.

Table 3.3-9. Vehicle Trip Generation Comparison (Size of Office Space)

		Vehicle Trips per 1,000 gsf		
Project Comparison		**A.M. Peak Hour**	**P.M. Peak Hour**	**Daily**
Buildings 20–23 (unmitigated)		1.88	1.88	15.15
Buildings 20–23 (with mitigation TRA 1.2)		1.37	1.37	15.15
Comparison with ITE Trip Generation Rates (vehicle trips per 1,000 gsf)				
Land Use Category	ITE Code	A.M. Peak Hour	P.M. Peak Hour	Daily
General Office	710	1.56	1.49	11.03
Corporate Headquarters	714	1.52	1.41	7.98

As described in Mitigation Measure TRA-1.1, the reduction in the number of net peak-hour vehicle trips under Mitigation Measure TRA-1.2 would result in less-than-significant impacts on peak-hour LOS at the following study intersections under background plus-Project conditions:

- TRA-1.1a: Sand Hill Road and I-280 Northbound On-Ramp (#2)
- TRA-1.1e: Bayfront Expressway and Chilco Street (#40)
- TRA-1.1i: University Avenue and US 101 Southbound Ramps (#56)
- TRA-1.1j: University Avenue and Woodland Avenue (#57)

Mitigation Measure TRA-1.2 would reduce Project traffic and net vehicle delay at the remaining eight study intersections with significant background plus-Project LOS impacts (as described in Mitigation Measures TRA-1.1b, c, d, f, g, k, l, and m). However, increased delay would still exceed significance thresholds; therefore, the mitigation described in Impact TRA-1.1 would still be required with Mitigation Measure TRA-1.2 in place. In addition, as described below under the analysis of cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-10.1), the reduction in the number of net peak-hour vehicle trips under Mitigation Measure TRA-1.2 would result in less-than-significant impacts at the following intersections under cumulative 2040 existing General Plan plus-Project conditions:

- TRA-10.1h: Chrysler Drive and Constitution Drive (#46)
- TRA-10.1j: University Avenue and US 101 Southbound Ramps (#56)
- TRA-10.1l: University Avenue and Bay Road (#51)

Impact TRA-2: Impacts on Routes of Regional Significance under Background Plus-Project Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in significant and unavoidable impacts. (SU)

The following Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in ***potentially significant*** impacts on the following San Mateo County CMP roadway segments:

- Bayfront Expressway between US 101 and Marsh Road
- Bayfront Expressway between Willow Road and University Avenue
- Bayfront Expressway between University Avenue and the county line
- US 101 north of Marsh Road
- US 101 south of Willow Road

MITIGATION MEASURE. Mitigation Measure TRA-1.2 (described above) would reduce allowable net Project vehicle trip generation by more than 75 percent during the a.m. peak hour and more than 90 percent during the p.m. peak hour. In addition, Mitigation Measure TRA-2.1 would implement improvements to Routes of Regional Significance to address background plus-Project effects. However, the Project impact on the following Routes of Regional Significance would remain ***significant and unavoidable****:*

- Bayfront Expressway between US 101 and Marsh Road
- Bayfront Expressway between Willow Road and University Avenue
- Bayfront Expressway between University Avenue and the County line
- US 101 north of Marsh Road
- US 101 south of Willow Road

TRA-2.1: Implement Improvements to Routes of Regional Significance to Address Background Plus-Project Effects. Providing additional travel lanes would increase segment capacity but would not be feasible on all segments given available right-of-way widths and both downstream and downstream capacity limitations on facilities such as US 101 and the Dumbarton Bridge. In addition, the routes are under the control of Caltrans, and the City cannot guarantee mitigation.

Impact TRA-3: Increase in Daily Traffic Volumes on Roadway Segments under Background Plus-Project Conditions. Increases in daily traffic associated with the Project under near-term plus-Project Conditions would result in increased ADT volumes on Project area roadway segments, resulting in significant and unavoidable impacts. (SU)

The Project would generate up to 16,329 net daily vehicle trips during a typical weekday under the proposed trip cap. Based on the criteria for significance, 21 roadway segments, located on the following 14 streets, would be significantly affected by the forecast increase in daily traffic volumes under background plus-Project conditions:

- Adams Drive
- Alameda de las Pulgas
- Alpine Road
- Cambridge Avenue
- Chilco Street
- Constitution Drive
- Hamilton Drive
- Ivy Drive
- Marsh Road
- Middlefield Road
- Newbridge Street
- Oak Grove Avenue
- Sand Hill Road
- Santa Cruz Avenue

Roadway improvements are needed to mitigate impacts of the Project on study roadways under background plus-Project conditions. A typical mitigation measure would be to widen the road in order to add travel lanes and the capacity needed to accommodate the increase in the number of net daily trips. However, increasing the capacity of the roadway would require additional rights-of-way, which would affect local property owners. It is also considered infeasible. Furthermore, the widening of roadways can lead to other effects, such as induced travel demand (e.g., more vehicles on the roadway because of increased capacity on a particular route), air quality degradation, increases in noise associated with motor vehicles, and reductions in transit use (less congestion or reduced driving time may make driving more attractive than transit travel). Wider roadways also result in the degradation of bicycle and pedestrian facilities, including increased intersection crossing times. There is also a quality-of-life aspect to roadway planning because congestion, mobility, air quality, and noise impacts affect the quality of life for local residents, commuters, employees, and businesses in the area. Neighborhoods as well as commercial business centers are affected by roadway projects. Thus, although traffic may increase on certain roadways by varying percentages, it should be viewed as more than an LOS or traffic operations issue.

MITIGATION MEASURES. Partial mitigation measures are identified to reduce the impacts of the Project on daily roadway segments under near-term plus-Project conditions. However, even with these measures, it would not be possible to fully mitigate impacts on study segments without eliminating most of the daily vehicle trips generated by the Project. Therefore, the impact would remain ***significant and unavoidable.***

TRA-3.1: Provide Measures to Reduce Cut-Through Traffic in the Belle Haven Neighborhood via Chilco Street (South of the Dumbarton Rail Corridor), Newbridge Street, and Ivy Drive. The Project Sponsor shall provide measures to prevent cut-through traffic, which could include prohibiting left-turns from the Project site to Chilco Street during the p.m. peak period. The provision of physical traffic-calming measures could also be included where such measures would not affect emergency access and/or transit service, subject to community and City approval. Because community members and other potentially affected stakeholders may be affected by such improvements, the Project Sponsor shall fund a Neighborhood Traffic Plan to identify appropriate measures for reducing cut-through traffic.

TRA-3.2: Provide Multi-Modal Improvements on Study Segments that Could Be Affected by Increased ADT. The Project Sponsor shall provide measures to improve mobility options (e.g., walking, bicycling, transit), consistent with the City's Complete Streets goals, which would help to offset the effect of daily traffic generated by the Project. In particular, such measures could include pedestrian enhancements across Willow Road at Hamilton Drive, Ivy Drive, and Newbridge Street as well as at other affected study segment locations. These measures are discussed further under Impacts TRA-4 and TRA-5.

Impact TRA-4: Pedestrian Connections under Background Plus-Project Conditions. The Project would result in a lack of adequate pedestrian connections to the area circulation system under background plus-Project conditions, resulting in a potentially significant impact. (LTS/M)

The Project would provide pedestrian connections to immediately adjacent sidewalks, and a proposed bicycle/pedestrian bridge over Bayfront Expressway would allow for public access to the Bay Trail and Bayfront Park from the Project site and the Belle Haven neighborhood. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented by the Project Sponsor in partnership with the City as separate a project that is already under construction. Frontage improvements are typically required by property owners as redevelopment occurs. Along Chilco Street, the planned improvements are to be located on the northeast side of the street between Terminal Avenue and Constitution Drive. These include a continuous pedestrian pathway and a Class IV separated bikeway, lighting, and landscaping. The improvements will be phased to expedite construction.

Other pedestrian facilities in the immediate vicinity are limited; gaps in the area sidewalk network would remain within a short distance of the Project site. No sidewalks are provided on Constitution Drive, immediately west of the Project site, which provides a connection to the Bayfront (formerly M-2) area, resulting in ***potentially significant*** impacts.

MITIGATION MEASURE. Mitigation Measure TRA-4.1 would result in ***less-than-significant*** impacts on pedestrian facilities.

TRA-4.1: Provide External Pedestrian Connections to the Area Circulation System and adjacent Land Uses. The proposed mitigation would include providing and/or contributing to the cost of pedestrian improvements to eliminate gaps in the sidewalk network in key areas that provide access routes to and from the Project site. The improvements outlined below were selected to provide an immediate connection to the Project site.

a. Constitution Drive

The Project Sponsor shall construct sidewalks along one side of Constitution Drive between Chilco Street and Chrysler Drive and pedestrian crosswalks and curb ramps at Chilco Street and Constitution Drive as well as Jefferson Drive and Constitution Drive. Construction of sidewalk and crossing improvements along this section of Constitution Drive, in conjunction with other planned and funded sidewalk construction in the area, will provide continuous pedestrian access from the Project site to the Bayfront (formerly M-2) area.

Impact TRA-5: Bicycle Connections under Background Plus-Project Conditions. The Project would result in a lack of adequate bicycle connections to the area's circulation system under background plus-Project conditions, resulting in potentially significant impacts. (LTS/M)

As part of the Project, a proposed bicycle/pedestrian bridge over Bayfront Expressway would be provided to allow public access to the Bay Trail and Bayfront Park from the Project site and the Belle Haven neighborhood. Frontage improvements, including bicycle and pedestrian improvements, along Chilco Street are being implemented in partnership with the City by the Project Sponsor as a separate project that is already under construction. Frontage improvements are typically required by property owners as redevelopment occurs. Along Chilco Street, the planned improvements are to be located on the northeast side of the street between Terminal Avenue and Constitution Drive. These include a continuous pedestrian pathway and a Class IV separated bikeway, lighting, and landscaping. The improvements will be phased to expedite construction. However, gaps would remain in the existing and planned bicycle routes that would most likely be used as key access routes to the Project site. Continuous

bicycle facilities are not provided between the US 101 overcrossing at Ringwood Avenue/Market Place, nor on segments of Willow Road that provide bicycle access to the Project site, including the US 101 overcrossing, resulting in ***potentially significant*** impacts.

MITIGATION MEASURE. The following mitigation measure has been identified to provide an immediate connection to the Project site. Implementation of Mitigation Measure TRA-5.1 would result in ***less-than-significant*** impacts.

TRA-5.1: *Provide Bicycle Connections to the Area Circulation System and adjacent Land Uses.* The recommended mitigation would include providing and/or contributing to the cost of bicycle improvements to eliminate gaps in the bicycle network that would most likely be used as a key access route to the Project site, including bicycle connections to and from the Menlo Park Caltrain station.

a. Hamilton Avenue

   The Project Sponsor shall install bicycle boulevard treatments on Hamilton Avenue between Chilco Street and the pedestrian/bicycle overcrossing of US 101. Bicycle boulevards generally include treatments to facilitate travel by bicyclists. Typical treatments generally include stop-sign modifications, lane markings, signage, and wayfinding elements. This designation is consistent with the street classification proposed in the ConnectMenlo draft Circulation Element.

b. Northbound Access to the Project Site for Bicyclists

   The Project Sponsor shall provide facilities for northbound bicyclists to cross Willow Road and access the Project site, thereby minimizing vehicle/bicycle conflicts. Such facilities may include a two-stage left-turn queue box, or similar improvements, to accommodate northbound left-turn movements for bicyclists at the Willow Road/Hamilton Drive intersection from the curbside bicycle lane, in conjunction with a Class I pathway or similar improvements for northbound bicyclists to the travel on the west side of Willow Road between Hamilton Avenue and the Project site.

Impact TRA-6: Pedestrian and/or Bicycle/Vehicle Conflicts. The Project design would cause increased potential for pedestrian and/or bicycle/vehicle conflicts, resulting in potentially significant impacts. (LTS/M)

The Project site plan includes elements that could increase the potential for bicycle/vehicle and pedestrian/vehicle conflicts. The Project proposes to facilitate internal pedestrian and bicycle circulation through use of emergency vehicle access (EVA) lanes and internal drive aisles, which could result in conflicts with on-campus tram and shuttle vehicles as well as vehicles that may be attempting to access parking spaces. This would result in ***potentially significant*** impacts.

MITIGATION MEASURE. Implementation of Mitigation Measure TRA-6.1 would result in ***less-than-significant*** impacts.

TRA-6.1: Refine the Project Design to Minimize Conflicting Movements between Bicycles, Pedestrians, and Other Travel Modes within the Project Site. The design for bicycle and pedestrian crossings, similar to the design at the Building 20 driveway, should direct bicycle and pedestrian traffic to the signalized intersection at Bayfront Expressway to avoid conflicts with motor vehicles and shuttle buses at uncontrolled crossings. The Project Sponsor shall work to minimize conflicts to the satisfaction of the transportation manager prior to approval of the site plan for construction.

Impact TRA-7: Increased Demand for Transit Services under Background Plus-Project Conditions. The Project would result in less-than-significant demand for transit services under background plus-Project conditions. (LTS)

The Project would provide a private shuttle bus service for employees to travel to/from regional transit stations, such as the Menlo Park and Palo Alto Caltrain stations, and regional locations outside of Menlo Park in San Francisco, the South Bay, and the East Bay. Therefore, the Project is not anticipated to result in a substantial increase in regional public transit ridership that cannot be accommodated by existing regional transit services. However, the Project could result in some increases in local transit demand on existing local routes within Menlo Park and East Palo Alto that do not currently serve the Project site directly, including SamTrans Route 281, which terminates in the adjacent Belle Haven neighborhood. Regardless, the Project impact is anticipated to be ***less than significant*** given the provision of shuttle bus service to the site, and no mitigation is required.

