4.13 TRANSPORTATION AND CIRCULATION

This chapter describes the regulatory framework and existing conditions related to transportation and circulation, the potential impacts on the transportation system from future development that could occur by adopting and implementing the proposed Specific Plan Update, and approval and development of the proposed Transit-Oriented Developments (TOD) #1 and #2 (together referred to as the "proposed Project"), and the recommended mitigation measures for identified significant impacts. The chapter and transportation analyses were prepared by Fehr & Peers. The analyses were conducted in accordance with the standards and methodologies set forth by the City of Millbrae (City) and City/County Association of Governments of San Mateo County (C/CAG).The technical appendices are included in Appendix H, Transportation Data, of this Draft EIR.

4.13.1 ENVIRONMENTAL SETTING

This section includes a description of the existing multi-modal transportation and circulation system, and the regulatory context. Impacts on the transportation system that would occur as a result of the proposed Specific Plan Update and development of the proposed TOD #1 and TOD #2 projects are discussed under the following section, Impacts and Mitigation Measures.

4.13.1.1 REGULATORY FRAMEWORK

This section describes federal, State, regional, and local environmental laws and policies that are relevant to the CEQA review process for transportation and circulation.

Federal Regulations

Americans with Disabilities Act

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

State Regulations

State Transportation Improvement Program

The California Transportation Commission (CTC) administers the public decision-making process that sets priorities and funds projects envisioned in long-range transportation plans. CTC's programming includes the State Transportation Improvement Program (STIP), a multi-year capital improvement program of transportation projects on and off the State highway system, funded with revenues from the State Highway Account and other funding sources. The California Department of Transportation (Caltrans) manages the operation of State highways.

California Department of Transportation

Caltrans is the primary State agency responsible for transportation issues. One of its duties is the construction and maintenance of the State highway system. Caltrans approves the planning, design, and construction of improvements for all State-controlled facilities including US Highway 101 (US 101) and the associated interchanges for these facilities located in the Specific Plan Area and State Route 82 (SR 82 or El Camino Real) which runs through the Specific Plan Area. Caltrans has established standards for roadway traffic flow and developed procedures to determine if State-controlled facilities require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities, but may influence traffic flow and levels of services at such facilities, Caltrans may recommend measures to mitigate the traffic impacts of such projects. The following Caltrans procedures and directives are relevant to the Specific Plan, particularly State roadway facilities:

- **Level of Service Target.** Caltrans maintains a minimum level of service (LOS) at the transition between LOS C and LOS D for all of its facilities.[1] Where an existing facility is operating at less than the LOS C/D threshold, the existing measure of effectiveness should be maintained.[2]
- **Caltrans Project Development Procedures Manual.** This manual outlines pertinent statutory requirements, planning policies, and implementing procedures regarding transportation facilities. It is continually and incrementally updated to reflect changes in policy and procedures. For example, the most recent revision incorporates the Complete Streets policy from Deputy Directive 64-R1, which is detailed below.
- **Caltrans Deputy Directive 64.** This directive requires Caltrans to consider the needs of non-motorized travelers, including pedestrians, bicyclists, and persons with disabilities, in all programming, planning, maintenance, construction, operations, and project development activities and products. This includes incorporation of the best available standards in all of Caltrans' practices.

[1] Level of service is explained further below in Section 4.13.3.2, Level of Service Standards and Analyses Methodologies.

[2] California Department of Transportation, 2002, Guide for the Preparation of Traffic Impact Studies.

- **Caltrans Deputy Directive 64-RI.** This directive requires Caltrans to provide for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities on the State highway system. Caltrans supports bicycle, pedestrian, and transit travel with a focus on "complete streets" that begins early in system planning and continues through project construction and maintenance and operations.
- **Caltrans Director's Policy 22.** This policy establishes support for balancing transportation needs with community goals. Caltrans seeks to involve and integrate community goals in the planning, design, construction, and maintenance and operations processes, including accommodating the needs of bicyclists and pedestrians.
- **Environmental Assessment Review and Comment.** Caltrans, as a responsible agency under CEQA, is available for early consultation on projects to provide guidance on applicable transportation analysis methodologies or other transportation related issues, and is responsible for reviewing traffic impact studies for errors and omissions pertaining to the State highway facilities. In relation to this role, Caltrans published the *Guide for the Preparation of Traffic Impact Studies* (2002), which establishes the Measures of Effectiveness as described under "Level of Service Target" above. The Measures of Effectiveness are used to determine significant impacts on State facilities. This Guide also mandates that traffic analyses include mitigation measures to lessen potential project impacts on State facilities and to meet each project's proportional share of responsibility for the impacts. However, the ultimate mitigation measures and their implementations are to be determined based on consultation between Caltrans, the City, and the project applicants.

California Complete Streets Act of 2008 (Assembly Bill 1358)

Originally passed in 2008, California's Complete Streets Act came into force in 2011 and requires local jurisdictions to plan for land use transportation policies that reflect a "complete streets" approach to mobility. "Complete streets" comprises a suite of policies and street design guidelines which provide for the needs of all road users, including pedestrians, bicyclists, transit operators and riders, children, the elderly, and the disabled. From 2011 onward, any local jurisdiction—county or city—that undertakes a substantive update of the circulation element of its general plan must consider complete streets and incorporate corresponding policies and programs.

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law.[3] The Legislature found that with the adoption of the Sustainable Communities and Climate Protection Act of 2008 (SB 375), the State had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and thereby contribute to the reduction of greenhouse gas emissions (GHG), as required by the California Global Warming Solutions Act of 2006 (Assembly Bill [AB 32]). Additionally, AB 1358, described above, requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users. To

[3] An act to amend Sections 65088.1 and 65088.4 of the Government Code, and to amend Sections 21181, 21183, 21186, 21187, 21189.1, and 21189.3 of, to add Section 21155.4 to, to add Chapter 2.7 (commencing with Section 21099) to Division 13 of, to add and repeal Section 21168.6.6 of, and to repeal and add Section 21185 of, the Public Resources Code, relating to environmental quality.

further the State's commitment to the goals of SB 375, AB 32 and AB 1358, SB 743 adds Chapter 2.7, Modernization of Transportation Analysis for Transit-Oriented Infill Projects, to Division 13 (Section 21099) of the Public Resources Code.

SB 743 started a process that could fundamentally change transportation impact analysis as part of CEQA compliance. These changes will include the elimination of auto delay, level of service, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts in many parts of California (if not statewide). Further, parking impacts will not be considered significant impacts on the environment for select development projects within infill areas with nearby frequent transit service. SB 743 includes amendments that allow cities and counties to opt out of traditional level of service standards where Congestion Management Programs (CMPs) are used and requires the Office of Planning and Research (OPR) to update the CEQA Guidelines and establish "criteria for determining the significance of transportation impacts of projects within transit priority areas.[4] As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." OPR is in the process of investigating alternative metrics, but a preliminary metrics evaluation[5] suggests that auto delay and level of service may work against goals such as greenhouse gas reduction and accommodation of all transportation modes. New criteria for determining the significance of transportation impacts may include, but are not limited to, "VMT, VMT per capita, automobile trip generation rates, or automobile trips generated."[6] OPR is still in the process of preparing the guidelines and has prepared a preliminary discussion draft, with comments at the end of 2014. A second set of Guidelines will be released spring of 2015 for public comment. OPR will then make one more set of revisions and submit the final Guidelines to the Natural Resources Agency in the summer of 2015. This will start the formal 'rulemaking' process, which tends to last about six (6) months. Upon completion, there is a 60-day administrative law review before the Guidelines are formally law. After that date though, lead agencies still have 120 days to update their guidance, etc. to comply with the law. Additional time may be available before full implementation is required. Once the guidelines are prepared and certified "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment."[7]

California Building Code

The California Building Code (CBC), Title 24 of the California Code of Regulations, provides fire and emergency equipment access standards for public roadways in Part 9, Appendix D. These standards include specific width, grading, design and other specifications for roads which provide access for fire apparatuses; the code also indicates which areas are subject to requirements for such access. The CBC also incorporates by reference the standards of the International Fire Code (IFC). The future construction of streets in the Specific Plan Area would be subject to these and any modified State standards.

[4] A "transit priority area" is defined in as an area within one-half mile of an existing or planned major transit stop. A "major transit stop" is defined in Public Resources Code Section 21064.3 as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.
[5] opr.ca.gov/docs/PreliminaryEvaluationTransportationMetrics.pdf
[6] Public Resources Code Section 21099(b)(1)
[7] Public Resources Code Section 21099(b)(2)

Regional Regulations

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county Bay Area, including Sonoma County. It also functions as the federally mandated metropolitan planning organization (MPO) for the region. It is responsible for regularly updating the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities. The current RTP, *Plan Bay Area*, was adopted on July 18, 2013. *Plan Bay Area* was prepared by MTC in partnership with the Association of Bay Area Governments (ABAG), the Bay Area Air Quality Management District (BAAQMD), and the Bay Conservation and Development Commission (BCDC). The MTC updates the RTP every four (4) years. *Plan Bay Area* specifies a detailed set of investments and strategies throughout the region from 2013 through 2040 to maintain, manage, and improve the surface transportation system, specifying how anticipated federal, State, and local transportation funds will be spent.

MTC has established its policy on Complete Streets for the Bay Area. The policy states that projects funded all, or in part, with regional funds (e.g., federal, State Transportation Improvement Program, bridge tolls) must consider the accommodation of bicycle and pedestrian facilities, as described in Caltrans Deputy Directive 64. These recommendations do not replace locally-adopted policies regarding transportation planning, design, and construction. Instead, these recommendations facilitate the accommodation of pedestrians, including wheelchair users, and bicyclists into all projects where bicycle and pedestrian travel is consistent with current adopted regional and local plans.

With the passage of Assembly Bill (AB) 32, the *Global Warming Solutions Act of 2006*, the State of California committed itself to reducing statewide greenhouse gas (GHG) emissions to 1990 levels by 2020. Subsequent to adoption of AB 32, the State adopted Senate Bill 375 (SB 375) as the means for achieving regional transportation-related GHG targets. Among the requirements of SB 375 are the adoption of targets to be met by 2020 and 2035 for each MPO in the state, as well as the creation of a Sustainable Communities Strategy (SCS) that provides a plan for meeting regional targets. The SCS and the RTP must be consistent with one other, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an Alternative Planning Strategy that details an alternative approach to meet the target. Finally, MPOs must use transportation and air emissions modeling techniques consistent with guidelines prepared by the State CTC. The RTPs, cities, and counties are encouraged, but not required, to use travel demand models consistent with the State CTC guidelines. The provisions of AB 32 and SB 375 are discussed in detail in Chapter 4.6, Greenhouse Gas Emissions, of this Draft EIR.

San Mateo City/County Association of Governments

C/CAG is the Congestion Management Agency for San Mateo County authorized to set State and federal funding priorities for improvements affecting the San Mateo County CMP roadway system. C/CAG-designated CMP roadway system components in Millbrae include SR 82 (El Camino Real) and US 101. The intersection of El Camino Real and Millbrae Avenue is a C/CAG-designated CMP intersection. C/CAG has set the level of service standards for US 101 segments in the vicinity of the Specific Plan site.

C/CAG has adopted guidelines to evaluate the impacts of net new vehicle trips generated by new developments on the CMP network. These guidelines apply to all developments that generate 100 or more net new peak period vehicular trips on the CMP network and are subject to CEQA review. C/CAG also has guidelines that "the developer and/or tenants will reduce the demand for all new peak hour trips (including the first 100 trips) projected to be generated by the development" through the use of a trip credit system. C/CAG has published a list of mitigation options in a memorandum that also outlines a process for obtaining C/CAG approval.

San Francisco Bay Trail Plan

The San Francisco Bay Trail Plan (Association of Bay Area Governments, 1989) and *Enhanced San Francisco Bay Area Water Trail Plan* (California Coastal Conservancy, 2011) provide guidance to the development of a shared-use bicycle and pedestrian path that will one day allow continuous travel around the San Francisco Bay. The Specific Plan Area represents a gap in the trail separating several existing and planned segments.

Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport

As required by State law, C/CAG has prepared and adopted an Airport Land Use Compatibility Plan (ALUCP) in 2012. The ALUCP for the San Francisco International Airport (SFO) provides standards and criteria, which local agencies work under to help inform land use compatibility between SFO and their respective jurisdictions. The SFO ALUCP also establishes planning boundaries around SFO that "define height/airspace protection, noise, and safety areas for policy implementation, and areas within which notification of SFO proximity is required as part of real estate transactions."[8] The SFO ALUCP has been prepared to be consistent with the guidance provided by the Department of Transportation, Division of Aeronautics, and the Federal Aviation Administration (FAA). The Airport Influence Area (AIA) for SFO is established by the C/CAG Board to ensure compatibility between land use planning and SFO regulations.

Local Regulations

Millbrae 1998-2015 General Plan

The City is responsible for planning, constructing, and maintaining local public transportation facilities, including all city streets, City-operated traffic signals, sidewalks, and bicycle facilities. The City of Millbrae General Plan outlines various goals, policies and implementing programs relevant to transportation and traffic in the Circulation Element. The General Plan Circulation Element was amended in 2009 to include a bicycle and pedestrian transportation plan. The policies relevant to the proposed Project are listed in Table 4.13-1.

[8] City/County Association of Governments of San Mateo County, 2012. Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport, p.12.

TABLE 4.13-1 GENERAL PLAN POLICIES PERTAINING TO TRANSPORTATION

Number	Policy
Circulation Element (C)	
C1.1	Local Residential Streets Protection. Provide for a transition in land use intensity, site design and traffic circulation between high density residential and commercial projects having primary access on local streets in single family districts, except where there is no feasible alternative route, and implement "traffic calming" measures in residential areas where conditions may so permit.
C1.2	Traffic Diversion. Protect community character along Millbrae's surface streets from the impacts of peak hour through traffic and diversions by discouraging non-local and commercial traffic from using local and collector streets through land use restrictions and traffic control devices, where appropriate. Minimize the diversion of traffic onto local residential streets.
C1.3	Traffic Safety. Maintain and improve traffic safety to minimize traffic accident potential, provide safe walking. Enforce speeding and other traffic safety laws.
C1.4	Workable and Safe Access to New Commercial Projects. Design new commercial developments so that, wherever possible, the minimum number of needed entrance or exit points shall be allowed to ensure safe and efficient internal traffic flow and to reduce through traffic delays on public roads serving the project.
C1.5	Transportation and Transit Funding. Encourage regional agencies to provide adequate regional and local funding of roadway and transit improvements through sales tax initiatives, traffic impact fees and other measures when necessary. Ensure that the City remains eligible for and aggressively pursues all available roadway and transit improvements funds.
C1.7	Restrictions on Truck Traffic. Restrict truck through traffic on all city streets as designated by ordinance.
C1.8	Bikeway and Pedestrian Improvements. Provide appropriate bikeway and pedestrian improvements to promote alternative transportation uses.
C2.1	Regional Traffic Improvements. Review proposals relative to their impact on Millbrae and support all appropriate measures necessary to improve regional traffic on US 101, Interstate 280, and El Camino Real (SR 82) as related to traffic conditions in the City of Millbrae.
C2.3	CMP Roadway System. Establish the following roadways in Millbrae, which serve either as a highway or principal arterial, as having regional significance consistent with the San Mateo County Congestion Management Program (CMP): a. Bayshore Freeway (US 101) b. Junipero Serra Freeway (I-280) c. El Camino Real (SR 82) In addition, the intersection of SR 82 (El Camino Real) and Millbrae A venue meets the CMP criteria as a significant intersection in the CMP Roadway System and should be monitored for service levels. The adopted level of service for this intersection in the morning peak hour is LOS E.
C2.5	Coordinate with Major Transportation Agencies. Ensure that continuous coordination is carried out with San Francisco International Airport, BART, Caltrain, SamTrans, Metropolitan Transportation Commission (MTC) and Caltrans to provide funding for appropriate improvements and to mitigate impacts.
C2.7	Regional Traffic Impacts. Require an analysis of traffic impacts on all regional routes and significant intersections for all projects anticipated to generate over 100 peak-hour vehicle trips in accordance with the CMP. Submit environmental assessments for projects with more than 100 peak-hour trips to regional jurisdictions and affected jurisdictions for review and appropriate action.
C3.1	Millbrae Street Classification. Seek to maintain a street and highway system that separates commuter and regional traffic from local traffic and minimizes impacts on Millbrae neighborhoods. The designation of regionally significant routes (US 101 Interstate 280 and SR 82) is intended to establish a monitoring and mitigation program as part of the CMP. The designation of streets serving as collectors is intended to recognize the function these streets have so that appropriate monitoring and mitigation, including "traffic calming" measures, as appropriate, may be implemented. The street and highway system hierarchy and traffic level of service

TABLE 4.13-1 GENERAL PLAN POLICIES PERTAINING TO TRANSPORTATION

Number	Policy
	standards (LOS) are as follows: Principal Arterials a. Millbrae Avenue (Magnolia Avenue to Old Bayshore Highway) - LOS D Local Streets - LOS A All other streets in Millbrae function as local streets providing access to abutting properties and feeding local collectors which, in turn, lead to arterials. MTS Streets and Highways *Highways (Class 2)* a. El Camino Real (SR 82) - LOS D *Other MTS Routes* a. Millbrae Avenue (Skyline Boulevard to Old Bay shore Highway) CMP Roadway /Intersection a. El Camino Real (SR 82) b. El Camino Real/Millbrae Avenue Intersection
C3.2	Maintaining Traffic Level of Service. Seek to achieve or exceed adopted traffic service level standards during peak traffic hours through Transportation Systems Management (TSM), Transportation Demand Management (TDM), street maintenance, Capital Improvement Programming, coordination with federal, state, county, private and district funding programs for street and other transportation improvements, and developer payment of pro rata fair share of traffic improvement costs for new developments.
C3.3	New Development Requirements. Require transportation-related mitigation attributable to a specific development when identified through required traffic analyses in order to maintain acceptable level of service standards.· Assure that new projects pay their pro rata share of offsite street improvements that will be needed to serve the project. Such sharing will also cover the incremental improvement costs of the collector and arterial street system that will be utilized by project users.
C3.4	Development Fees in the Millbrae Station Area Specific Plan. Establish development fees as envisioned in the Millbrae Station Area Specific Plan for provision of necessary roadway improvements.
C3.5	Traffic Studies. Require site-specific traffic studies (including access, circulation and parking) for development projects where there may be a substantial impact on the local street system. The City will evaluate traffic impacts and funding of improvements prior to approval of development projects or annexation of unincorporated areas.
C4.1	Transit Access. Encourage the increased regional use of transit to relieve commuter congestion along the US 101, Interstate 280 and SR 82 corridor and to serve the transportation needs of San Mateo County. In coordination with the CMP and transit service providers, attain a coordinated system that is safe, efficient and reliable to provide a convenient alternative to driving. Considerations include: a. Children, commuters and senior citizens should be housed within walking distance (1/4 mile) of bus stops. b. Commuters should be able to easily connect among different modes of transit, whose operating hours should correspond to need. c. Coordination of Sam Trans, BART and Cal Train services. Provision for mobility-impaired individuals.

TABLE 4.13-1 GENERAL PLAN POLICIES PERTAINING TO TRANSPORTATION

Number	Policy
C4.2	Millbrae BART/Caltrain Station Area. Support development of the Millbrae BART /Caltrain Station area as part of the BART and Caltrain system and provide area specific land use planning and coordination with related agencies to ensure minimal impacts on the City of Millbrae.
C4.6	Reduced Work Trips. Adopt land use, housing and circulation policies supporting the jobs/ housing balance, including local job creation, TSM, provision of housing for all income levels, satellite office sites, and telecommunications improvements to reduce or shorten home to work trips along the travel corridor.
C4.7	Transportation Systems and Transportation Demand Management. Implement and enforce local and regional TSM and TDM programs.
C4.8	Bikeways Standards. Pursue the following bikeways standards : a. Class I Bikeways: Improved surface of varying width, physically separated from motorized traffic. Can be combined with pedestrian paths and trails~ if properly designed. b. Examples of improved bikeway surfaces include decomposed granite and asphalt concrete. c. Class II Bikeways: Paved right-of-way adjacent to vehicular traffic designed for the exclusive use of bicyclists. Class III Bikeways: Paved right-of-way shared with motorized vehicles and designated as a bike route.
C4.9	Bikeways System. Develop and maintain a safe and logical bikeways system which is coordinated with the countywide system, and will include separate bicycle lanes where possible and posted bicycle routes. This system is intended as a viable alternative mode of travel throughout the City.
C4.10	Bike Parking Facilities. Require adequate bike parking facilities at transportation centers, public parks and buildings, recreational facilities, commercial centers and large multi-family residential projects.
C4.15	Pedestrian System. Develop a safe, pleasant pedestrian system that provides direct and convenient pedestrian access, designed to serve all segments of the public including the young, the aged, and the disabled. Pedestrian safety shall be duly considered in the design of intersection and other roadway improvements. The pedestrian circulation system is intended as a viable alternative mode of travel throughout the City by providing pedestrian facilities, including trails, paths, and sidewalks that are safe, direct and convenient.
C4.16	Pedestrian Improvements. Continue to require as a condition of development project approval the provision of sidewalks and curb ramps in accordance with American With Disabilities Act (ADA) requirements. Require utility poles, signs, street lights and street landscaping on sidewalks be placed and maintained to comply with ADA standards.
C5.1	Parking Standards. Adopt parking requirements to provide an adequate parking supply as a condition of development approval.
C5.2	Parking Lot Design. Provide proper site planning and design to include screening of loading and storage areas, and providing parking areas adjacent to, but not in front of, the front of a structure, and to place employee parking and loading areas in the rear of the site. The placement of parking toward the rear of the site is especially applicable for industrial, wholesale and office uses.
C5.4	Parking In-Lieu Fee. Maintain the Parking In-Lieu Fee as adopted in commercial areas and use funds generated thereby for enhancement of parking.
C5.5	Parking Enforcement. Consider the use of parking management techniques such as electronic ticketing meters and permit systems to enhance parking in commercial areas.
CIP-2	Traffic Safety. Maintain and improve traffic safety by minimizing traffic accident potential and providing safe walking as part of new commercial projects.
CIP-4	City, Street and Highway Signage. Maintain a street and highway signage program to increase driver familiarity with the area to direct traffic to appropriate streets and coordinate with Caltrans, BART and the San Francisco International Airport as appropriate on US Highway 101 and Interstate 280. Signage should not encourage use of City streets by through or non-Millbrae traffic.

TABLE 4.13-1 GENERAL PLAN POLICIES PERTAINING TO TRANSPORTATION

Number	Policy
CIP-12	Millbrae Station Area Specific Plan Improvements. Implement appropriate improvements to mitigate potential impacts on the City of Millbrae as identified in the Millbrae Station Area Specific Plan. Some of the potential improvements include: a. US 101/Millbrae Avenue Interchange Improvements b. California Drive Extension c. Adrian Road d. Rollins Road and Garden Lane Intersection e. Millbrae Avenue/El Camino Real Intersection f. Millbrae Avenue/Rollins Road g. Rollins Road/ Adrian Road Intersection In addition, identify ways to encourage bicycling in coordination with BART.
CIP-15	TSM and TDM Requirements. Continue to implement TSM and TDM requirements through MTSMA and provide incentives to employers to hire locally.
CIP-18	Westside Garage. Consider construction of a transit-oriented Westside Garage to mitigate the impacts of the Millbrae Station for traffic arriving on the west side. Consider establishing a sticker system to provide sufficient parking for local resident commuter parking.
CIP-21	Enforcement of Millbrae Station Area Parking Regulations. Enforce parking restrictions and monitor the spillover of parking around the BART station in coordination with BART.

Source: City of Millbrae General Plan 1998-2015, adopted 1998. Circulation Element was amended in 2009.

Millbrae Municipal Code

The City of Millbrae Municipal Code contains all ordinances for the city. The Municipal Code is organized by Title, Chapter, and Section. The current Municipal Code is up to date through Ordinance 747, passed May 27, 2014. The following provisions in Title 9, Building Regulations, of the Municipal Code help to insure adequate emergency access is available in Millbrae:

- **Chapter 9.30, Fire Code.** Per Section 9.30.010, Adoption of California Fire Code, 2013 Edition, the City adopted the 2013 CFC (Title 24, Part 9, CFC and the International Fire Code, 2012 Edition, as amended by the state of California). The Fire Code includes regulations governing conditions hazardous to life and property from fire or explosion, and governing the maintenance of buildings and premises and safeguarding life, health, property and public welfare by regulating the storage, use and handling of dangerous and hazardous materials, substances and processes, and by regulating the maintenance of adequate egress facilities in the City of Millbrae, and providing for the issuance of permits and the collection of fees to cover the cost of the Fire Department to review and inspect the intended activities, operations or functions.

4.13.1.2 TRAFFIC ANALYSIS OVERVIEW

This section presents the methods used to determine Existing (2014), Near Term (2020) and Cumulative (2040) traffic conditions, including descriptions of the data requirements and analysis methodologies.

Study Locations

This section of the EIR evaluates the impacts of the proposed Project on key roadway facilities, including ten (10) intersections, five (5) freeway segments, and freeway ramps at the US 101/Millbrae Avenue interchange. The study area for the traffic analysis was selected based on consultation with City staff to capture the roadway facilities likely to experience impacts due to buildout of the proposed Project. The study intersections and freeway mainline segments and ramps are listed below and study intersections are shown on Figure 4.13-1. All study intersections are controlled by a traffic signal unless noted below.

Study Intersections

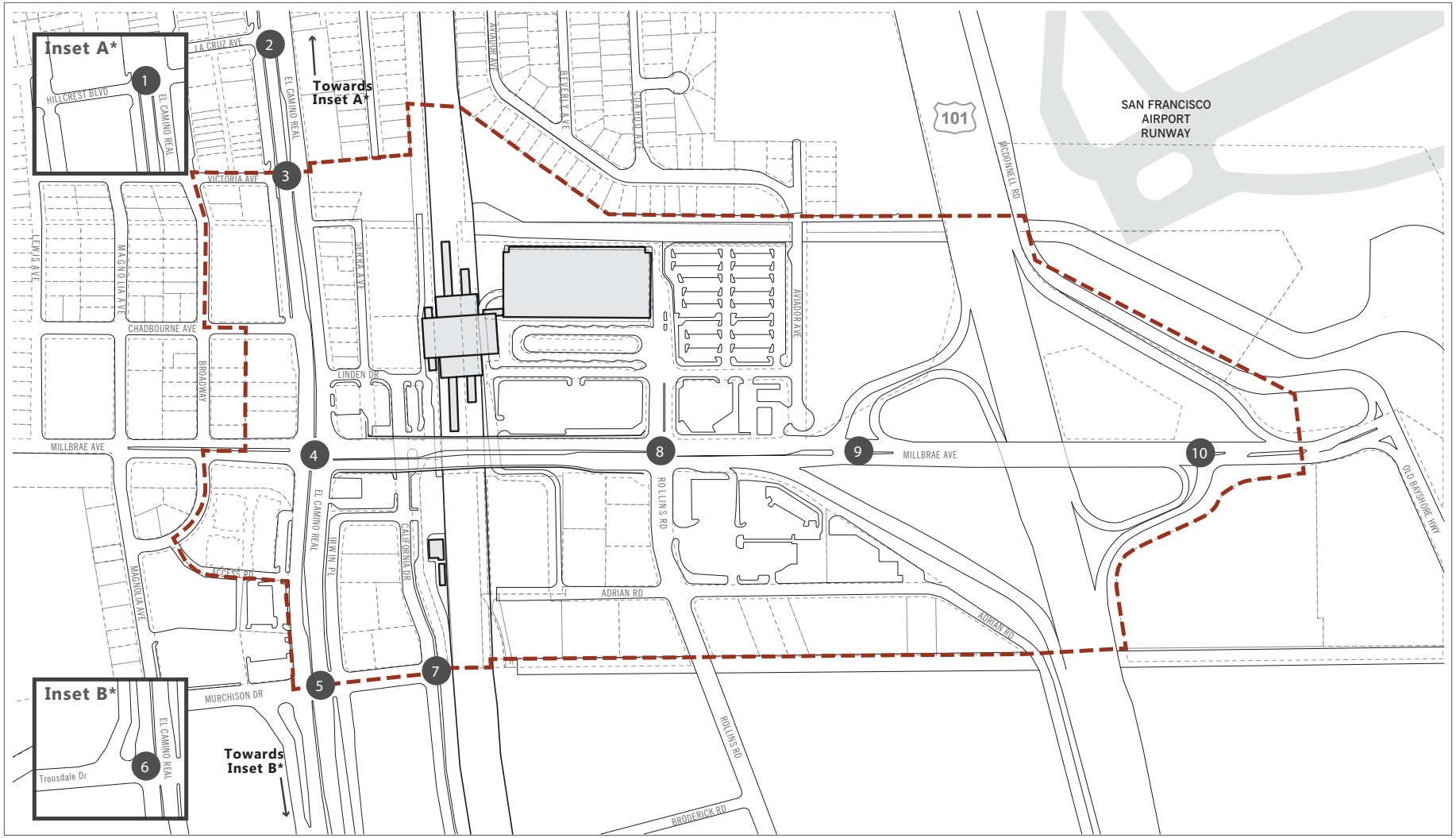
1. El Camino Real / Hillcrest Boulevard
2. El Camino Real / La Cruz Avenue (Side-Street Stop)
3. El Camino Real / Victoria Avenue
4. El Camino Real / Millbrae Avenue
5. El Camino Real / Murchison Drive
6. El Camino Real / Trousdale Drive
7. California Drive / Murchison Drive (Side-Street Stop)
8. Rollins Road / Millbrae Avenue
9. US 101 Southbound Ramps / Millbrae Avenue
10. US 101 Northbound Ramps / Millbrae Avenue

Freeway Segments

A. US 101 from Grand Avenue to Produce Avenue
B. US 101 from Produce Avenue to I-380
C. US 101 from I-380 to Millbrae Avenue
D. US 101 from Millbrae Avenue to Broadway
E. US 101 from Broadway to Peninsula Avenue

Freeway Ramps

- US 101 Millbrae Avenue On/Off Ramps



Source: Fehr & Peers Transportation Consultants, 2015.

Specific Plan Area

1 Study Intersection

0 500
Scale (Feet)

Figure 4.13-1
Study Intersections

Data Collection

Intersection vehicle turning movement (passenger and truck), pedestrian, and bicycle counts were conducted in March 2014 during the morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak periods, on mid-week, non-holiday days when local schools were in session and during fair weather.

Site Access

The Millbrae Bay Area Rapid Transit (BART)/Caltrain Station is located on a parcel in Millbrae that is roughly bounded by Aviador Avenue to the north, Millbrae Avenue to the south, El Camino Real to the west, and US 101 to the east. Access to the Specific Plan Area would be provided via Millbrae Avenue, Rollins Road, California Drive, and El Camino Real. Access to the station's eastern BART-operated parking garage and existing surface lots is provided from Millbrae Avenue via Rollins Road, while access to the station's western, Caltrain-operated surface lot is provided from El Camino Real via Linden Avenue and California Drive. Regional access to the station is provided via US 101 and El Camino Real (SR 82).

Traffic Analysis Methodologies

Potential roadway system impacts resulting from the Specific Plan Update have been evaluated following methodologies and standards commonly applied by the City in accordance with traffic planning and engineering practice, and in accordance with the guidelines and policies of C/CAG, which is the Congestion Management Agency for the County.

Evaluation of traffic conditions on local streets involves analysis of intersection operations, as intersections represent the locations where the roadway capacity is most constrained. Intersection and freeway mainline segment operations were evaluated with level of service calculations. Level of service (LOS) is a qualitative description of operations ranging from LOS A, when the roadway facility has excess capacity and vehicles experience little or no delay, to LOS F, where the volume of vehicles exceeds the capacity resulting in long queues and excessive delays. Typically, LOS E represents "at-capacity" conditions and LOS F represents "over-capacity" conditions. At signalized intersections operating at LOS F, for example, drivers may have to wait through multiple signal cycles.

This level of service grading system applies to signalized and unsignalized intersections and freeway mainline segments. LOS A, B, and C are generally considered satisfactory service levels, while the influence of congestion becomes more noticeable (though still considered acceptable) at LOS D. LOS E and F are generally considered to be unacceptable. The City has established a minimum acceptable operating level of LOS D for signalized and unsignalized intersections in all areas of the city. The level of service threshold for all study intersections for the Specific Plan Area is LOS D.

As previously stated in Section 4.13.1.1, Regulatory Setting, under SB 743 once the new CEQA Guidelines are prepared by OPR and certified by the Secretary of the Natural Resources Agency "automobile delay, as described solely by level of service or similar measures of vehicular capacity, or traffic congestion, shall not be considered a

significant impact on the environment."[9] As OPR has not yet amended the CEQA Guidelines to implement this change, automobile delay is still considered a significant impact and the City will continue to use the established level of service criteria.

For CEQA purposes, a freeway segment is considered to operate at an unacceptable level if the segment operates worse than the level of service standard identified for that segment by the County Congestion Management Agency , C/CAG. C/CAG's level of service standards for the five (5) study freeway segments are LOS E for US 101 from San Francisco County Line to Peninsula Avenue.

The study intersections were evaluated using the Synchro 8 software package, which incorporates the methods from Chapters 18 (Signalized Intersections) and 19 (Two-Way Stop Controlled Intersections) of the 2000 Highway Capacity Manual (HCM) methodology. Freeway analysis was conducted using the 2000 HCM volume-to-capacity (V/C) ratio methodology, consistent with methodology adopted by C/CAG. Each method is briefly described below.

Signalized Intersections

The method from Chapter 18 of the HCM bases signalized intersection operations on the average control delay experienced by motorists traveling through it. Control delay incorporates the vehicle delay associated with deceleration, acceleration, stopping, and moving up in the queue. This method uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay. Table 4.13-2 summarizes the relationship between average delay per vehicle and level of service for signalized intersections according to the 2000 HCM method.

Unsignalized Intersections

Traffic conditions at the unsignalized study intersections (two-way stop-controlled intersections) were evaluated using the method from Chapter 19 of the 2000 HCM. With this method, operations are defined by the average control delay per vehicle (measured in seconds) for each stop-controlled movement or movement that must yield the right-of-way. At two-way stop-controlled intersections the movement with the highest delay and corresponding level of service is reported. Table 4.13-3 summarizes the relationship between delay and level of service for unsignalized intersections. Generally, the delay ranges for each level of service are lower than for signalized intersections because drivers expect less delay at unsignalized intersections.

[9] Public Resources Code Section 21099(b)(2)

TABLE 4.13-2 SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10 and ≤ 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 and ≤ 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 and ≤ 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55 and ≤ 80
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80

Source: Highway Capacity Manual, Transportation Research Board, 2000.

TABLE 4.13-3 UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no traffic delays	≤ 10
B	Short traffic delays	> 10 and ≤ 15
C	Average traffic delays	> 15 and ≤ 25
D	Long traffic delays	> 25 and ≤ 35
E	Very long traffic delays	> 35 and ≤ 50
F	Extreme traffic delays with intersection capacity exceeded	> 50

Source: Highway Capacity Manual, Transportation Research Board, 2000.

Freeway Operations

Freeway mainline and ramp operations were evaluated using the 2000 HCM V/C ratio method. The level of service description and the maximum V/C ratio for each level of service designation are presented in Table 4.13-4.

TABLE 4.13-4 FREEWAY LOS CRITERIA

Level of Service	Description	Maximum Volume-to-Capacity Ratio
A	Free flow operations with average operating speeds at, or above, the speed limit. Vehicles are unimpeded in their ability to maneuver.	0.30
B	Free flow operations with average operating speeds at the speed limit. Ability to maneuver is slightly restricted. Minor incidents cause some local deterioration in operations.	0.50
C	Stable operations with average operating speeds near the speed limit. Freedom to maneuver is noticeably restricted. Minor incidents cause substantial local deterioration in service.	0.71
D	Speeds begin to decline slightly with increasing flows. Freedom to maneuver is more noticeably restricted. Minor incidents create queuing.	0.89
E	Operations at capacity. Vehicle spacing causes little room to maneuver but speeds exceed 50 miles per hour (mph). Any disruption to the traffic stream can cause a wave of delay that propagates throughout the upstream traffic flow. Minor incidents cause serious breakdown of service with extensive queuing. Maneuverability is extremely limited.	1.00
F	Operations with breakdowns in vehicle flow. Volumes exceed capacity causing bottlenecks and queue formation.	N/A

Source: Highway Capacity Manual, Transportation Research Board, 2000.

Analysis Scenarios

The operations of the study intersections and the freeway segments and ramps were evaluated during the time periods when traffic volumes are highest, i.e., during the one (1) hour when morning and evening traffic is highest between 7:00 to 9:00 AM and 4:00 to 6:00 PM. The operations of these facilities were evaluated for the following scenarios:

- Existing Conditions – Existing traffic demand volumes on local roads and freeway segments based on counts collected in 2014 and existing lane configurations.
- Existing Plus Project Conditions – Existing traffic demand volumes plus new traffic from buildout of the proposed Project land uses and its transportation system changes with the existing transportation network (assessed for Specific Plan Update, proposed TOD #1 and TOD #2 projects).
- Near Term No Project Conditions – Projected conditions in 2020, including projected land use changes in the region and planned/funded transportation system improvements, without the project (only assessed for proposed TOD #1 and TOD #2 projects).
- Near Term Plus Project Conditions – Projected conditions in 2020 with the project (only assessed for proposed TOD #1 and TOD #2 projects).
- Cumulative No Project Conditions – Projected conditions in 2040, including projected land use changes in the region and planned/funded transportation system improvements, without the project (assessed for Specific Plan Update, proposed TOD #1 and TOD #2 projects).
- Cumulative Plus Project Conditions – Projected conditions in 2040 with the project (assessed for Specific Plan Update, proposed TOD #1 and TOD #2 projects).

4.13.1.3 EXISTING CONDITIONS

This section summarizes existing transportation conditions in the Specific Plan Area, including the roadway network, traffic conditions, pedestrian facilities, bicycle facilities, and transit services.

Roadway Network

Regional auto access to the Specific Plan Area is provided by US 101 and El Camino Real. Key city streets in the Specific Plan Area are Millbrae Avenue, Rollins Road, and California Drive. The regional and local roadways described below provide access to and through the Specific Plan Area, or are part of the study intersections.

Regional Roadways

- **US Highway 101** is a major regional freeway serving Millbrae that generally runs north-south. The freeway extends northward from Millbrae through San Francisco and southward through San Jose. In Millbrae, US 101 is located on the east side of the city and generally provides four (4) mixed-flow lanes in each direction. Access to the Specific Plan Area is provided from US 101 via the interchange at Millbrae Avenue.
- **El Camino Real** (SR 82) is a major north-south arterial located west of the Millbrae station that extends from San Francisco to the north to San Jose to the south, providing alternative regional access to the Specific Plan Area. Near the Specific Plan Area, El Camino Real has six (6) lanes, a raised median that provides left-turn bays at most intersections, and on-street parking.

Local Roadways

- **Millbrae Avenue** is a major east-west arterial that extends from Bayshore Highway to El Camino Real. West of El Camino Real, Millbrae Avenue continues until its terminus near Vallejo Drive and I-280. Millbrae Avenue connects residential areas west of Millbrae Avenue to El Camino Real and US 101. Millbrae Avenue crosses over and provides a regional connection to US 101 at an interchange east of the station. Millbrae Avenue varies in width from two- to six-lanes, with six (6) lanes and a median that provides left-turn pockets at major intersections near the station.
- **California Drive** is a local north-south street that extends south from the Specific Plan Area to Peninsula Avenue near the city of San Mateo. Near the Specific Plan Area, California Drive has two (2) lanes, left-turn pockets at most intersections, and on-street parking.
- **Hillcrest Boulevard** is a local east-west collector street that extends from Aviador Avenue to I-280, providing regional connections to I-280 and El Camino Real for the residential areas west of Millbrae. Near the Specific Plan Area, Hillcrest Boulevard has two (2) lanes and on-street parking.
- **La Cruz Avenue** is a short, east-west local street that extends from El Camino Real to Poplar Avenue in Millbrae. It has two (2) lanes and on-street parking.

- **Victoria Avenue** is a short, east-west local street that extends from El Camino Real to Lewis Avenue in Millbrae. From El Camino Real to Broadway, Victoria Avenue is a one-lane, one-way westbound street with on-street parking. West of Broadway, Victoria Avenue has two (2) lanes and on-street parking.
- **Murchison Drive** is an east-west collector street that extends from California Drive in Millbrae to Vallejo Drive near Mills Estates. Near the Specific Plan Area, Murchison Drive has four (4) lanes and on-street parking.
- **Trousdale Drive** is an east-west arterial that extends from California Drive to I-280, providing regional connections to I-280 and El Camino Real for residential areas around Mills Estates. Near the Specific Plan Area, Trousdale Drive has four (4) lanes, left-turn pockets at most intersections, and on-street parking.
- **Rollins Road** is a north-south arterial that extends south from the station to Broadway in Burlingame, providing connections to US 101 and El Camino Real via Millbrae Avenue and Broadway for commercial land uses along the corridor. Near the Specific Plan Area, Rollins Road has four (4) lanes with on-street parking.