Impact TRA-8: Delay for Public Transit Vehicles under Background Plus-Project Conditions. The Project would result in significant and unavoidable delays for public transit vehicles under background plus-Project conditions. (SU)

Potential impacts on AC Transit's Dumbarton bus service would occur because of the potential for increased approach delays. To reduce delays, capacity-enhancing measures such as transit signal pre-emption or queue-jump lanes could be provided on some approach segments. Additionally, the Project Sponsor provided funding for SamTrans to conduct the Dumbarton Transportation Corridor Study,[2] which is currently under way and anticipated to be completed in approximately 1 year. The study is anticipated to recommend a phased program of operational and infrastructure improvements to enhance mobility between Alameda, San Mateo, and Santa Clara Counties. The study will examine opportunities to improve auto, transit, bicycle, pedestrian, and other uses for the Dumbarton Bridge and the Dumbarton rail bridge, including enhancements to Dumbarton Express Bus (DBX) commuter service. The study will also identify ways to enhance rail bridge safety on the Bay's waterways and provide connectivity to commuter and intercity rail services. (e.g., by recommending options for preserving and repurposing the rail bridge). Through connections to Capitol Corridor, Altamont Commuter Express, Amtrak, and Caltrain, commuters from the South Bay could travel to destinations in the East Bay, the Central Valley, and beyond. However, recommendations from this study were not available when this document was being prepared. The Project Sponsor shall continue to collaborate with the City, SamTrans, and AC Transit to develop potential transit system improvements following completion of the Dumbarton Transportation Corridor Study. Because the provision of measures to reduce delay cannot be guaranteed at this time, this impact is ***significant and unavoidable***. (SU)

Impact TRA-9: Impacts on VMT. VMT per employee generated by the Project would not exceed a level 15 percent below the regional average VMT per employee. (LTS)

Information published as part of the 2013 Plan Bay Area EIR was reviewed to determine average weekday VMT per capita within the nine-county Bay Area region. This average trip length is used to determine the relevant standard or threshold for addressing a potentially significant VMT impact, following the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA.*[3]

[2] San Mateo County Transit District. 2016. *Dumbarton Transportation Corridor Study*. Available: <http://www.samtrans.com/Planning/Planning_and_Research/DumbartonTransportationCorridorStudy.html>. Accessed: May 6, 2016.

[3] Governor's Office of Planning and Research. 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA.* Implementing Senate Bill 743 (Steinberg, 2013). January 20. Available: https://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf. Accessed: May 6, 2016.

As summarized in Table 3.3-10, below, the regional average was calculated to be 20.8 miles per employee. The significance threshold is defined as a 15 percent reduction below the regional average, or 17.7 miles per employee. The Project Sponsor provided information about travel patterns and the characteristics of existing sites that operate adjacent to the Project site in order to estimate VMT per employee. Mode share for employees was determined with use of cordon counts, shuttle ridership counts, and onsite passenger interviews. To collect self-reported data regarding travel characteristics, the information was supplemented with data about workers' place of residence (at the city or zip code level to ensure employee privacy), visitor and delivery trip logs, and a housing and transportation survey. The information was analyzed to determine the average number of miles traveled by employees, vendors and contractors, and visitors, resulting in an average weekday VMT of 15.6 miles per employee.

Table 3.3-10. Project-Generated VMT Comparison

Area	Daily VMT per Employee
Nine-county Bay Area Regional Average	20.8
Threshold: 15% below Nine-County Bay Area Regional Average	17.7
Project	15.6

Because the Project's daily VMT per Employee of 15.6 miles is below the threshold of 17.7 miles, the Project's impact is considered ***less than significant,*** and no mitigation is required.

Cumulative 2040 Conditions

This section evaluates cumulative (2040) conditions without the Project under the current General Plan. The cumulative conditions assume that all approved and pending projects in Menlo Park are constructed and occupied, along with the additional development capacity in the Bayfront (formerly M-2) area, based on the 1994 General Plan Land Use Element and existing zoning. This current buildout potential under the General Plan is estimated to be approximately 2 million gsf for non-residential uses.

Cumulative 2040 Existing General Plan Conditions

This section evaluates baseline cumulative conditions for the Project and assumes that all approved and pending projects in Menlo Park are constructed and occupied, along with the additional development capacity in the Bayfront area, based on the 1994 General Plan Land Use Element. Full occupancy of Buildings 10–20 and Building 23 is also assumed, similar to background conditions. Table 3.3-11 summarizes the anticipated number of residents and jobs for this scenario.

Table 3.3-11. Cumulative 2040 Existing General Plan Growth (Without Project)

Analysis Scenario	Dwelling Units	Residents	Non-residential Development (gsf)	Jobs
Existing Conditions	13,100	32,900	14,600,000	30,900
Cumulative 2040 Existing General Plan	15,380	38,780	18,173,000	41,200
Net Increase	***2,280***	***5,880***	***3,543,000***	***10,300***

Traffic Volumes and LOS (Cumulative 2040 Existing General Plan Conditions)

The growth assumptions regarding dwelling units, residents, non-residential development, and jobs summarized in Table 3.3-11 were used to develop traffic forecasts for daily, a.m., and p.m. peak hours under 2040 conditions. The MPM model, which was used to develop the forecasts, accounts for changes in residential and non-residential land use patterns under cumulative conditions more accurately than other forecasting methods.

Daily Traffic Volumes

Forecast daily traffic volumes under cumulative 2040 existing General Plan conditions are shown in Appendix 3.3-2, which contains daily volume tables that show the forecast traffic volumes for each study segment under all scenarios.

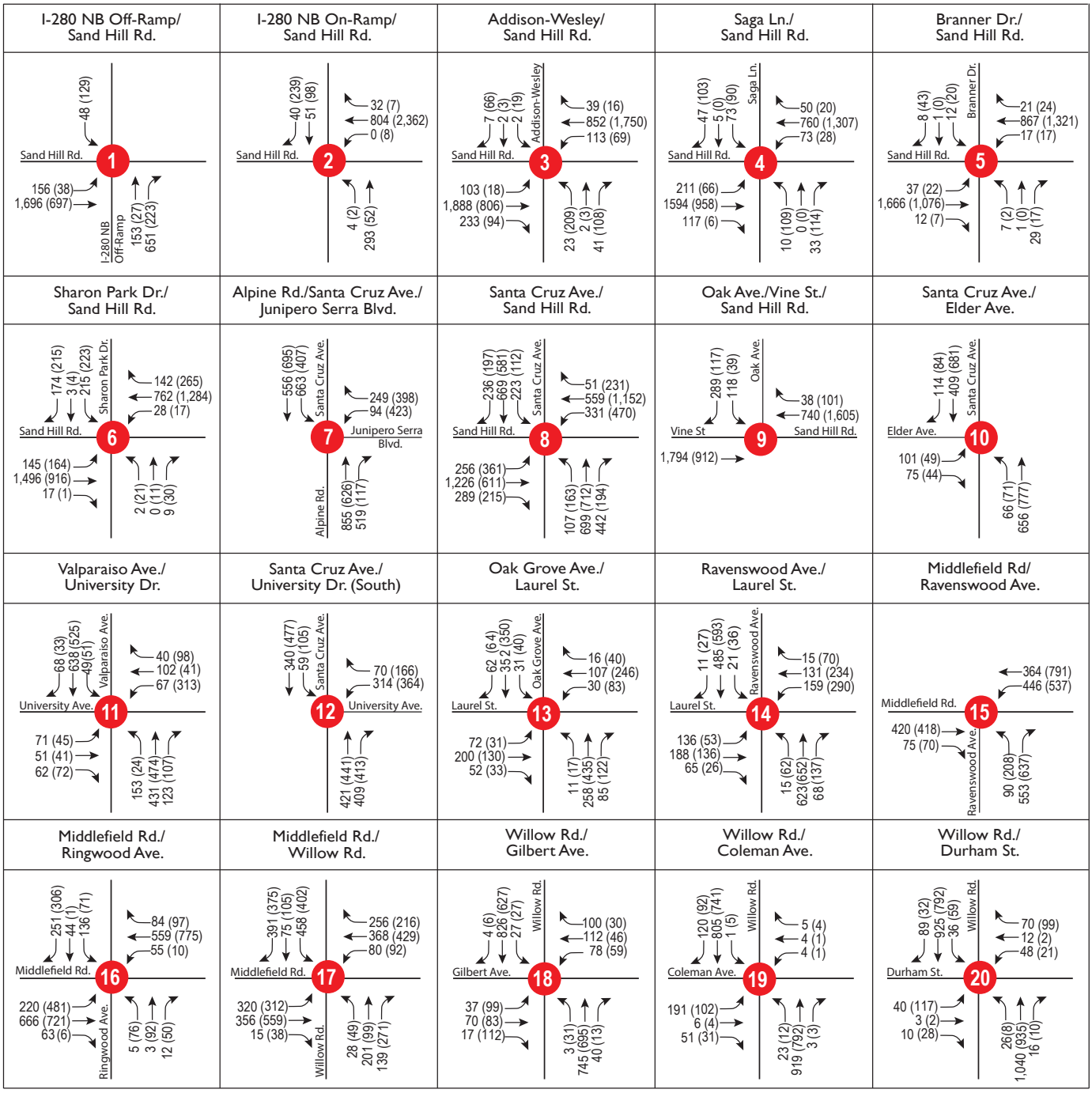
Peak-Hour Traffic Volumes

Forecasts of peak-hour traffic volumes under cumulative 2040 existing General Plan conditions at each study intersection were based on anticipated land use changes, as described above. By utilizing the MPM model, this forecast also incorporates anticipated changes to the jobs/housing balance in adjacent cities and throughout the region by 2040 that will affect peak-hour traffic patterns. Figures 3.3-18 through 3.3-20 illustrate forecast peak-hour vehicle turning movement volumes, lane geometry, and traffic controls at each study intersection under cumulative 2040 existing General Plan conditions. Detailed LOS calculations are contained in Appendix 3.3-4.

Cumulative 2040 Existing General Plan (No-Project) Conditions Intersection LOS Findings

Figure 3.3-21 illustrates the peak-hour LOS for each study intersection; tables that summarize the delay for each intersection are provided in Appendix 3.3-1. The following 22 study intersections would operate unacceptably under cumulative 2040 existing General Plan conditions without the Project:

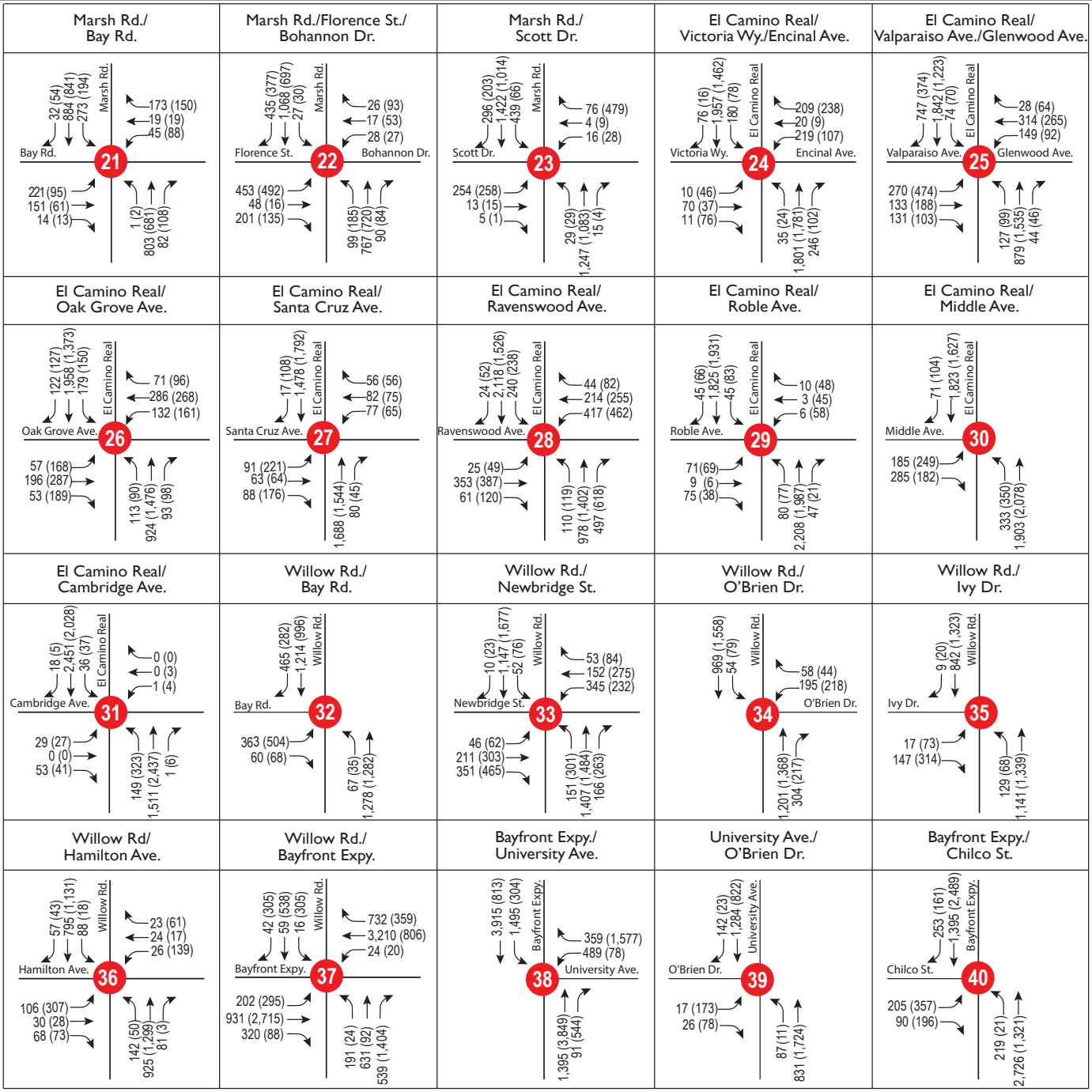
- Sand Hill Road and the I-280 northbound off-ramp (study intersection #1) – a.m.
- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Durham Street (#20) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- El Camino Real and Ravenswood Avenue (#28) – a.m.
- Willow Road and Bay Road (#32) – a.m. and p.m.
    - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