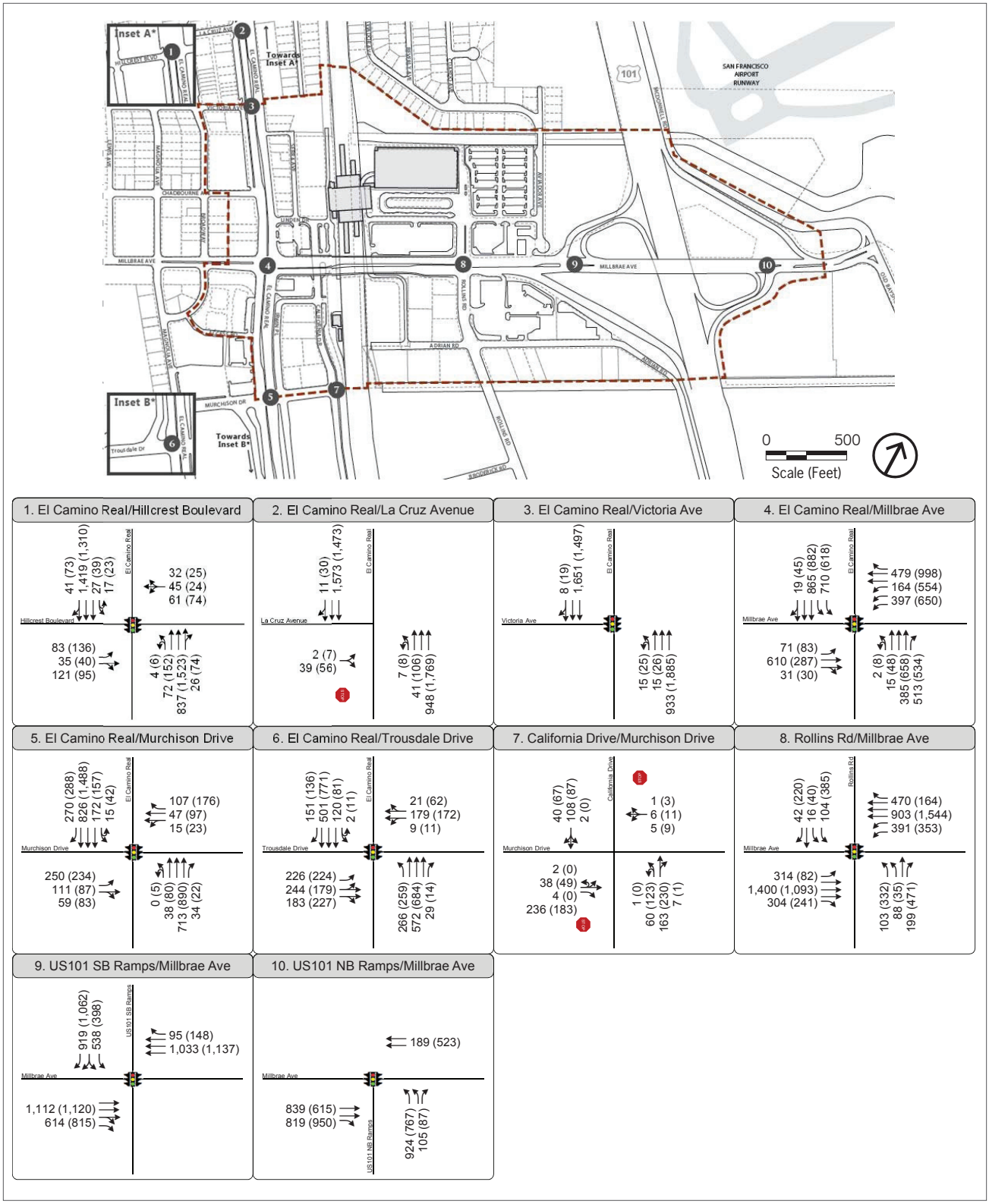
Intersection Traffic Demand Volumes and Lane Configurations

The existing AM and PM peak-hour traffic demand volumes, lane geometries, and intersection controls for the study intersections are shown in Figure 4.13-2. The raw traffic count data is presented in Appendix H of this Draft EIR.

Existing Intersection Operations

The results of the existing intersection level of service analysis are presented in Table 4.13-5. The table shows that all of the study intersections are operating acceptably during the AM and PM peak hours except the following intersection:

- El Camino Real / Millbrae Avenue – LOS E in the PM peak hour



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-2
Existing (2014) Peak Hour Traffic Volumes and Lane Configurations

TABLE 4.13-5 EXISTING INTERSECTION LOS RESULTS

Intersection	Control[1]	AM Peak Hour Delay[2]	AM Peak Hour LOS[3]	PM Peak Hour Delay[2]	PM Peak Hour LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	14	B	16	B
2. El Camino Real / La Cruz Avenue	SSS	12	B	14	B
3. El Camino Real / Victoria Avenue	Signal	<10	A	<10	A
4. El Camino Real / Millbrae Avenue[4]	Signal	50	D	74	E
5. El Camino Real / Murchison Avenue	Signal	24	C	29	C
6. El Camino Real / Trousdale Drive	Signal	37	D	33	C
7. California Drive / Murchison Drive	SSS	19	C	18	C
8. Rollins Road / Millbrae Avenue	Signal	31	C	37	D
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	16	B	21	C
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	14	B	14	B

Notes: Bold indicates unacceptable operations per City of Millbrae LOS standards
1. SSS = Side street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. For signalized intersections, LOS based on average intersection delay, based on the methodology in the Highway Capacity Manual, 2000. For unsignalized intersection, LOS is based on the worst approach which is indicated in parentheses.
4. CMP Intersection. LOS Standard is LOS E per CMP Monitoring Report (2013)

Source: Fehr & Peers, 2014.

Existing Freeway Operations

Ramp and mainline data were obtained from the following sources:

- Ramp volumes from existing intersection turning movement counts (Fehr & Peers, March 2014)
- Ramp volumes from the South San Francisco Downtown Specific Plan EIR (Fehr & Peers, December 2014)
- Ramp volumes from the Burlingame Point Traffic Analysis Report (Hexagon Transportation Consultants, October 2011)
- Ramp counts from the Caltrans Census database (2013)
- Mainline counts obtained from the Performance Measurement System (PeMS) database (2014)

This data was reviewed and volumes that represent a typical weekday were selected. Table 4.13-6 and Table 4.13-7 display the existing AM and PM peak hour traffic volumes and level of service results on the study freeway segments and ramps. The freeway mainline segments and ramp junction operations were evaluated using a V/C analysis consistent with the 2000 HCM and C/CAG requirements. All freeway ramps operate under capacity and all freeway segments currently operate at or better than the CMP level of service standard with the exception of following two (2) northbound segments during the AM peak hour:

- US 101 from Millbrae Avenue to Broadway
- US 101 from Broadway to Peninsula Avenue

TABLE 4.13-6 EXISTING (2014) FREEWAY SEGMENT LOS RESULTS

	CMP LOS Standard [1]	Direction	Peak Hour	Capacity[2]	Volume	V/C [3]	LOS
A. US 101 from Grand Avenue to Produce Avenue	E	NB	AM	9,200	8,510	0.93	E
			PM	9,200	6,923	0.75	D
		SB	AM	9,200	8,004	0.87	D
			PM	9,200	7,692	0.84	D
B. US 101 from Produce Avenue to I-380	E	NB	AM	11,500	9,480	0.82	D
			PM	11,500	7,281	0.63	C
		SB	AM	11,500	8,730	0.76	D
			PM	11,500	9,006	0.78	D
C. US 101 from I-380 to Millbrae Avenue	E	NB	AM	11,500	11,197	0.97	E
			PM	11,500	8,706	0.76	D
		SB	AM	11,500	8,157	0.71	C
			PM	11,500	8,432	0.73	D
D. US 101 from Millbrae Avenue to Broadway	E	NB	AM	9,200	11,105	1.21	F
			PM	9,200	8,630	0.94	E
		SB	AM	9,200	7,409	0.81	D
			PM	9,200	7,935	0.86	D
E. US 101 from Broadway to Peninsula Avenue	E	NB	AM	9,200	11,565	1.26	F
			PM	9,200	8,406	0.91	E
		SB	AM	9,200	7,659	0.83	D
			PM	9,200	8,185	0.89	D

Notes: **Bold** indicates unacceptable operation.
[1] Per 2013 CMP Monitoring Report.
[2] Does not include auxiliary lanes.
[3] V/C = Volume-to-Capacity ratio.
Source: Fehr & Peers, 2015.

TABLE 4.13-7 FREEWAY RAMP LOS RESULTS

Freeway Interchange and Ramp		Existing Type	Existing Capacity	Peak Hour	Volume	V/C [1]	LOS
US 101 / Millbrae Avenue							
Northbound	Off-Ramp to Millbrae Avenue	Diagonal	2,000	AM	1,029	0.51	C
				PM	854	0.43	B
	On-Ramp from Millbrae Avenue	Loop / Diagonal	2,000	AM	1,275	0.64	C
				PM	1,058	0.53	C
Southbound	Off-Ramp to Millbrae Avenue	Diagonal	2,000	AM	1,457	0.73	D
				PM	1,460	0.73	D
	On-Ramp from Westbound Millbrae Avenue	Loop	1,800	AM	95	0.05	A
				PM	148	0.08	A
	On-Ramp from Eastbound Millbrae Avenue	Diagonal	2,000	AM	614	0.31	B
				PM	815	0.41	B

Notes: Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.
1. V/C = Volume-t- Capacity ratio
Source: Fehr & Peers, 2015.

Existing Transit Service

The Specific Plan Area is served by three (3) major transit providers: BART, Caltrain, and the San Mateo County Transit District (SamTrans). BART provides regional heavy rail service, Caltrain provides commuter rail service, and SamTrans provides local and regional bus service. First/last mile shuttles are also provided during commute hours by Caltrain, Peninsula Traffic Congestion Relief Alliance, and nearby employers. Transit service (bus routes, major bus stops and Caltrain service and station) is shown on Figure 4.13-3.

BART

BART currently operates over 100 miles of double track rapid rail service, serving 44 stations and over three million people in four (4) densely populated Bay Area Counties: Contra Costa, Alameda, San Francisco, and San Mateo. BART carries more than 375,000 riders per weekday. The BART-SFO extension, completed in June 2003, added 8.7 miles of new track and four (4) new stations (including the Millbrae Station) to the existing system and provides direct service to the San Francisco International Airport.

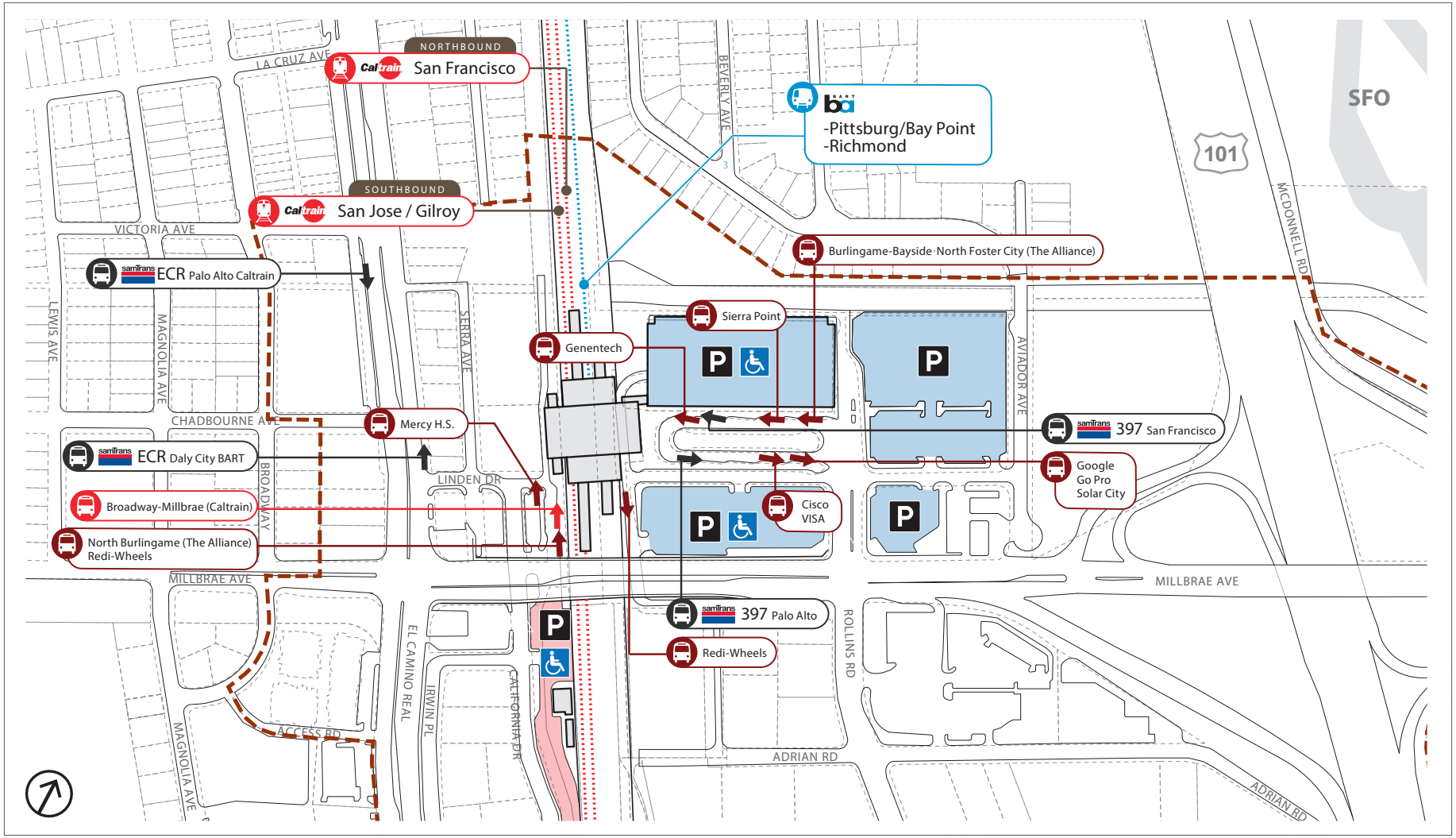
The Millbrae Station is the southern terminus of the Richmond-Millbrae Line on weekdays before 8:00 PM and the Pittsburg/Bay Point-SFO Airport-Millbrae Line after 8:00 PM on weekdays. The Millbrae Station is the only BART station that provides a direct intermodal connection to the Caltrain commuter rail system and provides fast and frequent service to many parts of the Bay Area, including downtown San Francisco (29 minutes), downtown Oakland (42 minutes), and the San Francisco International Airport (12 minutes). While the station has three (3) tracks/platforms available, most BART trains utilize the western-most track/platform (adjacent to the northbound Caltrain platform) for arrival and departure of revenue service (i.e. passenger-carrying) trains, while the remaining tracks are used for storage of trains during midday.

As shown in Table 4.13-8, BART provides service from 4:00 AM to 12:00 AM on weekdays with typical headways (frequency of service) of 15 minutes on the Richmond-Millbrae Line serving the station during peak and mid-day hours and 20 minute headways on the Pittsburg/Bay Point-SFO Airport-Millbrae Line in the evening after 8:00 PM and 6:00 AM (8:00 AM on Sundays) to 12:00 AM on weekends with typical headways of 20 minutes.

TABLE 4.13-8 MILLBRAE BART TRAIN SCHEDULE

	Headway (minutes)		
Line	Weekday before 8:00 PM	Weekday after 8:00 PM	Weekend
Richmond-Millbrae	15	No Service	No Service[1]
Pittsburg/Bay Point-SFO Airport-Millbrae	No Service	20	20

Notes:
1. Service between Richmond and Millbrae is only offered before 8:00 PM on weekdays
Source: BART, 2014.



Source: Fehr & Peers Transportation Consultants, 2015.

Parking
- Caltrain Parking Lot
- BART Parking Lot

Transit Types
- Bus
- Shuttle
- Caltrain
- BART
- Parking Lot
- ADA Accessible
- Specific Plan Area

Figure 4.13-3
Existing (2014) Transit Facilities

Caltrain

Caltrain operates 50 miles of commuter rail between San Francisco and San Jose, and limited service trains to Morgan Hill and Gilroy during weekday commute periods. Caltrain is funded through the Peninsula Corridor Joint Powers Board and managed by SamTrans. On weekdays, Caltrain operates 46 northbound and 46 southbound (for a total of 92) trains per day of local, limited stop, and Baby Bullet express service in both directions. Caltrain operates five (5) trains per direction during the AM and PM peak periods and one (1) train per hour per direction off-peak.

Caltrain currently operates three (3) types of service: Baby Bullet, limited, and local. Eleven trains in each direction are "Baby Bullet" express service trains that make the trip between San Francisco and San Jose in less than one (1) hour. Local trains are operated at the shoulders of peak periods and serve to transition the service from peak to off-peak. They stop at almost all stations between the San Jose Diridon Station and the 4th and King Station in San Francisco, resulting in the longest travel times of all service types. Limited-stop trains operate a skip-stop pattern for half of the route and as local trains for the other half. Skip-stop service stops at fewer stations than Local trains, skipping as many as one (1) to three (3) stations along the route at a time, thus offering slightly faster travel times than Local trains. The Millbrae station is served by local, limited, and Baby Bullet trains.

The Caltrain Electrification Program, scheduled for completion in 2021, is a plan to electrify the railway for increased efficiency and capacity. The program will increase frequency of service including expansion of the number of peak hour trains.

As shown in Table 4.13-9, Caltrain provides service at the Millbrae Station from 5:15 AM to 12:00 AM on weekdays with eight (8) limited and Baby Bullet trains in the AM peak and one (1) local, seven (7) limited, and six (6) Baby Bullet trains in the PM peak. On weekends, Caltrain provides service from 8:30 AM to 10:00 PM with local trains arriving every hour and four (4) Baby Bullet trains throughout the day.

TABLE 4.13-9 MILLBRAE CALTRAIN TRAIN SCHEDULE

	Number of Trains (Both Directions)				
	Weekday			Weekend	
Type of Service	AM Commute Period	PM Commute Period	Daily	Saturday (Daily)	Sunday (Daily)
Local	No Service	1	28	32	28
Limited	8	7	32	No Service	No Service
Baby Bullet	8	6	22	4	4

Source: Caltrain, 2014.

BART/Caltrain Ridership

According to existing ridership data provided by BART and Caltrain, there are approximately 6,430 daily BART boardings at the Millbrae Station and 3,255 daily Caltrain boardings. These include boardings (largely in the

morning) for trips originating in Millbrae, boardings (largely in the afternoon) by Millbrae visitors and nearby employees, and transfers between BART and Caltrain. Between 2005 and 2013, the Millbrae Station was one (1) of the top five (5) stations in terms of absolute weekday ridership growth (JPB, 2013) for Caltrain.

In 2013 Fehr & Peers conducted an intercept survey of Caltrain riders which asked questions about trip origin, destination, and mode of access. Through analysis of these responses it was estimated that approximately 1,600 riders transfer between BART and Caltrain daily. Each passenger would make two (2) transfers per day: one (1) transfer during the initial trip and one (1) transfer in the opposite direction for the return trip. This estimate was validated by BART who estimated a similar number of daily transferring riders. Subtracting transfer trips, approximately 4,830 daily BART boardings and approximately 1,655 daily Caltrain boardings have an origin or destination at the Millbrae Station. Table 4.13-10 details existing ridership for BART and Caltrain at the Millbrae Station.

TABLE 4.13-10 EXISTING MILLBRAE STATION DAILY BOARDINGS

Line	Non-Transfer	Transfer	Total
BART	4,830	1,600	6,430
Caltrain	1,655	1,600	3,255

Source: Fehr & Peers, 2015.

SamTrans Bus Service

SamTrans is the primary public transportation provider in San Mateo County. SamTrans manages local and regional bus service, paratransit services, and Caltrain commuter rail. There are over 50 routes in the county that can be categorized as community, express, BART connection, Caltrain connection, and BART and Caltrain connection routes. SamTrans operates 73 bus routes and paratransit service throughout San Mateo County and parts of San Francisco and Palo Alto. Caltrain and the San Mateo County Transportation Authority are contracted with SamTrans to serve as their managing agency, under the direction of the Peninsula Corridor Joint Powers Board and San Mateo County Transportation Authority Board of Directors, respectively.

The following SamTrans routes operate in the Specific Plan Area:

- **Route ECR** is a north-south bus line that provides regional transit service between Daly City and Palo Alto via El Camino Real. The route operates from 4:00 AM to 2:00 AM on weekdays with headways of 15 minutes during the peak commute and midday periods. On weekends, the route operates from 5:00 AM to 2:00 AM with headways of 20 to 30 minutes. The closest stop to the Millbrae Station is a far-side northbound ECR stop located at the intersection of Linden Avenue and El Camino Real – a 400-foot walk from the station. This stop provides a bench and a trash can, but does not provide a shelter (artificial or natural), direct lighting, or real-time arrival information for patrons. The closest southbound ECR stop

is a far-side stop[10] located between a frontage road and El Camino Real near the intersection of Victoria Avenue and El Camino Real – a quarter mile walk from the station. This stop provides a bench, trash can, and real-time arrival information via an electronic sign adjacent to the stop, but does not provide a shelter or direct lighting for patrons. There is also a northbound stop located at the intersection of El Camino Real and Murchison Drive.

- **Route 397** is a north-south bus line that provides late night regional transit service between Downtown San Francisco and Palo Alto primarily via El Camino Real. The route operates nightly from 1:00 AM to 6:00 AM with one (1) hour headways. The route stops in the eastern bus loop next to the Millbrae Station. There is also a northbound stop located at the intersection of El Camino Real and Murchison Drive.

Table 4.13-11 summarizes the scheduled headways for each route throughout a typical week and Figure 4.13-3 shows the stop locations within the Specific Plan Area for each route.

TABLE 4.13-11 SAMTRANS ROUTE SCHEDULE

	Headway (minutes)				
	Weekday			Weekend	
Route	AM Commute Period	PM Commute Period	Daily	Saturday (Daily)	Sunday (Daily)
ECR	15	15	15 – 30	20 – 30	20 – 30
397	No Service[a]	No Service[a]	60	60	60

Notes:
a. Route 397 is an owl service that operates between 1:00 AM and 6:00 AM nightly
Source: BART, 2014.

Table 4.13-12 shows the average daily ridership for weekdays, Saturdays, and Sundays for the SamTrans ECR and 397 routes near the station for February 2014.

TABLE 4.13-12 SAMTRANS RIDERSHIP – FEBRUARY 2014

Route	Weekday	Saturday	Sunday
ECR	12,045	8,237	6,435
397	216	232	200

Source: SamTrans, February 2014.

[10] A far-side stop is located past an intersection while a near-side stop is located before an intersection.

Commuter and Employer-Based Shuttles

Commuter shuttles provide important first/last mile access for commuters to jobs from regional transit connections (BART and Caltrain stations). These shuttles pick up commuters at BART/Caltrain stations in the morning and drop them off at or in the vicinity of their employer. The trip is reversed in the evening. Shuttles meet most trains and operate during weekdays only.

Recently, there has been substantial growth of shuttle operations in the San Francisco Bay Area, especially private employer-provided regional shuttles which provide direct service to employment sites either from residential neighborhood stops, or from major transit hubs, including Caltrain stations. Major employers offering such services include a number of technology industry companies based throughout the San Francisco Bay Area. Employers provide shuttles for a range of purposes including: employee retention, filling transit service gaps, reducing commute times, environmental stewardship, discouraging driving, and preserving on-site parking. Commuter and employer-based shuttles include the following:

- **Sierra Point** shuttle travels between the Millbrae Station and a large office park located southeast of the city of Brisbane. The shuttle route utilizes cutaways buses and operates from 7:30 to 9:55 AM and from 4:20 to 6:50 PM on weekdays with approximately nine (9) buses per day total for both directions.
- **Broadway-Millbrae Caltrain** shuttle travels between the Millbrae and Broadway Caltrain stations, since Caltrain does not provide weekday train service to the Broadway station. The shuttle operates from 6:15 to 9:10 AM and 3:20 to 7:15 PM every day with approximately 24 buses per day.
- **North Foster City** shuttle, operated by Peninsula Traffic Congestion Relief Alliance (Alliance), travels between the Millbrae Station and businesses in the North Foster City area. The shuttle operates from 6:50 to 9:00 AM and from 4:15 to 6:15 PM on weekdays with approximately 11 buses per day total for both directions.
- **Burlingame-Bayside Alliance** shuttle travels between the Millbrae Station and the Burlingame Bayside Area, a series of office buildings located along Bayshore Highway/Airport Boulevard and Rollins Road. The shuttle operates from 6:35 to 8:30 AM and from 4:30 to 6:15 PM on weekdays with approximately eight (8) buses per day total for both directions.
- **North Burlingame Alliance** shuttle travels between the Millbrae Station, Mills-Peninsula Health Service, Sisters of Mercy of the Americas, and the Easton-Burlinghome neighborhood. The shuttle operates from 6:15 to 9:30 AM and from 3:30 to 6:00 PM on weekdays with approximately 16 buses per day total for both directions.
- **Genentech** shuttle operates between the Millbrae Station and Genentech office buildings located east of US 101 in the city of South San Francisco using large, over-the-road coaches with a capacity of 40 or more people. The shuttle operates from 6:30 to 10:15 AM and from 2:50 to 7:45 PM on weekdays with approximately 22 buses per day total for both directions.
- **Google, Cisco,** and **Mercy High School** shuttles travel between the Millbrae station and their respective campuses during the AM and PM peak periods with headways of 30 to 60 minutes. The Google and Cisco shuttles utilize large, over-the-road coaches with a capacity of 40 or more people, while Mercy High School utilizes cutaway shuttle buses with a capacity of 20 to 30 people.

Private employer shuttles (Genentech, Google, and Cisco) utilize the eastern bus loop, while Mercy High School utilizes the western bus loop. The Sierra Point shuttle, Burlingame-Bayside shuttle and North Foster City shuttle utilize the eastern bus loop, while the Broadway-Millbrae Caltrain and North Burlingame Alliance shuttles utilize the western bus loop. The substantial capacity of the eastern bus loop (11 bus bays total) allows shuttles to operate efficiently during the peak periods. The two (2) designated bus loading zones at the western entrance provide sufficient capacity for the public shuttles that utilize that entrance, and the private Mercy High School shuttle occupies open curb space in the designated kiss-and-ride area at the western entrance. Based on field observations conducted outside the station in March 2014, shuttles are an important mode of access for Millbrae Station patrons. During the AM peak, approximately 340 people utilize shuttles for travel to and from the station, the majority being departures from the eastern bus loop. During the PM peak, approximately 390 people utilize shuttles, the majority being arrivals to the station from the eastern bus loop. Table 4.13-13 summarizes the observed ridership for all shuttles for the AM and PM peak periods by bus loop location.

TABLE 4.13-13 SHUTTLE RIDERSHIP – MARCH 2014

Area	Number of Passengers	
	AM Peak (7-9 AM)	PM Peak (4-6 PM)
Boardings		
Western Bus Loop	45	45
Eastern Bus Loop	256	28
Subtotal	*301*	*73*
Alightings		
Western Bus Loop	36	16
Eastern Bus Loop	3	300
Subtotal	*39*	*316*
Total	340	389

Source: Fehr & Peers, March 2014. Based on Observations.

Existing Pedestrian Facilities

This section provides a description of the pedestrian facilities in the Specific Plan Area and on-site at the Millbrae Station.

The Millbrae Station and Specific Plan Area are well-positioned for pedestrian activity, given its close distance to residential neighborhoods, commercial areas, schools, local parks, and the Bay Trail. However, the lack of direct pedestrian connections, presence of high-volume and high-speed roadways, and poor quality of sidewalks and crossing facilities in and around the Specific Plan Area present major challenges to walking as a mode of access.

Existing Pedestrian Network

The biggest pedestrian generators from the surrounding areas are the collection of residential neighborhoods and commercial zones to the west and south of the Millbrae Station. The airport to the north and industrial area to the east produce limited walk trips.

Specific Plan Area

- **West:** The pedestrian facilities surrounding Millbrae Station to the west are typical of an urban environment. The majority of the streets provide sidewalks and striped crosswalks at intersections with major roadways. Pedestrian signal heads and pedestrian activation devices, such as push buttons, are also provided at most signalized intersections. The quality of the sidewalks immediately surrounding Millbrae Station is generally poor. Sidewalks along the major arterial El Camino Real are very narrow, and there are a number of locations with uneven surfaces. The overall walkability of the sidewalks also suffers from a lack of street plantings, pedestrian-level light fixtures, and pedestrian seating.
- **South:** A few major arterials provide direct pedestrian access from the areas to the south of the Millbrae Station: Millbrae Avenue, Rollins Road and El Camino Real. These busy roadways can be intimidating for pedestrians, with no buffer separation from fast-moving traffic and wide intersections spaced far apart. Signals on the roadways provide insufficient time for pedestrians moving at a moderate speed to fully cross within the designated green time, and they lack median refuges for pedestrians to safely wait. Sidewalks are generally narrow and poorly maintained. El Camino Real has no sidewalks south of Murchison Drive.
- **North and East:** The industrial uses to the east and north of the Millbrae Station generate limited pedestrian activity, and direct pedestrian connections to these areas is correspondingly sparse.
- **Regional:** SamTrans Route ECR bus service provides important connections to the Millbrae Station from areas along El Camino Real in San Mateo County. Riders traveling northbound on route ECR must walk 400 feet between the station and a stop on El Camino Real and Linden Avenue. Riders traveling southbound on route ECR must walk a quarter mile between the station and a stop on El Camino Real and Victoria Avenue.

  Bus stop amenities are an important resource for pedestrians, particularly for people who rely on transit connections to access the Millbrae Station. Sufficient seating and shelter from weather are two (2) key factors for comfort, while amenities such as signing, accessible sidewalks and secure bicycle parking also encourage multimodal trips and transit use. Many bus stops around the Millbrae Station lack amenities, such as benches or shelters, and often stop locations do not have adequate sidewalk width for the installation of bus stop amenities.

Millbrae Station

Pedestrians access the station's west entrance from either Linden Avenue or California Drive. Narrow sidewalks are provided on both sides of the streets, but only one side of each street (the north side of Linden Avenue and the east side of California Drive) provides a continuous path to the station around the parking lot in front of the

entrance. Within the parking lot, there are designated pedestrian routes marked by striped crosswalks from the center islands to the station entrance and to California Drive and Linden Avenue.

Many pedestrians access the east entrance of Millbrae Station from the parking facilities that surround the entrance driveway. Walkways are provided along the north and south edges of the driveway. There is a standard striped crosswalk on the western end of the driveway to guide people from the southern walkway to the station entrance. Another standard striped crosswalk on the northern end of the driveway entrance directs pedestrians across Rollins Road from the parking lots to the east. Patrons who park in the garage to the north of the driveway use a pedestrian bridge that links the structure directly to the ticketing level of Millbrae Station.

Wayfinding within and to Millbrae Station is minimal and poorly designed. Patrons arriving at the west entrance at times are unsure how to access the opposite platform for the northbound train or how to connect to BART. Patrons arriving at the east entrance were observed to struggle in locating the correct staircase or escalator to take them down to the appropriate train.

Pedestrian Facility Gaps

Specific Plan Area

The street network in the residential neighborhoods to the west of the Millbrae Station is a grid, but there are limited routes providing direct pedestrian connectivity to the station. El Camino Real serves as a barrier to convenient and comfortable pedestrian access. A median that runs unbroken down the center of El Camino Real prevents pedestrians from legally crossing the arterial at the most convenient locations, namely at Isabel Alley, Chadbourne Avenue, or Linden Avenue.

Victoria Street is the closest legal crossing to the station, but it is poorly designed for pedestrians. The crosswalk is inconveniently striped only on the north side of the intersection, and the wait for the pedestrian signal is long and may deter people from attempting to cross there. La Cruz Avenue is the second-closest crossing location, but the intersection is unsignalized with a crosswalk striped only on the north side. El Camino Real is very wide at La Cruz Avenue, with three (3) southbound lanes, three (3) northbound lanes, and a northbound left-turn lane. It is inconvenient and uncomfortable for pedestrians to cross this uncontrolled intersection.

Hillcrest Boulevard presents the most desirable crossing location for pedestrians trying to access the station from the west, but it is over a quarter mile from the station's west entrance. This forces pedestrians to walk along the low-quality sidewalk of El Camino Real instead of the more pleasant residential streets to the west. The signalized intersection of Hillcrest Boulevard and El Camino Real has basic pedestrian facilities, including pedestrian signal heads and striped crosswalks on each leg. However, it lacks important pedestrian amenities that would make it a safer and more comfortable place to cross, such as continental crosswalk striping, bulbouts on the east corners, a median refuge, and pedestrian countdowns.

Because the options available to pedestrians for crossing El Camino Real are low-quality and inconvenient, people often illegally cut across the traffic lanes and center median to access the station in the most direct way.

Millbrae Station

The existing sidewalks and crosswalks at the west entrance of the Millbrae Station do not provide direct access for pedestrians. Because of this, many pedestrians instead cut across the parking lot, traversing vehicle lanes where buses, taxis and passenger vehicles pull in to pick up and drop off passengers. Some pedestrians approaching the west entrance of Millbrae Station from the southwest cut a diagonal path through the Peter's Café parking lot on the corner of El Camino Real and Millbrae Avenue and then cross California Drive where it becomes Linden Avenue. These pedestrians are poorly visible to drivers, who tend to make that turn very fast.

Pedestrian facilities at the east entrance also fail to follow pedestrian desire lines between the Millbrae Station and its parking lots. The Rollins Road crossing on the northern end of the driveway entrance is inconvenient for patrons who park in the surface lots directly across from the station entrance. These individuals instead often cross at an unmarked location across the seven (7) lanes of Rollins Road within the station that provide vehicle access to the entrance driveway and parking facilities. The crosswalk on the western end of the driveway is also rarely used, as patrons cross to and from the southern parking lots along the entire length of the driveway.

Pedestrian Counts

Pedestrian counts were taken at intersections surrounding the Millbrae Station during the AM and PM peak periods in March 2014. The counts show that pedestrian activity is generally highest at the intersections closest to the station: El Camino Real and Millbrae Avenue (169 crossings AM; 193 crossings PM), Rollins Road and Millbrae Avenue (121 crossings AM; 141 crossings PM), and El Camino Real and Victoria Avenue (94 crossings AM; 154 crossings PM). Pedestrian volumes are also high during the PM peak period along El Camino Real north of the station at La Cruz Avenue (123 crossings PM) and Hillcrest Boulevard (195 crossings PM). The high counts at these intersections indicate that most pedestrians access the station from areas to the west and southwest of the station, which are the most walkable and primarily residential neighborhoods.

Existing Bicycle Facilities

Millbrae's temperate climate and flat terrain are very good for bicycling. However, the lack of continuous bicycle facilities and the heavily trafficked auto-oriented streets in the Specific Plan Area make bicycling challenging and uncomfortable, even for the most confident riders. Busy roadways that dominate the area, such as El Camino Real, Millbrae Avenue, Rollins Road, and US 101, create significant barriers to bicycling.

Bikeway planning and design in San Mateo County generally relies on the guidelines and design standards established by Caltrans as documented in "Chapter 1000: Bikeway Planning and Design" of the Highway Design Manual (5th Edition, California Department of Transportation, January 2001). These standards provide for three (3) distinct types of bikeway facilities, which are described below.

- **Multi-Use Path (Class I)** are a completely separate right-of-way designated for the exclusive use of bicyclists and pedestrians with minimal vehicle and pedestrian cross-flow. Class I paths are for non-motorized use only.

- **Bike Lanes (Class II)** are a portion of roadway designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are generally appropriate for major arterials and collector roadways. They are generally at least five (5) feet wide.
- **Bike Routes (Class III)** are streets designated for shared use with pedestrians or motor vehicles by signs or pavement markings. Shared lanes are appropriate for roads with low speeds and traffic volumes. They can also be used for short stretches along Class II bikeways where there is insufficient right of way for a separated bicycle lane.

Figure 4.13-4 provides a map of existing and proposed bicycle facilities in the immediate vicinity of the Specific Plan Area.

Bicycle Network

Specific Plan Area

There are minimal existing bicycle facilities located in the Specific Plan Area, as shown in Figure 4.13-4. El Camino Real is a Class III facility north of Millbrae Avenue, with shared lane markings ("sharrows") in its outside lanes. California Drive is also a Class III facility marked with sharrows where it extends south from the Millbrae Station. Even with the markings on El Camino Real, only experienced and confident bicyclists would ride in the wide, high volume and high speed roadway. El Camino Real has no bicycle facilities south of Millbrae Avenue, where California Drive serves as a preferred alternate route.

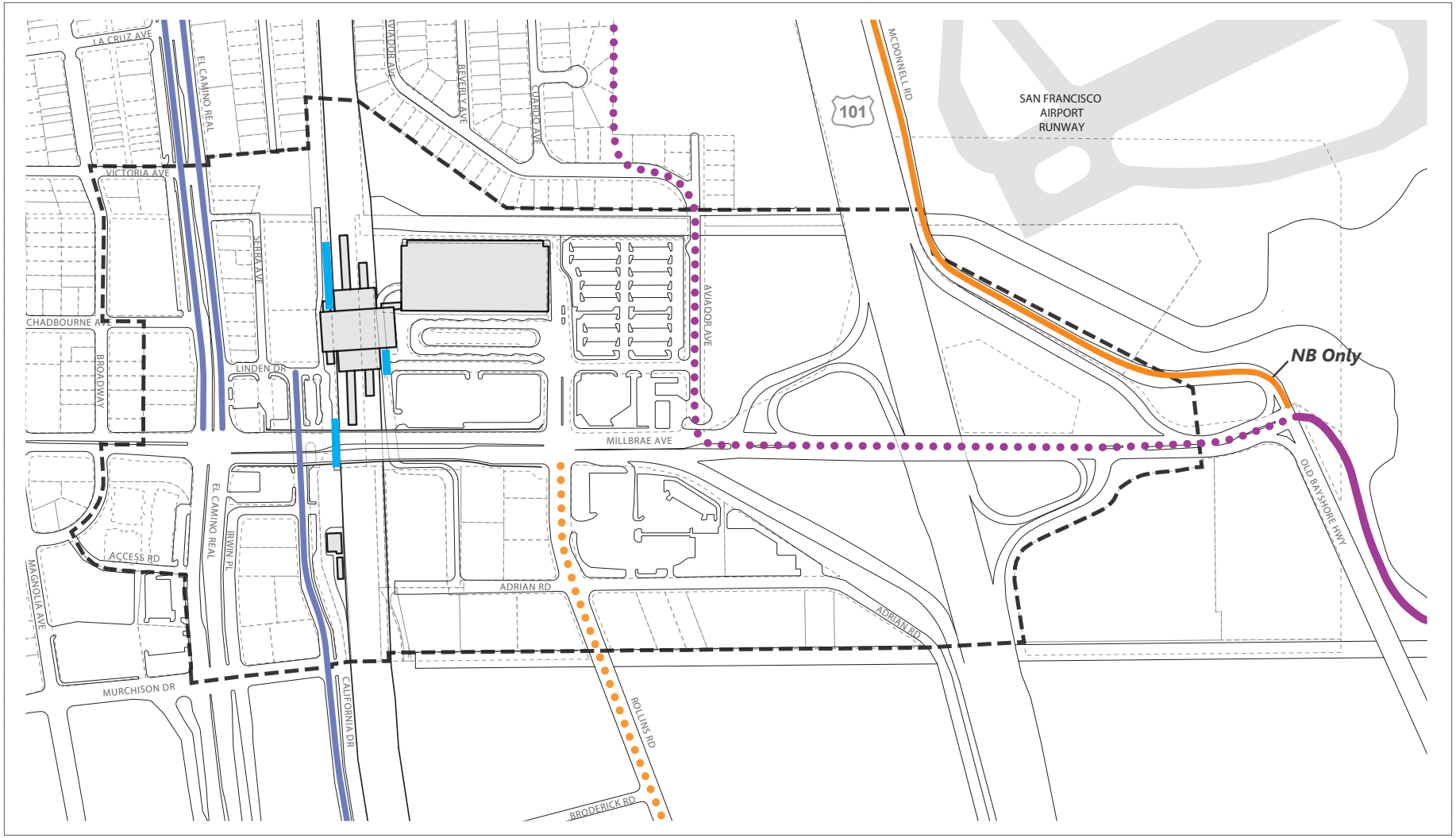
Roads west of the Millbrae Station are not designated bicycle facilities, but their characteristics are favorable for cycling. The hills are manageable, and the local, residential streets, such as Magnolia Avenue and Broadway Avenue, have low traffic volumes.

Millbrae Station

Millbrae Station entrances do not actively accommodate bicyclists. Few bicyclists enter the Millbrae Station from the east entrance. Those that do access the station do so by riding through the entrance driveway or, more commonly, on the pedestrian walkways. Numerous bicyclists access the Millbrae Station via the west entrance, but no special accommodations are provided. Bicyclists enter the station through the parking lot, riding in bus-only or exit-only lanes to cut a direct path to the bicycle parking and escalator at the station entrance.

Bicycle Parking

Every bicycle trip has two (2) components: 1) the route selected by the bicyclist and 2) the "end-of-trip" facilities at the destinations. End-of-trip facilities can include short- and long-term bicycle parking, showers, lockers, restrooms, good lighting, and even public phones. The lack of secure bicycle facilities at the destination can be one of the largest deterrents to cycling for many riders.



Source: Fehr & Peers Transportation Consultants, 2015.

Bicycle Facilities

Existing	*Proposed*	
Bay Trail	Bay Trail	Specific Plan Area
Class I	Class I	Station Bike Parking
Class II	Class II	
Class III	Class III	

0 500
Scale (Feet)

Figure 4.13-4
Existing (2014) and Proposed Bicycle Facilities

The bicycle facilities on-site at the Millbrae Station consist solely of support facilities with two (2) forms of bicycle parking:

- **Short-term bicycle parking** is generally low-cost bicycle racks to which a rider can secure his or her bicycle with a lock. A bicycle rack should be in a highly visible location secured to the ground, preferably within 50 feet of a main entrance to a building or facility. Short-term bicycle parking is commonly used for short trips, when cyclists are planning to leave their bicycles for up to a few hours.
- **Long-term bicycle parking** is generally bicycle lockers, or covered storage units. Bike lockers can be locked individually and provide secure parking for one (1) bicycle, as well as panniers and helmets. Lockers can be either mechanical or electronic. These are designed to provide bicyclists with a high level of security so that they feel comfortable leaving their bicycles for long periods of time. They are most appropriate at transit stations.

The west entrance of Millbrae Station has three (3) sets of bicycle parking facilities. The set closest to the station entrance is directly under the station behind the escalators. It consists of four (4) blocks of electronic lockers with four (4) spaces each and four (4) inverted u-racks. These facilities are the most used by bicyclists. The other two (2) bicycle parking facilities are further from the station entrance and underutilized. North of the station along the tracks is another four (4) blocks of lockers, with eight (8) keyed spaces each, and around six (6) inverted u-racks. South of the station below the Millbrae Avenue overpass are two (2) blocks of eight (8) keyed lockers each, one (1) set of 12 keyed lockers, and a coathanger rack. The parking facilities to the north and south of the station entrance are fairly hidden and are largely unused. The east entrance has one (1) bicycle rack for short-term parking.

The Millbrae Station lacks wayfinding to bicycle parking and bicycle access routes, such as elevators or bike channels on stairways.

Bicycle Facility Gaps

Specific Plan Area

El Camino Real, Millbrae Avenue, and Rollins Road are the primary roadways surrounding the Millbrae Station, and all are inhospitable to bicyclists. California Drive is a suitable alternative, but this street provides access only to and from the southeast. For the many riders who access the Millbrae Station from the west, the road network in those neighborhoods encourages bicycling, but the poor connection between the network and Millbrae Station is a significant barrier. Bicyclists face the same challenges that pedestrians do in crossing El Camino Real to access the west entrance of the station. Bicyclists are forced to either take a circuitous and uncomfortable route via Millbrae Avenue or to cross El Camino Real and ride along the east sidewalk for the final leg of their journey.

Millbrae Station

The lack of existing accommodations makes it challenging for bicyclists to safely and comfortably access the Millbrae Station. The few bicyclists who enter from the east must ride through the vehicle driveway busy with bus traffic or on the walkways crowded with pedestrians. Bicyclists who access the west entrance must navigate around shuttle buses or exiting vehicles. Bicyclists who ride from Linden Avenue also pass through the intersection of

California Drive and Linden Avenue, largely the same way that some pedestrians do – by cutting across the blind turn of fast-moving vehicles driving up California Drive.

Bay Trail

The Millbrae Station is situated close to the Bay Trail, which runs along the entire length of the Bay coastline and provides regional bicycle access. This paved, multiuse trail is 10- to 12-feet wide, with two (2) feet of additional clear shoulder width on both sides and 14- to 16-feet clearance to the nearest roadway. The only existing route between the Millbrae Station and the Bay Trail is Millbrae Avenue, which is not a welcoming street for bicyclists. Bicyclists can either ride in a wide travel lane with fast-moving cars or on a narrow and poorly maintained sidewalk on the south side of the street. With either strategy, a bicyclist must cross the path of vehicles making free right turns at four (4) separate locations. Signs warning drivers to "Yield to Pedestrians" are placed at these crossings, but during field observations at the site drivers at times failed to yield. The connection between the Millbrae Station and the Bay Trail is not only uncomfortable, but it also lacks any signage guiding bicyclists or pedestrians between the two.

Bicycle Counts

Bicycle counts were taken at intersections surrounding the Millbrae Station during the AM and PM peak periods in March 2014. The counts indicate that the majority of cyclists access the station from the southwest via California Drive, which is a low volume, low speed street that travels parallel to El Camino Real for several miles and connects to the station's western entrance. The highest bicycle volumes were observed on California Drive at Murchison Drive in the northbound direction during the AM peak period (14 cyclists) and in the southbound direction during the PM peak period (15 cyclists). As a result, bicycle storage facilities near the western station entrance are mostly full during the peak periods, while storage facilities near the eastern station entrance are mostly empty.

Existing Aviation Facilities

The Specific Plan Area is located across Highway 101 from SFO. The intersection of Millbrae Avenue and Rollins Road, which is near the center of the Specific Plan Area, is approximately 1,600 feet southwest of the southernmost portion of the airport tarmac. Over 385,000 aircraft takeoffs or landings occurred at SFO in 2010, consisting of air carriers, regional jets, general aviation propeller aircraft, commuter propeller aircraft, business jets, fixed-wing military aircraft, and both civilian and military helicopters.[11]

The Specific Plan Area is within Safety Compatibility Zones 1, 2, and 3 established in the 2012 ALUCP, which limits the types of development that can occur in the Specific Plan Area to prevent hazards to users of the site. The Specific Plan Area is also in the area where heights of structures are limited under FAA regulations to avoid hazards to air navigation. (See Figure 4.7-1 and Figure 4.7-2 in Chapter 4.7, Hazards and Hazardous Materials, of this Draft EIR).

[11] City/County Association of Governments of San Mateo County, 2012. Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport, Table 11-7, p. 11-31.

There are no private airstrips or heliports near the Specific Plan Area.[12]

4.13.1.4 STANDARDS OF SIGNIFICANCE

The criteria for evaluating the significance of a project's environmental impacts are based on the CEQA Guidelines Appendix G, Environmental Checklist, and applicable standards recognized by the City, surrounding jurisdictions and C/CAG.

CEQA Guidelines

The proposed Project would have a significant impact with regard to transportation and circulation, if it would:

1. 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, pedestrian and bicycle paths, and mass transit;
2. Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
3. 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;
4. Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);
5. Result in inadequate emergency access; or
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Level of Service Impact Criteria

In addition to the above Appendix G, Environmental Checklist, State CEQA Guidelines, the following impact criteria are derived from the City of Millbrae General Plan policies that establish LOS D as the minimum acceptable threshold for signalized and unsignalized intersections. The minimum LOS D operating standard is also consistent with other jurisdictions in San Mateo County. C/CAG has developed level of service thresholds for freeway segments, State highway segments (e.g. El Camino Real [SR 82]), and designated intersections as part of their CMP.

The freeway analysis results are presented with recognition that "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities;" however, Caltrans acknowledges that this

[12] Airnav.com. 2014. Airport Information. http://www.airnav.com/airports/, accessed December 1, 2014.

may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. In addition, Caltrans states that for existing State highway facilities operating at less than the target LOS, the existing LOS should be maintained. For CEQA purposes, a freeway segment is considered to operate at an acceptable level if the segment operates at the level of service standard identified for that segment by the County Congestion Management Agency , C/CAG. C/CAG's level of service standards for the five (5) study area US 101 freeway segments are LOS E.

To evaluate project-level and cumulative impacts at study intersections and freeway segments, the following thresholds were used. The proposed Project would create a significant traffic impact if, as a result of the addition of Project traffic, the Project would:

- Cause an intersection operating acceptably (LOS D or better) without the project to operate at LOS E or F;
- Increase the average delay at a signalized intersection operating at an unacceptable level (LOS E or F) by five (5) or more seconds;
- Increase the delay at an unsignalized intersection operating at an unacceptable level (LOS E or F) by five (5) or more seconds and traffic volumes at the intersection satisfy the Caltrans Peak Hour Volume Signal Warrant for traffic signal installation;
- Cause a freeway segment currently meeting its CMP level of service standard to exceed that standard;
- Increase the amount of traffic on a freeway segment already exceeding its CMP level of service standard by more than one (1) percent of the freeway segment's capacity;
- Cause the V/C ratio for a freeway ramp to exceed 1.0; or
- Increase traffic by more than five (5) percent of the freeway ramp's capacity on a freeway ramp already exceeding V/C ratio greater than 1.0.

Transit, Pedestrian and Bicycle Transportation Criteria

Transit, pedestrian, or bicycle impacts would be considered significant if the proposed Project would:

- Conflict with any existing or approved pedestrian, transit, and/or bicycle facilities or services;
- Cause the transit ridership demand to increase to levels greater than available capacity;
- Reduce access to transit service or create unsafe access for transit passengers;
- Cause pedestrian, transit, and/or bicycle facilities to be frequently blocked by cars or other potential safety obstructions/hazards;
- Cause vehicles to cross pedestrian or bicycle facilities on a regular basis at driveway entrances lacking adequate sight distance or warning systems;
- Encourage pedestrians to cross roads in undesignated areas.

4.13.2 SPECIFIC PLAN UPDATE IMPACT DISCUSSION

This section evaluates the transportation-related impacts of the Specific Plan Update under Existing (2014) and Cumulative (2040) Plus Project conditions.

The Specific Plan Update includes the following Circulation and Parking policies that would provide improved pedestrian, bicycle and transit opportunities in the Specific Plan Area; thus, potentially reducing VMT and vehicle congestion in the greater Millbrae area:

- P-CP 1. Provide superior pedestrian access and circulation in the Plan Area, especially to Millbrae Station, by providing sidewalks on both sides of all roadways and adding new routes where feasible.
- P-CP 2. Accommodate projected pedestrian volumes by increasing sidewalk widths to a minimum of 10 feet.
- P-CP 3. Create a direct pedestrian connection between El Camino Real (including the northbound bus stop on El Camino Real) and the west side Millbrae Station entrance through a pedestrian paseo.
- P-CP 4. Enhance pedestrian safety at signalized intersections with pedestrian countdown signals, signal timing that minimizes pedestrian wait times and provides adequate crossing times (3.5 feet per second), crosswalks at all approaches, continental and/or high-visibility crosswalk striping, corner bulbouts, and perpendicular ADA-standard curb cuts on all corners.
- P-CP 5. Design all streets to provide an attractive pedestrian and visual environment, including by adding pedestrian-scale lighting, benches, and street furniture.
- P-CP 6. Improve bicycle access to Millbrae Station and bicycle connections among the surrounding Plan Area land uses through a system of on-street and off-street bicycle facilities including Class I bicycle paths and Class II bicycle lanes.
- P-CP 7. Increase bicycle visibility to other road users through enhanced treatments at intersections, including bicycle signal detection (using bicycle-oriented loop detectors or push buttons) and colored pavement markings.
- P-CP 8. Provide secure, short- and long-term bicycle parking facilities at the Millbrae Station and at all developments.
- P-CP 9. Provide wayfinding signage in the Plan Area for all modes, with emphasis at the nearest entrances and exits, and web-available maps for users, as required in Chapters 6 and 7 of this Specific Plan.
- P-CP 10. Require development projects in the vicinity of the station to provide wayfinding signage along wayfinding paths, which include all streets and paseos within the Plan Area, major intersections, and designated bicycle routes.
- P-CP 11. Accommodate kiss-n-ride (passenger pick-up and drop-off) and taxis near station entrances on both the east side and west side of the Millbrae Station.

- P-CP 12. Provide bus and shuttle transfer facilities near station entrances on both the east side and west side of the Millbrae Station to accommodate the peak projected vehicles to support bus and shuttle as a priority access mode to BART, Caltrain, and future rail service, such as High Speed Rail (HSR).

- P-CP 13. Accommodate SamTrans Route ECR bus service by enhancing stops at Linden Avenue (El Camino Real) northbound at pedestrian paseo) and Murchison Drive (El Camino Real) northbound and southbound) and by providing a deviated route southbound (off El Camino Real) on California Drive Extension with a stop at the pedestrian paseo near the station entrance.

- P-CP 14. Coordinate with SamTrans, the Peninsula Corridor Joint Powers Board and BART to ensure implementation of all Millbrae station area improvements.

- P-CP 15. Extend California Drive from Linden Avenue north to intersect El Camino Real at Victoria Ave.

- P-CP 16. Expand the South Station Road as a two-way public street connecting from the station entrance to Adrian Road.

- P-CP 17. Operate Victoria Avenue between El Camino Real and Broadway as a two-way roadway. Add special paving treatments and pedestrian and bicycle facilities to emphasize this critical connection between Downtown and Millbrae Station.

- P-CP 18. Encourage the shared use of station area parking facilities for off-peak users. For example, drivers visiting restaurants in the evening could use station area parking during evening hours.

- P-CP 19. Establish parking standards that are adequate to serve new development but encourage the use of transit and alternate modes.

- P-CP 20. Explore the feasibility and desirability of a residential permit parking program to manage potential spillover parking from the Millbrae Station in the residential areas immediately adjacent to the Plan Area.

- P-CP 21. Design and locate parking facilities to be compatible with adjacent areas and to reinforce the pedestrian environment.

- P-CP 22. Require new developments within the Plan Area to accommodate alternative modes of transportation and to provide support facilities for bicyclists, such as showers and changing areas.

- P-CP 23. Require Plan Area employers to prepare Transportation Demand Management (TDM) Plans that include measures to increase the number of employees walking, biking, using transit, or ridesharing (using carpools and vanpools) as commute modes and to reduce vehicle congestion. Where future projects have the potential to impact facilities under the Congestion Management Plan, the TDM Plan shall meet the current City/County Association of Governments of San Mateo County (C/CAG) requirements to reduce the number of trips on the CMP roadway network be approved by both the City and C/CAG.

- P-CP 24. Require site-specific transportation studies to address on-site circulation, driveway designs, loading, access, and safety for all modes as part of the development review process.

- P-CP 25. Plan for and implement public parking on the west side of the BART/Caltrain Station should transit parking be lost due to the development of the BART parking lot on the east side of the station.

TRANS-1	The proposed Specific Plan Update would 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, non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

This impact discussion focuses on vehicular transportation. Impacts related to other modes of transportation including transit and pedestrian and bicycle circulation are discussed under TRANS-5 below.

Methodology

Traffic forecasts for the Specific Plan Area were developed by calculating the total person trips projected to be generated by the planned new development, distributing those trips to the transportation network by mode, and then assigning vehicle trips to the study intersections for evaluation.

The Specific Plan Update includes the reconfiguration of several internal streets to better serve and connect the Specific Plan Area. One specific change to a study intersection is the reconfiguration of southbound Rollins Road approach at Millbrae Avenue to include one (1) left-turn lane, one (1) shared left-through lane and one (1) right-turn lane.

Vehicle Trip Generation Estimates

The amount of vehicle traffic generated by the land use changes in the Specific Plan Area was estimated by applying trip generation rates by land use type from the Institute of Transportation Engineers (ITE)*Trip Generation Manual (9th Edition)*, tailored to account for trip internalization using the MXD+ methodology.[13] The MXD+

[13] Standard trip generation practice does not accurately account for development density, scale, design, accessibility, transit proximity, demographics and mix of uses - attributes which affect site traffic generation. Traffic generation estimates for mixed-use development based on the ITE Trip Generation Manual and Handbook are overstated by an average of 35 percent.

MXD+ represents a substantial improvement over conventional traffic estimation methods. It improves accuracy, virtually eliminates overestimation and is supported by substantial evidence. The MXD+ method was developed by Fehr & Peers for the United States Environmental Protection Agency and is continuously refined through trip generation surveys and studies conducted for other state, regional and local clients. MXD+ is based on pooled household survey data for 239 MXDs in six (6) diverse US regions, statistically derived equations on internal trip capture and mode shares,

methodology also estimates pedestrian, bicycle, transit, and internalized trips generated by the development that further reduce the overall vehicle trip generation. Reductions for transit ridership were applied in coordination with separate transit ridership forecasts.[14] Tables 4.13-14 and 4.13-15 summarize trip generation by land use and travel mode for Existing (2014) and Cumulative (2040) conditions. As shown in these tables, the Specific Plan trip generation is forecasted to be slightly different between the 2014 and 2040 scenarios due to region-wide transportation system improvements that are projected to alter travel patterns and modes of Project trips. For example, by 2040 Caltrain is expected to be running trains more frequently, faster, and more efficiently as part of the Caltrain Electrification and Modernization Project, which will increase the transit mode share and decrease the vehicle mode share for project trips.

TABLE 4.13-14 2014 SPECIFIC PLAN TRIP GENERATION (PERSON-TRIPS)

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Vehicle	Transit	Walk/Bike	Vehicle	Transit	Walk/Bike
Residential	8,272	474	163	17	526	143	18
Retail	10,635	553	101	20	601	110	22
Office	9,297	1,127	350	46	1,056	328	43
Other[1]	179	-102	-44	0	-105	-45	0
Total	28,383	2,051	571	82	2,078	536	83

Notes:
1. Other includes industrial/non-retail commercial land uses to be removed and hotel land use to be added
Source: Fehr & Peers, 2015

TABLE 4.13-15 2040 SPECIFIC PLAN TRIP GENERATION (PERSON-TRIPS)

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Vehicle	Transit	Walk/Bike	Vehicle	Transit	Walk/Bike
Residential	8,272	448	189	17	498	170	18
Retail	10,635	526	128	20	572	139	22
Office	9,297	1,051	426	46	984	400	43
Other[1]	179	-96	-50	0	-99	-51	0
Total	28,383	1,928	694	82	1,956	658	83

Notes:
1. Other includes industrial/non-retail commercial land uses to be removed and hotel land use to be added
Source: Fehr & Peers, 2015

Vehicle Trip Distribution

Trip distribution refers to the directions from which the trips generated by the proposed project will approach and depart. The proposed trip distribution is based on a select zone analysis from the VTA-C/CAG model, locations of complementary land uses, existing travel patterns, familiarity with the study area, and engineering judgment. The

validation at 27 existing MXD sites primarily in California, and peer reviews. The MXD+ has been approved by the American Society of Civil Engineers.

[14] See the *Effects of Millbrae Station Area Specific Plan on BART Ridership and Parking* memorandum, dated November 13, 2014 and included in Appendix H of this Draft EIR for more details.

trip distribution and paths of access differ slightly for each site, but general directions and percentages are shown in Figure 4.13-5.

Vehicle Trip Assignment

Project vehicle trips presented in Tables 4.13-14 and 4.13-15 were assigned to the roadway network based on the percentages shown on Figure 4.13-5. Project-generated external vehicle trips were assigned to specific turning movements using Traffix are presented in Figure 4.13-6.

Level of Service

Existing (2014) Plus Project (Specific Plan Update) Conditions

This section presents the results of the intersection and freeway level of service analysis for Existing (2014) Plus Project (Specific Plan Update) conditions. Existing conditions form the baseline against which impacts as a result of implementing the Specific Plan Update are evaluated.

Existing (2014) Intersection Operations

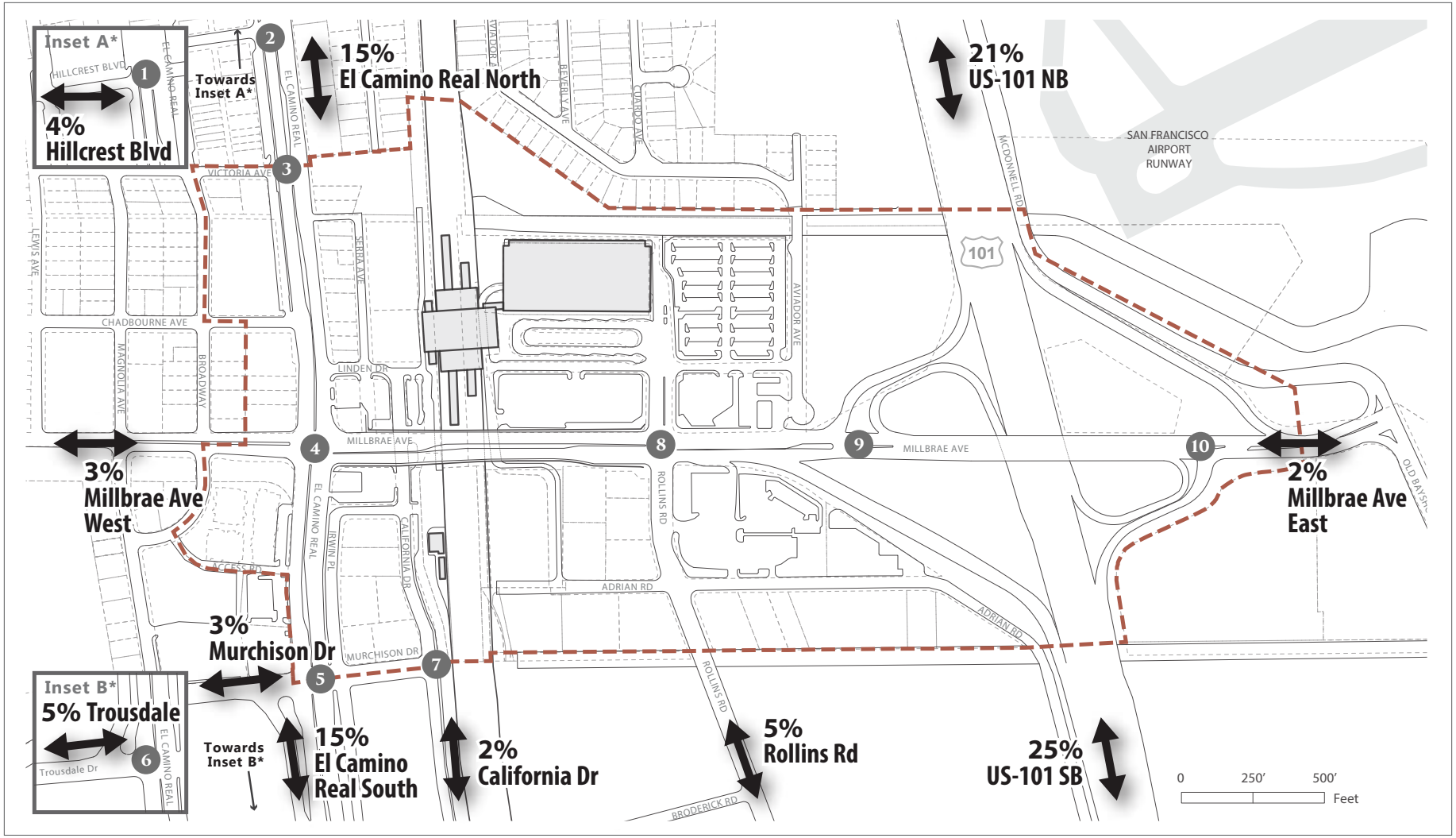
Under the Existing (2014) Plus Project (Specific Plan Update) scenario, the Specific Plan Update is forecasted to generate 1,361 inbound and 690 outbound net new vehicle-trips (for a total of 2,051 net new vehicle trips) during the weekday AM peak hour and 760 inbound and 1,318 outbound net new vehicle-trips (for a total of 2,078 net new vehicle trips) during the weekday PM peak hour.

All Specific Plan Update-generated vehicle trips, as shown on Figure 4.13-6, were added to the existing turning movement volumes, as shown on Figure 4.13-2. The resulting Existing (2014) Plus Project (Specific Plan Update) peak hour traffic volumes for the study intersections are presented in Figure 4.13-7. Table 4.13-16 compares the Existing and Existing (2014) Plus Project (Specific Plan Update) intersection levels of service for the weekday AM and PM peak hours. Detailed intersection levels of service calculations are provided in Appendix H of this Draft EIR.

With the exception of the intersection #4 El Camino Real/Millbrae Avenue, all study intersections would continue to operate at an acceptable LOS D or better with the Specific Plan Update. Therefore, impacts to these intersections would be *less than significant* under Existing (2014) Plus Project (Specific Plan Update) conditions.

Implementation of the Specific Plan Update would contribute traffic and worsen traffic operations from acceptable levels to unacceptable levels, or increase delay by more than five (5) seconds at study intersections that currently operate at unacceptable levels of service, resulting in a *significant* impact at the following location:

- El Camino Real / Millbrae Avenue – AM and PM peak hour



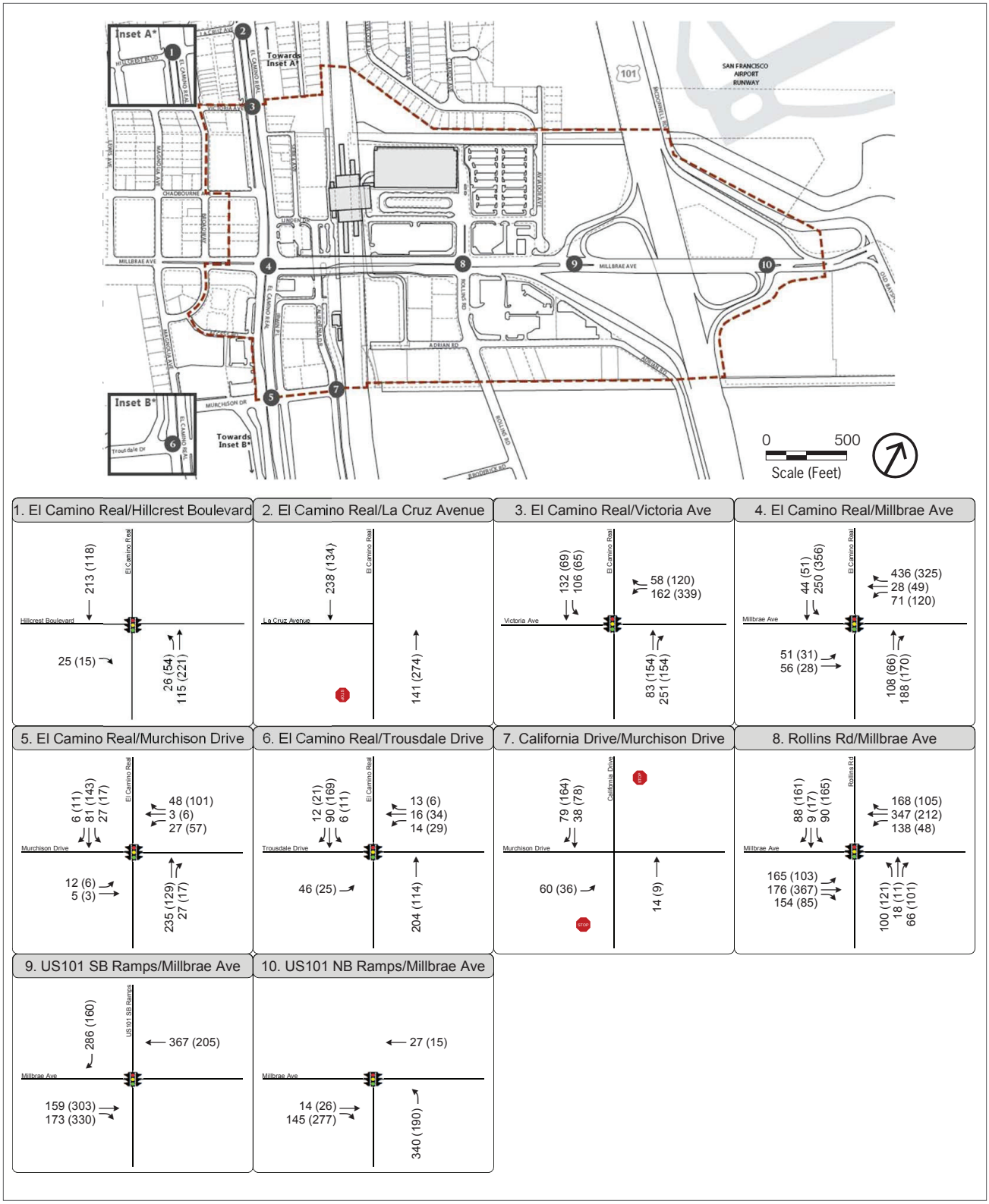
Source: Fehr & Peers Transportation Consultants, 2015.

Specific Plan Area

1 Study Intersection

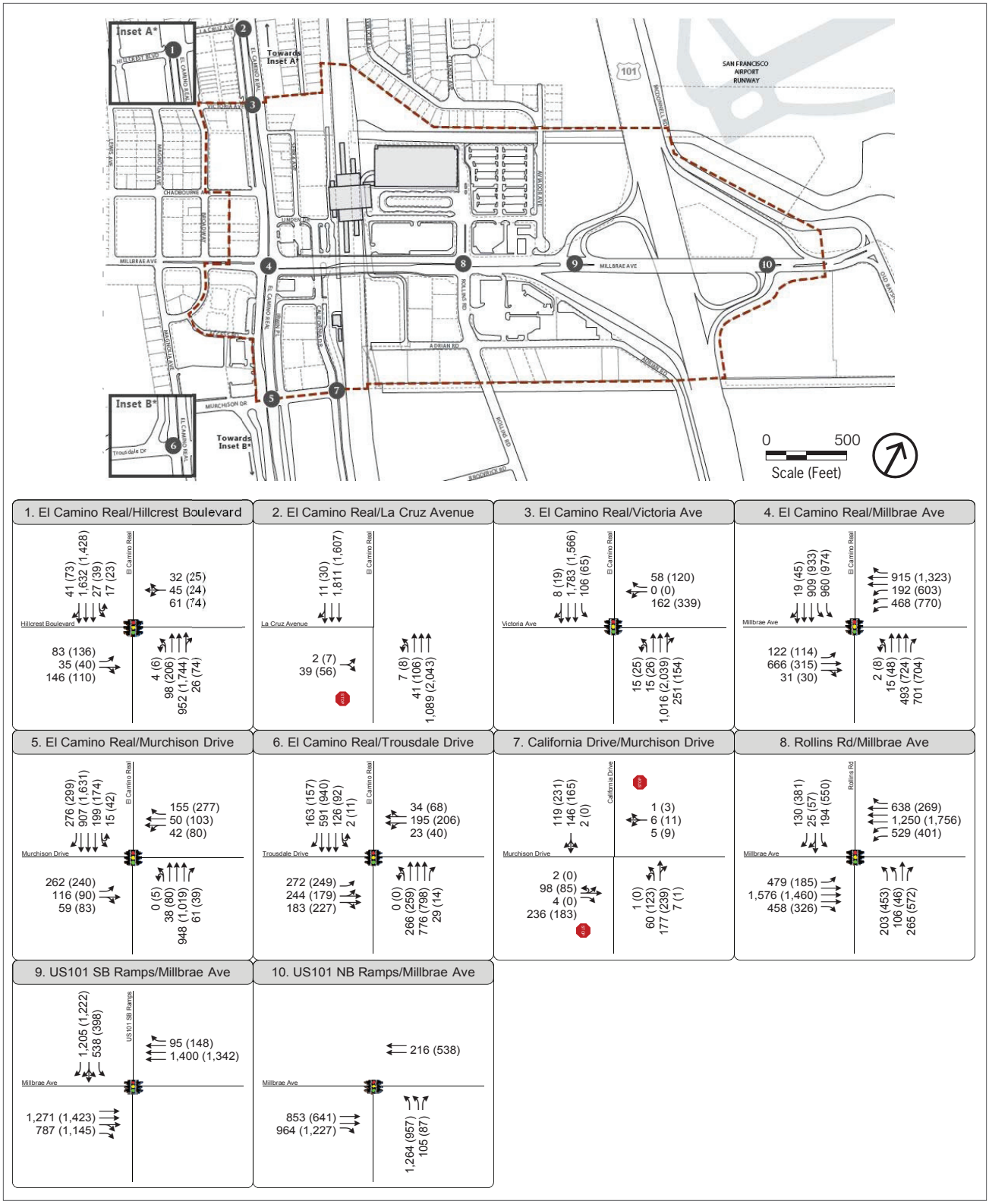
XX%
AAA
Percentage of Total New Trips
Origin/Destination

Figure 4.13-5
Specific Plan Update Trip Distribution



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-6
Specific Plan Update Trip Assignment



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-7

Existing (2014) Plus Project (Specific Plan Update) Intersection Peak Hour Volumes

TABLE 4.13-16 EXISTING (2014) PLUS PROJECT (SPECIFIC PLAN UPDATE) INTERSECTION LOS RESULTS

Intersection	Control[1]	Peak Hour	Existing		Existing Plus Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	AM	14	B	14	B
		PM	16	B	17	B
2. El Camino Real / La Cruz Avenue	SSS	AM	12	B	11	B
		PM	14	B	11	B
3. El Camino Real / Victoria Avenue	Signal	AM	<10	A	13	B
		PM	<10	A	36	D
4. El Camino Real / Millbrae Avenue[4]	Signal	AM	50	D	>80	F
		PM	74	E	>80	F
5. El Camino Real / Murchison Drive	Signal	AM	24	C	26	C
		PM	29	C	33	C
6. El Camino Real / Trousdale Drive	Signal	AM	37	D	39	D
		PM	33	C	35	D
7. California Drive / Murchison Drive	SSS	AM	19	C	23	C
		PM	18	C	24	C
8. Rollins Road / Millbrae Avenue	Signal	AM	31	C	39	D[5]
		PM	37	D	54	D[5]
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	AM	16	B	24	C
		PM	21	C	43	D
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	AM	14	B	21	C
		PM	14	B	14	B

Notes: Bold indicates unacceptable operations; Shaded indicates potentially significant impact
1. SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. LOS = Level of Service. For signalized intersections, LOS based on average intersection delay, based on the methodology in the *Highway Capacity Manual*, 2000.
4. CMP Intersection
5. Simple signal timing modifications are assumed to be implemented as necessary when traffic volumes change.

Source: Fehr & Peers, 2015.

The worsening of traffic conditions at the intersection #4 El Camino Real/Millbrae Avenue is due primarily to the increase in traffic from the Specific Plan Update using El Camino Real as a regional and local access route.

Impact TRANS-SP-1.1: Implementation of the Specific Plan Update would result in the addition of traffic to intersection #4 El Camino Real/Millbrae Avenue causing this intersection to degrade from LOS D to LOS F in the AM peak hour and would add more than five (5) seconds of delay in the PM peak hour (currently operating at LOS E), resulting in LOS F under Existing Plus Project conditions.

Mitigation Measure TRANS-SP-1.1: The City should modify the El Camino Real/Millbrae Avenue intersection footprint. The modified intersection footprint would add one (1) northbound right turn pocket lane (for a total of two [2] turn lanes) and one (1) westbound right turn pocket lane (for a total of two [2] turn lanes), each approximately 200 feet long. The City can accommodate these modifications to the intersection #4 within the current footprint through restriping. This can be accomplished by converting one westbound

through lane to a right turn only lane and by re-striping the northbound approach to make the left turn lane 10 feet wide, the through lanes 12 feet wide, and the two (2) right turn lanes 11 feet wide.

Significance With Mitigation: Significant and Unavoidable. The modifications to the El Camino Real/Millbrae Avenue intersection proposed under Mitigation Measure TRANS-SP-1.1 may not be feasible due to the City's lack of authority to independently implement (the intersection is under Caltrans jurisdiction). Although the mitigation is physically feasible, it is legally infeasible. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at this intersection would be significant and unavoidable.

Existing (2014) Freeway Operations

The study freeway segments and ramp on US 101 were analyzed to determine if added traffic resulting from the Specific Plan Update would significantly impact the freeway system. The results of the freeway segment and ramp capacity analyses are shown in Table 4.13-17 and Table 4.13-18. As shown in Table 4.13-18 all freeway ramps at the US 101/Millbrae Avenue interchange will continue to operate under capacity and at an acceptable level of service with the addition of traffic generated under the Specific Plan Update. Therefore, impacts to freeway ramps under Existing (2014) Plus Project (Specific Plan Update) conditions are considered *less than significant*.

However, as shown on Table 4.13-17, implementation of the Specific Plan Update would contribute to freeway segments that are currently operating over capacity. Therefore, impacts under the Specific Plan Update at these study mainline segments would be *significant*.

Impact TRANS-SP-1.2: Implementation of the Specific Plan Update would result in the addition of traffic volumes to freeway segments currently operating over capacity and Specific Plan Update-generated traffic would add more than one (1) percent of the segment's capacity at the following locations:

- Northbound US 101 from Millbrae Avenue to Broadway – AM peak hour
- Northbound US 101 from Broadway to Peninsula Avenue – AM peak hour

Mitigation Measure TRANS-SP-1.2: Construct an additional mixed flow and/or HOV lane on northbound US 101.

Significance With Mitigation: Significant and Unavoidable. The widening of US 101 proposed under Mitigation Measure TRANS-SP-1.2 may not be feasible due to right-of-way constraints and the City's lack of authority to independently implement (the freeway is under Caltrans jurisdiction). Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at these freeway segments would be significant and unavoidable.

Table 4.13-17 Existing (2014) Plus Project (Specific Plan Update) Freeway Segment LOS Results

Segment	Direction	Peak Hour	Existing			Existing Plus Project				
			Volume	V/C [1]	LOS	Volume	V/C [1]	LOS	Trips Added	% of Cap.
A. US 101 from Grand Avenue to Produce Avenue	NB	AM	8,510	0.93	E	8,619	0.94	E	109	1.2%
		PM	6,923	0.75	D	7,131	0.78	D	208	2.3%
	SB	AM	8,004	0.87	D	8,225	0.89	E	221	2.4%
		PM	7,692	0.84	D	7,816	0.85	D	124	1.3%
B. US 101 from Produce Avenue to I-380	NB	AM	9,480	0.82	D	9,596	0.83	D	116	1.0%
		PM	7,281	0.63	C	7,503	0.65	C	222	1.9%
	SB	AM	8,730	0.76	D	8,985	0.78	D	255	2.2%
		PM	9,006	0.78	D	9,149	0.80	D	143	1.2%
C. US 101 from I-380 to Millbrae Avenue	NB	AM	11,197	0.97	E	11,342	0.99	E	145	1.3%
		PM	8,706	0.76	D	8,983	0.78	D	277	2.4%
	SB	AM	8,157	0.71	C	8,497	0.74	D	340	3.0%
		PM	8,432	0.73	D	8,622	0.75	D	190	1.7%
D. US 101 from Millbrae Avenue to Broadway	NB	AM	11,105	1.21	F	11,391	1.24	F	286	3.1%
		PM	8,630	0.94	E	8,790	0.96	E	160	1.7%
	SB	AM	7,409	0.81	D	7,582	0.82	D	173	1.9%
		PM	7,935	0.86	D	8,265	0.90	E	330	3.6%
E. US 101 from Broadway to Peninsula Avenue	NB	AM	11,565	1.26	F	11,836	1.29	F	272	3.0%
		PM	8,406	0.91	E	8,558	0.93	E	152	1.7%
	SB	AM	7,659	0.83	D	7,823	0.85	D	164	1.8%
		PM	8,185	0.89	D	8,498	0.92	E	314	3.4%

Notes: Bold indicates unacceptable operation. Shaded indicates significant impact.
1. V/C = Volume-to-Capacity ratio.
Source: Fehr & Peers, 2015.

TABLE 4.13-18 EXISTING (2014) PLUS PROJECT (SPECIFIC PLAN UPDATE) FREEWAY RAMP LOS RESULTS

Freeway Interchange and Ramp		Peak Hour	Existing			Existing Plus Project				
			Volume	V/C [1]	LOS	Volume	V/C [1]	LOS	Trips Added	% of Cap.
US 101 / Millbrae Avenue										
NB	Off-Ramp to Millbrae Avenue	AM	1,029	0.51	C	1,098	0.55	C	69	3.5%
		PM	854	0.43	B	912	0.46	B	58	2.9%
	On-Ramp from Millbrae Avenue	AM	1,275	0.64	C	1,316	0.66	C	41	2.1%
		PM	1,058	0.53	C	1,139	0.57	C	81	4.1%
SB	Off-Ramp to Millbrae Avenue	AM	1,457	0.73	D	1,539	0.77	D	82	4.1%
		PM	1,460	0.73	D	1,530	0.77	D	70	3.5%
	On-Ramp from Westbound Millbrae Avenue	AM	95	0.05	A	95	0.05	A	0	0.0%
		PM	148	0.08	A	148	0.08	A	0	0.0%
	On-Ramp from Eastbound Millbrae Avenue	AM	614	0.31	B	663	0.33	B	49	2.5%
		PM	815	0.41	B	912	0.46	B	97	4.9%

Notes: Bold indicates unacceptable operation. Shaded indicates significant impact.
1. V/C = Volume to Capacity ratio
Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.
Source: Fehr & Peers, 2015.

Cumulative (2040) No Project (Specific Plan Update) Conditions

Cumulative conditions represent projected conditions in 2040, including traffic estimates for probable future developments and planned and funded system improvements. The improvements include Caltrain electrification, US 101 HOV/T lane improvements, and regional improvements to El Camino Real.