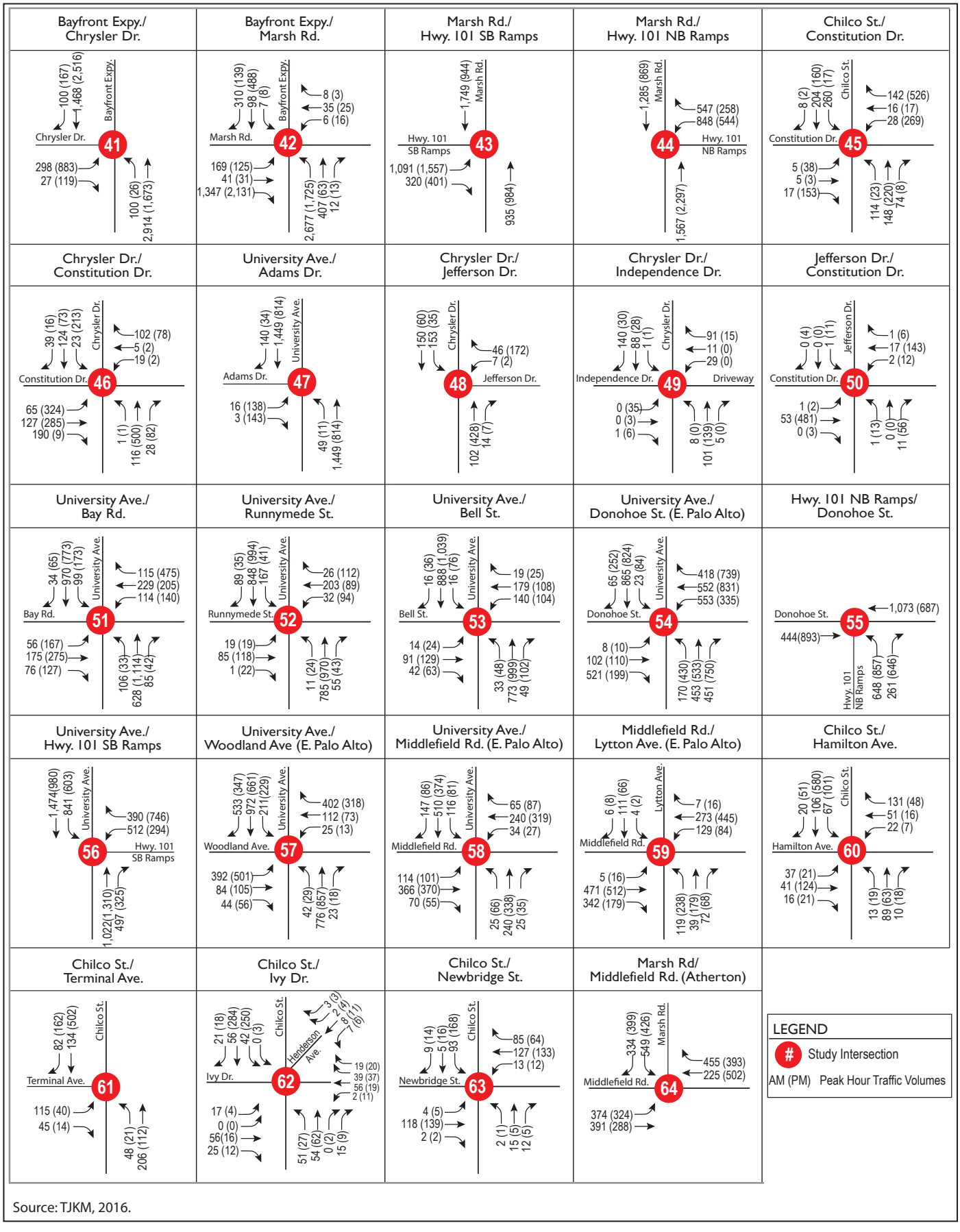
Figure 3.3-18
Cumulative 2040 Existing General Plan Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

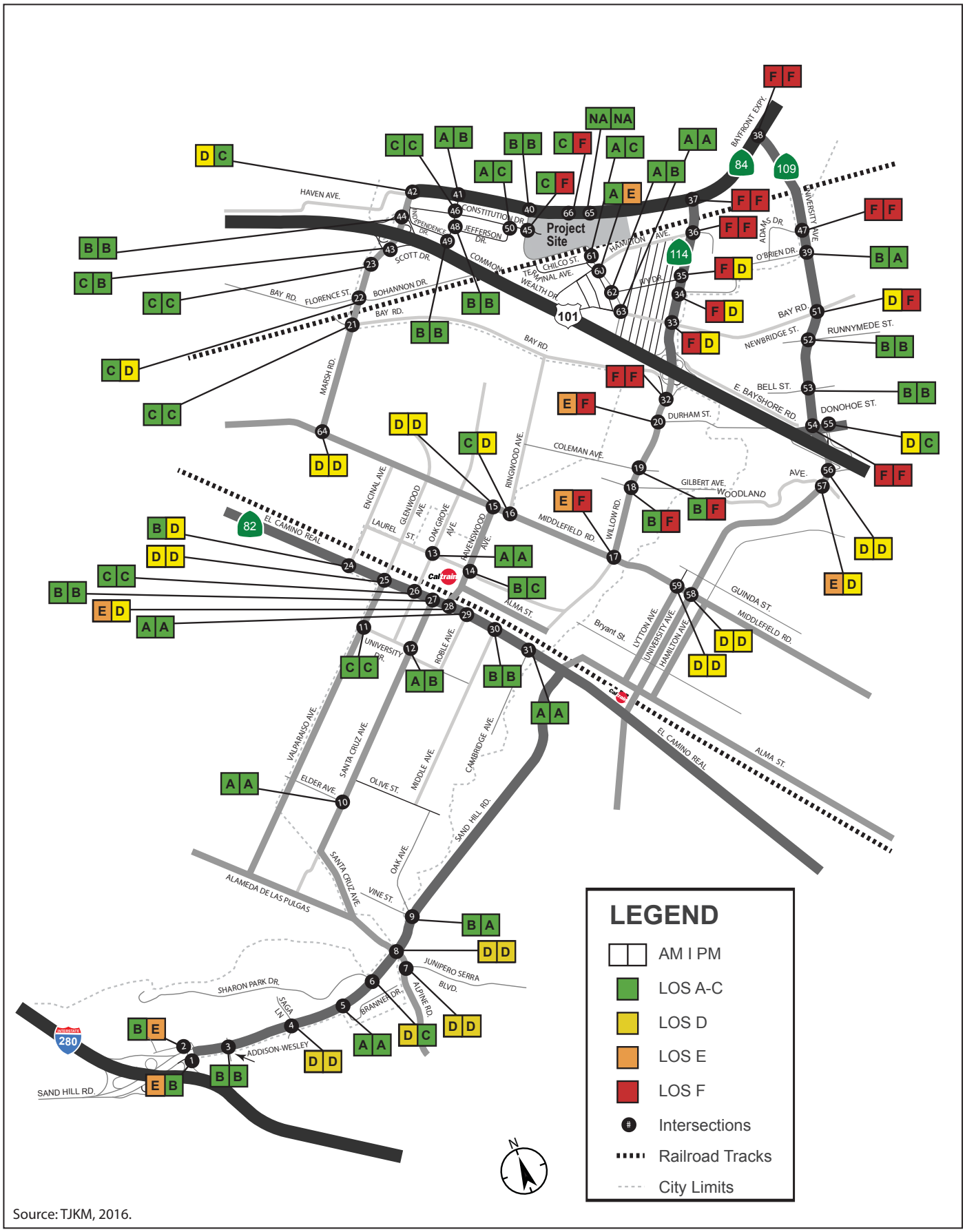
Figure 3.3-19
Cumulative 2040 Existing General Plan Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 [5-18-2016]

Figure 3.3-20
Cumulative 2040 Existing General Plan Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-21
Intersection LOS – Cumulative 2040 Existing General Plan Conditions
Facebook Campus Expansion Project Draft EIR

- Willow Road and Newbridge Street (#33) – a.m.
    - During the a.m. peak hour, this finding reflects delay from downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
    - During the p.m. peak hour, this finding reflects unserved demand that affects the northbound right-turn movements.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
    - During the a.m. peak hour, this finding reflects unserved demand that affects the westbound left-turn movement.
- Chilco Street and Constitution Drive (#45) – p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and Woodland Avenue (#57) – a.m. and p.m.
- Middlefield Road and Lytton Avenue (#59) – p.m.
- Chilco Street and Hamilton Avenue (#60) – p.m.
- Bayfront Expressway and Building 20 entrance (#65) – p.m.

Of these 22 locations, 19 are consistent with the operating levels identified under background conditions. The three additional intersections that degrade to unacceptable levels with added traffic under cumulative 2040 existing General Plan conditions (without the Project) are Sand Hill Road and the I-280 northbound off-ramp (#1), El Camino Real and Ravenswood Avenue (#28), and Chilco Street and Hamilton Avenue (#60).

Cumulative 2040 Existing General Plan plus-Project Conditions

This section evaluates cumulative (2040) conditions with the Project under the current General Plan. This scenario adds the Project to the cumulative 2040 existing General Plan conditions to determine potential cumulative impacts.

The Project, as described in Chapter 2, *Project Description*, is assumed to be in place in this scenario. The Project travel characteristics, including trip generation and distribution assumptions, and TDM program components are consistent with the description provided in the background plus-Project conditions section, above. Table 3.3-12 summarizes the anticipated number of residents and jobs for this scenario compared with the cumulative 2040 existing General Plan scenario.

Table 3.3-12. Cumulative 2040 Existing General Plan Plus-Project Growth

Analysis Scenario	Dwelling Units	Residents	Non-residential Development (gsf)	Jobs
Existing Conditions	13,100	32,900	14,600,000	30,900
Cumulative 2040 Existing General Plan	15,380	38,780	18,173,000	41,200
Cumulative 2040 Existing General Plan Plus Project	15,380	38,780	18,300,000	47,750

Traffic Volumes and LOS (Cumulative 2040 Existing General Plan plus Project)

The growth assumptions regarding dwelling units, residents, non-residential development, and jobs summarized in Table 3.3-12 formed the basis for the traffic forecasts for daily, a.m., and p.m. peak hours under the cumulative 2040 existing General Plan plus-Project conditions, which were developed with use of the MPM model.

Daily Traffic Volumes

Daily traffic volumes with Project traffic added to cumulative 2040 existing General Plan conditions are shown in Appendix 3.3-2. DTA forecasting predicts that some local and regional traffic would be rerouted to respond to congested locations. Although the Project would increase traffic volumes, sometimes the volumes would occur on streets where background traffic would shift to different locations, resulting in apparent decreases in traffic. Given the City of Menlo Park criteria, Project traffic would result in potentially significant impacts on 21 of the 87 roadway segments.

The roadway segment volume thresholds do not reflect the true capacity of each segment but, rather, a quality-of-life standard to minimize added traffic on residential streets. The affected study segments are located along the following streets within Menlo Park:

- Adams Drive
- Alameda de las Pulgas
- Alpine Road
- Cambridge Avenue
- Constitution Drive
- Hamilton Drive
- Ivy Drive
- Marsh Road
- Middlefield Road
- Newbridge Street
- Oak Grove Avenue
- Sand Hill Road
- Santa Cruz Avenue

Peak Hour Traffic Operations

Forecasts of peak-hour traffic volumes under cumulative 2040 existing General Plan plus-Project conditions at each study intersection were based on the MPM model. Lane configurations, signal timings, and peak-hour turning movement volumes would remain consistent under background plus-Project conditions. Figures 3.3-22 to 3.3-24 illustrate the forecast peak-hour vehicle turning movement volumes at each study intersection under cumulative 2040 existing General Plan plus-Project conditions. The forecast peak-hour traffic volumes reflect the anticipated net change that would result from the Project.

Cumulative 2040 Existing General Plan plus-Project Conditions Intersection LOS Findings

The peak-hour LOS for each study intersection under cumulative 2040 existing General Plan plus-Project conditions is illustrated in Figure 3.3-25. Detailed LOS tables are provided in Appendix 3.3-1.