Future year 2040 baseline traffic volumes were developed to assess the cumulative effects of the Specific Plan Update scenarios. VTA-C/CAG 2040 and 2013 models, along with existing intersection turning movement counts, were used to develop Year 2040 Baseline (No Project) traffic forecasts.

Raw model outputs from the model were post-processed to develop intersection turning movement forecasts using a process known as Furnessing. Furnessing is a method that takes the growth between the base and future year model and distributes the growth proportionately to the intersection turning movements based on existing counts. These furnessed forecasts were then refined further to account for existing volume balancing between intersections and to ensure reasonable growth in the study area. The VTA-C/CAG model run accounts for some growth in the immediate Specific Plan Area. However, as shown in Table 4.13-19, the amount of traffic growth forecasted by the model for the roadways surrounding the Specific Plan Area is considerably less than the traffic growth projected to be generated by the Specific Plan Update. Therefore, the modeled trips for the uses in the Specific Plan Area were manually removed to obtain the Cumulative 2040 No Project (Specific Plan Update) volume forecasts, as shown in Figure 4.13-8.

TABLE 4.13-19 2040 MODEL LAND USE COMPARISON (SPECIFIC PLAN AREA)

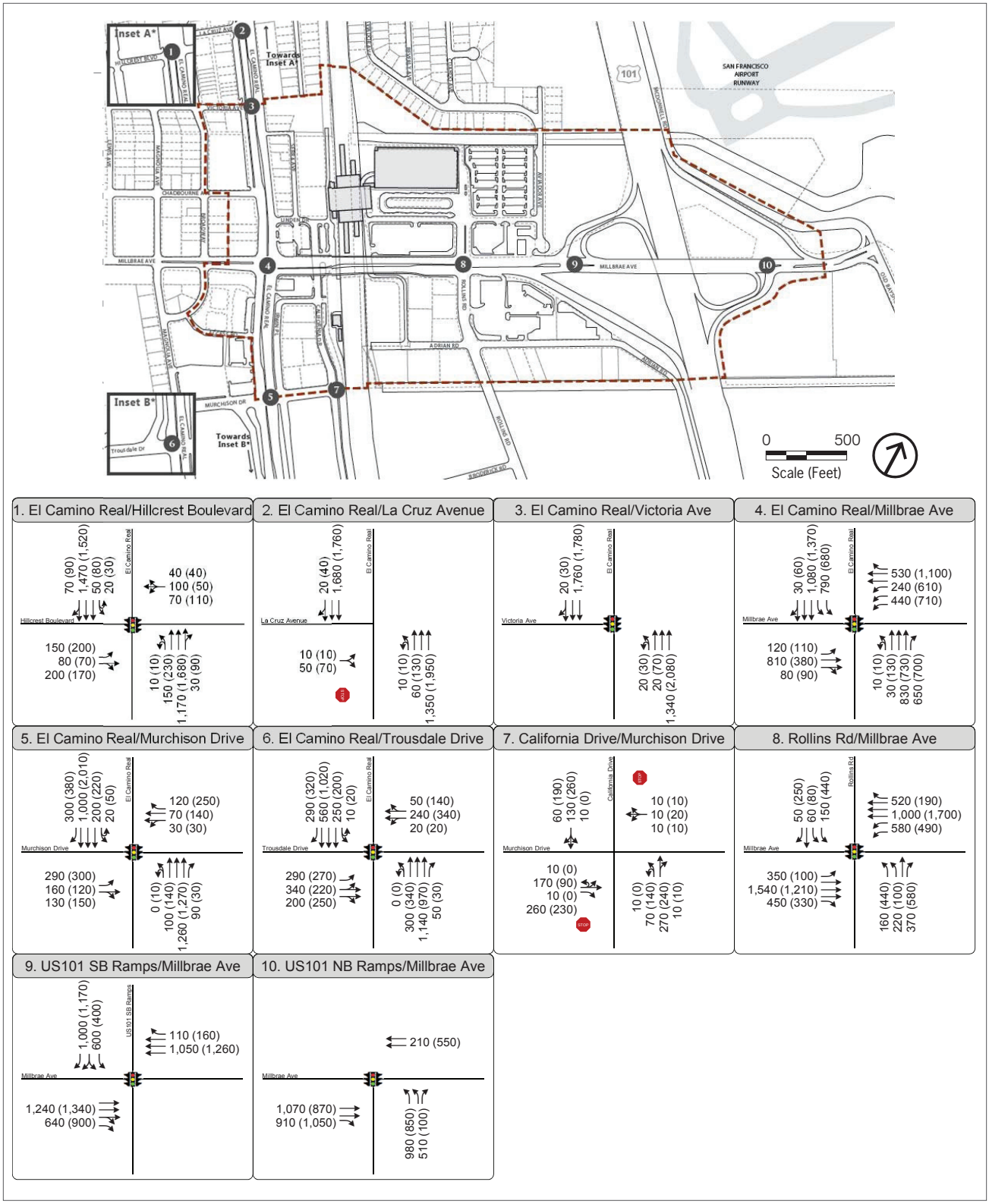
Land Use	Units[1]	Model Assumption[2]	Project (Full Specific Plan Buildout)[3]	Delta
Households (Apartments)	DU	1,376	1,438	62
Retail	KSF	300	181	-119
Office	KSF	250	1,645	1,395
Hotel	Rooms	0	364	364

Notes:
1. DU = Dwelling Units; KSF = thousand square feet
2. VTA-C/CAG 2040 model run
3. Based on information provided by Placeworks (Sept. 2014)

Source: Fehr & Peers, 2015.

These forecasts were also adjusted to account for existing volume balancing between intersections and nominal regional growth assumptions per ABAG projections. Minor adjustments were also made to the 2040 baseline traffic forecasts to account for the effects of the future roadway network improvements, as defined in the recently adopted *Plan Bay Area* RTP.

Intersection turning movement volumes for Cumulative (2040) No Project (Specific Plan Update) are shown on Figure 4.13-8.



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-8

Cumulative (2040) No Project (Specific Plan Update) Peak Hour Traffic Volumes

Cumulative (2040) Plus Project (Specific Plan Update) Conditions

This section evaluates the traffic-related impacts of the Specific Plan Update under Cumulative conditions.

Cumulative (2040) Intersection Operations

Under the Cumulative (2040) Plus Project (Specific Plan Update) scenario, the Specific Plan Update is forecasted to generate 1,276 inbound and 652 outbound net new vehicle-trips (for a total of 1,928 net new vehicle trips) during the weekday AM peak hour and 719 inbound and 1,237 outbound net new vehicle-trips (for a total of 1,956 net new vehicle trips) during the weekday PM peak hour.

All Specific Plan Update-generated vehicle trips, as shown in Table 4.13-15 were added to the Cumulative No Project traffic volumes in Figure 4.13-8. The resulting Cumulative (2040) Plus Project (Specific Plan Update) traffic volumes for the Specific Plan Update are presented in Figure 4.13-9. Table 4.13-20 compares the Cumulative (2040) No Project and Cumulative (2040) Plus Project (Specific Plan Update) intersection levels of service for the weekday AM and PM peak hours. Detailed intersection levels of service calculations are provided in Appendix H of this Draft EIR.

Implementation of the Specific Plan Update would contribute traffic and worsen traffic operations from acceptable levels to unacceptable levels at the following locations:

- El Camino Real/Murchison Drive – PM peak hour
- California Drive/Murchison Drive – AM and PM peak hours
- Rollins Road/Millbrae Avenue – AM and PM peak hours

Furthermore, the implementation of the Specific Plan Update would add traffic to an intersection currently operating at unacceptable levels at the following location:

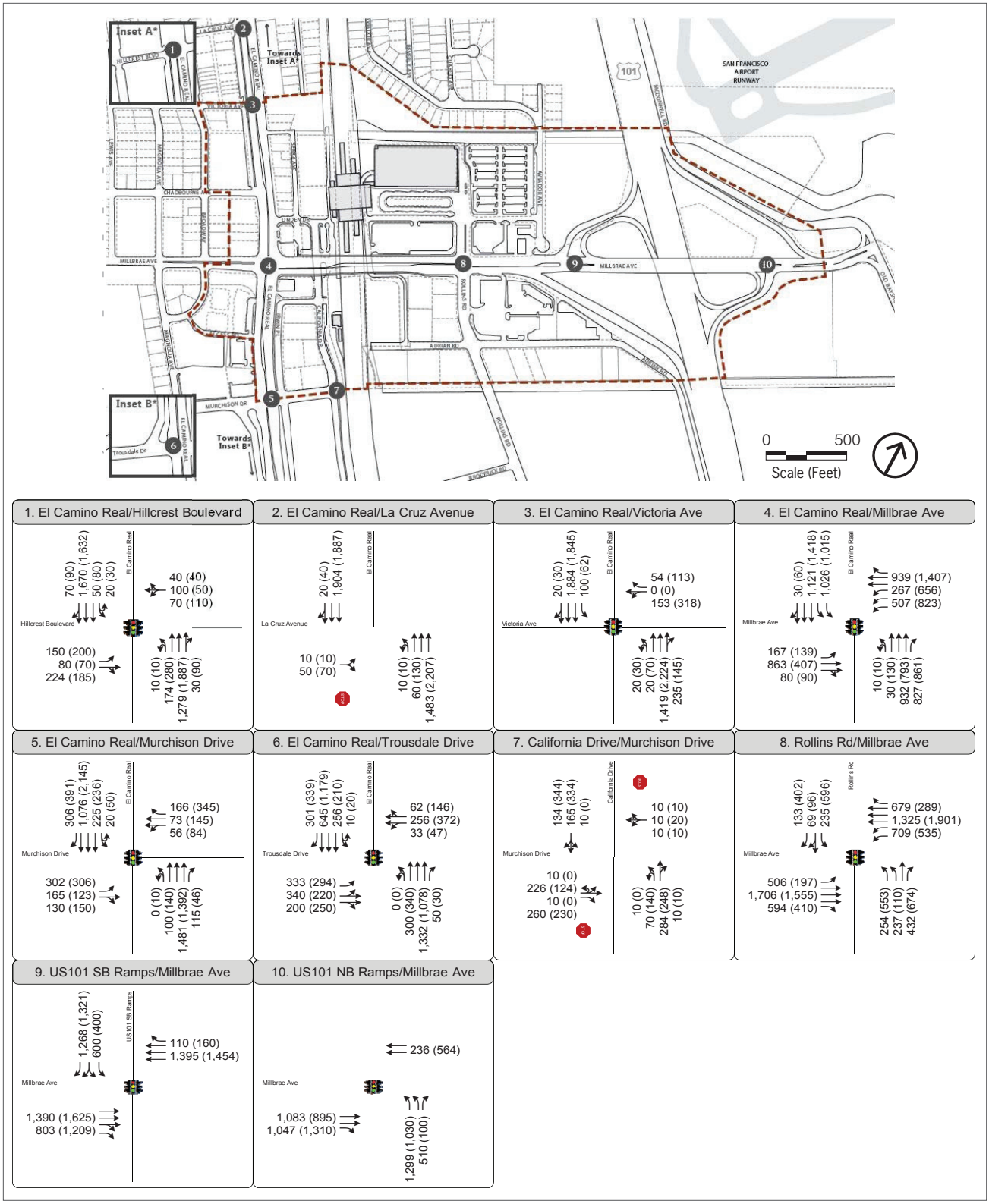
- El Camino Real/Millbrae Avenue – AM and PM peak hours

Therefore, implementation of the Specific Plan Update would represent a *significant* cumulative impact at these intersections.

Impact TRANS-SP-1.3: Implementation of the Specific Plan Update would contribute a considerable level of traffic and increase the average vehicle delay by more than five (5) seconds at the intersection #4 El Camino Real/Millbrae Avenue during the AM and PM peak hour.

Mitigation Measure TRANS-SP-1.3: Implement Mitigation Measure TRANS-SP-1.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at this intersection would be significant and unavoidable.



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-9
Cumulative (2040) Plus Project (Specific Plan Update)
Peak Hour Traffic Volumes

TABLE 4.13-20 CUMULATIVE (2040) INTERSECTION LOS RESULTS (SPECIFIC PLAN UPDATE)

Intersection	Traffic Control[1]	Peak Hour	Existing		Cumulative No Project		Cumulative Plus Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	AM	14	B	23	C	24	C
		PM	16	B	26	C	28	C
2. El Camino Real / La Cruz Avenue	SSS	AM	12	B	19	C	12	B
		PM	14	B	17	B	12	B
3. El Camino Real / Victoria Avenue	Signal	AM	<10	A	<10	A	16	B
		PM	<10	A	<10	A	32	C
4. El Camino Real / Millbrae Avenue	Signal	AM	50	D	75	E	>80	F
		PM	74	E	> 80	F	>80	F
5. El Camino Real / Murchison Drive	Signal	AM	24	C	32	C	36	D
		PM	29	C	50	D	77	E
6. El Camino Real / Trousdale Drive	Signal	AM	37	D	51	D	51	D[4]
		PM	33	C	51	D	49	D[4]
7. California Drive / Murchison Drive	SSS	AM	19	B	29	D	>50	F
		PM	18	B	29	D	>50	F
8. Rollins Road / Millbrae Avenue	Signal	AM	31	C	54	D	> 80	F
		PM	37	D	48	D	> 80	F
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	AM	16	B	18	B	32	C
		PM	21	C	26	C	42	D[4]
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	AM	14	B	17	B	24	C
		PM	14	B	14	B	13	B

Notes:
1. SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. LOS = Level of Service. For signalized intersections, LOS based on average intersection delay, based on the methodology in the *Highway Capacity Manual*, 2000.
4. Simple signal timing modifications are assumed to be implemented as necessary when traffic volumes change.

Bold indicates unacceptable operations; Shaded indicates potentially significant impact
Source: Fehr & Peers, 2015.

Impact TRANS-SP-1.4: Implementation of the Specific Plan Update would contribute a considerable level of traffic to intersection #5 El Camino Real/Murchison Drive and cause this intersection to degrade from LOS D to LOS E in the PM peak hour under Cumulative (2040) Plus Project (Specific Plan Update) conditions.

Mitigation Measure TRANS-SP-1.4: The City of Millbrae shall work with the City of Burlingame to modify the El Camino Real/Murchison Drive intersection footprint. The modified intersection footprint would add one (1) northbound left turn pocket lane (for a total of two [2] turn lanes), one (1) westbound right turn pocket lane (for a total of two [2] turn lanes), and one (1) eastbound left turn pocket lane (for a total of two [2] turn lanes). The modified intersection footprint can be accommodated within the existing right of way. This is accomplished through the following measures:

- Remove parking lanes along Murchison Drive.
- Restripe westbound approach with through lanes 11 feet wide and westbound right turn lanes are 10 feet wide.

- Restripe northbound approach such that left and right turn lanes are 10 feet wide and through lanes are 12 feet wide. An additional one foot of space would need to be acquired from either the center median or side median separating El Camino Real from the adjacent access road.
- Restripe eastbound approach such that each lane (turns and through lanes) are 12 feet wide.

Significance With Mitigation: Significant and Unavoidable. The modified intersection footprint of the El Camino Real/Murchison Drive intersection under this mitigation measure would reduce the average delay at the intersection to acceptable levels. However, this mitigation measure requires participation or and decisions by agencies over which Millbrae has no authority, and it is not within the City's power to impose such mitigation. Although the mitigation is physically feasible, it is legally infeasible. As a result, implementation cannot be guaranteed, and there can be no assurance that impacts would be reduced to a less-than-significant level. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. For these reasons, the impact at the El Camino Real/Murchison Drive intersection would therefore remain significant and unavoidable.

Impact TRANS-SP-1.5: Implementation of the Specific Plan would contribute a considerable level of traffic to intersection #7 California Drive/Murchison Drive and cause this intersection to degrade from LOS D to LOS F in the AM and PM peak hour under Cumulative (2040) Plus Project (Specific Plan Update) conditions. In addition, the intersection meets the Caltrans peak hour signal warrant for urbanized areas (Warrant 3).

Mitigation Measure TRANS-SP-1.5: The City of Millbrae shall work with the City of Burlingame to conduct a full signal warrant analysis under the direction of a professional engineer and install a signal at the California Drive/Murchison Drive intersection.

Significance With Mitigation: Significant and Unavoidable. The signalization of the California Drive/Murchison Drive intersection under this mitigation measure would reduce the average delay at the intersection to acceptable levels, this mitigation measure requires participation or and decisions by agencies over which Millbrae has no authority, and it is not within the City's power to impose such mitigation. Although the mitigation is physically feasible, it is legally infeasible. As a result, implementation cannot be guaranteed, and there can be no assurance that impacts would be reduced to a less-than-significant level. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Accordingly, the impact at the California Drive/Murchison Drive intersection would therefore remain significant and unavoidable.

Impact TRANS-SP-1.6: Implementation of the Specific Plan Update would contribute a considerable level of traffic to intersection #8 Rollins Road/Millbrae Avenue and cause this intersection to degrade from LOS D to LOS F in the AM and PM peak hour under Cumulative (2040) Plus Project (Specific Plan Update) conditions.

Mitigation Measure TRANS-SP-1.6: The City should expand the Rollins Road/Millbrae Avenue intersection footprint. The expanded intersection footprint would add one (1) eastbound and one (1) westbound through lane (for a total of four [4] in each direction), one (1) eastbound left turn pocket lane (for a total of two [2]), one (1) eastbound right turn pocket lane (for a total of two [2]), one (1) westbound right turn pocket lane (for a total of two [2]), and one (1) southbound right turn pocket lane (for a total of two [2]).

Significance With Mitigation: Significant and Unavoidable. Implementation of Mitigation Measure TRANS-SP-1.6 would require significant intersection expansion, which is not recommended due to the adverse secondary impacts to pedestrians and/or encroachment into private property. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Accordingly, the level of service impacts at the Rollins Road/Millbrae Avenue intersection would be significant and unavoidable.

Cumulative (2040) Freeway Operations

The cumulative freeway mainline and ramp operations under the Cumulative (2040) No Project (Specific Plan Update) and Plus Project (Specific Plan Update) conditions are presented in Table 4.13-21 and Table 4.13-22. Cumulative growth not associated with the Specific Plan Update would cause nearly all of the segments to operate at LOS E or F under Cumulative (2040) No Project (Specific Plan Update) conditions.

As shown in Table 4.13-22 all freeway ramps at the US 101/Millbrae Avenue interchange will continue to operate under capacity and at an acceptable level of service with the addition of Specific Plan Update-generated traffic.

However, as shown on Table 4.13-21, implementation of the Specific Plan Update would contribute traffic that exceeds one (1) percent of the mainline capacity to several mainline segments operating over capacity (LOS F) under Cumulative (2040) No Project (Specific Plan Update) conditions. Therefore, implementation of the Specific Plan Update would represent a *significant* cumulative impact at these study mainline segments.

TABLE 4.13-21 CUMULATIVE (2040) FREEWAY SEGMENT LOS RESULTS (SPECIFIC PLAN UPDATE)

Segment	Dir.	Peak Hour	Existing		Cumulative			Cumulative Plus Project				
			V/C [1]	LOS	Vol.	V/C [1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
A. US 101 from Grand Avenue to Produce Avenue	NB	AM	0.93	E	10,870	1.18	F	10,973	1.19	F	103	1.1%
		PM	0.75	D	8,525	0.93	E	8,720	0.95	E	195	2.1%
	SB	AM	0.87	D	10,224	1.11	F	10,431	1.13	F	207	2.3%
		PM	0.84	D	9,472	1.03	F	9,589	1.04	F	117	1.3%
B. US 101 from Produce Avenue to I-380	NB	AM	0.82	D	12,110	1.05	F	12,219	1.06	F	110	1.0%
		PM	0.63	C	8,966	0.78	D	9,174	0.80	D	208	1.8%
	SB	AM	0.76	D	11,152	0.97	E	11,391	0.99	E	239	2.1%
		PM	0.78	D	11,091	0.96	E	11,226	0.98	E	135	1.2%
C. US 101 from I-380 to Millbrae Avenue	NB	AM	0.97	E	14,302	1.24	F	14,439	1.26	F	137	1.2%
		PM	0.76	D	10,721	0.93	E	10,981	0.95	E	260	2.3%
	SB	AM	0.71	C	10,420	0.91	E	10,739	0.93	E	319	2.8%
		PM	0.73	D	10,384	0.90	E	10,564	0.92	E	180	1.6%
D. US 101 from Millbrae Avenue to Broadway	NB	AM	1.21	F	14,361	1.56	F	14,629	1.59	F	268	2.9%
		PM	0.94	E	10,526	1.14	F	10,677	1.16	F	151	1.6%
	SB	AM	0.81	D	9,570	1.04	F	9,733	1.06	F	163	1.8%
		PM	0.86	D	9,874	1.07	F	10,183	1.11	F	309	3.4%
E. US 101 from Broadway to Peninsula Avenue	NB	AM	1.26	F	14,948	1.62	F	15,202	1.65	F	255	2.8%
		PM	0.91	E	10,250	1.11	F	10,393	1.13	F	143	1.6%
	SB	AM	0.83	D	9,888	1.07	F	10,043	1.09	F	155	1.7%
		PM	0.89	D	10,182	1.11	F	10,475	1.14	F	294	3.2%

Notes: Bold indicates unacceptable operation. Shaded indicates significant impact. Dir. = Direction. Vol. = Volume.
1. V/C = Volume-to-Capacity ratio.
Source: Fehr & Peers, 2015.

TABLE 4.13-22 CUMULATIVE (2040) FREEWAY RAMP LOS RESULTS (SPECIFIC PLAN UPDATE)

Freeway Interchange and Ramp		Peak Hour	Existing		Cumulative			Cumulative Plus Project				
			V/C [1]	LOS	Vol.	V/C [1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
US 101 / Millbrae Avenue												
NB	Off-Ramp to Millbrae Avenue	AM	0.51	C	1,490	0.75	D	1,758	0.88	D	268	13.4%
		PM	0.43	B	950	0.48	B	1,101	0.55	C	151	7.6%
	On-Ramp from Millbrae Avenue	AM	0.64	C	1,628	0.81	D	1,765	0.88	D	137	6.9%
		PM	0.53	C	1,303	0.65	C	1,563	0.78	D	260	13.0%
SB	Off-Ramp to Millbrae Avenue	AM	0.73	D	1,600	0.80	D	1,919	0.96	E	319	16.0%
		PM	0.73	D	1,570	0.79	D	1,750	0.88	D	180	9.0%
	On-Ramp from Westbound Millbrae Avenue	AM	0.05	A	110	0.06	A	110	0.06	A	0	0.0%
		PM	0.08	A	160	0.09	A	160	0.09	A	0	0.0%
	On-Ramp from Eastbound Millbrae Avenue	AM	0.31	B	640	0.32	B	803	0.40	B	163	8.2%
		PM	0.41	B	900	0.45	B	1,209	0.60	C	309	15.5%

Notes: Bold indicates unacceptable operation. Shaded indicates significant impact.
1. V/C = Volume-to-Capacity ratio
Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.
Source: Fehr & Peers, 2015.

Impact TRANS-SP-1.7: Under Cumulative (2040) Plus Project (Specific Plan Update) conditions, the Specific Plan Update would add traffic volumes representing more than one (1) percent of the segment's capacity to the following freeway segments exceeding the capacity without the Specific Plan Update:

- Northbound and Southbound US 101 Grand Avenue to Produce Avenue – AM and PM peak hours
- Northbound US 101 Produce Avenue to I-380 – AM peak hour
- Northbound US 101 I-380 to Millbrae Avenue – AM peak hour
- Northbound and Southbound US 101 Millbrae Avenue to Broadway – AM and PM peak hours
- Northbound and Southbound US 101 Broadway to Peninsula Avenue – AM and PM peak hours

Mitigation Measure TRANS-SP-1.7: Construct an additional mixed flow and/or HOV lane on southbound US 101.

Significance With Mitigation: Significant and Unavoidable. The widening of US 101 proposed under Mitigation Measure TRANS-SP-1.7 may not be feasible due to right-of-way constraints and the City's lack of authority to independently implement (the freeway is under Caltrans jurisdiction). Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at these freeway segments would be significant and unavoidable.

Future (Temporary) Construction Traffic

Project construction associated with future development under the Specific Plan Update would temporarily affect off-site circulation due to increased truck traffic to and from the development sites. Construction would also disrupt on-site travel due to the potential closure of sidewalks and blockage of bicycle facilities and transit routes during construction. However, compliance with the following Specific Plan Update Implementation (IMP) policy would ensure construction related impacts would be *less than significant*:

- P-IMP 11. Require applicants for new development to prepare and implement construction management plans to control construction-related impacts from fugitive dust, emissions, noise, and traffic. Project construction management plans shall include, but are not limited to, the following:
    - Current Bay Area Air Quality Control Management District (BAAQMD) basic control measures for fugitive dust control in addition to other feasible measures that may be identified in project-level technical air quality assessments, when required;
    - A list of all construction equipment to be used during construction that identifies the make, model, and number of each piece of equipment;
    - Location of construction staging areas for materials, equipment, and vehicles;
    - Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur;

- Identification of haul routes for movement of construction vehicles that would minimize impacts on vehicular and pedestrian traffic, circulation, and safety; and provision for monitoring surface streets used for haul routes so that any damage and debris attributable to the haul trucks can be identified and corrected by the project sponsors;
- Provisions for pedestrian and bicycle circulation through the congestion zone;
- Provisions for removal of trash generated by project construction activity; and
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an on-site complaint manager.

Significance Without Mitigation: Less than significant.

Parking Requirements

Vehicular Parking

The minimum parking requirements outlined in Table 4.13-23 apply to developments that do not employ other parking management techniques. Developments that incorporate other parking and TDM techniques to reduce demand, including shared parking, employer programs, subsidized transit passes, and rideshare incentives, could result in negotiations between the City and developers to provide lower parking requirements. Additionally, mixed-use developments may provide fewer spaces than determined with the Specific Plan rates with a City-approved shared parking demand analysis.

TABLE 4.13-23 MINIMUM OFF-STREET VEHICLE PARKING REQUIREMENTS IN THE SPECIFIC PLAN AREA

	Parking Ratios	
Land Use	Transit-Oriented	General
Office	(within 800 feet of station) 1.5 spaces per 1,000 gross square feet (gsf)	2.5 spaces per 1,000 gsf
Hotel	(within 800 feet of station) 0.4 space per room	1 space per room
Residential	(within 600 feet of station) 1 space per unit	1.25 spaces per unit
Restaurant	(within 600 feet of station) 5.0 spaces per 1,000 gsf	6.5 spaces per 1,000 gsf
Retail	(within 600 feet of station) 1.5 spaces per 1,000 gsf	3 spaces per 1,000 gsf

Notes: gross square feet = gsf
Source: Draft Millbrae Station Area Specific Plan Update, 2015.

These Specific Plan Update parking requirements take into account the Specific Plan Area's transit rich environment with both Caltrain and BART service. The rates have been specifically designed to provide sufficient amounts of vehicle parking to minimize neighborhood intrusion while not providing excessive amounts of parking which could increase traffic and associated traffic impacts. These parking standards incorporate recent information and recommendations in the MTC Parking Policies Toolbox for Suburban Center/Town Center[15] and ratios in the Pleasant Hill BART Station Plan. For restaurant uses, which have a high demand relative to gross square footage of the establishment, the upper end of parking requirements recommended by the MTC guidelines are used for transit-oriented restaurants, and rates supported by the Urban Land Institute's (ULI's) shared parking methodology are used for other Specific Plan Area restaurant development.

Parking plans prepared by future project applicants in the Specific Plan Area and submitted to the City as part of the entitlement process would be required to be consistent with these parking standards prior to City approval. Furthermore, compliance with Specific Plan Update Policy CP 23 would require future applicants in the Specific Plan Area to prepare a TDM Plan that would achieve vehicle trip reduction and subsequently also achieve parking demand reduction. Accordingly, impacts associated with parking would be *less than significant* and no mitigation measures are required.

Significance Without Mitigation: Less than Significant.

Bicycle Parking

Bicycle parking generally falls into two (2) categories: long-term (Class I) and short-term (Class II). Long-term bicycle parking serves parking needs of longer than two (2) hours and is used by bicyclists who prioritize greater security and protection from the elements. Short-term bicycle parking serves parking needs of shorter than two (2) hours and is used by bicyclists who prioritize convenience and accessibility. Bicycle parking rates for development in the Specific Plan Area are shown in Table 4.13-24.

[15] "Suburban Centers and Town Centers are generally located in the center of communities with less density as compared to urban downtowns. Typically, these areas contain a good mix of medium or low-rise office buildings and housing types including townhomes and apartments. These locations can act as both origin and destination settings. The parking environment is typically defined by ample surface parking lots, however, suburban downtowns also tend to have a good mix of transit service with direct connections to urban settings, (e.g. San Francisco, Oakland, and San Jose). Examples of suburban centers and town centers include Walnut Creek, Concord, San Mateo or Palo Alto." (Reforming Parking Policies To Support Smart Growth, Metropolitan Transportation Commission, June 2007)

TABLE 4.13-24 BIKE PARKING REQUIREMENTS IN THE SPECIFIC PLAN AREA

Activity Type	Long-Term Bicycle Parking Requirements	Short-Term Bicycle Parking Requirements
Multi-Family Residential	0.5 spaces for each bedroom. Minimum requirement 2 spaces.	0.05 spaces for each bedroom. Minimum requirement 2 spaces.
Office	1 space per 10,000 square feet of floor area. Minimum requirement 2 spaces. OR Adequate spaces to accommodate 5% of building users (measured at peak periods).	1 space per 20,000 square feet of floor area. Minimum requirement 2 spaces.
Retail	1 space per 12,000 square feet of floor area. Minimum requirement 2 spaces.	1 space per 2,000-5,000 square feet of floor area. Minimum requirement 2 spaces.
Off-Street Parking Lots and Garages Available To General Public	1 space per 20 automobile spaces.	1 space per 20 automobile spaces. Minimum requirement 6 spaces.
Millbrae Station	Adequate spaces to meet existing demand plus an additional 10% for future growth.	Adequate spaces to meet existing demand plus an additional 10% for future growth.

Source: *Bicycle Parking Guidelines*, 2nd Edition, Association of Pedestrian and Bicycle Professionals (APBP), 2010; *Bicycle Access and Parking Plan*, BART, 2002

Parking plans prepared by future project applicants in the Specific Plan Area and submitted to the City as part of the entitlement process would be required to be consistent with these parking standards prior to City approval. Accordingly, impacts associated with parking would be *less than significant* and no mitigation measures are required.

Significance Without Mitigation: Less than Significant.

TRANS-2	The proposed Specific Plan Update would conflict with an applicable congestion management program, including, but not limited to, level of service standards, travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

The CMP requires new developments that are projected to add 100 or more peak hour trips to the CMP roadway network to implement Travel Demand Management (TDM) measures that would reduce project impacts. Facilities in the Specific Plan Area that are part of the CMP network include the following:

- El Camino Real/Millbrae Avenue
- US 101 from Grand Avenue to Produce Avenue
- US 101 from Produce Avenue to I-380
- US 101 from I-380 to Millbrae Avenue
- US 101 from Millbrae Avenue to Broadway
- US 101 from Broadway to Peninsula Avenue

The Specific Plan Update includes a suite of TDM strategies to reduce peak single-occupancy vehicle trips and encourage use of transit, walking, and biking as transportation modes. These strategies can significantly enhance

mobility for people accessing the Specific Plan Area and will require close coordination among multiple agencies, including staff from BART, Caltrain, SamTrans, C/CAG, and the City. These TDM strategies will be most effective when they are provided for all user groups in the Specific Plan Area including residents, employees, and visitors.

Impacts to these facilities are discussed under TRANS-1. For the purpose of conducting a conservative traffic analysis, individual TDM programs and their associated vehicle trip reductions are not included in the travel demand calculations for this EIR traffic analysis because the feasibility, funding sources, and effectiveness for these mode shift strategies are unknown at this time.

The measures discussed below are based on the current best practices for TDM programs. The TDM programs should be regularly evaluated to ensure the widest range of options are available to reduce the number of single occupancy vehicle trips. The TDM programs that would be managed by individual projects, or potentially through a Transportation Management Association (TMA), would include the components such as:

- **TDM Coordinator:** On-site TDM Coordinators would manage and promote TDM programs and oversee monitoring to determine program effectiveness. A TDM Coordinator provides information via flyers, posters, e-mail, and educational programs regarding non-auto access and circulation options. The TDM Coordinator's role may also include actively marketing alternative mode use, administering a neighborhood ridematching program, and overseeing a Guaranteed Ride Home program (working with a local taxi service or rental car agency). A TDM Coordinator could also help implement or support the parking and vehicle management strategies.
- **Transit Subsidies:** Provide a transit subsidy ("commuter check" or "EcoPass") to all residents and employees. This component would reduce the cost of using transit service to access the Inner Harbor Specific Plan Area.
- **Guaranteed Ride Home Program/Taxi Service:** Provide a guaranteed ride home program. One of the reasons many commuters choose to drive to work and/or transit stations, rather than being dropped off or taking transit, is their inability to go home unexpectedly or the fear of being stranded if returning late without a car at the station. Guaranteed Ride Home programs are designed to allay these fears. With this program, transit riders are able to use a complimentary or reduced price taxi service to get home. Adequate taxi service is necessary for the Guaranteed Ride Home program to be successfully implemented.
- **Ridematching and Ridesharing:** Carpools consist of two (2) or more people riding in one (1) vehicle for commute purposes. A vanpool consists of seven (7) to 15 passengers, including the driver, and the vehicle is either owned by one (1) of the vanpoolers or their employer or leased by a vanpool rental company. Carpools and vanpool formations often require ridematching assistance. Additionally, the Guaranteed Ride Home program (see above) would provide an insurance plan to those hesitant to join carpools for concerns of being unable to respond to an emergency, sick child, or other issue. To facilitate the formation of carpools, a TDM coordinator will administer an on-site carpool and vanpool matching service for commuters and maintain a list of available vanpools that provide service between the Specific Plan Area and various residential neighborhoods. The coordinator could also direct patrons to the 511.org Rideshare website to access additional ridematching services.

- **Preferential Parking for Vanpools or Carpools:** Reserve convenient parking spaces for high-occupancy vehicles (HOVs) to encourage ridesharing. Preferential spaces could be striped and signed at a low cost. By implementing this strategy, there will be minimal enforcement costs. Complementary strategies such as a Guaranteed Ride Home program and a ridematching program will further encourage ridesharing.
- **Carsharing:** Recruit and make provisions for carshare programs and neighborhood electric vehicle programs to reduce the need to have a car on site for occasional use. Membership fees typically include insurance, fuel, and maintenance costs and may be paid on a per-hour or mile basis. Carsharing can be an alternative to car ownership or may encourage households within the Specific Plan Area to "shed" an extra car, or employees to take transit to the site knowing that they will have vehicles available if needed. Carsharing could complement other strategies such as unbundled parking or parking permits for residents and discounted transit passes and parking cash-out for employees.
- **Bay Area Bike Share:** Expand the Bay Area Bike Share to Millbrae and the Specific Plan Area to provide bicycles for use on a temporary basis. It would reduce vehicle trips by providing a means of transportation in the area for individuals who use transit or rideshare as a commute mode. Bay Area Bike Share currently operates 70 bike share stations in San Francisco and throughout the Bay Area Peninsula. Bike Share stations should be located adjacent to major land uses and near proposed bicycle and pedestrian facilities. Any Bay Area Bike Share expansion would be a coordinated effort among the many applicable agencies.

Impact TRANS-SP-2: As discussed under TRANS-1, implementation of the Specific Plan Update would result in a *significant* impact at the CMP facilities during at least one (1) of the peak hours under Existing (2014) and Cumulative (2040) conditions as follows:

Existing (2014) Plus Project (Specific Plan Update)
- El Camino Real/Millbrae Avenue – AM and PM peak hour
- Northbound US 101 from Millbrae Avenue to Broadway – AM peak hour
- Northbound US 101 from Broadway to Peninsula Avenue – AM peak hour

Cumulative (2040) Plus Project (Specific Plan Update)
- El Camino Real/Millbrae Avenue – AM and PM peak hour
- Northbound and Southbound US 101 Grand Avenue to Produce Avenue – AM and PM peak hours
- Northbound US 101 Produce Avenue to I-380 – AM peak hour
- Northbound US 101 I-380 to Millbrae Avenue – AM peak hour
- Northbound and Southbound US 101 Millbrae Avenue to Broadway – AM and PM peak hours
- Northbound and Southbound US 101 Broadway to Peninsula Avenue – AM and PM peak hours

Mitigation Measure TRANS-SP-2a: Implement Mitigation Measure TRANS-SP-1.2.

Mitigation Measure TRANS-SP-2b: Implement Mitigation Measure TRANS-SP-1.7.

Significance With Mitigation: Significant and Unavoidable. The widening of US 101 proposed under Mitigation Measures TRANS-SP-1.2 and TRANS-SP-1.7 and may not be feasible due to right-of-way

constraints and the City's lack of authority to independently implement (the freeway is under Caltrans jurisdiction). Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at these CMP facilities would be significant and unavoidable.

TRANS-3	The proposed Specific Plan Update would not 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.

As discussed in Section 4.13.1.3, Existing Conditions, the 2012 ALUCP addresses issues related to compatibility between airport operations and surrounding proposed land use development. The Specific Plan Area is within areas of the ALUCP that limits land use to minimize impacts to people residing or working in the Specific Plan Area. Precisely, the Specific Plan Area is located within the ALCUP's Safety Compatibility Zones 1, 2, and 3. However, future development under the Specific Plan Update would only occur within Zone 2 and Zone 3 and the types of mixed-use development projects proposed under the Specific Plan Update are not considered incompatible land use for these zones.[16] Additionally, the proposed Specific Plan Update would be accessed by the existing roadway infrastructure as discussed under TRANS-1 and TRANS-2. Although traffic levels would increase in the area as a result of the Specific Plan Update, these increases would not result in changes to existing roadway configurations that could interfere with flight operations. Accordingly, impacts on air traffic patterns as a result of the proposed Specific Plan Update would *be less than significant*.

TRANS-4	The proposed Specific Plan Update would substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).

This section discusses vehicular roadway hazards. Hazards associated with bicycle and pedestrian circulation is discussed under TRANS-5 below.

Incompatible Land Use Hazards

The Specific Plan Area is located in a highly urbanized are of Millbrae. The types of land uses proposed as a part of the Specific Plan Update are generally similar to existing and surrounding uses and thereby are compatible with the existing uses in the Specific Plan Area and in the surrounding area. Therefore *no impact* would result from circulation hazards as a result of incompatible uses.

[16] See Table 4.7-2, Safety Compatibility Criteria, in Chapter 4.7, Hazards and Hazardous Materials, of the Draft EIR for a list of incompatible land uses for these zones.

Roadway Improvement Hazards

Access to the Specific Plan Area would continue from the roadway network described is Section 4.13.1.3, Existing Conditions above. Therefore, future development under the Specific Plan Update would not alter the layout or design of any major city road or intersection that could result in hazardous circulation conditions and impacts would be *less than significant*.

Queuing Hazards

An intersection operations analysis was provided to identify potential impacts with respect to vehicular queuing at intersections to ensure that left turn pockets at intersections would accommodate the anticipated queue lengths so cars would not "spill" to the through lanes. If there is insufficient storage length in left-turn pockets, queues of vehicles may extend out of the pocket into the adjacent through lane. This makes an intersection less efficient as the queue would block through vehicles from proceeding through the intersection. Further, they increase the potential for rear-end crashes which creates a safety hazard. Detailed intersection queuing calculations are provided in Appendix H of this Draft EIR. The 95th percentile queue lengths for key intersections and left-turn movements were compared for the Existing (2014) and Existing (2014) Plus Project (Specific Plan Update) conditions. Most queuing conditions were found to be similar between the two (2) scenarios; however some queues that were already exceeding available storage space under Existing (2014) conditions were exacerbated under Existing (2014) Plus Project (Specific Plan Update) conditions, most notably at and between the intersections of El Camino Real/Millbrae Avenue and Rollins Road/Millbrae Avenue. Additionally, the El Camino Real/Murchison Drive and El Camino Real/Trousdale Drive intersections saw queues that exceeded capacity in Existing (2014) conditions worsen in Existing (2014) Plus Project conditions. Therefore, implementation of the Specific Plan Update could result in queues that exceed available storage space resulting in a *significant* hazardous circulation condition.

Impact TRANS-SP-4: Queues that were already exceeding available storage space under Existing (2014) conditions were exacerbated under Existing (2014) Plus Project (Specific Plan Update) conditions at and between the intersections of El Camino Real/Millbrae Avenue and Rollins Road/Millbrae Avenue resulting in hazardous driving conditions from backed up traffic.

Mitigation Measure TRANS-SP-4a: Implement Mitigation Measure TRANS-SP-1.1.