The following 25 study intersections would operate unacceptably under cumulative 2040 existing General Plan plus-Project conditions:

- Sand Hill Road and the I-280 northbound off-ramp (study intersection #1) – a.m.
- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Durham Street (#20) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- El Camino Real and Glenwood Avenue (#25) – a.m.
- El Camino Real and Ravenswood Avenue (#28) – a.m.
- Willow Road and Bay Road (#32) – a.m. and p.m.
    - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).
- Willow Road and Newbridge Street (#33) – a.m.
    - During the a.m. peak hour, this finding reflects delay from downstream queues (southbound approaching the US 101 ramps).
- Willow Road and O'Brien Drive (#34) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.

- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
    - During the a.m. peak hour, this finding reflects unserved demand that affects the westbound left-turn movement.
- Chilco Street and Constitution Drive (#45) – a.m. and p.m.
- Chrysler Drive and Constitution Drive (#46) – p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 southbound ramps (#56) – a.m. and p.m.
- University Avenue and Woodland Avenue (#57) – a.m. and p.m.
- Chilco Street and Hamilton Avenue (#60) – p.m.
- Bayfront Expressway and Building 20 entrance (#65) – p.m.
- Bayfront Expressway and proposed Building 21 entrance (#66) – p.m.

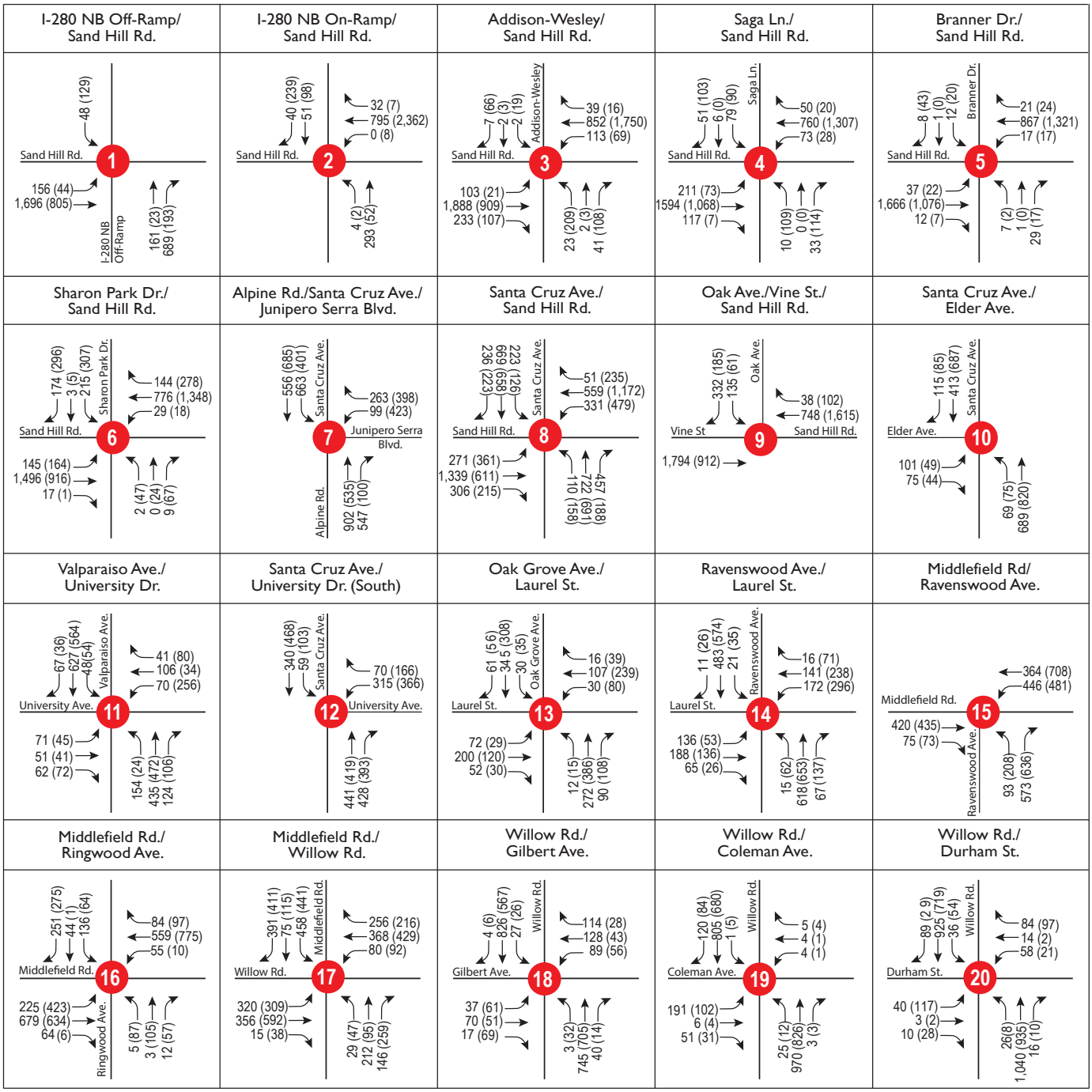
Of these 25 locations, 21 are consistent with the operating levels identified under cumulative 2040 existing General Plan conditions without the Project. The other four intersections that would degrade to unacceptable levels with added traffic from the Project are El Camino Real and Glenwood Avenue (#25), Chrysler Drive and Constitution Drive (#46), University Avenue and the US 101 southbound ramps (#56), and Bayfront Expressway and the proposed Building 21 entrance (#66). In addition, the Chilco Street and Constitution Drive (#45) intersection operates unacceptably during the p.m. peak hour without the Project; it would degrade to LOS F during the a.m. peak hour with the addition of Project traffic.

Cumulative Impacts and Mitigation Measures

Impact TRA-10: Peak-Hour Traffic Impacts at Intersections under Cumulative 2040 Existing General Plan Plus-Project Conditions. Increases in peak-hour vehicle traffic associated with the Project would result in increased delays during AM and PM peak hours, causing significant and unavoidable impacts on the operation of study intersections under cumulative 2040 conditions with the existing General Plan. (SU)

The Project is not anticipated to result in an increase in average vehicle delay that would exceed the significance threshold at the locations listed below. Therefore, Project impacts on these intersections would be less than significant under cumulative 2040 existing General Plan plus-Project conditions:

- Sand Hill Road and the I-280 northbound on-ramp (#2)
- Willow Road and Middlefield Road (#17)
- Willow Road and Gilbert Avenue (#18)



LEGEND

#	Study Intersection
AM (PM)	Peak Hour Traffic Volumes

Source: TJKM, 2016.

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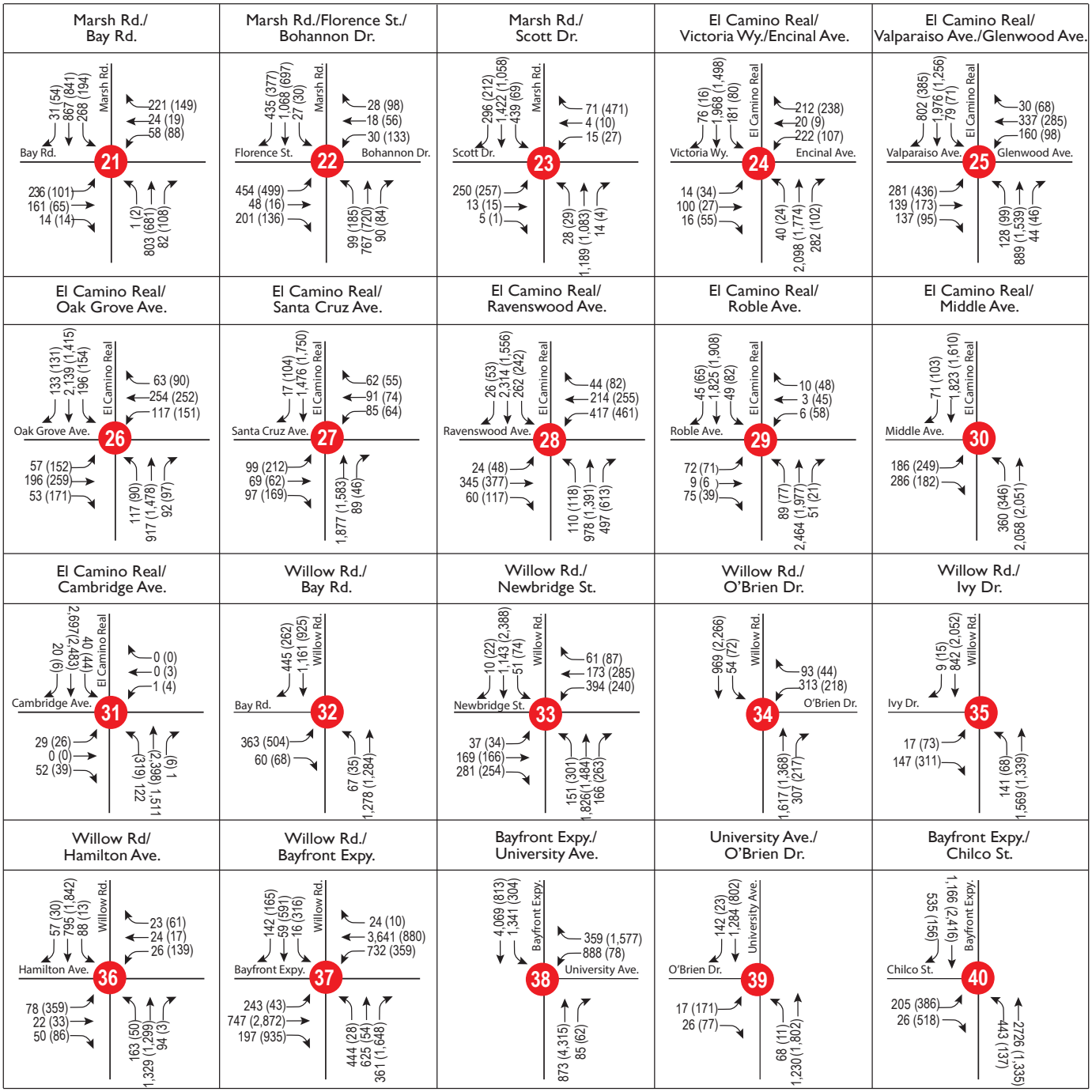
Figure 3.3-22
Cumulative 2040 Existing General Plan plus Project Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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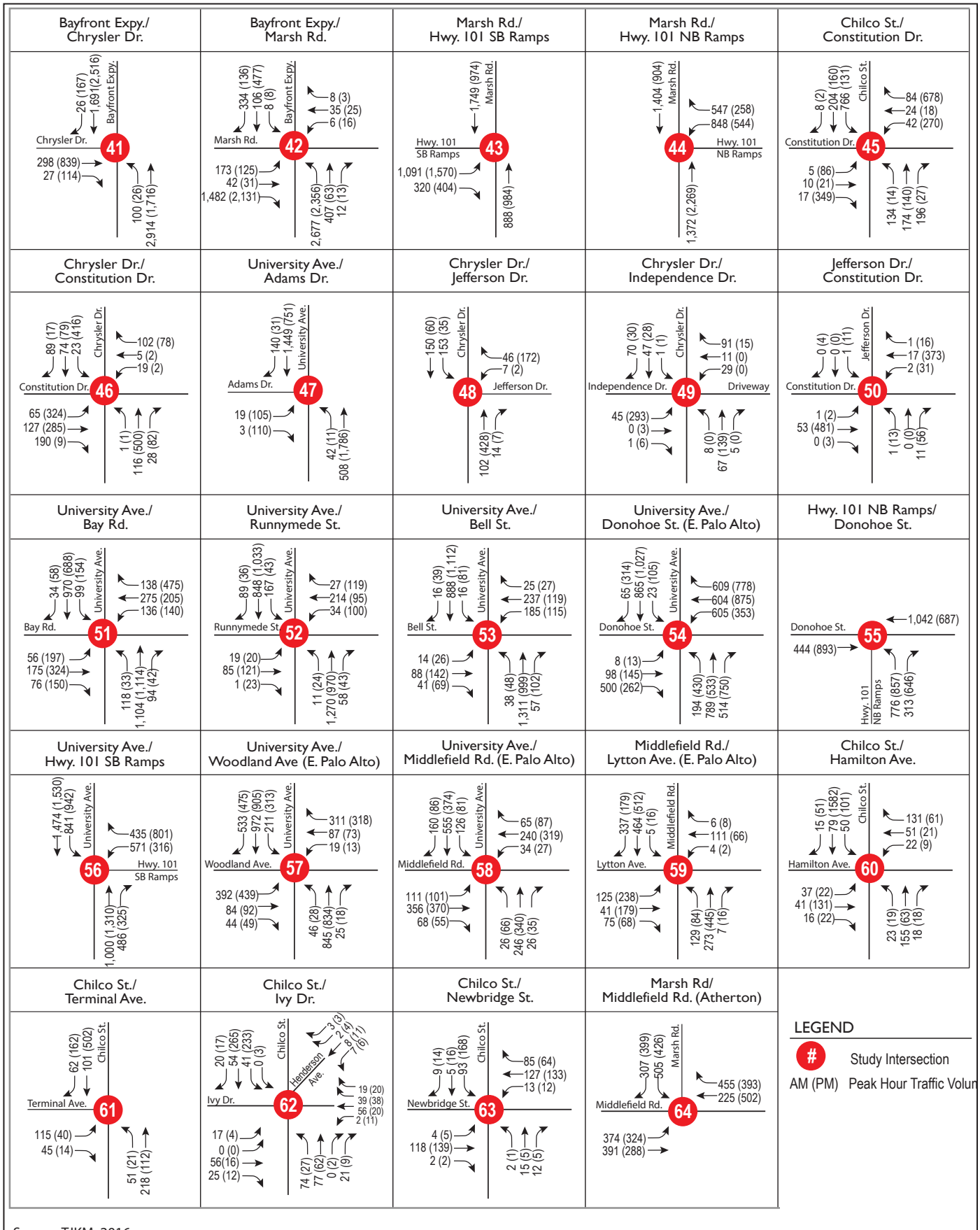
Figure 3.3-23
Cumulative 2040 Existing General Plan plus Project Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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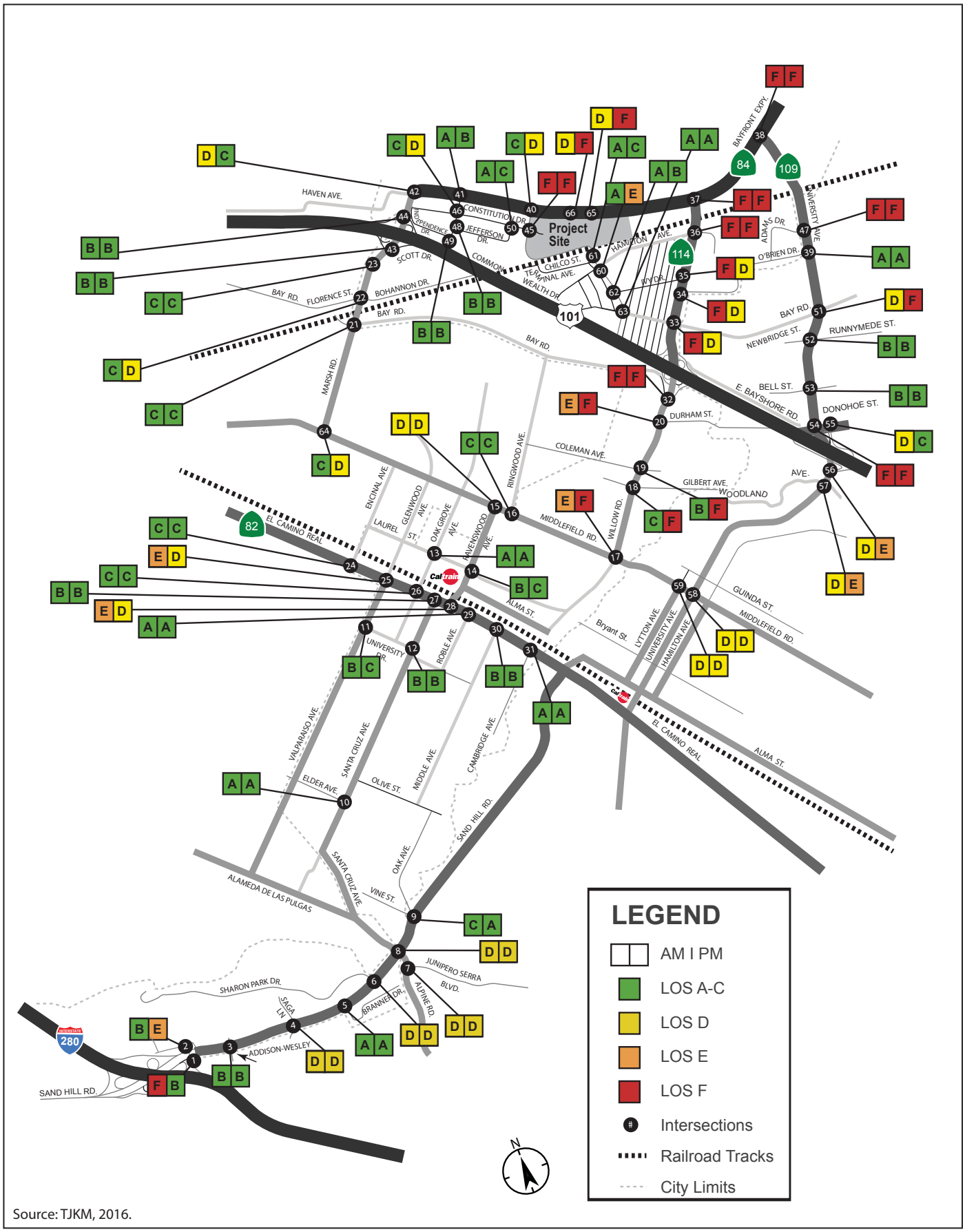
Figure 3.3-24

Cumulative 2040 Existing General Plan plus Project Conditions Traffic Volumes

Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

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Figure 3.3-25
Intersection LOS – Cumulative 2040 Existing General Plan plus Project Conditions
Facebook Campus Expansion Project Draft EIR

- Willow Road and Coleman Avenue (#19)
- Willow Road and Durham Street (#20)
- Willow Road and Bay Road (#32)
- Willow Road and Newbridge Street (#33)
- Willow Road and O'Brien Drive (#34)
- Willow Road and Ivy Drive (#35)

AM Peak Hour

During the a.m. peak hour, the following intersections would operate acceptably under cumulative 2040 existing General Plan conditions without the Project, but the addition of traffic associated with the Project would result in an unacceptable LOS under cumulative 2040 existing General Plan plus-Project conditions:

- El Camino Real and Glenwood Avenue (#25)
- Chilco Street and Constitution Drive (#45)

The following intersections operate unacceptably under cumulative 2040 existing General Plan conditions, and the addition of Project traffic during the a.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions would cause additional delay that would exceed the significance threshold and trigger a potentially significant impact:

- Sand Hill Road and the I-280 northbound off-ramp (#1)
- El Camino Real and Ravenswood Avenue (#28)
- Willow Road and Hamilton Avenue (#36)
- Willow Road and Bayfront Expressway (#37)
- University Avenue and Bay Road (#51)
- University Avenue and Donohoe Street (#54)

At the following study intersections on Bayfront Expressway, potential impacts on westbound through movements would occur during the a.m. peak hour because queue lengths for westbound left-turn pockets would exceed storage capacity, resulting in ***potentially significant*** impacts:

- Bayfront Expressway and the Building 20 entrance (#65)
- Bayfront Expressway and the proposed Building 21 entrance (#66)

PM Peak Hour

During the p.m. peak hour, the following intersections would operate acceptably under cumulative 2040 conditions without the Project, but the addition of traffic associated with the Project would result in an unacceptable LOS under cumulative 2040 plus-Project conditions:

- Chrysler Drive and Constitution Drive (#46)
- University Avenue and the US 101 southbound ramps (#56)
- University Avenue and Woodland Avenue (#57)

The following intersections operate unacceptably under cumulative 2040 existing General Plan conditions. The addition of Project traffic during the p.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions would cause additional delay that would exceed the significance threshold and trigger a ***potentially significant*** impact:

- Willow Road and Hamilton Avenue (#36)
- Willow Road and Bayfront Expressway (#37)
- Bayfront Expressway and University Avenue (#38)
- Chilco Street and Constitution Drive (#45)
- Chrysler Drive and Constitution Drive (#46)
- University Avenue and Adams Drive (#47)
- University Avenue and Donohoe Street (#54)
- University Avenue and Woodland Avenue (#57)
- Chilco Street and Hamilton Avenue (#60)
- Bayfront Expressway and the Building 20 entrance (#65)
- Bayfront Expressway and the Proposed Building 21 entrance (#66)

MITIGATION MEASURES. As described below, two types of mitigation are provided to address potentially significant impacts on study intersections under cumulative 2040 existing General Plan plus-Project conditions, increasing capacity and reducing travel demand, similar to background plus-Project conditions. Where measures are consistent with those identified under background plus-Project conditions, the prior measure number is referenced. In addition Mitigation Measure TRA-1.2, above, would reduce the peak hour share of allowable vehicle trips. Regardless, impacts would remain ***significant and unavoidable*** at certain study intersections.

TRA-10.1: Provide Increased Traffic Capacity to Address Project Impacts on Peak-Hour LOS under Cumulative 2040 Existing General Plan plus-Project Conditions. Mitigation Measure TRA-10.1 identifies potential measures to mitigate or reduce Project impacts where feasible.

a. Sand Hill Road and the I-280 Northbound Off-Ramp (#1)

   During the a.m. peak hour, the eastbound intersection of Sand Hill Road and the I-280 northbound off-ramp (study intersection #1) operates at LOS D under existing conditions. It would operate unacceptably at LOS E under cumulative 2040 existing General Plan conditions without the Project and degrade further to LOS F with the addition of Project trips, reflecting traffic delay while exiting I-280 northbound.

   With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the a.m. peak hour would be reduced by more than 75 percent. With Mitigation Measure TRA-1.2, the intersection would operate at LOS E, and the net change in delay resulting from the Project would be reduced to less than 4 seconds. Therefore, with Mitigation Measure TRA-1.2, the Project contribution to the impact at this location under 2040 existing General Plan plus-Project conditions would be reduced to a ***less-than-significant*** level. (LTS/M)

b. El Camino Real and Glenwood Avenue (#25)

During the a.m. peak hour, traffic associated with the Project would result in an unacceptable LOS of E under cumulative 2040 existing General Plan plus-Project conditions.

The provision of a dedicated right-turn lane on Glenwood Avenue, where it approaches El Camino Real, is identified in the City's TIF program. The Project Sponsor's payment of the TIF shall partially mitigate this impact. The provision of one additional through lane on Glenwood Avenue would be needed to improve LOS to an acceptable LOS of D and fully mitigate this impact. However, the provision of an additional through lane is not feasible given the right-of-way constraints. Therefore, this impact would be considered ***significant and unavoidable*** under cumulative 2040 existing General Plan plus-Project conditions. (SU)

c. El Camino Real and Ravenswood Avenue-Menlo Avenue (#28)

During the a.m. peak hour, traffic associated with the Project would result in an unacceptable LOS under cumulative 2040 existing General Plan plus-Project conditions. Potential mitigation would be to provide a right-turn pocket on Menlo Avenue, where it approaches El Camino Real, and a third through lane on El Camino Real in both the northbound and southbound directions. These measures are identified in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact. With implementation of this mitigation measure, the intersection would operate acceptably, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

d. Willow Road and Hamilton Avenue (#36)

The Project impact was identified under background plus-Project conditions (see TRA-1.1b). No additional feasible mitigation measures were identified to reduce this peak-hour traffic impact, which would remain ***significant and unavoidable***. (SU)

e. Bayfront Expressway and Willow Road (#37)

The Project impact was identified under background plus-Project conditions. Additional delay would occur during the a.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions. As discussed in Mitigation Measure TRA-1.1c, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable***. (SU)

f. Bayfront Expressway and University Avenue (#38)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during both the a.m. and p.m. peak hours. As discussed in Mitigation Measure TRA-1.1d, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable***. (SU)

g. Chilco Street and Constitution Drive (#45)

This impact, identified under background plus-Project conditions, pertains to the design of the Project entrance, as described above in Mitigation Measure TRA-1.1f. With implementation of this mitigation measure, the intersection would operate acceptably, and this impact would be reduced to a ***less-than-significant*** level. (LTS/M)

h. Chrysler Drive and Constitution Drive (#46)

During the p.m. peak hour, the intersection of Chrysler Drive and& Constitution Drive (study intersection #46) operates acceptably at LOS C under cumulative 2040 existing General Plan conditions without the Project. Traffic associated with the Project would cause LOS to degrade to an unacceptable LOS of D during the p.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent, and the intersection would operate acceptably at LOS C. Therefore, with Mitigation Measure TRA-1.2, the Project impact at this location under 2040 existing General Plan plus-Project conditions would be reduced to a ***less-than-significant*** level. (LTS/M)

i. University Avenue and Adams Drive (#47)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during both the a.m. and p.m. peak hours (see Mitigation Measure TRA-1.1g). This impact would remain ***significant and unavoidable*** under existing General Plan plus-Project conditions. (SU)

Installation of a traffic signal at this location would be recommended under 2040 cumulative conditions with the proposed General Plan. Therefore, if the proposed General Plan is adopted, this impact could be mitigated to a less-than-significant level (see Mitigation Measure TRA-13.1i).

j. University Avenue and Bay Road (#51)

The Project was identified to have a potential impact during the p.m. peak hour under cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. With Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

k. University Avenue and Donohoe Street (#54)

This state-controlled intersection located adjacent to the US 101 northbound ramps in East Palo Alto operates at LOS F under existing conditions during both the a.m. and p.m. peak hours. The addition of Project traffic under cumulative 2040 existing General Plan plus-Project conditions would result in additional delay that would exceeding the 4-second significance threshold during both peak hours.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project would be substantially reduced, but the increase in delay would still be anticipated to exceed the 4-second significance threshold.

Potential mitigation options are limited given the proximity of adjacent freeway ramp intersections and recent development near the intersection. The provision of additional westbound lane capacity on Donohoe Street, including an extended dual left-turn pocket, dedicated through lane, and dual right-turn lanes, would reduce delay but would not be

feasible given the right-of-way limitations, including proximity to the adjacent property on the northeastern corner and the relatively short block length to the upstream US 101 northbound off-ramp. Similarly, providing a southbound right-turn lane on University Avenue and lengthening the northbound turn pockets, if feasible, would reduce delay but would most likely be constrained by adjacent land uses and proximity to the US 101 overpass and two northbound on-ramps. Furthermore, because the intersection is not under the control of the City of Menlo Park, implementation of potential mitigation to reduce peak-hour delay at this location, even if feasible options were available, cannot be guaranteed. This impact is therefore considered ***significant and unavoidable***. (SU)

l. University Avenue and US 101 Southbound Ramps (#56)

Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering a potential impact during the p.m. peak hour.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

m. University Avenue and Woodland Avenue (#57)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour.