Mitigation Measure TRANS-SP-4b: In addition to implementing Mitigation Measure TRANS-SP-1.6, the City should also extend the El Camino Real/Millbrae Avenue intersection eastbound left turn pocket to 310 feet, extend the westbound left turn pocket to 490 feet, and extend the southbound turn pocket to 775 feet under the Existing (2014) Plus Project conditions. Under the Cumulative (2040) Plus Project conditions, the following turn pocket extensions would apply:

- El Camino Real/Murchison Drive, extend eastbound left to 395 feet, northbound left to 180 feet, and southbound left to 385 feet.
- Rollins Road/Millbrae Avenue, extend westbound left to 720 feet, southbound left to 415 feet.
- El Camino Real/Millbrae Avenue, extend eastbound left to 415 feet, westbound left to 530 feet, and northbound right to 555 feet.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, implementation of Mitigation Measure TRANS-SP-1.6 and TRANS-SP-4b would require significant intersection expansion, which is not recommended due to the adverse secondary impacts to pedestrians and/or encroachment into private property. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Accordingly, the hazardous conditions at these intersections as a result of "spill-over" queuing would be significant and unavoidable.

TRANS-5 The proposed Specific Plan Update would not result in inadequate emergency access.

Emergency vehicle access to the Specific Plan Area would primarily be provided by Millbrae Avenue, El Camino Real, and Rollins Road. Emergency vehicles would be able to use the roadways throughout the Specific Plan Area. The entire Specific Plan Area is within approximately one (1) mile from the nearest fire station, located at 511 Magnolia Avenue in downtown Millbrae. Under current traffic conditions, it takes approximately four (4) minutes to access the Specific Plan Area from this fire station.

The implementation of the Specific Plan Update would result in slightly increased traffic congestion and delay at study intersections along emergency vehicle access routes under Existing (2014) Plus Project (Specific Plan Update) and Cumulative (2040) Plus Project (Specific Plan Update) conditions. This additional traffic congestion could potentially slow emergency response and evacuation. However, future development under the Specific Plan Update is required to comply with all City roadway and access standards as well as the minimum specifications in Municipal Code Chapter 9.30, which includes the California Fire Code, adopted by reference and local amendments[17] that insures emergency access is adequate in the city. Additionally, the Specific Plan Area is well-served by public streets. For these reasons, implementation of the Specific Plan Update would not result in inadequate emergency access and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

[17] Millbrae Municipal Code, Title 9, Building Regulations, Chapter 9.30, Fire Code.

TRANS-6	The proposed Specific Plan Update would 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 following presents an analysis of other transportation issues associated with the Specific Plan Area, including transit, pedestrian and bicycle circulation.

Transit Operations

Transit Trips Generated by the Specific Plan Update

Transit trips generated by the Specific Plan Update were estimated and assigned to BART, Caltrain, or bus/shuttle modes. BART only provides access to destinations north of the station, while Caltrain and buses provide access to destinations both north and south of the station. For rail trips, these were assigned to BART north, Caltrain north, or Caltrain south. Bus/shuttle trips are inclusive of demand for SamTrans fixed route service (Route ECR) as well as first/last mile shuttle activity. Both boardings and alighting trips were identified, and daily, AM peak hour, and PM peak hour trips were estimated.

Ridership Generated by the Specific Plan Update

Transit ridership generated by the Specific Plan Update under Existing (2014) conditions and in 2040 (see Tables 4.13-25 and 4.13-26) was forecasted using a four-step modeling process including: 1) trip generation, 2) mode choice, 3) trip distribution, 4) trip assignment.

Trip Generation

First, total daily trips generated were estimated using Fehr & Peers' MXD+ tool. This tool uses site-specific information, including intensity and size of land uses, as inputs and produces trip generation estimates that take into account reductions in trips due to internal capture of trips among mixed uses. Initial vehicle trip generation estimates are derived from standard ITE trip generation rates; the MXD+ tool then estimates internalization based on national research by the US EPA on the impact of smart growth factors such as development density, scale, design, accessibility, transit proximity, demographics and mix of uses on site trip generation. Output of the tool includes trips generated by each land use and by trip purpose.

Mode Share[18]

Literature on travel behavior of TOD residents and workers was reviewed to develop mode share estimates of trips generated by the TOD. Research shows that trips to and from TODs have higher transit mode shares than for locations not located near transit stations. Due to their proximity to two (2) rail lines, the proposed TOD #1 and #2 projects are expected to have a high transit mode share. This mode share was applied to the trip generation results to estimate total daily rail and bus/shuttle boardings generated by the Specific Plan Update.

[18] Percentage of trips using a particular transportation mode.

Trip Distribution and Assignment

Rail trip distribution and assignment of trips to either BART or Caltrain were determined using existing BART and Caltrain ridership data paired with intercept survey results. Those transferring at Millbrae were excluded from the analysis. Trips between Millbrae and downtown San Francisco in 2040 would not match existing trip assignment due to planned changes to the transit system by 2040 such as the opening of the Caltrain Transbay Terminal Station. In order to determine future assignment of these trips, the ratio of total households and jobs located in each walk shed[19] was used to assign the share of rail trips between Millbrae and downtown San Francisco which would use BART and Caltrain.

Existing (2014) Conditions

Table 4.13-25 summarizes the transit trips (boardings and alightings, or ons and offs) generated by the Specific Plan Update under Existing (2014) conditions.

TABLE 4.13-25 EXISTING (2014) TRANSIT TRIPS GENERATED BY THE SPECIFIC PLAN UPDATE

	Daily		AM		PM	
Specific Plan Update Buildout	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
BART North	1,807	1,807	139	226	245	125
Caltrain North	292	292	27	12	20	23
Caltrain South	373	373	26	95	57	22
Bus/Shuttle	688	688	42	118	107	44
Total	3,159	3,159	234	452	428	214

Source: Fehr & Peers, 2015.

Cumulative (2040) Conditions

Table 4.13-26 summarizes the rail trips generated by the Specific Plan Update under Cumulative (2040) conditions. Due to the increased attractiveness of rail in 2040 due to transit system improvements, a travel mode shift towards a higher share of rail trips is forecasted. Furthermore, with the opening of the Caltrain Transbay Terminal, some ridership is expected to shift from BART to Caltrain. This shift is also accounted for in the forecasts of transit trips generated by the Specific Plan Update.

[19] A catchment area around a transit station that generates ridership via a walk mode of access.

TABLE 4.13-26 CUMULATIVE (2040) TRANSIT TRIPS GENERATED BY THE SPECIFIC PLAN UPDATE

	Daily		AM		PM	
Specific Plan Update Buildout	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
BART North	1,863	1,863	136	276	280	129
Caltrain North	814	814	68	23	53	60
Caltrain South	475	475	32	120	71	28
Bus/Shuttle	744	744	44	134	122	47
Total	3,897	3,897	280	554	526	263

Source: Fehr & Peers, 2015.

Transit Screenline Analysis – BART and Caltrain

Based on the transit impact criteria, the impact of additional transit ridership that would be generated by development of the Specific Plan Update was assessed based on transit capacity. This analysis incorporated a transit capacity utilization methodology that refers to transit riders as a percentage of the capacity of a transit line, or group of lines combined and analyzed as cordons or screenlines across which transit lines travel. The regional screenline analysis was conducted for the following three screenline locations for Specific Plan Update trip making:

- **BART to/from downtown San Francisco:** Specific Plan Area development's contribution to the BART San Francisco screenline reflects the forecasted volume of Specific Plan Area development-generated transit trips to and from downtown San Francisco and the East Bay measured between Civic Center and 16th Street Mission BART stations.
- **Caltrain to/from South Bay:** Specific Plan Area development's contribution to the Caltrain South Bay screenline is based on transit ridership and capacity on the Caltrain line at the peak load point south of Millbrae measured between Millbrae and Burlingame Caltrain stations.
- **Caltrain to/from San Francisco:** Specific Plan Area development's contribution to the Caltrain San Francisco screenline is based on transit ridership and capacity on the Caltrain line at the peak load point north of Millbrae measured between Millbrae and San Bruno stations.

Rail transit ridership, capacity and capacity utilization were evaluated across each transit screenline during both the AM and PM peak hours, since this is when transit capacity utilization is the highest. For BART, the AM analysis represents travel in the northbound direction, while the PM analysis represents travel in the southbound direction, since those are the directions of peak travel for each time period. Ridership represents the passenger load on all of the trains during the peak hour when crossing the screenline. Capacity represents the number of passengers that can be accommodated by the transit service during the specified time period. Capacity utilization is the percent of total capacity being used. Transit trips generated by the Specific Plan Update were added to the transit network to show the increase in transit capacity utilization with the Specific Plan Update.

Existing (2014) Conditions

The transit screenline analysis results for Existing (2014) conditions are shown in Table 4.13-27.

TABLE 4.13-27 EXISTING (2014) SCREENLINE ANALYSIS (SPECIFIC PLAN UPDATE)

Regional Screenline	Existing AM Peak Hour			Existing PM Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
BASELINE						
BART						
16th Street – Civic Center	10,680	14,910	72%	10,680	14,910	72%
Caltrain						
NB: Millbrae – San Bruno	2,440	3,275	75%	1,800	3,275	55%
SB: Millbrae – Burlingame	1,930	3,275	59%	2,830	3,275	86%
Screenlines Total	15,050	21,460	70%	15,310	21,460	71%
SPECIFIC PLAN UPDATE BUILDOUT						
BART						
16th Street - Civic Center	10,819	14,910	73%	10,805	14,910	72%
Caltrain						
NB: Millbrae - San Bruno	2,467	3,275	75%	1,820	3,275	56%
SB: Millbrae - Burlingame	1,956	3,275	60%	2,887	3,275	88%
Screenlines Total	15,242	21,460	71%	15,512	21,460	72%

Source: Fehr & Peers, 2015.

All screenlines evaluated are operating at below 100 percent capacity utilization, meaning that there is enough capacity to accommodate all riders both without and with the Specific Plan Update. Capacity utilization is highest on Caltrain during the PM peak hour, immediately south of the Millbrae Station. Under Existing (2014) conditions without the Specific Plan Update, the capacity utilization across this screenline is 86 percent. The capacity utilization increases to 88 percent under the full buildout. The total screenline capacity utilization does not increase by more than two (2) percent between the baseline and the Specific Plan Update. Therefore, implementation of the Specific Plan Update would result in a *less-than-significant* impact to transit capacity.

Significance Without Mitigation: Less than significant.

Cumulative (2040) Conditions

The transit screenline analysis results for Cumulative (2040) conditions are shown in Table 4.13-28.

TABLE 4.13-28 CUMULATIVE (2040) SCREENLINE ANALYSIS (SPECIFIC PLAN UPDATE)

Regional Screenline	Cumulative AM Peak Hour			Cumulative PM Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Baseline						
BART						
16th Street – Civic Center	14,400	24,180	60%	14,400	24,180	60%
Caltrain						
NB: Millbrae – San Bruno	3,902	3,990	98%	3,325	3,990	83%
SB: Millbrae – Burlingame	3,898	3,990	98%	3,559	3,990	89%
Screenlines Total	22,200	32,160	69%	21,284	32,160	66%
Specific Plan Update Buildout						
BART						
16th Street - Civic Center	14,536	24,180	60%	14,529	24,180	60%
Caltrain						
NB: Millbrae - San Bruno	3,970	3,990	99%	3,378	3,990	85%
SB: Millbrae - Burlingame	3,930	3,990	98%	3,630	3,990	91%
Screenlines Total	22,436	32,160	70%	21,537	32,160	67%

Source: Fehr & Peers, 2015.

BART is expected to increase capacity by 2040 through increases in service frequency. All screenlines evaluated are expected to be operating at below 100 percent capacity utilization, meaning that there will be enough capacity to accommodate all riders both without and with the Specific Plan Update. Caltrain is expected to have high increases in ridership by 2040 with service improvements due to Caltrain electrification as well as through the opening of the Transbay Terminal in the San Francisco Financial District, which is expected to cause some shifts in ridership from BART to Caltrain. As a result, Caltrain capacity utilization, particularly in the AM peak hour, across both the screenlines directly north of and directly south of the Millbrae Station are expected to be operating at near capacity. Capacity utilization across these screenlines during the AM peak hour is forecasted to be 98 percent without the Specific Plan Update, increasing to 99 percent north of the station under the Specific Plan Update. The total screenline capacity utilization does not increase by more than two (2) percent between the baseline and the Specific Plan Update. Therefore, implementation of the Specific Plan Update would result in a *less-than-significant* cumulative impact to transit capacity.

Transit Access

SamTrans and shuttles (shuttles solve the "last mile" transportation problem from regional transit) are a primary mode of access from BART/Caltrain to nearby employment and will continue to play an important role in the future of the Millbrae Station for both transfers from regional rail as well as new TOD residents traveling to/from work.

Eastside Access

The existing eastern bus loop/transit center contains 11 sawtooth bus bays that can accommodate a range of vehicle sizes (up to 60 feet articulated transit buses) and approximately 560 feet of linear layover space. However, even at peak operations some bays remain empty. Public and private first/last mile shuttles as well as SamTrans Route 397 (owl) serve the Millbrae Station via the eastern bus loop/transit center. A total of seven (7) bays are recommended for a redesigned transit center on the eastside to accommodate current and future shuttle activity. These bays will be provided on a new roadway west of Rollins Road and south of the BART parking structure (4 smaller bays to accommodate cutaway vehicles) and on a bus transfer facility located east of Rollins Road on Garden Lane (3 larger bays to accommodate 45-feet over-the-road [OTR] coaches). Additional pedestrian crossing facilities on Rollins Road and wayfinding will be needed create acceptable shuttle facilities located east of Rollins Road.

Westside Access

New development on the west side of the station will likely trigger the need to reconfigure or replace the existing shuttle facilities. The replacement or reconfigured facility on California Drive must be designed to safely and effectively accommodate future shuttle activity, provide adequate facilities for riders, and minimize rider walk distance from the Millbrae Station. The existing "sawtooth" configuration that includes two (2) bays is currently in the ideal location for transfers and should be expanded to three shuttle bays to accommodate future demand. Replacement facility design must minimize travel distances for shuttles to turn around to begin outbound runs. Based on the roadway network design, westside shuttles will enter the Specific Plan Area from Murchison Drive and exit via Victoria Avenue.

The westside of the Millbrae Station is also served by SamTrans Route ECR. The Specific Plan Update provides an opportunity for SamTrans to reroute southbound ECR service along Railroad Avenue/California Drive that would provide direct access to the Millbrae Station. The ultimate decision to reroute southbound ECR service will be made by SamTrans. Northbound ECR service would remain on El Camino Real. The northbound ECR stop should be conveniently located in front of pedestrian paseo directly across from the westside station entrance (currently Linden Avenue).

Compliance number of bus bays and SamTrans Route ECR stop locations as shown above and with the Specific Plan Update-recommended bus loading dimensions described below would ensure impacts from future development under the Specific Plan Update would be *less than significant*.

Specific Plan Update-Recommended Bus Loading Dimensions

Dimensions for consecutive bus loading zones are based on VTA design criteria[20] and include a standard lane width (12 feet) for circulation and a 10-feet wide loading zone. If a sawtooth design is feasible, these dimensions may be reduced.

- Clearance between loading zones = 20 feet
- Minimum approach/departure clearance = 20 feet
  - Minimum if duckout = 50 feet
- Loading zones by vehicle type/length:
  - 30-fee cutaway and smaller vehicles = 45 feet
  - 31 to 35-feet cutaway vehicles = 50 feet
  - 40-feet transit buses (or >35-feet cutaway vehicles) = 55 feet
  - 45-feet OTR coaches = 60 feet

Significance Without Mitigation: Less than significant.

Pedestrian and Bicycle Facilities

Implementation of the Specific Plan Update would result in increased pedestrian and bicycle activity in and around the Specific Plan Area. To accommodate this growth, the Specific Plan Update would provide a network of "complete streets" that serve multiple travel modes, including walking and biking. The Specific Plan Update would enhance pedestrian and bicycle operations through new and widened sidewalks, improved intersection crossings, enhanced bicycle facilities along major and minor roadways, and a network of pedestrian and bicycle oriented streets and pathways throughout the Specific Plan Area. The Specific Plan Update's bicycle and pedestrian circulation frameworks are shown on Figures 3-13 and 3-14 in Chapter 3, Project Description, of this Draft EIR.

The Specific Plan Update proposes a continuous sidewalk network on all Specific Plan Area roads with several pedestrian paseos which will be closed to vehicle traffic. The Specific Plan Update's design guidelines include wayfinding, landscaping and pedestrian amenities such as benches and pedestrian-scaled lighting to illuminate sidewalks for improved safety and to create a more welcoming pedestrian environment.

Internal circulation at future development sites in the Specific Plan Area would be provided through a pedestrian-friendly interconnected street network, with short block lengths and a system of pedestrian walkways connecting all buildings to on-site automobile and bicycle parking areas, as well as open spaces. When pedestrian desire lines are located at mid-block locations, such as at transit stops or pathway entrances, mid-block crossing opportunities would be evaluated to provide adequate pedestrian crossings. Proposed internal walkways would be a minimum of six (6) feet wide where located adjacent to any common open spaces and a minimum of four (4) feet wide elsewhere. Connections between internal walkways and the public sidewalks and any adjacent pedestrian trails would be provided.

[20] Local Bus Service Design Guidelines, VTA Transit Sustainability Policy 2007.

Off-street pedestrian and bicycle trails include the proposed multi-use trail along Millbrae Avenue crossing US 101 and connecting to the existing Bail Trail segment. This trail comprises a segment of the San Francisco Bay Trail and continues north on Aviador Avenue to connect to the next segment of Bay Trail. Per the San Francisco Bay Trail guidelines, this paved trail shall be 10 to 12-feet wide, with two (2) feet of additional clear shoulder width on both sides and 14 to 16-feet clearance to the nearest roadway.

Class II bicycle lanes on Railroad Avenue/California Drive, Victoria Avenue, Adrian Road and South Station Street will provide access for bicyclists to much of the Specific Plan Area. Class III bicycle routes will enhance access on other roadways including El Camino Real and Rollins Road. Many proposed bicycle lanes and bicycle routes will connect to other existing and planned facilities outside the Specific Plan Area.

Bicycle parking is needed in addition to bike lanes and trails to support bicycle travel. Developments within the Specific Plan Area would need to provide safe, secure, and convenient long-term and short-term bicycle storage facilities and other appropriate amenities.

The Specific Plan Update is designed to be consistent with these policies, plans, and programs and would not preclude the development of bicycle and pedestrian facilities described here. Future development under the Specific Plan Update will be reviewed to ensure consistency with applicable design standards. These standards include designing driveway entrances to ensure they provide adequate sight distance or warning systems, providing adequate pedestrian crossings to accommodate pedestrian desire lines, and designing site access to ensure vehicle queues do not block pedestrian and bicycle facilities. Considering the pedestrian and bicycle improvements associated with the Specific Plan Update, implementation of the Specific Plan Update would improve existing pedestrian and bicycle conditions, minimize on-site potential conflicts between various modes, and provide safe and efficient pedestrian, bicycle, and vehicle connections within the Specific Plan Area and the surrounding circulation systems. Therefore, impacts to bicycle and pedestrian conditions would be *less than significant*.

Significance Without Mitigation: Less than significant.

TRANS-7	Implementation of the proposed Project, in combination with past, present, and reasonably foreseeable projects, would result in additional cumulatively considerable impacts.

The analysis of the proposed Specific Plan Update, above, addresses cumulative impacts to the transportation network in the city and its surroundings; accordingly, cumulative impacts would be the same as proposed Specific Plan Update-specific impacts.

Significance With Mitigation: Significant and unavoidable.

4.13.3 TOD #1 IMPACT DISCUSSION

This section evaluates the transportation-related impacts of the proposed TOD #1 project under Existing (2014), Near Term (2020) and Cumulative (2040) conditions.

TRANS-8	**The proposed TOD #1 project would 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, non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.**

This impact discussion focuses on vehicular transportation. Impacts related to other modes of transportation including transit and pedestrian and bicycle circulation are discussed under TRANS-13 below.

Methodology

Traffic forecasts for the proposed TOD #1 project were developed by calculating the total trips projected to be generated by the planned new development, distributing those trips to the transportation network by mode, and then assigning vehicle trips to the study intersections for evaluation.

Vehicle Trip Generation Estimates

The amount of vehicle traffic generated by land use changes in the proposed TOD #1 project was estimated by applying trip generation rates by land use type from the ITE *Trip Generation Manual (9th Edition)*, tailored to account for trip internalization using the MXD+ methodology[21] and reductions for transit ridership were applied in coordination with separate transit ridership forecasts.[22] Tables 4.13-29, 4.13-30, and 4.13-31 summarize trip generation by land use and travel mode for Existing (2014), Near Term (2020) and Cumulative (2040) conditions.

[21] Standard trip generation practice does not accurately account for development density, scale, design, accessibility, transit proximity, demographics and mix of uses - attributes which affect site traffic generation. Traffic generation estimates for mixed-use development based on the ITE Trip Generation Manual and Handbook are overstated by an average of 35 percent.

MXD+ represents a substantial improvement over conventional traffic estimation methods. It improves accuracy, virtually eliminates overestimation and is supported by substantial evidence. The MXD+ method was developed by Fehr & Peers for the United States Environmental Protection Agency and is continuously refined through trip generation surveys and studies conducted for other state, regional and local clients. MXD+ is based on pooled household survey data for 239 MXDs in six (6) diverse US regions, statistically derived equations on internal trip capture and mode shares, validation at 27 existing MXD sites primarily in California, and peer reviews. The MXD+ has been approved by the American Society of Civil Engineers.

[22] See the *Effects of Millbrae Station Area Specific Plan on BART Ridership and Parking* memorandum, dated November 13, 2014 and included in Appendix H of this Draft EIR for more details.

The proposed TOD #1 project's trip generation is forecasted to be slightly different between the 2014, 2020, and 2040 scenarios due to region-wide transportation system improvements that are projected to alter travel patterns and modes of project trips. For example, by 2040 Caltrain is expected to be running trains more frequently, faster, and more efficiently as part of the Caltrain Electrification and Modernization Project, which will increase the transit mode share and decrease the vehicle mode share for project trips.

TABLE 4.13-29 EXISTING (2014) TOD #1 TRIP GENERATION (PERSON-TRIPS)

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Vehicle	Transit	Walk/Bike	Vehicle	Transit	Walk/Bike
Residential	3,074	173	58	6	208	53	7
Retail	3,138	60	11	2	206	38	8
Office	2,681	292	91	12	250	78	10
Other[1]	0	0	0	0	0	0	0
Total	8,893	525	160	20	664	169	25

Notes:
1. Other includes industrial/non-retail commercial land uses to be removed and hotel land use to be added
Source: Fehr & Peers, 2015

TABLE 4.13-30 NEAR TERM (2020) TOD #1 TRIP GENERATION (PERSON-TRIPS)

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Vehicle	Transit	Walk/Bike	Vehicle	Transit	Walk/Bike
Residential	3,074	170	60	6	205	56	7
Retail	3,138	59	12	2	203	40	8
Office	2,681	284	99	12	244	85	10
Other[1]	0	0	0	0	0	0	0
Total	8,893	514	171	20	652	181	25

Notes:
1. Other includes industrial/non-retail commercial land uses to be removed and hotel land use to be added
Source: Fehr & Peers, 2015

TABLE 4.13-31 CUMULATIVE (2040) TOD #1 TRIP GENERATION (PERSON-TRIPS)

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Vehicle	Transit	Walk/Bike	Vehicle	Transit	Walk/Bike
Residential	3,074	163	67	6	197	64	7
Retail	3,138	57	14	2	196	48	8
Office	2,681	272	111	12	234	95	10
Other[1]	0	0	0	0	0	0	0
Total	8,893	493	192	20	626	206	25

Notes:
1. Other includes industrial/non-retail commercial land uses to be removed and hotel land use to be added
Source: Fehr & Peers, 2015

Vehicle Trip Distribution

Trip distribution refers to the directions from which the trips generated by the proposed TOD #1 project will approach and depart. The proposed trip distribution is based on a select zone analysis from the VTA-C/CAG model, locations of complementary land uses, existing travel patterns, familiarity with the study area, and engineering judgment. The trip distribution and paths of access differ slightly for each site, but general directions and percentages are shown in Figure 4.13-5.

Vehicle Trip Assignment

The proposed TOD #1 project's vehicle trips, presented in Tables 4.13-29, 4.13-30, and 4.13-31, were assigned to the roadway network based on the percentages shown on Figure 4.13-5. The proposed TOD #1 project's project-generated external vehicle trips were assigned to specific turning movements using Traffix, which are presented in Figure 4.13-10.

Level of Service

Existing (2014) Plus Project (TOD #1) Conditions

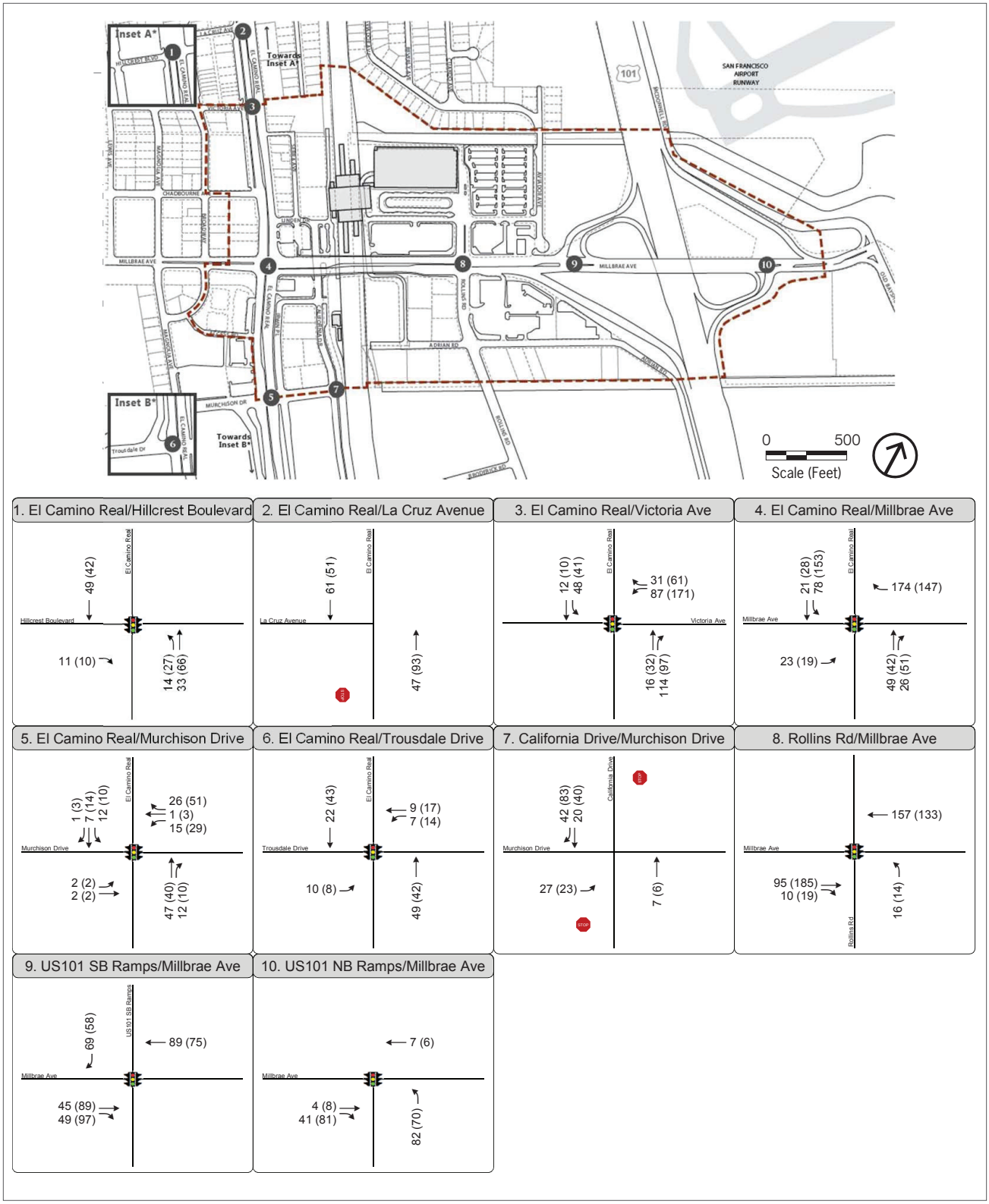
This section presents the results of the intersection and freeway level of service analysis for Existing (2014) Plus Project (TOD #1) conditions. Existing conditions form the baseline against which the proposed TOD #1 project's project-specific impacts are evaluated.

Existing (2014) Plus Project Intersection Operations

Under the Existing (2014) Plus Project (TOD #1) scenario, the proposed TOD #1 project is forecasted to generate 328 inbound and 197 outbound net new vehicle-trips (for a total of 525 net new vehicle trips) during the weekday AM peak hour and 278 inbound and 386 outbound net new vehicle-trips (for a total of 664 net new vehicle trips) during the weekday PM peak hour.

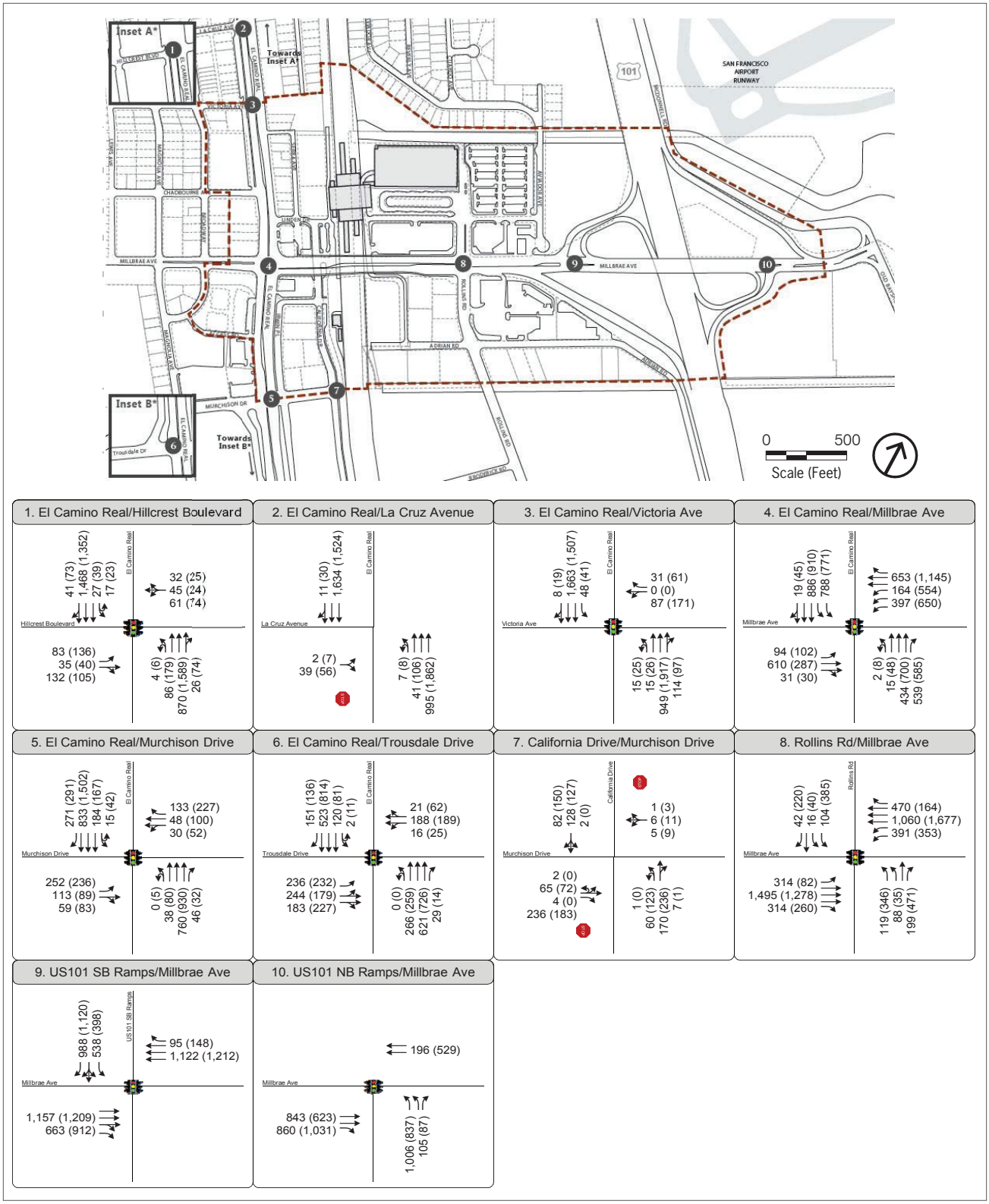
All of the proposed TOD #1 project's project-generated vehicle trips, as shown on Figure 4.13-10, were added to the existing turning movement volumes shown on Figure 4.13-2. The resulting Existing (2014) Plus Project (TOD #1) peak hour traffic volumes for the study intersections are presented in Figure 4.13-11. Table 4.13-32 compares the Existing (2014) and Existing (2014) Plus Project (TOD #1) intersection levels of service for the weekday AM and PM peak hours. Detailed intersection levels of service calculations are provided in Appendix H of this Draft EIR.

With the exception of intersection #4 El Camino Real/Millbrae Avenue, all study intersections would continue to operate at an acceptable LOS D or better with the proposed TOD #1 project. Therefore, impacts to these intersections would be *less than significant* under Existing (2014) Plus Project (TOD #1) conditions.



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-10
Existing (2014) TOD #1 Trip Assignment



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-11

Existing (2014) Plus Project (TOD #1) Intersection Peak Hour Volumes

The proposed TOD #1 project would contribute traffic and worsen traffic operations from acceptable levels to unacceptable levels, or increase delay by more than five (5) seconds at study intersections that currently operate at unacceptable levels of service, resulting in a *significant* impact at the following location:

- El Camino Real/Millbrae Avenue – AM and PM peak hour

TABLE 4.13-32 EXISTING (2014) PLUS PROJECT (TOD #1) INTERSECTION LOS RESULTS

Intersection	Control[1]	Peak Hour	Existing		Existing Plus Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	AM	14	B	13	B
		PM	16	B	16	B
2. El Camino Real / La Cruz Avenue	SSS	AM	12	B	11	B
		PM	14	B	12	B
3. El Camino Real / Victoria Avenue	Signal	AM	<10	A	<10	A
		PM	<10	A	15	B
4. El Camino Real / Millbrae Avenue	Signal	AM	50	D	54	D[4]
		PM	74	E	>80	F
5. El Camino Real / Murchison Drive	Signal	AM	24	C	25	C
		PM	29	C	31	C
6. El Camino Real / Trousdale Drive	Signal	AM	37	D	38	D
		PM	33	C	34	C
7. California Drive / Murchison Drive	SSS	AM	19	C	21	C
		PM	18	C	21	C
8. Rollins Road / Millbrae Avenue	Signal	AM	31	C	31	C
		PM	37	D	38	D
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	AM	16	B	17	B
		PM	21	C	23	C
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	AM	14	B	15	B
		PM	14	B	14	B

Notes: Bold indicates unacceptable operations; Shaded indicates potentially significant impact

1. SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. LOS = Level of Service. For signalized intersections, LOS based on average intersection delay, based on the methodology in the *Highway Capacity Manual*, 2000.
4. Simple signal timing modifications are assumed to be implemented as necessary when traffic volumes change.

Source: Fehr & Peers, 2015.

Impact TRANS-TOD#1-8.1: The proposed TOD #1 project would add traffic to intersection #4 El Camino Real/Millbrae Avenue, which currently operates at LOS E during the PM peak hour. Traffic added by the proposed TOD #1 project would increase vehicle delay at this intersection by more than five (5) seconds in the PM peak hour under Existing (2014) Plus Project (TOD #1) conditions and result in the intersection operating at LOS F.

Mitigation Measure TRANS-TOD#1-8.1: Implement Mitigation Measure TRANS-SP-1.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, while the proposed TOD #1 project would be required to comply with the Specific Plan Update

Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the TOD #1 project area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at this intersection would be significant and unavoidable.

Existing (2014) Freeway Operations

The study freeway segments and ramp on US 101 were analyzed to determine if added traffic resulting from the project would significantly impact the freeway system. The results of the freeway segment and ramp capacity analyses are shown in Table 4.13-33 and Table 4.13-34. All freeway segments operate at or better than the CMP level of service standard under Existing (2014) Plus Project (TOD #1) conditions with the exception of following two (2) northbound segments during the AM peak hour:

- Northbound US 101 from Millbrae Avenue to Broadway – AM peak hour
- Northbound US 101 from Broadway to Peninsula Avenue – AM peak hour

TABLE 4.13-33 EXISTING (2014) PLUS PROJECT (TOD #1) FREEWAY SEGMENT LOS RESULTS

Segment	Direction	Peak Hour	Existing			Existing Plus Project				
			Volume	V/C [1]	LOS	Volume	V/C [1]	LOS	Trips Added	% of Cap.
A. US 101 from Grand Avenue to Produce Avenue	NB	AM	8,510	0.93	E	8,541	0.93	E	31	0.3%
		PM	6,923	0.75	D	6,984	0.76	D	61	0.7%
	SB	AM	8,004	0.87	D	8,057	0.88	D	53	0.6%
		PM	7,692	0.84	D	7,738	0.84	D	46	0.5%
B. US 101 from Produce Avenue to I-380	NB	AM	9,480	0.82	D	9,513	0.83	D	33	0.3%
		PM	7,281	0.63	C	7,346	0.64	C	65	0.6%
	SB	AM	8,730	0.76	D	8,792	0.76	D	62	0.5%
		PM	9,006	0.78	D	9,059	0.79	D	53	0.5%
C. US 101 from I-380 to Millbrae Avenue	NB	AM	11,197	0.97	E	11,238	0.98	E	41	0.4%
		PM	8,706	0.76	D	8,787	0.76	D	81	0.7%
	SB	AM	8,157	0.71	C	8,239	0.72	D	82	0.7%
		PM	8,432	0.73	D	8,502	0.74	D	70	0.6%
D. US 101 from Millbrae Avenue to Broadway	NB	AM	11,105	1.21	F	11,174	1.21	F	69	0.8%
		PM	8,630	0.94	E	8,688	0.94	E	58	0.6%
	SB	AM	7,409	0.81	D	7,458	0.81	D	49	0.5%
		PM	7,935	0.86	D	8,032	0.87	D	97	1.1%
E. US 101 from Broadway to Peninsula Avenue	NB	AM	11,565	1.26	F	11,630	1.26	F	66	0.7%
		PM	8,406	0.91	E	8,461	0.92	E	55	0.6%
	SB	AM	7,659	0.83	D	7,705	0.84	D	47	0.5%
		PM	8,185	0.89	D	8,277	0.90	E	92	1.0%

Notes: **Bold** indicates unacceptable operation. Shaded indicates significant impact.
[1] V/C = Volume to Capacity ratio.
Source: Fehr & Peers, 2015.

As shown in Table 4.13-33 all freeway segments that operate under capacity under Existing (2014) conditions will continue to operate under capacity with the addition of the proposed TOD #1 project-generated traffic. All

freeway segments that operate over capacity under Existing (2014) conditions continue to operate over capacity with the addition of the proposed TOD #1-project-generated traffic. However, the proposed TOD #1 project's project-added traffic to those segments represents less than one (1) percent of segment capacity and therefore, impacts to freeway segments under Existing (2014) Plus Project (TOD #1) conditions are considered *less than significant* .

TABLE 4.13-34 EXISTING (2014) PLUS PROJECT (TOD #1) FREEWAY RAMP LOS RESULTS

Freeway Interchange and Ramp		Peak Hour	Existing			Existing Plus Project				
			Volume	V/C [1]	LOS	Volume	V/C [1]	LOS	Trips Added	% of Cap.
US 101 / Millbrae Avenue										
NB	Off-Ramp to Millbrae Avenue	AM	1,029	0.51	C	1,098	0.55	C	69	3.5%
		PM	854	0.43	B	912	0.46	B	58	2.9%
	On-Ramp from Millbrae Avenue	AM	1,275	0.64	C	1,316	0.66	C	41	2.1%
		PM	1,058	0.53	C	1,139	0.57	C	81	4.1%
SB	Off-Ramp to Millbrae Avenue	AM	1,457	0.73	D	1,539	0.77	D	82	4.1%
		PM	1,460	0.73	D	1,530	0.77	D	70	3.5%
	On-Ramp from Westbound Millbrae Avenue	AM	95	0.05	A	95	0.05	A	0	0.0%
		PM	148	0.08	A	148	0.08	A	0	0.0%
	On-Ramp from Eastbound Millbrae Avenue	AM	614	0.31	B	663	0.33	B	49	2.5%
		PM	815	0.41	B	912	0.46	B	97	4.9%

Notes: Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.
1. V/C = Volume to Capacity ratio
Source: Fehr & Peers, 2015.

As shown in Table 4.13-34 all freeway ramps at the US 101 Millbrae Avenue interchange will continue to operate under capacity and at an acceptable level of service with the addition of proposed TOD #1 project's project-generated traffic. Therefore, impacts to freeway ramps under existing plus project conditions are considered *less than significant*.

Near Term (2020) Plus Project (TOD #1) Conditions

This section evaluates the traffic-related impacts of the proposed TOD #1 project under Near Term (2020) conditions, which represent projected conditions in 2020, including traffic estimates for probable future developments and planned and funded system improvements. Near Term 2020 baseline (No Project) traffic forecasts were developed through linear interpolation between the existing counts and the Year 2040 Baseline traffic forecasts (which are discussed in the Cumulative (2040) conditions section below). Near Term (2020) Baseline volumes were developed to assess near term effects of the proposed TOD #1 project. The VTA-C/CAG 2040 and 2013 models, along with existing intersection turning movement counts, were used to develop Year 2020 Baseline (No Project) traffic forecasts. Intersection turning movement volumes for Near Term (2020) No Project (TOD #1) are shown on Figure 4.13-12.

Near Team (2020) Intersection Operations

Under the Near Term (2020) Plus Project (TOD #1) scenario, the proposed TOD #1 project is forecasted to generate 320 inbound and 193 outbound net new vehicle-trips (for a total of 514 net new vehicle trips) during the weekday AM peak hour and 274 inbound and 378 outbound net new vehicle-trips (for a total of 652 net new vehicle trips) during the weekday PM peak hour. All of the proposed TOD #1 project's project-generated vehicle trips shown in Table 4.13-30 were added to the Near Term (2020) No Project (TOD #1) traffic volumes in Figure 4.13-12. The resulting Near Term (2020) Plus Project (TOD #1) traffic volumes for the proposed TOD #1 project are presented in Figure 4.13-13.

Table 4.13-35 compares the Near Term (2020) and Near Term (2020) Plus Project (TOD #1) intersection levels of service for the weekday AM and PM peak hours. Detailed intersection levels of service calculations are provided in Appendix H of this Draft EIR.

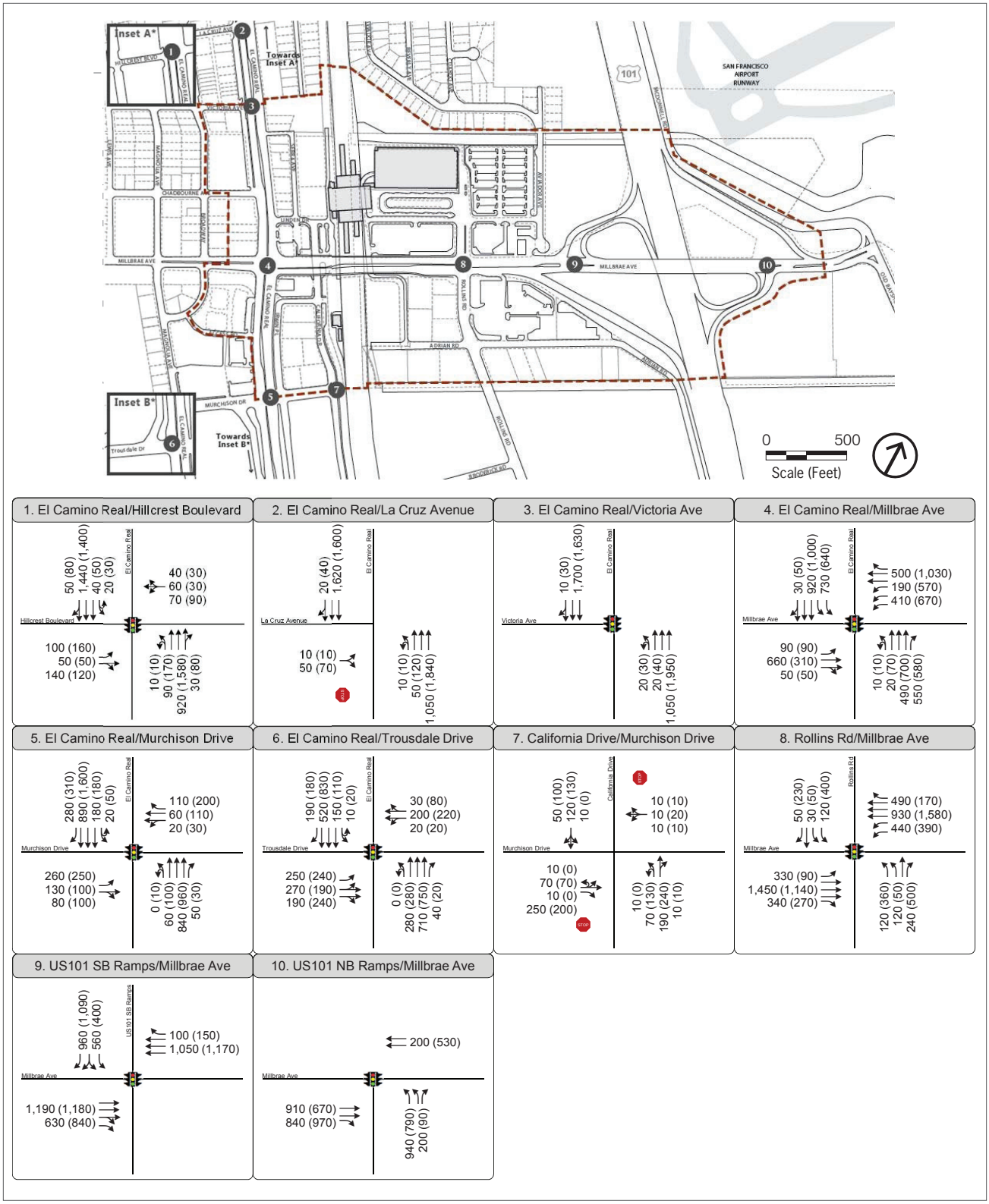
TABLE 4.13-35 NEAR TERM (2020) INTERSECTION LOS RESULTS (TOD #1)

Intersection	Traffic Control[1]	Peak Hour	Existing		Near Term No Project		Near Term Plus Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	AM	14	B	17	B	17	B
		PM	16	B	19	B	19	B
2. El Camino Real / La Cruz Avenue	SSS	AM	12	B	21	C	14	B
		PM	14	B	16	C	12	B
3. El Camino Real / Victoria Avenue	Signal	AM	<10	A	<10	A	<10	A
		PM	<10	A	<10	A	15	B
4. El Camino Real / Millbrae Avenue	Signal	AM	50	D	54	D	59	E[4]
		PM	74	E	> 80	F	>80	F
5. El Camino Real / Murchison Drive	Signal	AM	24	C	26	C	27	C
		PM	29	C	34	C	36	D
6. El Camino Real / Trousdale Drive	Signal	AM	37	D	40	D	41	D
		PM	33	C	37	D	38	D
7. California Drive / Murchison Drive	SSS	AM	19	B	21	C	24	C
		PM	18	B	20	C	23	C
8. Rollins Road / Millbrae Avenue	Signal	AM	31	C	37	D	37	D
		PM	37	D	40	D	41	D
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	AM	16	B	17	B	18	B
		PM	21	C	22	C	25	C
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	AM	14	B	14	B	15	B
		PM	14	B	14	B	14	B

Notes: Bold indicates unacceptable operations; Shaded indicates potentially significant impact

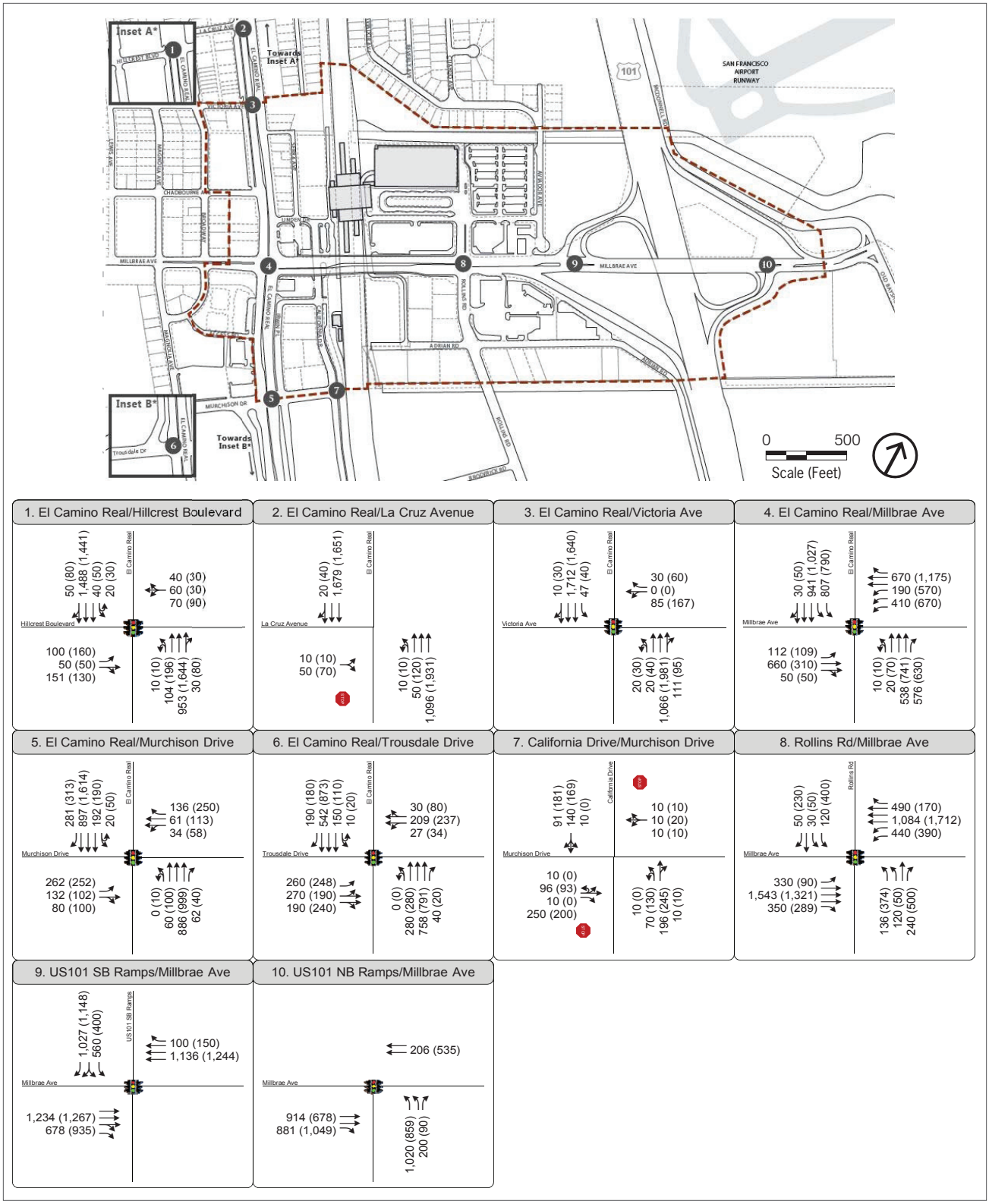
1. SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. LOS = Level of Service. For signalized intersections, LOS based on average intersection delay, based on the methodology in the *Highway Capacity Manual*, 2000.
4. Simple signal timing modifications are assumed to be implemented as necessary when traffic volumes change.

Source: Fehr & Peers, 2015.



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-12
Near Term (2020) No Project Peak Hour Traffic Volumes



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-13
Near Term (2020) Plus Project (TOD #1) Peak Hour Traffic Volumes

With the exception of intersection #4 El Camino Real/Millbrae Avenue, all study intersections would continue to operate at an acceptable LOS D or better with the proposed TOD #1 project. Therefore, impacts to these intersections would be *less than significant* under Near Term (2020) Plus Project (TOD #1) conditions.

The proposed TOD #1 project would contribute traffic and worsen traffic operations from acceptable levels to unacceptable levels or add traffic to intersections currently operating at unacceptable levels at the intersection #4 El Camino Real/Millbrae Avenue during AM and PM peak hours. This is a *significant* impact.

Impact TRANS-TOD#1-8.2: The proposed TOD #1 project would result in the addition of traffic to intersection #4 El Camino Real/Millbrae Avenue and causing this intersection to degrade from LOS D to LOS E in the AM peak hour and would add more than five (5) seconds of delay in the PM peak hour (operating at LOS F under baseline), resulting in LOS F under Near Term (2020) Plus Project (TOD #1) conditions. The worsening of traffic conditions at this location is due primarily to the increase in traffic from the proposed TOD #1 project using El Camino Real as a regional and local access point.

Mitigation Measure TRANS-TOD#1-8.2: Implement of Mitigation Measure TRANS-SP-1.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, while the proposed TOD #1 project would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the TOD #1 project area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at this intersection would be significant and unavoidable.

Near Team (2020) Freeway Operations

The freeway mainline and ramp operations under the Near Term (2020) No Project (TOD #1) and Plus Project (TOD #1) conditions are presented in Table 4.13-36 and Table 4.13-37. Near term growth not associated with the proposed TOD #1 project would cause several of the segments to operate at LOS E or F under Near Term (2020) No Project (TOD #1) conditions. The following freeway segments are expected to operate worse than the CMP level of service standard under Near Term (2020) Plus Project (TOD #1) conditions:

- Northbound US 101 from Grand Avenue to Produce Avenue – AM peak hour
- Northbound US 101 from I-380 to Millbrae Avenue – AM peak hour
- Northbound US 101 from Millbrae Avenue to Broadway – AM and PM peak hours
- Northbound US 101 from Broadway to Peninsula Avenue – AM peak hours

TABLE 4.13-36 NEAR TERM (2020) FREEWAY SEGMENT LOS RESULTS (TOD #1)

Segment	Dir.	Peak Hour	Existing		Near Term			Near Term Plus Project				
			V/C [1]	LOS	Vol.	V/C[1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
A. US 101 from Grand Avenue to Produce Avenue	NB	AM	0.93	E	9,242	1.00	F	9,273	1.01	F	31	0.3%
		PM	0.75	D	7,412	0.81	D	7,471	0.81	D	59	0.6%
	SB	AM	0.87	D	8,692	0.94	E	8,744	0.95	E	52	0.6%
		PM	0.84	D	8,235	0.90	E	8,280	0.90	E	45	0.5%
B. US 101 from Produce Avenue to I-380	NB	AM	0.82	D	10,295	0.90	E	10,328	0.90	E	33	0.3%
		PM	0.63	C	7,795	0.68	C	7,858	0.68	C	63	0.5%
	SB	AM	0.76	D	9,481	0.82	D	9,541	0.83	D	60	0.5%
		PM	0.78	D	9,642	0.84	D	9,693	0.84	D	52	0.5%
C. US 101 from I-380 to Millbrae Avenue	NB	AM	0.97	E	12,159	1.06	F	12,200	1.06	F	41	0.4%
		PM	0.76	D	9,320	0.81	D	9,399	0.82	D	79	0.7%
	SB	AM	0.71	C	8,859	0.77	D	8,939	0.78	D	80	0.7%
		PM	0.73	D	9,027	0.78	D	9,096	0.79	D	69	0.6%
D. US 101 from Millbrae Avenue to Broadway	NB	AM	1.21	F	12,083	1.31	F	12,150	1.32	F	67	0.7%
		PM	0.94	E	9,205	1.00	F	9,263	1.01	F	58	0.6%
	SB	AM	0.81	D	8,069	0.88	D	8,117	0.88	D	48	0.5%
		PM	0.86	D	8,527	0.93	E	8,622	0.94	E	95	1.0%
E. US 101 from Broadway to Peninsula Avenue	NB	AM	1.26	F	12,581	1.37	F	12,645	1.37	F	64	0.7%
		PM	0.91	E	8,965	0.97	E	9,020	0.98	E	55	0.6%
	SB	AM	0.83	D	8,340	0.91	E	8,385	0.91	E	46	0.5%
		PM	0.89	D	8,795	0.96	E	8,885	0.97	E	90	1.0%

Notes: Bold indicates unacceptable operation. Shaded indicates significant impact. Dir. = Direction. Vol. = Volume.
[1.] V/C = Volume-to-Capacity ratio.
Source: Fehr & Peers, 2015.

As shown in Table 4.13-36 all freeway segments that operate under capacity under Near Term (2020) No Project (TOD #1) conditions will continue to operate under capacity with the addition of proposed TOD #1 project-generated traffic. All freeway segments that operate over capacity under Near Term (2020) No Project (TOD #1) conditions continue to operate over capacity with the addition of the proposed TOD #1 project's project-generated traffic. However, the proposed TOD #1 project's project-added traffic to those segments represents less than one (1) percent of segment capacity and therefore, impacts to freeway segments under Near Term (2020) Plus Project (TOD #1) conditions are considered *less than significant*.

TABLE 4.13-37 NEAR TERM (2020) FREEWAY RAMP LOS RESULTS (TOD #1)

Freeway Interchange and Ramp		Peak Hour	Existing		Near Term			Near Term Plus Project				
			V/C [1]	LOS	Vol.	V/C[1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
US 101 / Millbrae Avenue												
NB	Off-Ramp to Millbrae Avenue	AM	0.51	C	1,140	0.57	C	1,207	0.60	C	67	3.4%
		PM	0.43	B	880	0.44	B	938	0.47	B	58	2.9%
	On-Ramp from Millbrae Avenue	AM	0.64	C	1,384	0.69	C	1,425	0.71	D	41	2.1%
		PM	0.53	C	1,133	0.57	C	1,212	0.61	C	79	4.0%
SB	Off-Ramp to Millbrae Avenue	AM	0.73	D	1,520	0.76	D	1,600	0.80	D	80	4.0%
		PM	0.73	D	1,490	0.75	D	1,559	0.78	D	69	3.5%
	On-Ramp from Westbound Millbrae Avenue	AM	0.05	A	100	0.06	A	100	0.06	A	0	0.0%
		PM	0.08	A	150	0.08	A	150	0.08	A	0	0.0%
	On-Ramp from Eastbound Millbrae Avenue	AM	0.31	B	630	0.32	B	678	0.34	B	48	2.4%
		PM	0.41	B	840	0.42	B	935	0.47	B	95	4.8%

Notes: Bold indicates unacceptable operation. Shaded indicates significant impact.

1. V/C = Volume-to-Capacity ratio

Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.

Source: Fehr & Peers, 2015.

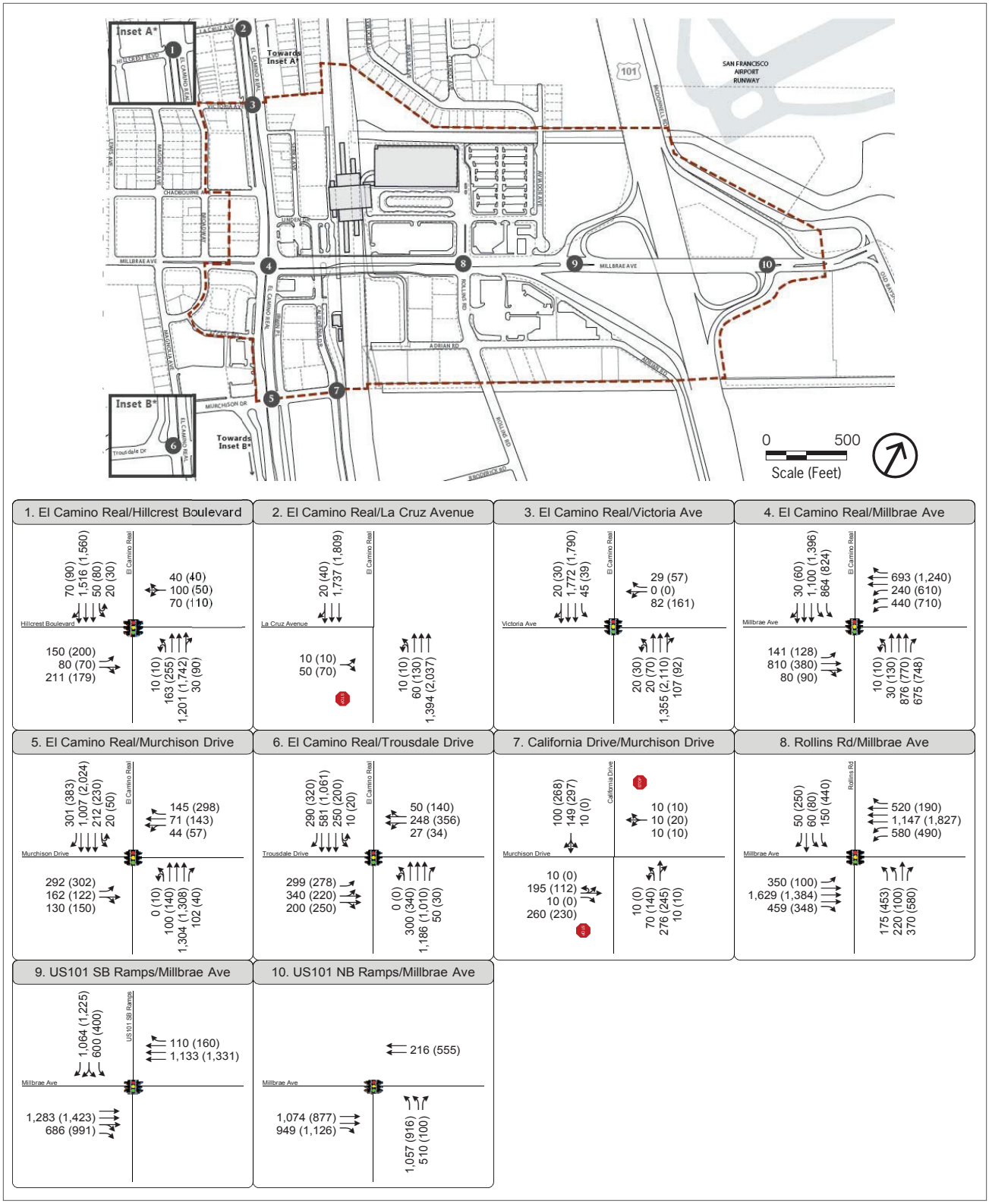
As shown in Table 4.13-37 all freeway ramps at the US 101 Millbrae Avenue interchange will continue to operate under capacity and at an acceptable level of service with the addition of the proposed TOD #1 project's project-generated traffic. Therefore, impacts to freeway ramps under Near Term (2020) Plus Project (TOD #1) conditions are considered *less than significant.*

Cumulative (2040) Conditions Plus Project (TOD #1)

This section evaluates the traffic-related impacts of the proposed TOD #1 project under cumulative conditions. Cumulative (2040) No Project conditions represent projected conditions in 2040, including traffic estimates for probable future developments and planned and funded system improvements. See TRANS-1 under the subheading "Cumulative (2040) No Project (Specific Plan Update) conditions" for a discussion of 2040 baseline volume forecasts. Intersection turning movement volumes for Cumulative (2040) No Project (Specific Plan Update) and Plus Project (TOD #1) conditions are shown on Figures 4.13-8 and 4.13-14, respectively.

Cumulative (2040) Intersection Operations

Under the Cumulative (2040) Plus Project (TOD #1) scenario, the proposed TOD #1 project is forecasted to generate 307 inbound and 185 outbound net new vehicle-trips (for a total of 493 net new vehicle trips) during the weekday AM peak hour and 264 inbound and 363 outbound net new vehicle-trips (for a total of 626 net new vehicle trips) during the weekday PM peak hour.



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-14
Cumulative (2040) Plus Project (TOD #1) Peak Hour Traffic Volumes

TABLE 4.13-38 CUMULATIVE (2040) INTERSECTION LOS RESULTS (TOD #1)

Intersection	Traffic Control[1]	Peak Hour	Existing		Cumulative No Project		Cumulative Plus Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	AM	14	B	23	C	22	C
		PM	16	B	26	C	26	C
2. El Camino Real / La Cruz Avenue	SSS	AM	12	B	19	C	13	B
		PM	14	B	17	B	12	B
3. El Camino Real / Victoria Avenue	Signal	AM	<10	A	<10	A	<10	A
		PM	<10	A	<10	A	16	B
4. El Camino Real / Millbrae Avenue	Signal	AM	50	D	75	E	80	F[4]
		PM	74	E	> 80	F	>80	F[4]
5. El Camino Real / Murchison Drive	Signal	AM	24	C	32	C	34	C
		PM	29	C	50	D	56	E
6. El Camino Real / Trousdale Drive	Signal	AM	37	D	51	D	53	D
		PM	33	C	51	D	45	D[4]
7. California Drive / Murchison Drive	SSS	AM	19	B	29	D	49	E
		PM	18	B	29	D	36	E
8. Rollins Road / Millbrae Avenue	Signal	AM	31	C	54	D	54	D
		PM	37	D	48	D	50	D
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	AM	16	B	18	B	19	B
		PM	21	C	26	C	34	C
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	AM	14	B	17	B	18	B
		PM	14	B	14	B	14	B

Notes: Bold indicates unacceptable operations; Shaded indicates potentially significant impact

1. SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. LOS = Level of Service. For signalized intersections, LOS based on average intersection delay, based on the methodology in the *Highway Capacity Manual*, 2000.
4. Simple signal timing modifications are assumed to be implemented as necessary when traffic volumes change.

Source: Fehr & Peers, 2015.

All TOD #1 project-generated vehicle trips shown in Table 4.13-31 were added to the Cumulative (2040) No Project (Specific Plan Update) traffic volumes in Figure 4.13-8. The resulting Cumulative (2040) Plus Project (TOD #1) traffic volumes are presented in Figure 4.13-14.

Table 4.13-38 compares the Cumulative (2040) and Cumulative (2040) Plus Project (TOD #1) intersection levels of service for the weekday AM and PM peak hours. Detailed intersection levels of service calculations are provided in Appendix H of this Draft EIR.

The proposed TOD #1 project would contribute traffic and worsen traffic operations from acceptable levels to unacceptable levels resulting in a *significant* impact at the following locations:

- El Camino Real/Millbrae Avenue – AM and PM peak hours
- El Camino Real/Murchison Drive – PM peak hour
- California Drive/Murchison Drive – AM and PM peak hours

The remaining intersections would continue to operate at an acceptable LOS D or better with the proposed TOD #1 project. Therefore, impacts to these intersections would be *less than significant* under Cumulative (2040) Plus Project (TOD #1) conditions.

Impact TRANS-TOD#1-8.3: The proposed TOD #1 project would add traffic to intersection #4 El Camino Real/Millbrae Avenue, which is expected to operate at LOS E during the AM peak hour and at LOS F during the PM peak hour under Cumulative (2040) No Project (TOD #1) conditions. Traffic added by the proposed TOD #1 project would increase vehicle delay at this intersection by more than five (5) seconds in the AM and PM peak hours under Cumulative (2040) Plus Project (TOD #1) conditions and result in the intersection operating at LOS F.

Mitigation Measure TRANS-TOD#1-8.3: Implement Mitigation Measure TRANS-SP-1.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, while the proposed TOD #1 project would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the TOD #1 project area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at this intersection would be significant and unavoidable.

Impact TRANS-TOD#1-8.4: The proposed TOD #1 project would result in the addition of traffic to intersection #5 El Camino Real/Murchison Drive and would cause this intersection to degrade from LOS D to LOS E in the PM peak hour under Cumulative (2040) Plus Project (TOD #1) conditions.

Mitigation Measure TRANS-TOD#1-8.4: Implement Mitigation Measure TRANS-SP-1.4a.

Significance With Mitigation: Significant and Unavoidable. The modified intersection footprint of the El Camino Real/Murchison Drive intersection under this mitigation measure would reduce the average delay at the intersection to acceptable levels. However, this mitigation measure requires participation or and decisions by agencies over which Millbrae has no authority, and it is not within the City's power to impose such mitigation. Although the mitigation is physically feasible, it is legally infeasible. As a result, implementation cannot be guaranteed, and there can be no assurance that impacts would be reduced to a less-than-significant level. The impact at the El Camino Real/Murchison Drive intersection would therefore remain significant and unavoidable.

Impact TRANS-TOD#1-8.5: The proposed TOD #1 project would contribute a considerable level of traffic to intersection #7 California Drive/Murchison Drive and cause this intersection to degrade from LOS D to LOS E in the AM and PM peak hour under Cumulative (2040) Plus Project (TOD #1) conditions. In addition, the intersection meets the Caltrans peak hour signal warrant for urbanized areas (Warrant 3).

Mitigation Measure TRANS-TOD#1-8.5: Implement Mitigation Measure TRANS-SP-1.5.

Significance With Mitigation: Significant and Unavoidable. The signalization of the California Drive/Murchison Drive intersection under this mitigation measure would reduce the average delay at the intersection to acceptable levels. However, this mitigation measure requires participation or and decisions by agencies over which Millbrae has no authority, and it is not within the City's power to impose such mitigation. Although the mitigation is physically feasible, it is legally infeasible. As a result, implementation cannot be guaranteed, and there can be no assurance that impacts would be reduced to a less-than-significant level. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. The impact at the California Drive/Murchison Drive intersection would therefore remain significant and unavoidable.

Cumulative (2040) Freeway Operations

The cumulative freeway mainline and ramp operations under the Cumulative (2040) No Project (TOD #1) and Plus Project (TOD #1) conditions are presented in Table 4.13-39 and Table 4.13-40. Cumulative growth not associated with the proposed TOD #1 project would cause nearly all of the segments to operate at LOS E or F under Cumulative (2040) No Project (TOD #1) conditions. As shown in Table 4.13-38 all freeway segments that operate under capacity under Cumulative (2040) No Project (TOD #1) conditions will continue to operate under capacity with the addition of project-generated traffic. All freeway segments that operate over capacity under Cumulative (2040) No Project (TOD #1) conditions continue to operate over capacity with the addition of the proposed TOD #1 project's project-generated traffic. However, the proposed TOD #1 project's project-added traffic to those segments represents less than one (1) percent of segment capacity and therefore, impacts to freeway segments under Cumulative (2040) Plus Project (TOD #1)conditions are considered *less than significant*.

As shown in Table 4.13-39 all freeway ramps at the US 101/Millbrae Avenue interchange will continue to operate under capacity and at an acceptable level of service with the addition of project-generated traffic.

TABLE 4.13-39 CUMULATIVE FREEWAY SEGMENT LOS RESULTS (TOD #1)

Segment	Dir.	Peak Hour	Existing		Cumulative			Cumulative Plus Project				
			V/C [1]	LOS	Vol.	V/C[1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
A. US 101 from Grand Avenue to Produce Avenue	NB	AM	0.93	E	10,870	1.18	F	10,900	1.18	F	29	0.3%
		PM	0.75	D	8,525	0.93	E	8,582	0.93	E	57	0.6%
	SB	AM	0.87	D	10,224	1.11	F	10,274	1.12	F	50	0.5%
		PM	0.84	D	9,472	1.03	F	9,515	1.03	F	43	0.5%
B. US 101 from Produce Avenue to I-380	NB	AM	0.82	D	12,110	1.05	F	12,141	1.06	F	31	0.3%
		PM	0.63	C	8,966	0.78	D	9,027	0.78	D	61	0.5%
	SB	AM	0.76	D	11,152	0.97	E	11,209	0.97	E	58	0.5%
		PM	0.78	D	11,091	0.96	E	11,140	0.97	E	50	0.4%
C. US 101 from I-380 to Millbrae Avenue	NB	AM	0.97	E	14,302	1.24	F	14,341	1.25	F	39	0.3%
		PM	0.76	D	10,721	0.93	E	10,797	0.94	E	76	0.7%
	SB	AM	0.71	C	10,420	0.91	E	10,497	0.91	E	77	0.7%
		PM	0.73	D	10,384	0.90	E	10,450	0.91	E	66	0.6%
D. US 101 from Millbrae Avenue to Broadway	NB	AM	1.21	F	14,361	1.56	F	14,425	1.57	F	64	0.7%
		PM	0.94	E	10,526	1.14	F	10,581	1.15	F	55	0.6%
	SB	AM	0.81	D	9,570	1.04	F	9,616	1.05	F	46	0.5%
		PM	0.86	D	9,874	1.07	F	9,965	1.08	F	91	0.99%
E. US 101 from Broadway to Peninsula Avenue	NB	AM	1.26	F	14,948	1.62	F	15,009	1.63	F	61	0.7%
		PM	0.91	E	10,250	1.11	F	10,302	1.12	F	52	0.6%
	SB	AM	0.83	D	9,888	1.07	F	9,932	1.08	F	44	0.5%
		PM	0.89	D	10,182	1.11	F	10,268	1.12	F	86	0.9%

Notes: **Bold** indicates unacceptable operation. Shaded indicates significant impact. Dir. = Direction. Vol. = Volume.
[1] V/C = Volume to Capacity ratio.
Source: Fehr & Peers, 2015.

TABLE 4.13-40 CUMULATIVE (2040) FREEWAY RAMP LOS RESULTS (TOD #1)

Freeway Interchange and Ramp		Peak Hour	Existing		Cumulative			Cumulative Plus Project				
			V/C [1]	LOS	Vol.	V/C[1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
US 101 / Millbrae Avenue												
NB	Off-Ramp to Millbrae Avenue	AM	0.51	C	1,490	0.75	D	1,554	0.78	D	64	3.2%
		PM	0.43	B	950	0.48	B	1,005	0.50	C	55	2.8%
	On-Ramp from Millbrae Avenue	AM	0.64	C	1,628	0.81	D	1,667	0.83	D	39	2.0%
		PM	0.53	C	1,303	0.65	C	1,379	0.69	C	76	3.8%
SB	Off-Ramp to Millbrae Avenue	AM	0.73	D	1,600	0.80	D	1,677	0.84	D	77	3.9%
		PM	0.73	D	1,570	0.79	D	1,636	0.82	D	66	3.3%
	On-Ramp from Westbound Millbrae Avenue	AM	0.05	A	110	0.06	A	110	0.06	A	0	0.0%
		PM	0.08	A	160	0.09	A	160	0.09	A	0	0.0%
	On-Ramp from Eastbound Millbrae Avenue	AM	0.31	B	640	0.32	B	686	0.34	B	46	2.3%
		PM	0.41	B	900	0.45	B	991	0.50	B	91	4.6%

Notes: **Bold** indicates unacceptable operation. Shaded indicates significant impact.
[1] V/C = Volume to Capacity ratio
Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.
Source: Fehr & Peers, 2015.

TOD #1 (Temporary) Construction Traffic

Construction associated with the proposed TOD #1 project would temporarily affect off-site circulation due to increased truck traffic to and from the development sites. Construction would also disrupt on-site travel due to the potential closure of sidewalks and blockage of bicycle facilities and transit routes during construction. However, compliance with Specific Plan Update Policy IMP 11 discussed under TRANS-1, which would require the preparation and approval of a Construction Management Plan prior to the entitlement process, would ensure construction related impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

Parking

Vehicular Parking

Parking for the proposed TOD #1 project is provided in an underground parking garage accessed by two (2) driveways to the proposed extension of Railroad Avenue.

As shown in Table 3-9 in Chapter 3, Project Description, of this Draft EIR, the proposed parking supply for vehicles is 1,067 spaces.

As shown in Table 4.13-23, the Specific Plan Update automobile parking supply rates for sites located near Millbrae Station are 1.5 spaces per 1,000 square feet for office, 1.5 spaces per 1,000 square feet for retail, and 1 space per unit for residential. Applying these rates to the proposed TOD #1 project is required to provide 948 parking spaces. Therefore the proposed parking supply is sufficient and impacts are *less than significant*.

Significance Without Mitigation: Less than significant.

Bicycle Parking

The Specific Plan Update long-term bicycle parking supply rates for sites located near Millbrae Station are 1 space per 10,000 square feet for office, 1 space per 12,000 square feet for retail, and 0.5 spaces for each bedroom for residential and 1 space per 20,000 square feet for office, 1 space per 2,000 to 5,000 square feet for retail, and 0.05 spaces for each bedroom for residential for short-term (shown in Table 4.13-24). These rates applied to the proposed TOD #1 project results in the required provision of 549 long-term and 69 short-term bicycle parking spaces, for a total of 693 bicycle parking spaces.

Therefore, as shown in Table 3-9 in Chapter 3, the proposed bicycle parking supply is sufficient and impacts are *less than significant*.

Significance Without Mitigation: Less than significant.

TRANS-9	The proposed TOD #1 project would conflict with an applicable congestion management program, including, but not limited to, level of service standards, travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

As previously discussed under TRANS-2, the CMP requires new developments that are projected to add 100 or more peak hour trips to the CMP roadway network to implement TDM measures that would reduce project impacts. As discussed under TRANS-2, the Specific Plan Update includes a suite of TDM strategies to reduce peak single-occupancy vehicle trips and encourage use of transit, walking, and biking as transportation modes, which are based on the current best practices for TDM programs to reduce peak single-occupancy vehicle trips and encourage use of transit, walking, and biking as transportation modes. The proposed TOD #1 project would be required to be consistent with the Specific Plan Update once adopted.

Facilities in the Specific Plan Area that are part of the CMP network include the following:

- El Camino Real/Millbrae Avenue
- US 101 from Grand Avenue to Produce Avenue
- US 101 from Produce Avenue to I-380
- US 101 from I-380 to Millbrae Avenue
- US 101 from Millbrae Avenue to Broadway
- US 101 from Broadway to Peninsula Avenue

Impacts to these facilities are discussed under TRANS-8. As with the Specific Plan Update, for the purpose of conducting a conservative traffic analysis, individual TDM programs and their associated vehicle trip reductions are not included in the travel demand calculations for this EIR traffic analysis because the feasibility, funding sources, and effectiveness for these mode shift strategies are unknown at this time.

Impact TRANS-TOD#1-9: As discussed under TRANS-8, implementation of the proposed TOD #1 project would result in a *significant* impact at the CMP facilities during at least one (1) of the peak hours under Existing (2014), Near Term (2020) and Cumulative (2040) conditions as follows:

Existing (2014) Plus Project (TOD #1)

- El Camino Real/Millbrae Avenue – AM and PM peak hour

Near Term (2020) Plus Project (TOD #1)

- El Camino Real/Millbrae Avenue – AM and PM peak hour

Cumulative (2040) Plus Project (TOD #1)

- El Camino Real/Millbrae Avenue – AM and PM peak hours

Mitigation Measure TRANS-TOD#1-9a: Implement Mitigation Measure TRANS-SP-1.1.

Mitigation Measure TRANS-TOD#1-9b: Implement Mitigation Measure TRANS-TOD#1-8.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, implementation of Mitigation Measure TRANS-TOD#1-8.1 would require significant intersection expansion, which is not recommended due to the adverse secondary impacts to pedestrians and/or encroachment into private property. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at these CMP facilities would be significant and unavoidable.

TRANS-10	The proposed TOD #1 project would not 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.

As discussed in Section 4.13.1.3, Existing Conditions, the 2012 ALUCP addresses issues related to compatibility between airport operations and surrounding proposed land use development. The TOD #1 project site is within areas of the ALUCP that limits land use to minimize impacts to people residing or working on the TOD #1 project site. Specifically, the TOD #1 project site is located within the ALCUP's Safety Compatibility Zone 2 and the mixed-use development project proposed under the proposed TOD #1 project is not considered an incompatible land use for this zone.[23] Additionally, the proposed TOD #1 project would be accessed by the existing roadway infrastructure as discussed under TRANS-8 and TRANS-9. Although traffic levels would increase in the area as a result of the proposed TOD #1 project, these increases would not result in changes to existing roadway configurations that could interfere with flight operations. Accordingly, impacts on air traffic patterns as a result of the proposed TOD #1 project would *be less than significant*.

Significance Without Mitigation: Less than significant.

TRANS-11	The proposed TOD #1 project would substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).

This section discusses vehicular roadway hazards. Hazards associated with bicycle and pedestrian circulation is discussed under TRANS-13 below.

Incompatible Land Use Hazards

The TOD #1 project site is located in a highly urbanized are of Millbrae. The types of land uses proposed as a part of the proposed TOD #1 project are generally similar to existing and surrounding uses and thereby are

[23] See Table 4.7-2, Safety Compatibility Criteria, in Chapter 4.7, Hazards and Hazardous Materials, of the Draft EIR for a list of incompatible land uses for these zones.

compatible with the existing uses in the Specific Plan Area and in the surrounding area. Therefore *no impact* would result from circulation hazards as a result of incompatible uses.

Roadway Improvement Hazards

Access to the TOD #1 project site would continue from the roadway network described is Section 4.13.1.3, Existing Conditions above. Therefore, future development under the proposed TOD #1 project would not alter the layout or design of any major city road or intersection that could result in hazardous circulation conditions.

Railroad Avenue is being designed as a two-lane roadway with bike lanes; it will not have left-turn pockets to accommodate vehicles waiting to turn left into the garage. One of the driveways is located close to the intersection of Linden Avenue. Vehicles turning left into that driveway may extend into the intersection, especially if access controls are installed. The preliminary design does not include provisions for access controls. Some access controls may be needed to ensure that the facility is not used by BART and Caltrain customers. The final design of the parking garage, driveway locations, and access control operations would be reviewed and approved by City Public Works staff prior to project approval to ensure safe and efficient operations. Therefore, impacts related to roadway improvements and access would be *less than significant*.