With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent Therefore, with Mitigation Measure TRA-1.2, the change in delay would not be anticipated to exceed 4 seconds, and the impact would be reduced to a ***less-than-significant*** level. (LTS/M)

n. Chilco Street and Hamilton Avenue (#60)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour. As discussed in Mitigation TRA-1.1k, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable***. (SU)

o. Bayfront Expressway and Building 20 Entrance (#65)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the p.m. peak hour. As discussed in Mitigation Measure TRA-1.1l, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable*** during the p.m. peak hour. (SU)

p. Bayfront Expressway and Proposed Building 21 Entrance (#66)

The Project impact was identified under background plus-Project conditions. Additional delay would occur under cumulative 2040 existing General Plan plus-Project conditions, triggering an impact during the a.m. and p.m. peak hours. As discussed in Mitigation

Measure TRA-1.1m, no additional feasible mitigation measures were identified to reduce this impact, which would remain ***significant and unavoidable*** during the a.m. peak hour. (SU)

Impact TRA-11: Impacts on Routes of Regional Significance under Cumulative 2040 Existing General Plan Plus-Project Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in significant and unavoidable impacts. (SU)

The following Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips, and Project traffic would exceed the allowable 1 percent threshold, resulting in ***significant*** impacts:

- Bayfront Expressway between US 101 and Marsh Road
- Bayfront Expressway between Willow Road and University Avenue
- Bayfront Expressway between University Avenue and the county line
- US 101 north of Marsh Road
- US 101 south of Willow Road

MITIGATION MEASURE. As described in Mitigation Measure TRA-2.1, providing additional travel lanes, if feasible, would increase segment capacity but would not be feasible on all segments given available right-of-way widths and both downstream and downstream capacity limitations on facilities such as US 101 and the Dumbarton Bridge. In addition, the routes are under the control of Caltrans and not the City; therefore, mitigation cannot be guaranteed. No feasible mitigation measures were identified, and therefore, the Project impact on regional Routes of Regional Significance would remain ***significant and unavoidable***.

Impact TRA-12: Increase in Daily Traffic Volumes on Roadway Segments under Cumulative 2040 Existing General Plan Plus-Project Conditions. Increases in daily traffic under existing General Plan plus-Project conditions would result in increased ADT volumes on Project area roadway segments, resulting in significant and unavoidable impacts. (SU)

The Project would generate up to 16,329 net daily vehicle trips during a typical weekday under the proposed trip cap. Given the criteria for significance, 21 of the 87 roadway segments would experience significant impacts because of Project traffic. This is the same number, and same locations, shown in the background plus-Project evaluation.

A typical mitigation measure would be to widen the road in order to add travel lanes and the capacity needed to accommodate the increase in the number of net daily trips. However, increasing the capacity of the roadway would require additional rights-of-way, which would affect local property owners. It is also considered infeasible. Furthermore, the widening of roadways can lead to other effects, such as induced travel demand (e.g., more vehicles on the roadway because of increased capacity on a particular route), air quality degradation, increases in noise associated with motor vehicles, and reductions in transit use (less congestion or reduced driving time may make driving more attractive than transit travel). Wider roadways also result in the degradation of bicycle and pedestrian facilities, including increased intersection crossing times. There is also a quality-of-life aspect to roadway planning because congestion, mobility, air quality, and noise impacts affect the quality of life for local residents, commuters, employees, and businesses in the area. Neighborhoods as well as commercial business

centers are affected by roadway projects. Thus, although traffic may increase on certain roadways by varying percentages, it should be viewed as more than an LOS or traffic operation issue. Impacts would be ***significant***.

MITIGATION MEASURES. See Mitigation Measures TRA-3.1 and TRA-3.2 for partial mitigation measures to offset segment impacts. Because it would not be feasible to fully mitigate impacts on study segments, this cumulative impact would remain ***significant and unavoidable.***

Cumulative 2040 Proposed General Plan plus-Project Conditions

This section evaluates cumulative (2040) conditions with the Project in addition to the proposed update to the General Plan (ConnectMenlo). This scenario is based on the anticipated maximum development potential under the proposed General Plan. The Project, as described in Chapter 2, *Project Description*, is assumed to be in place in this scenario. Project travel characteristics, including trip generation, distribution assumptions, and TDM program components, are consistent with the description provided in the background plus-Project conditions section, above.

Proposed Land Use Changes

The proposed ConnectMenlo Land Use Element frames the type and scale of potential development that may occur over the next 20 years, particularly in the Bayfront (formerly M-2) area. ConnectMenlo also includes an update to City Zoning Ordinance provisions for the Bayfront area to implement the updated General Plan programs as well as design standards for development. An extensive community engagement process has been and will continue to be conducted as part of the update to the General Plan.

The proposed Land Use Element identifies a maximum level of potential development that could be accommodated under ConnectMenlo, consisting of approximately 2.3 million additional gsf of non-residential building space and 4,500 additional multi-family dwelling units beyond what is already possible under the existing General Plan. Table 3.3-13 provides a comparison of potential 2040 development under the existing and proposed General Plans, including the Project.

Table 3.3-13. Cumulative 2040 Proposed General Plan Growth

Analysis Scenario	Dwelling Units	Residents	Non-residential Development (gsf)	Jobs
Existing Conditions	13,100	32,900	14,600,000	30,900
Cumulative 2040 Existing General Plan (without Project)	15,380	38,780	18,173,000	41,200
Cumulative 2040 Existing General Plan (including Project)	15,380	38,780	18,300,000	47,750
Cumulative 2040 Proposed General Plan (including Project)	19,880	50,350	20,600,000	53,250

About 1.4 million gsf of the new non-residential development would be concentrated in the area between Willow Road and University Avenue (primarily for new and expanded life sciences uses). About 2,000 of the additional dwelling units would be located in that same area, with another 1,000 units in the Jefferson Drive area and 1,500 units on the Facebook East Campus on the north side of Bayfront Expressway. Non-residential development could also include ground-floor retail in a number of locations and roughly 500,000 gsf for three hotels, one in the Haven Avenue area, one in the Jefferson Drive area, and one on the Facebook West Campus. It is estimated that the anticipated development would increase the number of jobs in the Bayfront area by about 5,500 and beyond the amount accommodated by the current General Plan.

Traffic Volumes and LOS (2040 Proposed General Plan)

The growth assumptions regarding dwelling units, residents, non-residential development, and jobs formed the basis of traffic forecasts for daily, a.m., and p.m. peak hours under cumulative 2040 proposed General Plan conditions, which were developed using the MPM model.

Daily Traffic Volumes

Forecast daily traffic volumes under cumulative 2040 proposed General Plan conditions are shown in Appendix 3.3-2, which contains daily volume tables that show forecast traffic volumes for each study segment under all scenarios.

Peak-Hour Traffic Operations

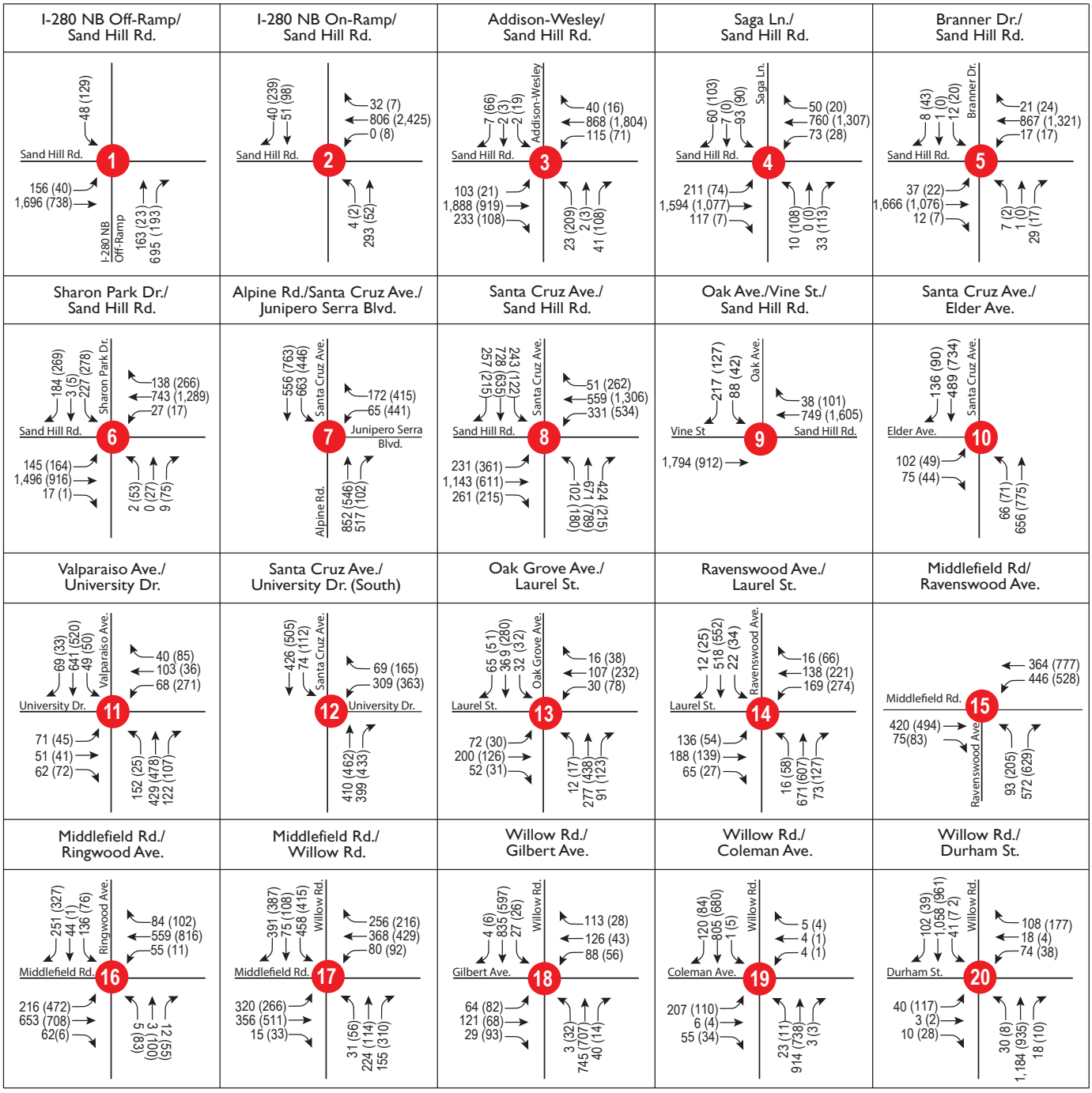
Forecasts of peak-hour traffic volumes under cumulative 2040 proposed General Plan conditions at each study intersection were based on anticipated land use changes, as described above. By utilizing the MPM model, this forecast also incorporates anticipated changes to the jobs/housing balance in adjacent cities and throughout the region by 2040 that will affect peak-hour traffic patterns. Figures 3.3-26 through 3.3-28 illustrate the forecast peak-hour vehicle turning movement volumes, lane geometry, and traffic controls at each study intersection under cumulative 2040 proposed General Plan conditions. The forecast peak-hour traffic volumes include vehicle trips that would result from the Project.

Cumulative 2040 Proposed General Plan Conditions Intersection LOS Findings

Figure 3.3-29 illustrates the peak-hour LOS for each study intersection under cumulative 2040 proposed General Plan conditions (including the Project). Tables that summarize the delay for each intersection are provided in Appendix 3.3-1. Detailed LOS calculations are contained in Appendix 3.3-4.