Queuing Hazards

Same as the Specific Plan Update, an intersection operations analysis was provided to identify potential impacts with respect to vehicular queuing at intersections to ensure that left turn pockets at intersections would accommodate the anticipated queue lengths so cars would not "spill" to the through lanes. If there is insufficient storage length in left-turn pockets, queues of vehicles may extend out of the pocket into the adjacent through lane. This makes an intersection less efficient as the queue would block through vehicles from proceeding through the intersection. Further, they increase the potential for rear-end crashes which creates a safety hazard. Detailed intersection queuing calculations are provided in Appendix H of this Draft EIR. The 95th percentile queue lengths for key intersections and left-turn movements were compared for the Existing (2014) and Existing (2014) Plus Project (TOD #1) conditions. Most queuing conditions were found to be similar between the two (2) scenarios; however some queues that were already exceeding available storage space under Existing (2014) conditions were exacerbated under Existing (2014) Plus Project (TOD #1) conditions, most notably at and between the intersections of El Camino Real/Millbrae Avenue and Rollins Road/Millbrae Avenue. Additionally, the El Camino Real/Murchison Drive and El Camino Real/Trousdale Drive intersections saw queues that exceeded capacity in Existing (2014) conditions worsen in Existing (2014) Plus Project conditions. Therefore, implementation of the Specific Plan Update could result in queues that exceed available storage space resulting in a *significant* hazardous circulation condition.

Impact TRANS-TOD#1-11: Queues that were already exceeding available storage space under Existing (2014) conditions were exacerbated under Existing (2014) Plus Project (TOD #1) conditions at and between the intersections of El Camino Real/Millbrae Avenue and Rollins Road/Millbrae Avenue resulting in hazardous driving conditions from backed up traffic.

Mitigation Measure TRANS-TOD#1-11a: Implement Mitigation Measure TRANS-SP-1.1.

Mitigation Measure TRANS-TOD#1-11b: Implement Mitigation Measures TRANS-SP-1.6 and TRANS-SP-4b.

Significance With Mitigation: Significant and Unavoidable As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, implementation of Mitigation Measures TRANS-SP-1.6 and TRANS-SP-4b would require significant intersection expansion, which is not recommended due to the adverse secondary impacts to pedestrians and/or encroachment into private property. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Accordingly, the hazardous conditions at these intersections as a result of "spill-over" queuing would be significant and unavoidable.

TRANS-12 The proposed TOD #1 project would not result in inadequate emergency access.

Figure 3-24 in Chapter 3, Project Description, of this Draft EIR, shows the road layout for the proposed TOD #1 project. As shown on this figure, the proposed vehicular circulation and access to the project site would occur on the existing Serra Avenue and Linden Avenue, but would also include two (2) new roadways. The new roadways are shown as Railroad Avenue along the site's eastern border with the railroad tracks and a limited-access driveway to the north.

As shown on Figure 3-34, emergency response vehicles would have access to the project site on all sides. The new roadways (Railroad Avenue and the limited-access driveway) would include two (2) 12-foot travel lanes to accommodate emergency vehicle access. The TOD #1 project site is within approximately one (1) mile from the nearest fire station, located at 511 Magnolia Avenue in downtown Millbrae. Under current traffic conditions, it takes approximately four (4) minutes to access the TOD #1 project site from this fire station.

The proposed TOD #1 project would result in slightly increased traffic congestion and delay at study intersections along emergency vehicle access routes under Existing (2014) Plus Project (TOD #1) and Cumulative (2040) Plus Project (TOD #1) conditions. This additional traffic congestion could potentially slow emergency response and evacuation. However, the proposed TOD #1 project is required to comply with all City roadway and access standards as well as the minimum specifications in Municipal Code Chapter 9.30, which includes the California Fire Code, adopted by reference and local amendments[24] that insures emergency access is adequate in the city. Additionally, the TOD #1 project site is well-served by public streets. For these reasons, the proposed TOD #1 project would not result in inadequate emergency access and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

[24] Millbrae Municipal Code, Title 9, Building Regulations, Chapter 9.30, Fire Code.

TRANS-13	The proposed TOD #1 project would 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 following presents an analysis of other transportation issues associated with the TOD #1 project site, including transit, pedestrian and bicycle circulation.

Transit Operations

Transit Trips Generated by the proposed TOD #1 Project

Transit trips generated by the proposed TOD #1 project were estimated and assigned to BART, Caltrain, or bus/shuttle modes. BART only provides access to destinations north of the station, while Caltrain and buses provide access to destinations both north and south of the station. For rail trips, these were assigned to BART north, Caltrain north, or Caltrain south. Bus/shuttle trips are inclusive of demand for SamTrans fixed route service (Route ECR) as well as first/last mile shuttle activity. Both boardings and alighting trips were identified, and daily, AM peak hour, and PM peak hour trips were estimated.

Ridership Generated by the proposed TOD #1 Project

Transit ridership generated by the proposed TOD #1 project under Existing 2014, Near Term 2020 and Cumulative 2040 conditions was forecasted using a four-step modeling process including: 1) trip generation, 2) mode choice, 3) trip distribution, 4) trip assignment.

Trip Generation

First, total daily trips generated were estimated using Fehr & Peers' MXD+ tool. This tool uses site-specific information, including intensity and size of land uses, as inputs and produces trip generation estimates that take into account reductions in trips due to internal capture of trips among mixed uses. Initial vehicle trip generation estimates are derived from standard ITE trip generation rates; the MXD+ tool then estimates internalization based on national research by the US EPA on the impact of smart growth factors such as development density, scale, design, accessibility, transit proximity, demographics and mix of uses on site trip generation. Output of the tool includes trips generated by each land use and by trip purpose.

Mode Share

Literature on travel behavior of TOD residents and workers was reviewed to develop mode share estimates of trips generated by the TOD. Research shows that trips to and from TODs have higher transit mode shares than for locations not located near transit stations. Due to its proximity to two (2) rail lines, the proposed TOD #1 project is expected to have a high transit mode share. This mode share was applied to the trip generation results to estimate total daily rail and bus/shuttle boardings generated by the proposed TOD #1 project.

Trip Distribution and Assignment

Rail trip distribution and assignment of trips to either BART or Caltrain were determined using existing BART and Caltrain ridership data paired with intercept survey results. Those transferring at Millbrae were excluded from the analysis. Trips between Millbrae and downtown San Francisco in 2020 and 2040 would not match existing trip assignment due to planned changes to the transit system by 2040 such as the opening of the Caltrain Transbay Terminal Station. In order to determine future assignment of these trips, the ratio of total households and jobs located in each walk shed was used to assign the share of rail trips between Millbrae and downtown San Francisco which would use BART and Caltrain.

Existing (2014) Conditions

Table 4.13-41 summarizes the transit trips generated by the proposed TOD #1 project under Existing (2014) conditions.

TABLE 4.13-41 EXISTING (2014) TRANSIT TRIPS GENERATED BY TOD #1

	Daily		AM		PM	
Specific Plan Update Buildout	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
BART North	564	564	45	60	72	48
Caltrain North	91	91	9	3	6	9
Caltrain South	116	116	8	25	17	8
Bus/Shuttle	207	207	11	29	29	15
Total	978	978	74	118	123	80

Source: Fehr & Peers, 2015.

Near Term (2020) Conditions

Table 4.13-42 summarizes the transit trips generated by the proposed TOD #1 project under Near Term (2020) conditions. Due to the increased attractiveness of rail in 2020 due to transit system improvements, including increased capacity and service frequencies, a slight shift in trips towards more rail trips is forecasted.

TABLE 4.13-42 NEAR TERM (2020) TRANSIT TRIPS GENERATED BY THE TOD #1

	Daily		AM		PM	
Specific Plan Update Buildout	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
BART North	585	585	46	64	75	49
Caltrain North	115	115	11	4	7	11
Caltrain South	124	124	9	27	18	9
Bus/Shuttle	223	223	12	33	32	15
Total	1,047	1,047	78	127	132	84

Source: Fehr & Peers, 2015.

Cumulative (2040) Conditions

Table 4.13-43 summarizes the rail trips generated by the proposed TOD #1 project under Cumulative (2040) conditions. Due to the increased attractiveness of rail in 2040 due to transit system improvements, a travel mode shift towards a higher share of rail trips is forecasted. Furthermore, with the opening of the Caltrain Transbay Terminal, some ridership is expected to shift from BART to Caltrain. This shift is also accounted for in the forecasts of transit trips generated by the proposed TOD #1 project.

TABLE 4.13-43 CUMULATIVE (2040) TRANSIT TRIPS GENERATED BY THE TOD #1

	Daily		AM		PM	
Specific Plan Update Buildout	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
BART North	582	582	43	72	82	49
Caltrain North	254	254	22	6	16	23
Caltrain South	148	148	10	32	21	11
Bus/Shuttle	223	223	12	33	32	15
Total	1,207	1,207	87	143	150	97

Source: Fehr & Peers, 2015.

Transit Screenline Analysis – BART and Caltrain

Based on the transit impact criteria, the impact of additional transit ridership that would be generated by development of the proposed TOD #1 project was assessed based on transit capacity. This analysis incorporated a transit capacity utilization methodology that refers to transit riders as a percentage of the capacity of a transit line, or group of lines combined and analyzed as cordons or screenlines across which transit lines travel. The regional screenline analysis was conducted for the following three screenline locations for the proposed TOD #1 project trip making:

- **BART to/from downtown San Francisco:** The proposed TOD #1 project's contribution to the BART San Francisco screenline reflects the forecasted volume of Project Site development-generated transit trips to and from downtown San Francisco and the East Bay measured between Civic Center and 16th Street Mission BART stations.

- **Caltrain to/from South Bay:** The proposed TOD #1 project's contribution to the Caltrain South Bay screenline is based on transit ridership and capacity on the Caltrain line at the peak load point south of Millbrae measured between Millbrae and Burlingame Caltrain stations.
- **Caltrain to/from San Francisco** The proposed TOD #1 project's contribution to the Caltrain San Francisco screenline is based on transit ridership and capacity on the Caltrain line at the peak load point north of Millbrae measured between Millbrae and San Bruno stations.

Rail transit ridership, capacity and capacity utilization were evaluated across each transit screenline during both the AM and PM peak hours, since this is when transit capacity utilization is the highest. For BART, the AM analysis represents travel in the northbound direction, while the PM analysis represents travel in the southbound direction, since those are the directions of peak travel for each time period. Ridership represents the passenger load on all of the trains during the peak hour when crossing the screenline. Capacity represents the number of passengers that can be accommodated by the transit service during the specified time period. Capacity utilization is the percent of total capacity being used. Transit trips generated by the proposed TOD #1 project were added to the transit network to show the increase in transit capacity utilization with the project.

Existing (2014) Conditions

The transit screenline analysis results for Existing (2014) conditions are shown in Table 4.13-44. All screenlines evaluated are operating at below 100 percent capacity utilization, meaning that there is enough capacity to accommodate all riders both without and with the proposed TOD #1 project. Capacity utilization is highest on Caltrain during the PM peak hour, immediately south of the Millbrae Station. Under Existing (2014) conditions without the proposed TOD #1 project, the capacity utilization across this screenline is 86 percent. The capacity utilization increases to 87 percent under the project scenario. The total screenline capacity utilization does not increase by more than two (2) percent between the baseline and the proposed TOD #1 project. Therefore the project's impact to transit capacity is *less than significant*.

TABLE 4.13-44 EXISTING (2014) SCREENLINE ANALYSIS (TOD #1)

Regional Screenline	Existing AM Peak Hour			Existing PM Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Baseline						
BART						
16th Street – Civic Center	10,680	14,910	72%	10,680	14,910	72%
Caltrain						
NB: Millbrae – San Bruno	2,440	3,275	75%	1,800	3,275	55%
SB: Millbrae – Burlingame	1,930	3,275	59%	2,830	3,275	86%
Screenlines Total	15,050	21,460	70%	15,310	21,460	71%
Specific Plan Update Buildout						
BART						
16th Street - Civic Center	10,725	14,910	72%	10,728	14,910	72%
Caltrain						
NB: Millbrae - San Bruno	2,449	3,275	75%	1,806	3,275	55%
SB: Millbrae - Burlingame	1,938	3,275	59%	2,847	3,275	87%
Screenlines Total	15,113	21,460	70%	15,380	21,460	72%

Source: Fehr & Peers, 2015.

Near Term (2020) Conditions

The transit screenline analysis results for Near Term (2020) conditions are shown in Table 4.13-45. Both BART and Caltrain are expected to increase capacity by 2020 through providing new trains with higher rider capacity and through increases in service frequency. All screenlines evaluated are expected to be operating at below 100 percent capacity utilization, meaning that there will be enough capacity to accommodate all riders both without and with the proposed TOD #1 project. The total screenline capacity utilization does not increase by more than two (2) percent between baseline and proposed TOD #1 project. Therefore the project's impact to transit capacity is *less than significant*.

TABLE 4.13-45 NEAR TERM (2020) SCREENLINE ANALYSIS (TOD #1)

Regional Screenline	Near Term AM Peak Hour			Near Term PM Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Baseline						
BART						
16th Street – Civic Center	11,650	17,760	66%	11,650	17,760	66%
Caltrain						
NB: Millbrae – San Bruno	2,600	3,990	65%	2,340	3,990	59%
SB: Millbrae – Burlingame	2,500	3,990	63%	2,640	3,990	66%
Screenlines Total	16,750	25,740	65%	16,630	25,740	65%
Specific Plan Update Buildout						
BART						
16th Street - Civic Center	11,696	17,760	66%	11,699	17,760	66%
Caltrain						
NB: Millbrae - San Bruno	2,611	3,990	65%	2,347	3,990	59%
SB: Millbrae - Burlingame	2,509	3,990	63%	2,658	3,990	67%
Screenlines Total	16,816	25,740	65%	16,704	25,740	65%

Source: Fehr & Peers, 2015.

Cumulative (2040) Conditions

The transit screenline analysis results for Cumulative (2040) conditions are shown in Table 4.13-46. BART is expected to increase capacity by 2040 through increases in service frequency. All screenlines evaluated are expected to be operating at below 100 percent capacity utilization, meaning that there will be enough capacity to accommodate all riders both without and with the proposed TOD #1 project. Caltrain is expected to have high increases in ridership by 2040 with service improvements due to Caltrain electrification as well as through the opening of the Transbay Terminal in the San Francisco Financial District, which is expected to cause some shifts in ridership from BART to Caltrain. As a result, Caltrain capacity utilization, particularly in the AM peak hour, across both the screenlines directly north of and directly south of the Millbrae Station are expected to be operating at near capacity. Capacity utilization across these screenlines during the AM peak hour is forecasted to be 98 percent with and without the proposed TOD #1 project north of the station. The total screenline capacity utilization does not increase by more than two (2) percent between the baseline and the proposed TOD #1 project. Therefore the project's impact to transit capacity is *less than significant*.

TABLE 4.13-46 CUMULATIVE (2040) SCREENLINE ANALYSIS (TOD #1)

Regional Screenline	Cumulative AM Peak Hour			Cumulative PM Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Baseline						
BART						
16th Street – Civic Center	14,400	24,180	60%	14,400	24,180	60%
Caltrain						
NB: Millbrae – San Bruno	3,902	3,990	98%	3,325	3,990	83%
SB: Millbrae – Burlingame	3,898	3,990	98%	3,559	3,990	89%
Screenlines Total	22,200	32,160	69%	21,284	32,160	66%
Specific Plan Update Buildout						
BART						
16th Street - Civic Center	14,443	24,180	60%	14,449	24,180	60%
Caltrain						
NB: Millbrae - San Bruno	3,924	3,990	98%	3,341	3,990	84%
SB: Millbrae - Burlingame	3,908	3,990	98%	3,580	3,990	90%
Screenlines Total	22,275	32,160	69%	21,369	32,160	66%

Source: Fehr & Peers, 2015.

Transit Access

The existing western bus transit center contains two (2) sawtooth bus bays. The proposed TOD #1 project maintains the two (2) bay configuration. A total of three (3) shuttle bays are needed to accommodate future demand.

The westside of the Millbrae Station is also served by SamTrans Route ECR. The proposed TOD #1 project provides an opportunity for SamTrans to reroute southbound ECR service along Railroad Avenue/California Drive to provide direct access to the Millbrae Station. Northbound ECR service would remain on El Camino Real. The proposed TOD #1 project includes a southbound ECR stop underneath the Millbrae Avenue overcrossing and relocating the existing northbound ECR stop from its current location at Linden Avenue to Victoria Avenue.

Under the proposed TOD #1 project there is no increase in shuttle capacity, and the relocated northbound and southbound Route ECR stops are further away from the Millbrae Station entrance than is desirable. This would result in a *significant* impact under existing and cumulative conditions. Mitigation Measure TRANS-TOD#1-13 below is recommended.

Impact TRANS-TOD#1-13: The proposed TOD #1 project would reduce access to transit service or create unsafe access for transit passengers.

Mitigation Measure TRANS-TOD#1-13: The project applicant shall provide shuttle access on the westside of the station to be as close to the Millbrae Station entrance as possible taking into consideration the design

constraints of the proposed TOD #1 project. The existing sawtooth configuration should be expanded to three (3) shuttle bays to accommodate up to 35-feet cutaway vehicles and projected shuttle activity in 2040. If this is not feasible, the replacement facility on California Drive (or other location) would be designed to safely and effectively accommodate future shuttle activity, provide adequate facilities for riders, and minimize rider walk distance from the Millbrae Station.

The northbound ECR stop shall be located in front of pedestrian paseo directly across from the westside station entrance (currently Linden Avenue). The ultimate decision to reroute southbound ECR service will be made by SamTrans. While providing better access to the Millbrae Station and Specific Plan Area the deviation would incur a time penalty compared to a through trip on El Camino Real. The tradeoff between access and travel time (which increases operating costs) will be considered by SamTrans during the service planning process.

Significance With Mitigation: Less than significant.

Pedestrian and Bicycle Facilities

The proposed TOD #1 project would result in increased pedestrian and bicycle activity in and around the TOD #1 project site. To accommodate this growth, the proposed TOD #1 project would provide "complete streets" that serve multiple travel modes, including walking and biking, adjacent to the TOD #1 project site. The proposed TOD #1 project would enhance pedestrian and bicycle operations through new and widened sidewalks and on-site bicycle facilities. As shown on Figure 3-20, in Chapter 3, Project Description, of the Draft EIR, the proposed TOD #1 project includes 10-foot sidewalks with landscaping around the perimeter of the buildings. Per the Grand Boulevard Initiative, the 15-foot setback on El Camino Real would create a larger sidewalk. Pedestrian access is also provided via an enclosed galleria retail corridor connecting Serra Avenue to the Millbrae Station platform.

While the proposed TOD #1 project does not propose any new bicycle lanes or routes, bikes would share the same on-site roads and access points with vehicles. The proposed TOD #1 project would provide sheltered bicycle lockers or storage rooms within the building for residents and employees. Outdoor bicycle racks that are compatibility with the most common locking devices would be provided at each building entrance.

On site pedestrian and bicycle facilities would include lighting for safety.

The proposed TOD #1 project is designed to be consistent with the Specific Plan Update and would not preclude the development of bicycle and pedestrian facilities on the proposed TOD #1 project site or in the Specific Plan Area. Considering the pedestrian and bicycle improvements associated with the proposed TOD #1 project, the project would improve existing pedestrian and bicycle conditions, minimize on-site potential conflicts between various modes, and provide safe and efficient pedestrian, bicycle, and vehicle connections on the proposed TOD #1 project site and the surrounding circulation systems. Therefore, impacts to bicycle and pedestrian conditions would be *less than significant*.

Significance Without Mitigation: Less than significant.

TRANS-14	Implementation of the proposed TOD #1 project, in combination with past, present, and reasonably foreseeable projects, would result in additional cumulatively considerable impacts.

The analysis of the proposed TOD #1 project, above, addresses cumulative impacts to the transportation network in the city and its surroundings; accordingly, cumulative impacts would be the same as proposed TOD #1 project-specific impacts.

Significance With Mitigation: Significant and unavoidable.

4.13.4 TOD #2 IMPACT DISCUSSION

This section evaluates the transportation-related impacts of the proposed TOD #2 project under Existing (2014), Near Term (2020) and Cumulative (2040) Conditions.

TRANS-15	The proposed TOD #2 project would 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, non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

This impact discussion focuses on vehicular transportation. Impacts related to other modes of transportation including transit and pedestrian and bicycle circulation are discussed under TRANS-20 below.

Methodology

Traffic forecasts for the proposed TOD #2 project were developed by calculating the total trips projected to be generated by the planned new development, distributing those trips to the transportation network by mode, and then assigning vehicle trips to the study intersections for evaluation.

Vehicle Trip Generation Estimates

The amount of vehicle traffic generated by land use changes in the proposed TOD #2 project was estimated by applying trip generation rates by land use type from the ITE *Trip Generation Manual (9th Edition)*, tailored to account for trip internalization using the MXD+ methodology[25] and reductions for transit ridership were applied in

[25] Standard trip generation practice does not accurately account for development density, scale, design, accessibility, transit proximity, demographics and mix of uses - attributes which affect site traffic generation. Traffic generation estimates for mixed-use development based on the ITE Trip Generation Manual and Handbook are overstated by an average of 35 percent.

coordination with separate transit ridership forecasts.[26] Tables 4.13-47, 4.13-48, and 4.13-49 summarize trip generation by land use and travel mode for Existing (2014), Near Term (2020) and Cumulative (2040) conditions.

The proposed TOD #2 project's trip generation is forecasted to be slightly different between the 2014, 2020, and 2040 scenarios due to region-wide transportation system improvements that are projected to alter travel patterns and modes of project trips. For example, by 2040 Caltrain is expected to be running trains more frequently, faster, and more efficiently as part of the Caltrain Electrification and Modernization Project, which will increase the transit mode share and decrease the vehicle mode share for project trips.

TABLE 4.13-47 EXISTING (2014) TOD #2 TRIP GENERATION (PERSON-TRIPS)

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Vehicle	Transit	Walk/Bike	Vehicle	Transit	Walk/Bike
Residential	2,004	109	36	4	126	32	4
Retail	5,288	222	41	8	296	54	11
Office	1,844	193	60	8	156	49	6
Other[1]	909	39	17	0	39	17	0
Total	10,046	563	154	20	617	151	22

Notes:
1. Other includes industrial/non-retail commercial land uses to be removed and hotel land use to be added
Source: Fehr & Peers, 2015

TABLE 4.13-48 NEAR TERM (2020) TOD #2 TRIP GENERATION (PERSON-TRIPS)

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Vehicle	Transit	Walk/Bike	Vehicle	Transit	Walk/Bike
Residential	2,004	107	38	4	124	34	4
Retail	5,288	219	43	8	293	58	11
Office	1,844	188	65	8	152	53	6
Other[1]	909	39	17	0	38	17	0
Total	10,046	553	164	20	607	161	22

Notes:
1. Other includes industrial/non-retail commercial land uses to be removed and hotel land use to be added
Source: Fehr & Peers, 2015

MXD+ represents a substantial improvement over conventional traffic estimation methods. It improves accuracy, virtually eliminates overestimation and is supported by substantial evidence. The MXD+ method was developed by Fehr & Peers for the United States Environmental Protection Agency and is continuously refined through trip generation surveys and studies conducted for other state, regional and local clients. MXD+ is based on pooled household survey data for 239 MXDs in six (6) diverse US regions, statistically derived equations on internal trip capture and mode shares, validation at 27 existing MXD sites primarily in California, and peer reviews. The MXD+ has been approved by the American Society of Civil Engineers.

[26] See the *Effects of Millbrae Station Area Specific Plan on BART Ridership and Parking* memorandum, dated November 13, 2014 and included in Appendix H of this Draft EIR for more details.

TABLE 4.13-49 CUMULATIVE (2040) TOD #2 TRIP GENERATION (PERSON-TRIPS)

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Vehicle	Transit	Walk/Bike	Vehicle	Transit	Walk/Bike
Residential	2,004	103	42	4	119	39	4
Retail	5,288	211	51	8	282	69	11
Office	1,844	180	73	8	146	59	6
Other[1]	909	37	19	0	36	19	0
Total	10,046	531	186	20	583	185	22

Notes:
1. Other includes industrial/non-retail commercial land uses to be removed and hotel land use to be added
Source: Fehr & Peers, 2015

Vehicle Trip Distribution

Trip distribution refers to the directions from which the trips generated by the proposed TOD #2 project will approach and depart. The proposed trip distribution is based on a select zone analysis from the VTA-C/CAG model, locations of complementary land uses, existing travel patterns, familiarity with the study area, and engineering judgment. The trip distribution and paths of access differ slightly for each site, but general directions and percentages are shown in Figure 4.13-5.

Vehicle Trip Assignment

Project vehicle trips presented in Tables 4.13-47, 4.13-48, and 4.13-49 were assigned to the roadway network based on the percentages shown on Figure 4.13-5. The proposed TOD #2 project's project-generated external vehicle trips were assigned to specific turning movements using Traffix, which are presented in Figure 4.13-15.

Level of Service

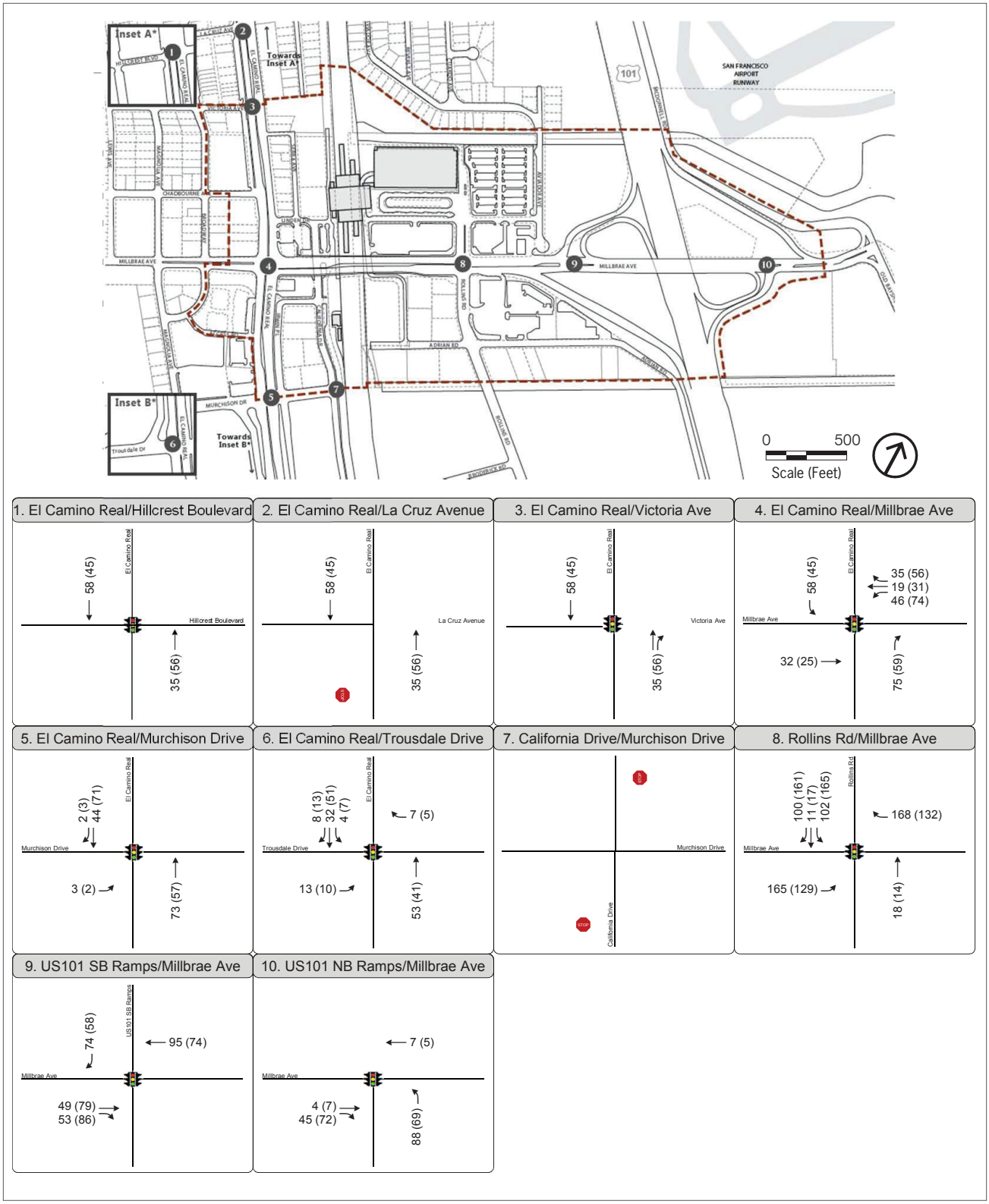
Existing (2014) Plus Project (TOD #2) Conditions

This section presents the results of the intersection and freeway level of service analysis for Existing (2014) Plus Project (TOD #2) conditions. Existing conditions form the baseline against which the proposed TOD #2 project's project-specific impacts are evaluated.

Existing (2014) Intersection Operations

Under the Existing (2014) Plus Project scenario, the proposed TOD #2 project is forecasted to generate 351 inbound and 212 outbound net new vehicle-trips (for a total of 563 net new vehicle trips) during the weekday AM peak hour and 274 inbound and 343 outbound net new vehicle-trips (for a total of 617 net new vehicle trips) during the weekday PM peak hour.

All of the proposed TOD #2 project's project-generated vehicle trips, as shown on Figure 4.13-15, were added to the existing turning movement volumes shown on Figure 4.13-2. The resulting Existing (2014) Plus Project (TOD #2) peak hour traffic volumes for the study intersections are presented in Figure 4.13-16.



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-15
Existing (2014) TOD #2 Trip Assignment

Table 4.13-50 compares the Existing (2014) and Existing (2014) Plus Project (TOD #2) intersection levels of service for the weekday AM and PM peak hours. Detailed intersection levels of service calculations are provided in Appendix H of this Draft EIR.

TABLE 4.13-50 EXISTING (2014) PLUS PROJECT (TOD #2) INTERSECTION LOS RESULTS

Intersection	Control[1]	Peak Hour	Existing		Existing Plus Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	AM	14	B	14	B
		PM	16	B	17	B
2. El Camino Real / La Cruz Avenue	SSS	AM	12	B	12	B
		PM	14	B	14	B
3. El Camino Real / Victoria Avenue	Signal	AM	<10	A	<10	A
		PM	<10	A	<10	A
4. El Camino Real / Millbrae Avenue	Signal	AM	50	D	56	E
		PM	74	E	>80	F
5. El Camino Real / Murchison Drive	Signal	AM	24	C	24	C
		PM	29	C	29	C
6. El Camino Real / Trousdale Drive	Signal	AM	37	D	38	D
		PM	33	C	34	C
7. California Drive / Murchison Drive	SSS	AM	19	C	19	C
		PM	18	C	18	C
8. Rollins Road / Millbrae Avenue	Signal	AM	31	C	32	C[4]
		PM	37	D	49	D
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	AM	16	B	18	B
		PM	21	C	23	C
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	AM	14	B	15	B
		PM	14	B	14	B

Notes: Bold indicates unacceptable operations; Shaded indicates potentially significant impact

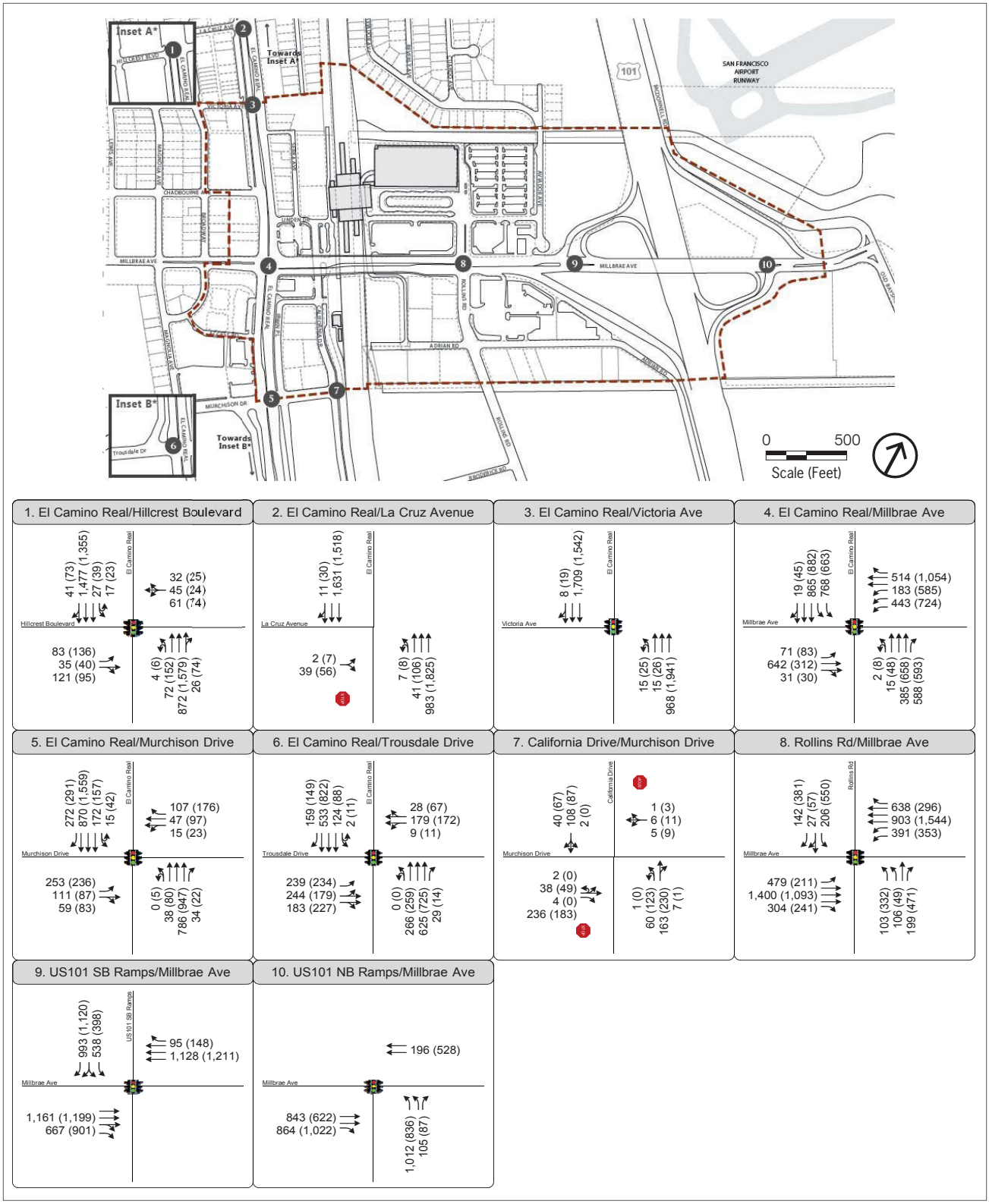
1. SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. LOS = Level of Service. For signalized intersections, LOS based on average intersection delay, based on the methodology in the *Highway Capacity Manual*, 2000.
4. Simple signal timing modifications are assumed to be implemented as necessary when traffic volumes change.

Source: Fehr & Peers, 2015.

With the exception of intersection #4 El Camino Real/Millbrae Avenue, all study intersections would continue to operate at an acceptable LOS D or better with the proposed TOD #2 project. Therefore, impacts to these intersections would be *less than significant* under Existing (2014) Plus Project (TOD #2) conditions.

The proposed TOD #2 project would contribute traffic and worsen traffic operations from acceptable levels to unacceptable levels, or increase delay by more than five (5) seconds at study intersections that currently operate at unacceptable levels of service, resulting in a *significant* impact at the following location:

- El Camino Real/Millbrae Avenue – AM and PM peak hour



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-16

Existing (2014) Plus Project (TOD #2) Intersection Peak Hour Volumes

Impact TRANS-TOD#2-15.1: The proposed TOD #2 project would add traffic to intersection #4 El Camino Real/Millbrae Avenue and would cause this intersection to degrade from LOS D to LOS E in the AM peak hour and would add more than five (5) seconds of delay in the PM peak hour (currently operating at LOS E), resulting in LOS F under Existing (2014) Plus Project (TOD #2) conditions. The worsening of traffic conditions at this location is due primarily to the increase in traffic from the project using El Camino Real as a regional and local access point.

Mitigation Measure TRANS-TOD#2-15.1: Implement Mitigation Measure TRANS-SP-1.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, while the proposed TOD #2 project would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the TOD #2 project area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at this intersection would be significant and unavoidable.

Existing (2014) Freeway Operations

The study freeway segments and ramp on US 101 were analyzed to determine if added traffic resulting from the project would significantly impact the freeway system. The results of the freeway segment and ramp capacity analyses are shown in Table 4.13-51 and Table 4.13-52. All freeway segments operate at or better than the CMP level of service standard under Existing (2014) Plus Project (TOD #2) conditions with the exception of following two (2) northbound segments during the AM peak hour:

- Northbound US 101 from Millbrae Avenue to Broadway – AM peak hour
- Northbound US 101 from Broadway to Peninsula Avenue – AM peak hour

As shown in Table 4.13-50 all freeway segments that operate under capacity under Existing (2014) conditions will continue to operate under capacity with the addition of the proposed TOD #2 project's project-generated traffic. All freeway segments that operate over capacity under Existing (2014) conditions continue to operate over capacity with the addition of the proposed TOD #2 project's project-generated traffic. However, the proposed TOD #2 project's project-added traffic to those segments represents less than one (1) percent of segment capacity and therefore, impacts to freeway segments under Existing (2014) Plus Project (TOD #2) conditions are considered *less than significant*.

TABLE 4.13-51 EXISTING (2014) PLUS PROJECT (TOD #2) FREEWAY SEGMENT LOS RESULTS

Segment	Direction	Peak Hour	Existing			Existing Plus Project				
			Volume	V/C [1]	LOS	Volume	V/C [1]	LOS	Trips Added	% of Cap.
A. US 101 from Grand Avenue to Produce Avenue	NB	AM	8,510	0.93	E	8,544	0.93	E	34	0.4%
		PM	6,923	0.75	D	6,977	0.76	D	54	0.6%
	SB	AM	8,004	0.87	D	8,061	0.88	D	57	0.6%
		PM	7,692	0.84	D	7,737	0.84	D	45	0.5%
B. US 101 from Produce Avenue to I-380	NB	AM	9,480	0.82	D	9,516	0.83	D	36	0.3%
		PM	7,281	0.63	C	7,339	0.64	C	58	0.5%
	SB	AM	8,730	0.76	D	8,796	0.76	D	66	0.6%
		PM	9,006	0.78	D	9,058	0.79	D	52	0.5%
C. US 101 from I-380 to Millbrae Avenue	NB	AM	11,197	0.97	E	11,242	0.98	E	45	0.4%
		PM	8,706	0.76	D	8,778	0.76	D	72	0.6%
	SB	AM	8,157	0.71	C	8,245	0.72	D	88	0.8%
		PM	8,432	0.73	D	8,501	0.74	D	69	0.6%
D. US 101 from Millbrae Avenue to Broadway	NB	AM	11,105	1.21	F	11,179	1.22	F	74	0.8%
		PM	8,630	0.94	E	8,688	0.94	E	58	0.6%
	SB	AM	7,409	0.81	D	7,462	0.81	D	53	0.6%
		PM	7,935	0.86	D	8,021	0.87	D	86	0.9%
E. US 101 from Broadway to Peninsula Avenue	NB	AM	11,565	1.26	F	11,635	1.26	F	70	0.8%
		PM	8,406	0.91	E	8,461	0.92	E	55	0.6%
	SB	AM	7,659	0.83	D	7,709	0.84	D	50	0.5%
		PM	8,185	0.89	D	8,267	0.90	E	82	0.9%

Notes: Bold indicates unacceptable operation. Shaded indicates significant impact.
1. V/C = Volume to Capacity ratio.
Source: Fehr & Peers, 2015.

TABLE 4.13-52 EXISTING (2014) PLUS PROJECT (TOD #2) FREEWAY RAMP LOS RESULTS

Freeway Interchange and Ramp		Peak Hour	Existing			Existing Plus Project				
			Volume	V/C [1]	LOS	Volume	V/C [1]	LOS	Trips Added	% of Cap.
US 101 / Millbrae Avenue										
NB	Off-Ramp to Millbrae Avenue	AM	1,029	0.51	C	1,103	0.55	C	74	3.7%
		PM	854	0.43	B	912	0.46	B	58	2.9%
	On-Ramp from Millbrae Avenue	AM	1,275	0.64	C	1,320	0.66	C	45	2.3%
		PM	1,058	0.53	C	1,130	0.57	C	72	3.6%
SB	Off-Ramp to Millbrae Avenue	AM	1,457	0.73	D	1,545	0.77	D	88	4.4%
		PM	1,460	0.73	D	1,529	0.76	D	69	3.5%
	On-Ramp from Westbound Millbrae Avenue	AM	95	0.05	A	95	0.05	A	0	0.0%
		PM	148	0.08	A	148	0.08	A	0	0.0%
	On-Ramp from Eastbound Millbrae Avenue	AM	614	0.31	B	667	0.33	B	53	2.7%
		PM	815	0.41	B	901	0.45	B	86	4.3%

Notes: Bold indicates unacceptable operation. Shaded indicates significant impact.
1. V/C = Volume to Capacity ratio
Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.
Source: Fehr & Peers, 2015.