The following 23 study intersections would operate unacceptably under cumulative 2040 proposed General Plan conditions:

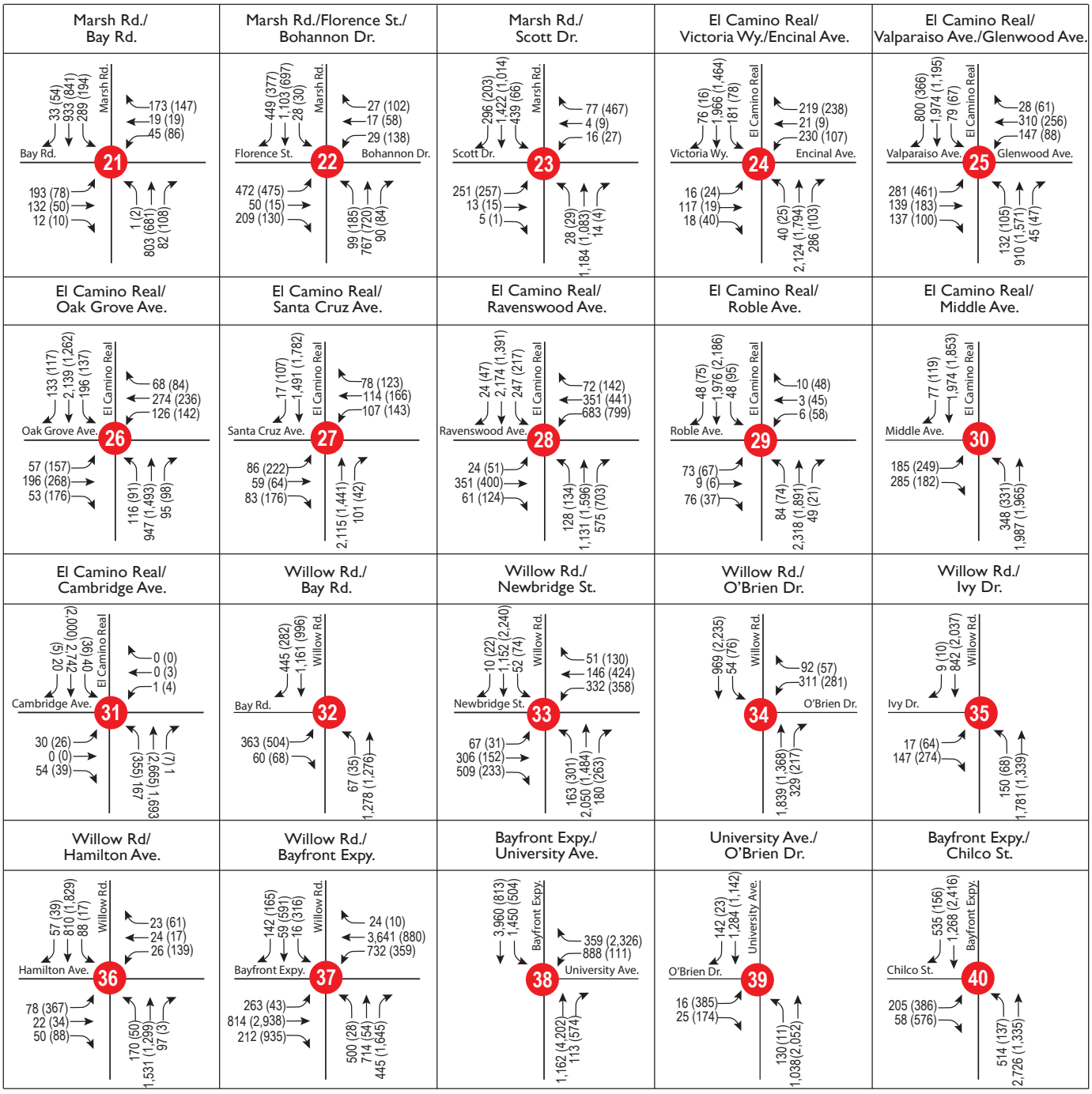
- Sand Hill Road and the I-280 northbound off-ramp (study intersection #1) – a.m.
- Sand Hill Road and the I-280 northbound on-ramp (study intersection #2) – p.m.
- Willow Road and Middlefield Road (#17) – a.m. and p.m.
- Willow Road and Gilbert Avenue (#18) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.
- Willow Road and Coleman Avenue (#19) – p.m.
    - During the p.m. peak hour, this finding reflects unserved demand.



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-26
Cumulative 2040 Proposed General Plan Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



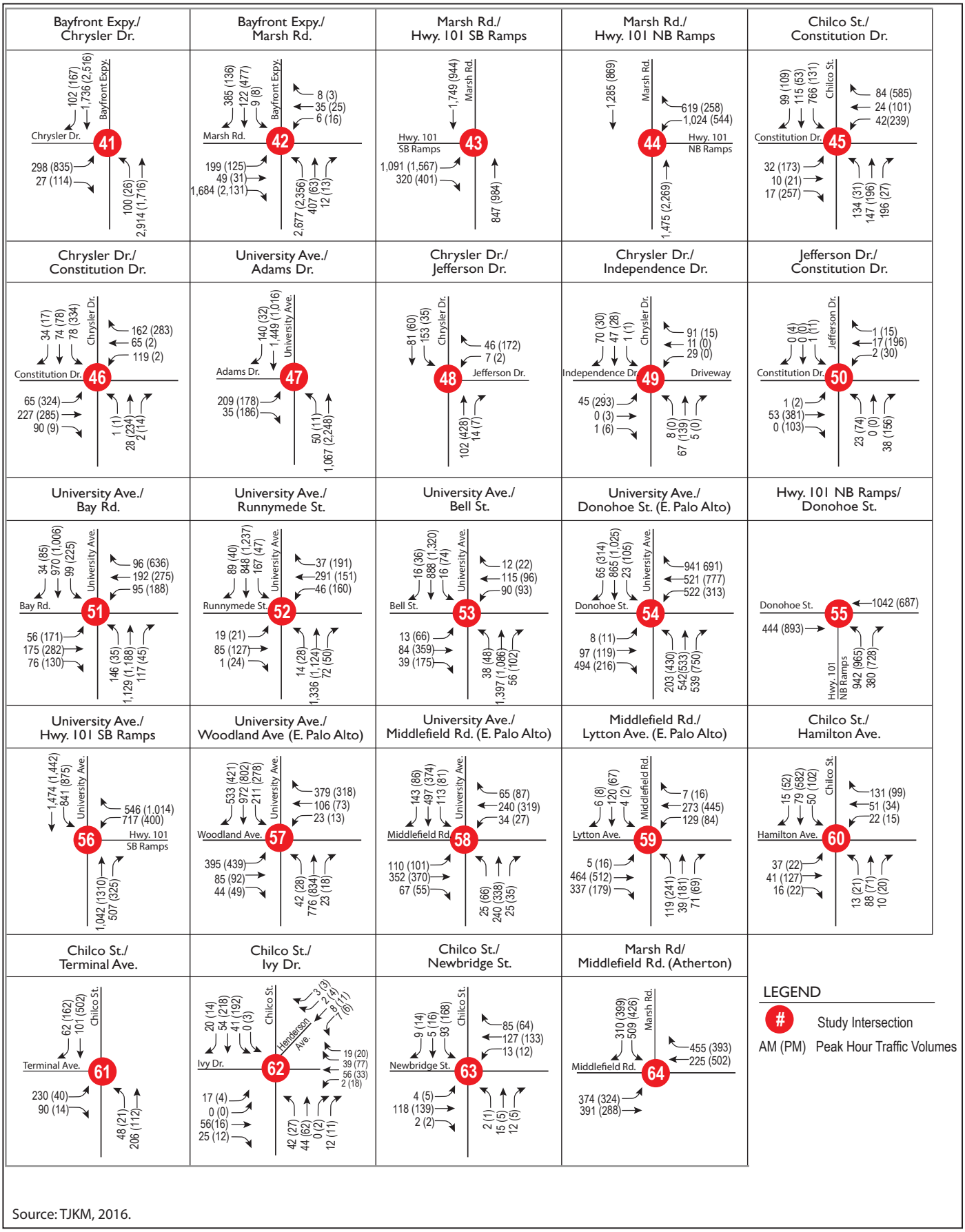
LEGEND

#	Study Intersection
AM (PM)	Peak Hour Traffic Volumes

Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

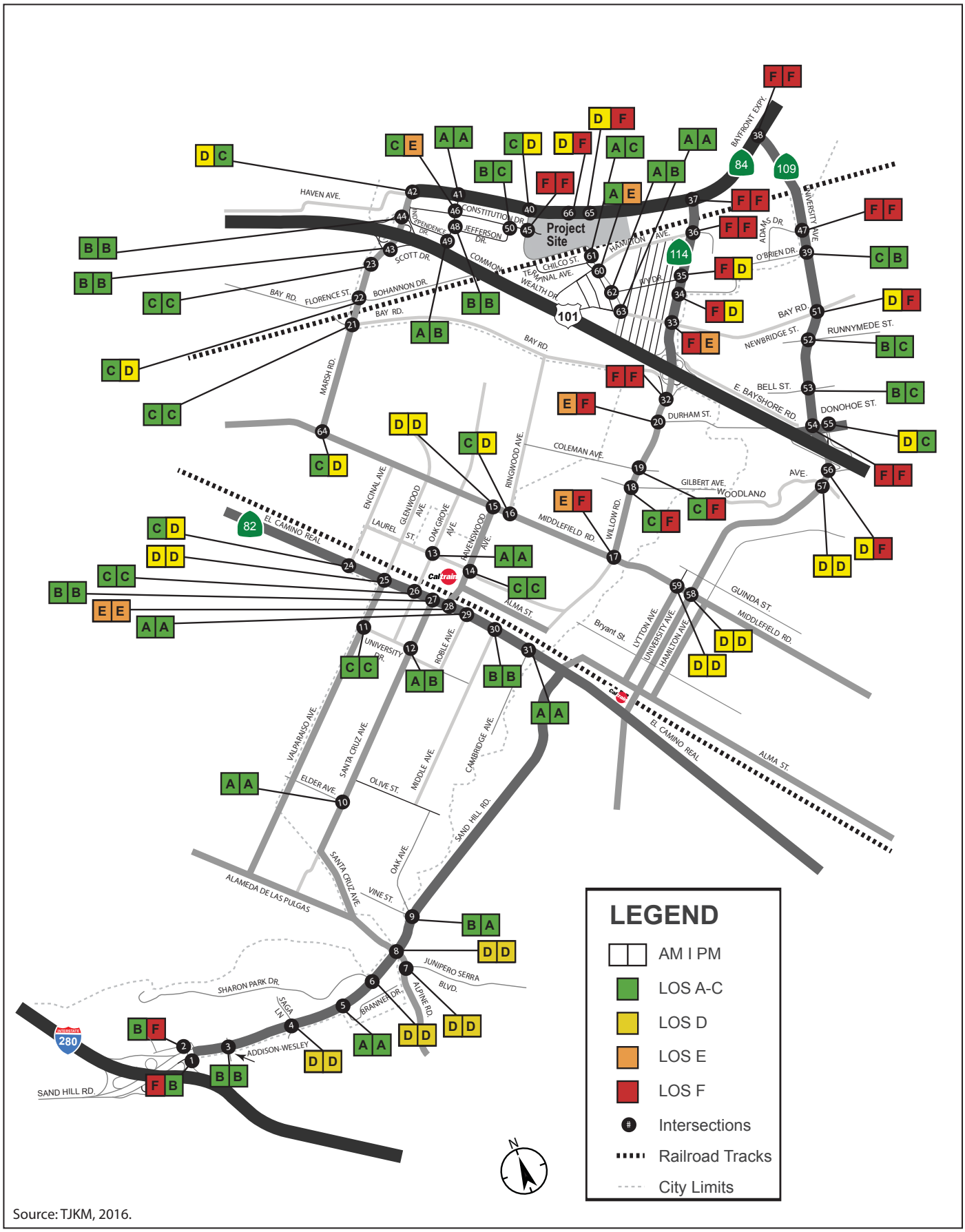
Figure 3.3-27
Cumulative 2040 Proposed General Plan Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-28
Cumulative 2040 Proposed General Plan Conditions Traffic Volumes
Facebook Campus Expansion Project Draft EIR



Source: TJKM, 2016.

Graphics ... 00296.15 (5-18-2016)

Figure 3.3-29
Intersection LOS – Cumulative 2040 Proposed General Plan Conditions
Facebook Campus Expansion Project Draft EIR

- Willow Road and Durham Street (#20) – a.m. and p.m.
    - During both the a.m. and p.m. peak hours, this finding reflects unserved demand.
- El Camino Real and Ravenswood Avenue (#28) – a.m. and p.m.
- Willow Road and Bay Road (#32) – a.m. and p.m.
    - During both peak hours, this finding reflects delay due to unserved demand and downstream queues (southbound approaching the US 101 ramps during the a.m. peak hour and northbound approaching the Willow/Bayfront intersection during the p.m. peak hour).
- Willow Road and Newbridge Street (#33) – a.m. and p.m.
- Willow Road and O'Brien Drive (#34) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Ivy Drive (#35) – a.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Hamilton Avenue (#36) – a.m. and p.m.
    - The LOS finding reflects unserved demand due to upstream and downstream congestion during the a.m. peak hour.
- Willow Road and Bayfront Expressway (#37) – a.m. and p.m.
- University Avenue and Bayfront Expressway (#38) – a.m. and p.m.
    - During the a.m. peak hour, this finding reflects unserved demand that affects the westbound left-turn movement.
- Chilco Street and Constitution Drive (#45) – a.m. and p.m.
- Chrysler Drive and Constitution Drive (#46) – p.m.
- University Avenue and Adams Drive (#47) – a.m. and p.m.
- University Avenue and Bay Road (#51) – p.m.
- University Avenue and Donohoe Street (#54) – a.m. and p.m.
- University Avenue and US 101 Southbound Ramps (#56) – a.m. and p.m.
- Chilco Street and Hamilton Avenue (#60) – p.m.
- Bayfront Expressway and Building 20 Entrance (#65) – p.m.
- Bayfront Expressway and Proposed Building 21 Entrance (#66) – p.m.

Each of these 23 locations was also identified as operating unacceptably under cumulative 2040 existing General Plan plus-Project conditions.

Under cumulative 2040 existing General Plan plus-Project conditions, a significant and unavoidable impact was identified at the El Camino Real and Glenwood Avenue intersection (#25), but intersection LOS would improve to acceptable under cumulative 2040 conditions with the proposed General Plan.

Cumulative Impacts and Mitigation Measures (with Proposed General Plan)

Impact TRA-13: Peak-Hour Traffic Impacts at Intersections under Cumulative 2040 Proposed General Plan Conditions. Increases in peak-hour vehicle traffic associated with the Project would contribute to increased delays during the a.m. and p.m. peak hours in 2040 under the proposed General Plan (ConnectMenlo), causing a significant and unavoidable impact on the operation of study intersections. (SU)

Given the net change in average delay resulting from the Project under both background plus-Project and 2040 existing General Plan plus-Project conditions, the addition of Project traffic would have very little effect on average delay at the locations listed below. Project traffic would not be anticipated to result in increased vehicle delay that would exceed significance thresholds under cumulative 2040 proposed General Plan conditions:

- Sand Hill Road and the I-280 northbound on-ramp (#2)
- Willow Road and Middlefield Road (#17)
- Willow Road and Gilbert Avenue (#18)
- Willow Road and Coleman Avenue (#19)
- Willow Road and Durham Street (#20)
- Willow Road and Bay Road (#32)
- Willow Road and Newbridge Street (#33)
- Willow Road and O'Brien Drive (#34)
- Willow Road and Ivy Drive (#35)

AM Peak Hour

The following intersections would experience increased delay during the a.m. peak hour under cumulative 2040 proposed General Plan conditions. The Project's contribution to impacts related to increased delay, compared with cumulative 2040 existing General Plan plus-Project conditions, would be ***potentially significant***.

- Sand Hill Road and the I-280 northbound off-ramp (#1)
- El Camino Real and Ravenswood Avenue (#28)
- Willow Road and Hamilton Avenue (#36)
- Willow Road and Bayfront Expressway (#37)
- University Avenue and Bayfront Expressway (#38)
- Chilco Street and Constitution Drive (#45)
- University Avenue and Adams Drive (#47)
- University Avenue and Donohoe Street (#54)

PM Peak Hour

The following intersections would experience increased delay during the p.m. peak hour under cumulative 2040 proposed General Plan conditions. The Project's contribution to impacts related to increased delay, compared with cumulative 2040 existing General Plan plus-Project conditions, would be ***potentially significant***.

- El Camino Real and Ravenswood Avenue (#28)
- Willow Road and Hamilton Avenue (#36)
- University Avenue and Bayfront Expressway (#38)
- Chilco Street and Constitution Drive (#45)
- Chrysler Drive and Constitution Drive (#46)
- University Avenue and Adams Drive (#47)
- University Avenue and Bay Road (#51)
- University Avenue and the US 101 southbound ramps (#56)
- Chilco Street and Hamilton Avenue (#60)
- Bayfront Expressway and Facebook Building 20 entrance (#65)
- Bayfront Expressway and Proposed Building 21 entrance (#66)

MITIGATION MEASURES. As described in Impact TRA-1, two types of mitigation are described to address potentially significant impacts on study intersections, increasing capacity and reducing travel demand, as summarized below. Additional details on each measure follow later in this section. Where measures are consistent with those identified under background plus-Project conditions, the prior measure number is referenced. Mitigation Measure TRA-13.1 below identifies potential measures to mitigate or reduce Project impacts. In addition, Mitigation Measure TRA-1.2 would reduce the peak-hour share of allowable vehicle trips. Regardless, impacts would be ***significant and unavoidable*** at certain study intersections.

TRA-13.1: Increase Traffic Capacity to Address Impacts on Peak-Hour LOS under Cumulative 2040 Proposed General Plan Conditions. This measure describes the types of mitigation measures that would be necessary to mitigate impacts at each affected location to less than significant.

a. Sand Hill Road and I-280 Northbound Off-Ramp (#1)

   This a.m. peak-hour impact was identified under cumulative 2040 existing General Plan plus-Project conditions (see Impact TRA-10.1a) and mitigated to less-than-significant levels with the peak-hour trip reduction described under Mitigation Measure TRA-1.2. Average delay would change by less than 1 second under the proposed General Plan, and impact findings would remain consistent with cumulative 2040 General Plan plus-Project conditions. The Project impact would, therefore, remain ***less than significant*** with Mitigation Measure TRA-1.2 under cumulative 2040 proposed General Plan conditions. (LTS/M)

b. El Camino Real and Ravenswood Avenue-Menlo Avenue (#28)

   The intersection would operate unacceptably during both the a.m. and p.m. peak hours under cumulative 2040 proposed General Plan conditions. As described above under Mitigation Measure TRA-10.1c, the provision of a right-turn pocket on Menlo Avenue,

where it approaches El Camino Real, and a third through lane on El Camino Real is identified in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact to a ***less-than-significant*** level. (LTS/M)

c. Willow Road and Hamilton Avenue (#36)

This potential impact on p.m. peak-hour traffic operations was identified as significant and unavoidable under background plus-Project conditions (see Mitigation Measure TRA-1.1b) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions.

Under cumulative 2040 proposed General Plan conditions, delay would further increase during the p.m. peak hour, thereby exceeding the significance threshold. Project impacts would remain ***significant and unavoidable***, as described under Mitigation Measure TRA-1.1b. (SU)

d. Bayfront Expressway and Willow Road (#37)

This potential impact on p.m. peak-hour traffic operations was identified as significant and unavoidable under background plus-Project conditions (see Mitigation Measure TRA-1.1c) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions.

Under cumulative 2040 proposed General Plan conditions, additional delay would exceed the significance threshold (see Mitigation Measure TRA-1.1c for a discussion of potential mitigation and constraints to mitigation). Mitigation Measure TRA-1.2 would partially reduce the impact, but it would remain significant. This impact would remain ***significant and unavoidable,*** as described under Mitigation Measure 1.1c. (SU)

e. Bayfront Expressway and University Avenue (#38)

This potential impact on peak-hour traffic operations was identified as significant and unavoidable under background plus-Project conditions (see Mitigation Measure TRA-1.1d) and would remain significant and unavoidable under cumulative 2040 existing General Plan plus-Project conditions. Increased delay is anticipated during the p.m. peak hour under the proposed General Plan. This impact would remain ***significant and unavoidable,*** as described under Mitigation Measure TRA-1.1d. (SU)

f. Chilco Street and Constitution Drive (#45)

This impact, also identified under background plus-Project conditions, pertains to the design of the Project entrance (see Mitigation Measure TRA-1.1). With implementation of this Project mitigation measure, the intersection would operate acceptably and this impact would be reduced to a ***less-than-significant*** level. (LTS/M)

g. Chilco Street and Constitution Drive (#46)

This impact was also identified under cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent and the Project contribution to increased delay would be less than 4 seconds. Therefore, with Mitigation Measure TRA-1.2, the Project impact at this location under 2040 proposed General Plan conditions would be reduced to a less-than-significant level. (LTS/M)

h. University Avenue and Adams Drive (#47)

LOS at this intersection reflects delay on the side-street stop-controlled approach from Adams Drive. Signalization of this intersection would be warranted under cumulative 2040 proposed General Plan conditions with buildout of ConnectMenlo, including the Project. Therefore, signalization of this intersection should be included in the City's TIF program. The Project Sponsor's payment of the TIF shall mitigate this impact, and the impact would be ***less than significant.*** (LTS/M)

i. University Avenue and Bay Road (#51)

The intersection operates at LOS F during the p.m. peak hour under existing conditions, reflecting primarily northbound traffic as it approaches the Dumbarton Bridge.

Increased delay would exceed the significance threshold under cumulative 2040 proposed General Plan conditions, reflecting added traffic to/from the other development sites (west of University Avenue and east of Willow Road) identified under the proposed General Plan. Replacement of the east/west "split-phase" signal on Bay Street with standard protected signal phases would allow eastbound and westbound pedestrian crossings to occur simultaneously and reduce p.m. peak-hour delay at this intersection. Because the intersection is not under the control of the City of Menlo Park, implementation of potential mitigation to reduce peak-hour delay at this location cannot be guaranteed.

Project traffic would occur primarily in the reverse-peak direction (southbound) during the p.m. peak hour. In addition, Mitigation Measure TRA-1.2 would reduce the net increase in the number of p.m. peak-hour vehicle trips generated by the Project by approximately 90 percent. Therefore, the Project would not result in increased p.m. peak-hour delay that would exceed the impact threshold under background plus-Project or cumulative 2040 existing General Plan plus-Project conditions.

Under cumulative 2040 proposed General Plan conditions with Mitigation Measure TRA-1.2, the Project would not be anticipated to result in additional delay to critical movements that would exceed 4 seconds, and Project trips would not result in the critical v/c ratio exceeding the impact threshold. The Project contribution to this cumulative impact would be ***less than significant*** with Mitigation Measure TRA-1.2. (LTS/M)

j. University Avenue and Donohoe Street (#54)

This state-controlled intersection located adjacent to the US 101 northbound ramps in East Palo Alto operates at LOS F under existing conditions during both the a.m. and p.m. peak hours. The addition of Project traffic under cumulate 2040 existing General Plan plus-Project conditions would result in additional delay that would exceed the 4-second significance threshold during both peak hours. Additional delay would occur under cumulative 2040 proposed General Plan conditions during the a.m. peak hour.

This impact was identified under cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-10.1j) and would remain ***significant and unavoidable*** under cumulative 2040 proposed General Plan conditions. (SU)

k. University Avenue and the US 101 Southbound Ramps (#56)

During the p.m. peak hour, this intersection operates unacceptably at LOS E under existing conditions; it would remain at LOS E under background plus-Project and cumulative 2040 existing General Plan plus-Project conditions. With implementation of Mitigation Measure TRA-1.2, the net increase in the number of peak-hour vehicle trips resulting from the Project during the p.m. peak hour would be reduced by more than 90 percent. Therefore, with Mitigation Measure TRA-1.2, the intersection would be anticipated to operate at LOS E, consistent with existing conditions. The Project contribution to this cumulative impact would be ***less than significant*** with Mitigation Measure TRA-1.2. (LTS/M)

l. Chilco Street and Hamilton Avenue (#60)

The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1k). This impact would remain ***significant and unavoidable***. (SU)

m. Bayfront Expressway and Facebook Building 20 Entrance (#65)

The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1l). This impact would remain ***significant and unavoidable*** during the p.m. peak hour. (SU)

n. Bayfront Expressway and Proposed Building 21 Entrance (#66)

The Project impact was identified under background plus-Project conditions and cumulative 2040 existing General Plan plus-Project conditions (see Mitigation Measure TRA-1.1m). With the proposed mitigation, the impact would remain ***significant and unavoidable*** during the a.m. peak hour. (SU)

Impact TRA-14: Impacts on Routes of Regional Significance under Cumulative 2040 Proposed General Plan Conditions. Some Routes of Regional Significance would operate at or below their LOS threshold with the addition of Project trips. However, Project traffic would exceed the allowable 1 percent threshold, resulting in significant and unavoidable impacts. (SU)

Under cumulative 2040 proposed General Plan conditions, the Project's share of traffic volumes on regional facilities would be partially reduced compared with cumulative 2040 existing General Plan plus-Project conditions. Some regional Project trips would be diverted to other locations because of the allowances for additional housing within Menlo Park under the proposed General Plan. The provision of such housing could allow a greater share of Project employees to live close to the Project site, resulting in fewer and shorter vehicle trips. Nonetheless, the following Routes of Regional Significance would continue to operate at or below their LOS threshold under cumulative 2040 proposed General Plan conditions, and Project traffic would still be anticipated to exceed the allowable 1 percent threshold, resulting in ***significant*** impacts:

- Bayfront Expressway between US 101 and Marsh Road
- Bayfront Expressway between Willow Road and University Avenue
- Bayfront Expressway between University Avenue and the county line
- US 101 north of Marsh Road
- US 101 south of Willow Road

MITIGATION MEASURE. See Mitigation Measure TRA-2.1. Providing additional travel lanes, if feasible, would increase segment capacity but would not be feasible on all segments given the available right-of-way widths and both downstream and downstream capacity limitations on facilities such as US 101 and the Dumbarton Bridge. In addition, the routes are under the control of Caltrans; the City cannot guarantee mitigation. Therefore, the Project impact on regional Routes of Regional Significance would remain ***significant and unavoidable***.

Impact TRA-15: Increase in Daily Traffic Volumes on Roadway Segments under Cumulative 2040 Proposed General Plan Conditions. Increases in daily traffic associated with the Project under cumulative 2040 proposed General Plan conditions would result in increased ADT volumes on Project area roadway segments, resulting in significant and unavoidable impacts. (SU)

The Project would generate up to 16,329 net daily vehicle trips during a typical weekday under the proposed trip cap. Under both background plus-Project and cumulative 2040 existing General Plan plus-Project conditions, based on the criteria for significance, 21 of the 87 roadway segments would experience significant impacts, which would result from Project traffic. Under cumulative 2040 proposed General Plan conditions, which include both the Project and citywide growth under ConnectMenlo, 23 of the 87 roadway segments would have significant impacts.

A typical mitigation measure would be to widen the road in order to add travel lanes and the capacity needed to accommodate the increase in the number of net daily trips. However, increasing the capacity of the roadway would require additional rights-of-way, which would affect local property owners. It is also considered infeasible. Furthermore, the widening of roadways can lead to other effects, such as induced travel demand (e.g., more vehicles on the roadway because of increased capacity on a particular route), air quality degradation, increases in noise associated with motor vehicles, and reductions in transit use (less congestion or reduced driving time may make driving more attractive than transit travel). Wider roadways also result in the degradation of bicycle and pedestrian facilities, including increased intersection crossing times. There is also a quality-of-life aspect to roadway planning because congestion, mobility, air quality, and noise impacts affect the quality of life for local residents, commuters, employees, and businesses in the area. Neighborhoods as well as commercial business centers are affected by roadway projects. Thus, although traffic may increase on certain roadways by varying percentages, it should be viewed as more than an LOS or traffic operation issue. Impacts would be ***significant***.

MITIGATION MEASURES. See Mitigation Measures TRA-3.1 and TRA-3.2 for partial mitigation measures to offset segment impacts. Because it would not be feasible to fully mitigate impacts on study segments, this cumulative impact would remain ***significant and unavoidable.***