As shown in Table 4.13-52 all freeway ramps at the US 101 Millbrae Avenue interchange will continue to operate under capacity and at an acceptable level of service with the addition of the proposed TOD #2 project's project-generated traffic. Therefore, impacts to freeway ramps under existing plus project conditions are considered *less than significant*.

Near Term (2020) Plus Project (TOD #2) Conditions

This section evaluates the traffic-related impacts of the proposed TOD #2 project under Near Term (2020) conditions. Near Term (2020) conditions represent projected conditions in 2020, including traffic estimates for probable future developments and planned and funded system improvements.

Near term 2020 baseline (No Project) traffic forecasts were developed through linear interpolation between the existing counts and the Year 2040 Baseline traffic forecasts (which are discussed in the Cumulative (2040) conditions section below). Near Term (2020) Baseline volumes were developed to assess near term effects of the proposed TOD #2 project. VTA-C/CAG 2040 and 2013 models, along with existing intersection turning movement counts, were used to develop Year 2020 Baseline (No Project) traffic forecasts.

Intersection turning movement volumes for Near Term (2020) No Project (TOD #2) are shown on Figure 4.13-12.

Near Term (2020) Intersection Operations

Under the Near Term (2020) Plus Project scenario, the proposed TOD #2 project is forecasted to generate 344 inbound and 209 outbound net new vehicle-trips (for a total of 553 net new vehicle trips) during the weekday AM peak hour and 270 inbound and 337 outbound net new vehicle-trips (for a total of 607 net new vehicle trips) during the weekday PM peak hour.

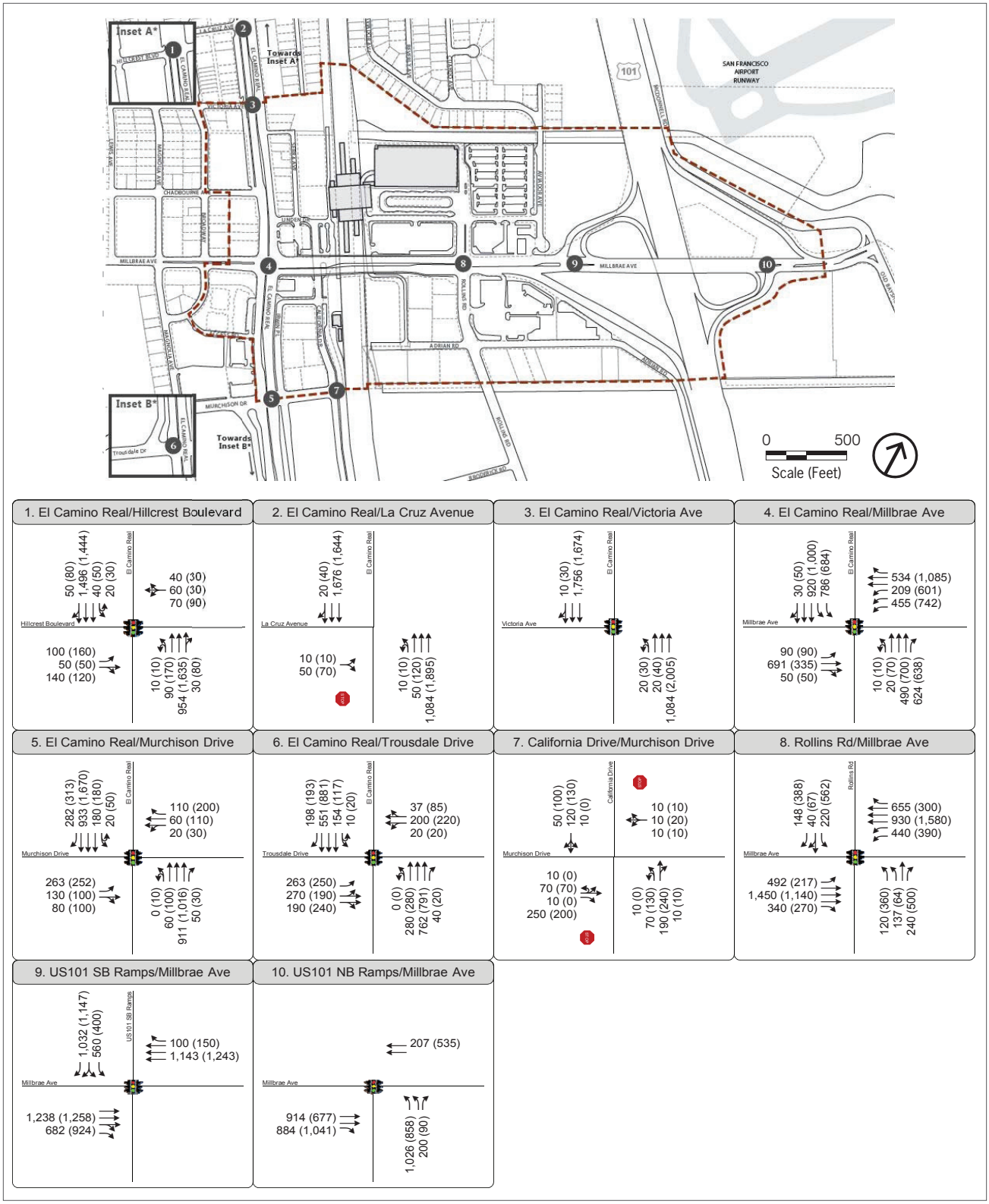
All of the proposed TOD #2 project's project-generated vehicle trips shown in Table 4.13-48 were added to the Near Term (2020) No Project (TOD #2) traffic volumes in Figure 4.13-12. The resulting Near Term (2020) Plus Project (TOD #2) traffic volumes for the proposed TOD #2 project are presented in Figure 4.13-17.

Table 4.13-53 compares the Near Term (2020) and Near Term (2020) Plus Project (TOD #2) intersection levels of service for the weekday AM and PM peak hours. Detailed intersection levels of service calculations are provided in Appendix H of this Draft EIR.

The proposed TOD #2 project would contribute traffic and worsen traffic operations from acceptable levels to unacceptable levels or add traffic to intersections currently operating at unacceptable levels at the following location:

- El Camino Real/Millbrae Avenue – AM and PM peak hours

The remaining intersections would continue to operate at an acceptable LOS D or better with the proposed TOD #2 project. Therefore, impacts to these intersections would *be less than significant* under Near Term (2020) Plus Project (TOD #1) conditions.



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-17
Near Term (2020) Plus Project (TOD #2) Peak Hour Traffic Volumes

TABLE 4.13-53 NEAR TERM (2020) INTERSECTION LOS RESULTS (TOD #2)

Intersection	Traffic Control[1]	Peak Hour	Existing		Near Term No Project		Near Term Plus Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	AM	14	B	17	B	17	B
		PM	16	B	19	B	19	B
2. El Camino Real / La Cruz Avenue	SSS	AM	12	B	21	C	22	C
		PM	14	B	16	C	16	C
3. El Camino Real / Victoria Avenue	Signal	AM	<10	A	<10	A	<10	A
		PM	<10	A	<10	A	<10	A
4. El Camino Real / Millbrae Avenue	Signal	AM	50	D	54	D	63	E[4]
		PM	74	E	> 80	F	>80	F
5. El Camino Real / Murchison Drive	Signal	AM	24	C	26	C	26	C
		PM	29	C	34	C	34	C
6. El Camino Real / Trousdale Drive	Signal	AM	37	D	40	D	41	D
		PM	33	C	37	D	37	D
7. California Drive / Murchison Drive	SSS	AM	19	B	21	C	21	C
		PM	18	B	20	C	20	C
8. Rollins Road / Millbrae Avenue	Signal	AM	31	C	37	D	37	D[4]
		PM	37	D	40	D	53	D
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	AM	16	B	17	B	18	B
		PM	21	C	22	C	24	C
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	AM	14	B	14	B	15	B
		PM	14	B	14	B	14	B

Notes:
1. SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. LOS = Level of Service. For signalized intersections, LOS based on average intersection delay, based on the methodology in the *Highway Capacity Manual*, 2000.
4. Simple signal timing modifications are assumed to be implemented as necessary when traffic volumes change.

Bold indicates unacceptable operations; Shaded indicates potentially significant impact
Source: Fehr & Peers, 2015.

Impact TRANS-TOD#2-15.2: The proposed TOD #2 project would result in the addition of traffic to intersection #4 El Camino Real/Millbrae Avenue causing this intersection to degrade from LOS D to LOS E in the AM peak hour and would add more than five (5) seconds of delay in the PM peak hour (operating at LOS F under baseline), resulting in LOS F under Near Term (2020) Plus Project (TOD #2) conditions. The worsening of traffic conditions at this location is due primarily to the increase in traffic from the project using El Camino Real as a regional and local access point. Therefore, the proposed TOD #2 project's impact at this study intersection would represent a *significant* impact.

Mitigation Measure TRANS-TOD#2-15.2: Implement of Mitigation Measure TRANS-SP-1.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, while the proposed TOD #2 project would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the TOD #2 project area by providing improved pedestrian, bicycle and transit and

opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at this intersection would be significant and unavoidable.

Near Team (2020) Freeway Operations

The freeway mainline and ramp operations under the Near Term (2020) No Project (TOD #2) and Plus Project (TOD #2) conditions are presented in Table 4.13-54 and Table 4.13-54. Near term growth not associated with the TOD #2 project would cause several of the segments to operate at LOS E or F under Near Term (2020) No Project (TOD #2) conditions. The following freeway segments are expected to operate worse than the CMP level of service standard under Near Term (2020) Plus Project (TOD #2) conditions:

- Northbound US 101 from Grand Avenue to Produce Avenue – AM peak hour
- Northbound US 101 from I-380 to Millbrae Avenue – AM peak hour
- Northbound US 101 from Millbrae Avenue to Broadway – AM and PM peak hours
- Northbound US 101 from Broadway to Peninsula Avenue – AM peak hours

TABLE 4.13-54 NEAR TERM (2020) FREEWAY SEGMENT LOS RESULTS (TOD #2)

Segment	Dir.	Peak Hour	Existing		Near Term			Near Term Plus Project				
			V/C [1]	LOS	Vol.	V/C[1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
A. US 101 from Grand Avenue to Produce Avenue	NB	AM	0.93	E	9,242	1.00	F	9,275	1.01	F	33	0.4%
		PM	0.75	D	7,412	0.81	D	7,465	0.81	D	53	0.6%
	SB	AM	0.87	D	8,692	0.94	E	8,748	0.95	E	56	0.6%
		PM	0.84	D	8,235	0.90	E	8,279	0.90	E	44	0.5%
B. US 101 from Produce Avenue to I-380	NB	AM	0.82	D	10,295	0.90	E	10,330	0.90	E	35	0.3%
		PM	0.63	C	7,795	0.68	C	7,852	0.68	C	57	0.5%
	SB	AM	0.76	D	9,481	0.82	D	9,545	0.83	D	65	0.6%
		PM	0.78	D	9,642	0.84	D	9,693	0.84	D	51	0.4%
C. US 101 from I-380 to Millbrae Avenue	NB	AM	0.97	E	12,159	1.06	F	12,203	1.06	F	44	0.4%
		PM	0.76	D	9,320	0.81	D	9,391	0.82	D	71	0.6%
	SB	AM	0.71	C	8,859	0.77	D	8,945	0.78	D	86	0.7%
		PM	0.73	D	9,027	0.78	D	9,095	0.79	D	68	0.6%
D. US 101 from Millbrae Avenue to Broadway	NB	AM	1.21	F	12,083	1.31	F	12,155	1.32	F	72	0.8%
		PM	0.94	E	9,205	1.00	F	9,262	1.01	F	57	0.6%
	SB	AM	0.81	D	8,069	0.88	D	8,121	0.88	D	52	0.6%
		PM	0.86	D	8,527	0.93	E	8,611	0.94	E	84	0.9%
E. US 101 from Broadway to Peninsula Avenue	NB	AM	1.26	F	12,581	1.37	F	12,650	1.37	F	68	0.7%
		PM	0.91	E	8,965	0.97	E	9,019	0.98	E	54	0.6%
	SB	AM	0.83	D	8,340	0.91	E	8,389	0.91	E	49	0.5%
		PM	0.89	D	8,795	0.96	E	8,874	0.96	E	80	0.9%

Notes:
Bold indicates unacceptable operation. Shaded indicates significant impact. Dir. = Direction. Vol. = Volume.
1. V/C = Volume to Capacity ratio.
Source: Fehr & Peers, 2015.

As shown in Table 4.13-54 all freeway segments that operate under capacity under Near Term (2020) No Project (TOD #1) conditions will continue to operate under capacity with the addition of the proposed TOD #2 project's

project-generated traffic. All freeway segments that operate over capacity under Near Term (2020) No Project (TOD #2) conditions continue to operate over capacity with the addition of the proposed TOD #1 project's project-generated traffic. However, the proposed TOD #2 project's project-added traffic to those segments represents less than one (1) percent of segment capacity and therefore, impacts to freeway segments under Near Term (2020) Plus Project (TOD #2) conditions are considered *less than significant*.

TABLE 4.13-55 NEAR TERM (2020) FREEWAY RAMP LOS RESULTS (TOD #2)

Freeway Interchange and Ramp		Peak Hour	Existing		Near Term			Near Term Plus Project				
			V/C [1]	LOS	Vol.	V/C[1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
US 101 / Millbrae Avenue												
NB	Off-Ramp to Millbrae Avenue	AM	0.51	C	1,140	0.57	C	1,212	0.61	C	72	3.6%
		PM	0.43	B	880	0.44	B	937	0.47	B	57	2.9%
	On-Ramp from Millbrae Avenue	AM	0.64	C	1,384	0.69	C	1,428	0.71	D	44	2.2%
		PM	0.53	C	1,133	0.57	C	1,204	0.60	C	71	3.6%
SB	Off-Ramp to Millbrae Avenue	AM	0.73	D	1,520	0.76	D	1,606	0.80	D	86	4.3%
		PM	0.73	D	1,490	0.75	D	1,558	0.78	D	68	3.4%
	On-Ramp from Westbound Millbrae Avenue	AM	0.05	A	100	0.06	A	100	0.06	A	0	0.0%
		PM	0.08	A	150	0.08	A	150	0.08	A	0	0.0%
	On-Ramp from Eastbound Millbrae Avenue	AM	0.31	B	630	0.32	B	682	0.34	B	52	2.6%
		PM	0.41	B	840	0.42	B	924	0.46	B	84	4.2%

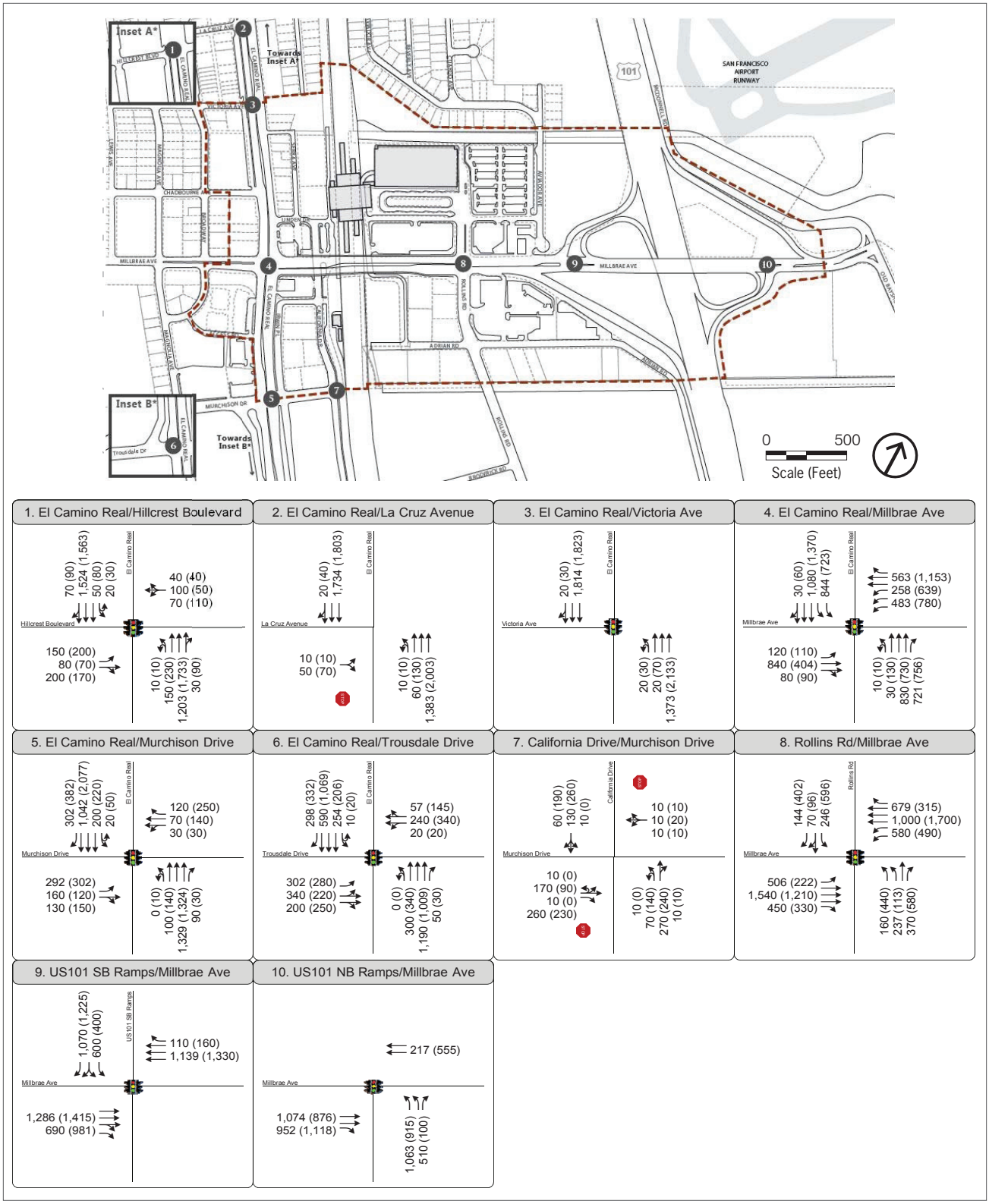
Notes: Bold indicates unacceptable operation. Shaded indicates significant impact.
1. V/C = Volume to Capacity ratio
Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.
Source: Fehr & Peers, 2015.

As shown in Table 4.13-55 all freeway ramps at the US 101 Millbrae Avenue interchange will continue to operate under capacity and at an acceptable level of service with the addition of the proposed TOD #2 project's project-generated traffic. Therefore, impacts to freeway ramps under Near Term (2020) Plus Project (TOD #2) conditions are considered *less than significant*.

Cumulative (2040) Conditions Plus Project (TOD #2)

This section evaluates the traffic-related impacts of the proposed TOD #2 project under cumulative conditions. Cumulative (2040) conditions represent projected conditions in 2040, including traffic estimates for probable future developments and planned and funded system improvements.

See TRANS-1 under the subheading "Cumulative (2040) No Project (Specific Plan Update) conditions" for a discussion of 2040 baseline volume forecasts. Intersection turning movement volumes for Cumulative (2040) No Project (Specific Plan Update) and Plus Project (TOD #1) conditions are shown on Figures 4.13-8 and 4.13-18, respectively.



Source: Fehr & Peers Transportation Consultants, 2015.

Figure 4.13-18
Cumulative (2040) Plus Project (TOD #2) Peak Hour Traffic Volumes

Cumulative (2040) Intersection Operations

Under the Cumulative (2040) Plus Project (TOD #2) scenario, the proposed TOD #2 project is forecasted to generate 331 inbound and 201 outbound net new vehicle-trips (for a total of 531 net new vehicle trips) during the weekday AM peak hour and 260 inbound and 324 outbound net new vehicle-trips (for a total of 583 net new vehicle trips) during the weekday PM peak hour.

All of the proposed TOD #2 project's project-generated vehicle trips shown in Table 4.13-49 were added to the Cumulative (2040) No Project (TOD #2) traffic volumes in Figure 4.13-8. The resulting Cumulative (2040) Plus Project (TOD #2) traffic volumes for the proposed TOD #2 project are presented in Figure 4.13-18.

Table 4.13-56 compares the Cumulative (2040) and Cumulative (2040) Plus Project (TOD #2) intersection levels of service for the weekday AM and PM peak hours. Detailed intersection levels of service calculations are provided in Appendix H of this Draft EIR.

The proposed TOD #2 project would contribute traffic and worsen traffic operations from acceptable levels to unacceptable levels or would add traffic to intersections operating at unacceptable levels under baseline conditions, resulting in *significant* cumulative impacts at the following locations:

- El Camino Real/Millbrae Avenue – AM and PM peak hours
- Rollins Road/Millbrae Avenue – AM and PM peak hours

The remaining intersections would continue to operate at an acceptable LOS D or better with the proposed TOD #2 project. Therefore, impacts to these intersections would be *less than significant* under Cumulative (2040) Plus Project (TOD #2) conditions.

Impact TRANS-TOD#2-15.3: The proposed TOD #2 project would add traffic to intersection #4 El Camino Real/Millbrae Avenue, which is expected to operate at LOS E during the AM peak hour and at LOS F during the PM peak hour under Cumulative (2040) No Project (TOD #2) conditions. Traffic added by the proposed TOD #2 project would increase vehicle delay at this intersection by more than five (5) seconds in the AM and PM peak hours under Cumulative (2040) Plus Project (TOD #2) conditions and result in the intersection operating at LOS F.

Mitigation Measure TRANS-TOD#2-15.3: Implement Mitigation Measure TRANS-SP-1.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, while the proposed TOD #2 project would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the TOD #2 project area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at this intersection would be significant and unavoidable.

TABLE 4.13-56 CUMULATIVE INTERSECTION LOS RESULTS (TOD #2)

Intersection	Traffic Control[1]	Peak Hour	Existing		Cumulative No Project		Cumulative Plus Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. El Camino Real / Hillcrest Boulevard	Signal	AM	14	B	23	C	23	C
		PM	16	B	26	C	26	C
2. El Camino Real / La Cruz Avenue	SSS	AM	12	B	19	C	19	C
		PM	14	B	17	B	16	C
3. El Camino Real / Victoria Avenue	Signal	AM	<10	A	<10	A	<10	A
		PM	<10	A	<10	A	<10	A
4. El Camino Real / Millbrae Avenue	Signal	AM	50	D	75	E	>80	F[4]
		PM	74	E	> 80	F	>80	F[4]
5. El Camino Real / Murchison Drive	Signal	AM	24	C	32	C	33	C
		PM	29	C	50	D	52	D
6. El Camino Real / Trousdale Drive	Signal	AM	37	D	51	D	53	D
		PM	33	C	51	D	52	D
7. California Drive / Murchison Drive	SSS	AM	19	B	29	D	29	D
		PM	18	B	29	D	29	D
8. Rollins Road / Millbrae Avenue	Signal	AM	31	C	54	D	56	E[4]
		PM	37	D	48	D	58	E[4]
9. US 101 Southbound Ramps / Millbrae Avenue	Signal	AM	16	B	18	B	19	B
		PM	21	C	26	C	33	C
10. US 101 Northbound Ramps / Millbrae Avenue	Signal	AM	14	B	17	B	18	B
		PM	14	B	14	B	14	B

Notes:
1. SSS = Side Street stop controlled; Signal = Signal controlled
2. Delay reported as seconds per vehicle. For signalized intersections, a combined weighted average delay for the various movements within the intersection is reported. For unsignalized intersection, the highest average delay for an approach is reported.
3. LOS = Level of Service. For signalized intersections, LOS based on average intersection delay, based on the methodology in the *Highway Capacity Manual*, 2000.
4. Simple signal timing modifications are assumed to be implemented as necessary when traffic volumes change.

Bold indicates unacceptable operations; Shaded indicates potentially significant impact
Source: Fehr & Peers, 2015.

Impact TRANS-TOD#2-15.4: The proposed TOD #2 project would result in the addition of traffic to intersection #8 Rollins Road/Millbrae Avenue and would cause this intersection to degrade from LOS D to LOS E in the AM and PM peak hours under Cumulative (2040) Plus Project (TOD #2) conditions.

Mitigation Measure TRANS- TOD#2-15.4: Implement Mitigation Measure TRANS-SP-1.6.

Significance With Mitigation: Significant and Unavoidable. Implementation of Mitigation Measure TRANS-SP-1.6 would require significant intersection expansion, which is not recommended due to the adverse secondary impacts to pedestrians and/or encroachment into private property. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be assured that the reductions would sufficiently reduce the impact. Accordingly, the level of service impacts at the Rollins Road/Millbrae Avenue intersection would be significant and unavoidable.

Cumulative (2040) Freeway Operations

The cumulative freeway mainline and ramp operations under the Cumulative (2040) No Project (TOD #2) and Plus Project (TOD #2) conditions are presented in Table 4.13-57 and Table 4.13-58. Cumulative growth not associated with the proposed TOD #2 project would cause nearly all of the segments to operate at LOS E or F under Cumulative (2040) No Project (TOD #2) conditions.

As shown in Table 4.13-57 all freeway segments that operate under capacity under Cumulative (2040) No Project (TOD #2) conditions will continue to operate under capacity with the addition of TOD #2 project-generated traffic. All freeway segments that operate over capacity under Cumulative (2040) No Project (TOD #2) conditions continue to operate over capacity with the addition of the proposed TOD #2 project's project-generated traffic. However, the proposed TOD #2 project's project-added traffic to those segments represents less than one (1) percent of segment capacity and therefore, impacts to freeway segments under Cumulative (2040) Plus Project (TOD #2) conditions are considered *less than significant*.

TABLE 4.13-57 CUMULATIVE (2040) FREEWAY SEGMENT LOS RESULTS (TOD #2)

Segment	Dir.	Peak Hour	Existing		Cumulative			Cumulative Plus Project				
			V/C [1]	LOS	Vol.	V/C [1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
A. US 101 from Grand Avenue to Produce Avenue	NB	AM	0.93	E	10,870	1.18	F	10,902	1.18	F	32	0.3%
		PM	0.75	D	8,525	0.93	E	8,576	0.93	E	51	0.6%
	SB	AM	0.87	D	10,224	1.11	F	10,278	1.12	F	54	0.6%
		PM	0.84	D	9,472	1.03	F	9,515	1.03	F	42	0.5%
B. US 101 from Produce Avenue to I-380	NB	AM	0.82	D	12,110	1.05	F	12,143	1.06	F	34	0.3%
		PM	0.63	C	8,966	0.78	D	9,021	0.78	D	54	0.5%
	SB	AM	0.76	D	11,152	0.97	E	11,214	0.98	E	62	0.5%
		PM	0.78	D	11,091	0.96	E	11,139	0.97	E	49	0.4%
C. US 101 from I-380 to Millbrae Avenue	NB	AM	0.97	E	14,302	1.24	F	14,344	1.25	F	42	0.4%
		PM	0.76	D	10,721	0.93	E	10,789	0.94	E	68	0.6%
	SB	AM	0.71	C	10,420	0.91	E	10,503	0.91	E	83	0.7%
		PM	0.73	D	10,384	0.90	E	10,449	0.91	E	65	0.6%
D. US 101 from Millbrae Avenue to Broadway	NB	AM	1.21	F	14,361	1.56	F	14,431	1.57	F	70	0.8%
		PM	0.94	E	10,526	1.14	F	10,581	1.15	F	55	0.6%
	SB	AM	0.81	D	9,570	1.04	F	9,620	1.05	F	50	0.5%
		PM	0.86	D	9,874	1.07	F	9,955	1.08	F	81	0.9%
E. US 101 from Broadway to Peninsula Avenue	NB	AM	1.26	F	14,948	1.62	F	15,014	1.63	F	67	0.7%
		PM	0.91	E	10,250	1.11	F	10,302	1.12	F	52	0.6%
	SB	AM	0.83	D	9,888	1.07	F	9,936	1.08	F	48	0.5%
		PM	0.89	D	10,182	1.11	F	10,258	1.12	F	77	0.8%

Notes:
Bold indicates unacceptable operation. Shaded indicates significant impact. Dir. = Direction. Vol. = Volume.
[1] V/C = Volume to Capacity ratio.
Source: Fehr & Peers, 2015.

As shown in Table 4.13-58 all freeway ramps at the US 101/Millbrae Avenue interchange will continue to operate under capacity and at an acceptable level of service with the addition of the proposed TOD #2 project's project-generated traffic.

TABLE 4.13-58 CUMULATIVE (2040) FREEWAY RAMP LOS RESULTS (TOD #2)

Freeway Interchange and Ramp		Peak Hour	Existing		Cumulative			Cumulative Plus Project				
			V/C [1]	LOS	Vol.	V/C[1]	LOS	Vol.	V/C [1]	LOS	Trips Added	% of Cap.
US 101 / Millbrae Avenue												
NB	Off-Ramp to Millbrae Avenue	AM	0.51	C	1,490	0.75	D	1,560	0.78	D	70	3.5%
		PM	0.43	B	950	0.48	B	1,005	0.50	C	55	2.8%
	On-Ramp from Millbrae Avenue	AM	0.64	C	1,628	0.81	D	1,670	0.84	D	42	2.1%
		PM	0.53	C	1,303	0.65	C	1,371	0.69	C	68	3.4%
SB	Off-Ramp to Millbrae Avenue	AM	0.73	D	1,600	0.80	D	1,683	0.84	D	83	4.2%
		PM	0.73	D	1,570	0.79	D	1,635	0.82	D	65	3.3%
	On-Ramp from Westbound Millbrae Avenue	AM	0.05	A	110	0.06	A	110	0.06	A	0	0.0%
		PM	0.08	A	160	0.09	A	160	0.09	A	0	0.0%
	On-Ramp from Eastbound Millbrae Avenue	AM	0.31	B	640	0.32	B	690	0.35	B	50	2.5%
		PM	0.41	B	900	0.45	B	981	0.49	B	81	4.1%

Notes:
Bold indicates unacceptable operation. Shaded indicates significant impact.
1. V/C = Volume to Capacity ratio
Theoretical capacities of ramps per Exhibit 25-3 of HCM 2000: 1,800 vph for loop ramps and 2,000 vehicles per hour (vph) for single-lane diagonal ramps.
Source: Fehr & Peers, 2015.

TOD #2 (Temporary) Construction Traffic

The proposed TOD #2 project's construction would temporarily affect off-site circulation due to increased truck traffic to and from the development sites. Construction would also disrupt on-site travel due to the potential closure of sidewalks and blockage of bicycle facilities and transit routes during construction. However, compliance with Specific Plan Update Policy IMP 11 discussed under TRANS-1, which would require the preparation and approval of a Construction Management Plan prior to the entitlement process, would ensure construction related impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

Parking

Vehicular Parking

Parking for the proposed TOD #2 project is provided in multiple parking garages and surface lots. Parking for the office space and some of the retail/restaurant space will be provided in a garage with driveway access to the East Station Access Road. The residential units will have a separate garage with one (1) driveway on Garden Lane and another on the South Station Access Road. Hotel parking will be provided in a surface lot with one (1) driveway on Garden Lane and another on Rollins Road. This lot will also provide parking for the restaurant that is attached to the hotel. Another surface lot will provide parking for the retail space located on the northeast corner of the intersection of Rollins Road and Millbrae Avenue.

As shown in Table 3-10 in Chapter 3, Project Description, of this Draft EIR, the proposed parking supply for vehicles is 1,612 spaces.

The Specific Plan parking supply rates for sites located near Millbrae Station are 1.5 spaces per 1,000 square feet for retail, 5.0 spaces per 1,000 square feet for restaurant, 1.5 spaces per 1,000 square feet for office, 1 space per unit for residential, and 0.40 spaces per room for hotel. These rates were applied to the development proposal (with 25,920 sf of retail space and 17,280 sf of restaurant space) yielding a parking supply of 710 spaces.

The proposed TOD #2 project would eliminate all 883 surface level BART parking lot spaces and provide 317 replacement BART parking spaces, for a total net reduction of 566 parking spaces. The BART ridership increase generated by the proposed TOD #2 project would more than offset the ridership decrease caused by the reduced number of parking spaces. Reducing BART parking would reduce the amount of traffic entering and exiting the site as the parkers would either use another mode to access the station, park at another BART station, or elect to use another travel mode for their; however, the traffic analysis for this Draft EIR conservatively assumes no reduction in traffic volumes.

Because the proposed TOD #2 project provides parking that exceeds the required number of spaces, the proposed parking supply is sufficient and impacts are *less than significant*.

Significance Without Mitigation: Less than significant.

Bicycle Parking

The Specific Plan Update long-term bicycle parking supply rates for sites located near Millbrae Station are 1 space per 10,000 square feet for office, 1 space per 12,000 square feet for retail, and 0.5 spaces for each bedroom for residential and 1 space per 20,000 square feet for office, 1 space per 2,000 to 5,000 square feet for retail, and 0.05 spaces for each bedroom for residential for short-term (shown in Table 4.13-24). These rates applied to the proposed TOD #2 project results in the required provision of 267 long-term and 58 short-term bicycle parking spaces, for a total of 325 bicycle parking spaces.

Therefore, as shown in Table 3-10 in Chapter 3, the proposed bicycle parking supply is sufficient and impacts are *less than significant*.

Significance Without Mitigation: Less than significant.

TRANS-16	The proposed TOD #2 project would conflict with an applicable congestion management program, including, but not limited to, level of service standards, travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

As previously discussed under TRANS-2, the CMP requires new developments that are projected to add 100 or more peak hour trips to the CMP roadway network to implement TDM measures that would reduce project impacts. As discussed under TRANS-2, the Specific Plan Update includes a suite of TDM strategies to reduce

peak single-occupancy vehicle trips and encourage use of transit, walking, and biking as transportation modes, which are based on the current best practices for TDM programs to reduce peak single-occupancy vehicle trips and encourage use of transit, walking, and biking as transportation modes. The proposed TOD #2 project would be required to be consistent with the Specific Plan Update once adopted.

Facilities in the Specific Plan Area that are part of the CMP network include the following:

- El Camino Real/Millbrae Avenue
- US 101 from Grand Avenue to Produce Avenue
- US 101 from Produce Avenue to I-380
- US 101 from I-380 to Millbrae Avenue
- US 101 from Millbrae Avenue to Broadway
- US 101 from Broadway to Peninsula Avenue

Impacts to these facilities are discussed under TRANS-15. As with the Specific Plan Update, for the purpose of conducting a conservative traffic analysis, individual TDM programs and their associated vehicle trip reductions are not included in the travel demand calculations for this EIR traffic analysis because the feasibility, funding sources, and effectiveness for these mode shift strategies are unknown at this time.

Impact TRANS-TOD#2-16: As discussed under TRANS-15, implementation of the proposed TOD #2 project would result in a *significant* impact at the CMP facilities during at least one (1) of the peak hours under Existing (2014), Near Term (2020) and Cumulative (2040) conditions as follows:

Existing (2014) Plus Project (TOD #2)

- El Camino Real/Millbrae Avenue – AM and PM peak hour

Near Term (2020) Plus Project (TOD #2)

- El Camino Real/Millbrae Avenue – AM and PM peak hour

Cumulative (2040) Plus Project (TOD #2)

- El Camino Real/Millbrae Avenue – AM and PM peak hours

Mitigation Measure TRANS-TOD#1-16a: Implement Mitigation Measure TRANS-SP-1.1.

Mitigation Measure TRANS-TOD#1-16b: Implement Mitigation Measure TRANS-TOD#1-8.1.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, implementation of Mitigation Measure TRANS-TOD#1-8.1 would require significant intersection expansion, which is not recommended due to the adverse secondary impacts to pedestrians and/or encroachment into private property. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it cannot be

assured that the reductions would sufficiently reduce the impact. Therefore, the impacts at these CMP facilities would be significant and unavoidable.

TRANS-17	The proposed TOD #2 project would not 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.

As discussed in Section 4.13.1.3, Existing Conditions, the 2012 ALUCP addresses issues related to compatibility between airport operations and surrounding proposed land use development. The TOD #2 project site is within areas of the ALUCP that limits land use to minimize impacts to people residing or working on the TOD #2 project site. Specifically, the TOD #2 project site is located within the ALCUP's Safety Compatibility Zones 1 and 2, and the mixed-use development project proposed under the proposed TOD #2 project is not considered an incompatible land use for these zones.[27] Additionally, the proposed TOD #2 project would be accessed by the existing roadway infrastructure as discussed under TRANS-15 and TRANS-16. Although traffic levels would increase in the area as a result of the proposed TOD #2 project, these increases would not result in changes to existing roadway configurations that could interfere with flight operations. Accordingly, impacts on air traffic patterns as a result of the proposed TOD #2 project would *be less than significant*.

Significance Without Mitigation: Less than significant.

TRANS-18	The proposed TOD #2 project would substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).

This section discusses vehicular roadway hazards. Hazards associated with bicycle and pedestrian circulation is discussed under TRANS-20 below.

Incompatible Land Use Hazards

The TOD #2 project site is located in a highly urbanized are of Millbrae. The types of land uses proposed as a part of the proposed TOD #2 project are generally similar to existing and surrounding uses and thereby are compatible with the existing uses in the Specific Plan Area and in the surrounding area. Therefore *no impact* would result from circulation hazards as a result of incompatible uses.

Roadway Improvement Hazards

Access to the TOD #2 project site would continue from the roadway network described is Section 4.13.1.3, Existing Conditions above. Therefore, future development under the proposed TOD #2 project would not alter the layout or design of any major city road or intersection that could result in hazardous circulation conditions.

[27] See Table 4.7-2, Safety Compatibility Criteria, in Chapter 4.7, Hazards and Hazardous Materials, of the Draft EIR for a list of incompatible land uses for these zones.

The surface lot for the retail space located on the northeast corner of the intersection of Rollins Road and Millbrae Avenue will have an inbound and a separate outbound driveway to Garden Lane. Some access controls may be needed to ensure that the parking spaces are not used by BART and Caltrain riders. The final design of the parking garage, driveway locations, and access control operations would be reviewed and approved by City Public Works staff prior to project approval to ensure safe and efficient operations. Therefore, impacts related to roadway improvements and access would be *less than significant*.

Queuing Hazards

Same as the Specific Plan Update, an intersection operations analysis was provided to identify potential impacts with respect to vehicular queuing at intersections to ensure that left turn pockets at intersections would accommodate the anticipated queue lengths so cars would not "spill" to the thru lanes. If there is insufficient storage length in left-turn pockets, queues of vehicles may extend out of the pocket into the adjacent through lane. This makes an intersection less efficient as the queue would block through vehicles from proceeding through the intersection. Further, they increase the potential for rear-end crashes which creates a safety hazard. Detailed intersection queuing calculations are provided in Appendix H of this Draft EIR. The 95th percentile queue lengths for key intersections and left-turn movements were compared for the Existing (2014) and Existing (2014) Plus Project (TOD #2) conditions. Most queuing conditions were found to be similar between the two (2) scenarios; however some queues that were already exceeding available storage space under Existing (2014) conditions were exacerbated under Existing (2014) Plus Project (TOD #2) conditions, most notably at and between the intersections of El Camino Real/Millbrae Avenue and Rollins Road/Millbrae Avenue. Additionally, the El Camino Real/Murchison Drive and El Camino Real/Trousdale Drive intersections saw queues that exceeded capacity in Existing (2014) conditions worsen in Existing (2014) Plus Project conditions. Therefore, implementation of the Specific Plan Update could result in queues that exceed available storage space resulting in a *significant* hazardous circulation condition.

Impact TRANS-TOD#2-18: Queues that were already exceeding available storage space under Existing (2014) conditions were exacerbated under Existing (2014) Plus Project (TOD #2) conditions at and between the intersections of El Camino Real/Millbrae Avenue and Rollins Road/Millbrae Avenue resulting in hazardous driving conditions from backed up traffic.

Mitigation Measure TRANS-TOD#2-18a: Implement Mitigation Measure TRANS-SP-1.1.

Mitigation Measure TRANS-TOD#2-18c: Implement Mitigation Measure TRANS-SP-1.6 and TRANS-SP-4b.

Significance With Mitigation: Significant and Unavoidable. As previously stated, although Mitigation Measure TRANS-SP-1.1 is physically feasible, it is legally infeasible because it is under Caltrans jurisdiction. Furthermore, implementation of Mitigation Measures TRANS-SP-1.6 and TRANS-SP-4b would require significant intersection expansion, which is not recommended due to the adverse secondary impacts to pedestrians and/or encroachment into private property. Furthermore, while future projects would be required to comply with the Specific Plan Update Circulation and Parking policies listed above, which, as previously stated, could potentially reduce VMT and vehicle congestion in the Specific Plan Area by providing improved pedestrian, bicycle and transit and opportunities for alternative modes of transportation for employees, it

cannot be assured that the reductions would sufficiently reduce the impact. Accordingly, the hazardous conditions at these intersections as a result of "spill-over" queuing would be significant and unavoidable.

TRANS-19 The proposed TOD #2 project would not result in inadequate emergency access.

Figure 3-28 in Chapter 3, Project Description, of this Draft EIR, shows the site plan for the proposed TOD #2 project. As shown on this figure, the proposed TOD #2 project site includes one (1) main vehicular access point at the Rollins Road/Millbrae Avenue intersection. The project would improve Garden Lane that connects Rollins Road and Aviador Avenue. Site 5A would be accessed via the Service Road off of Rollins Road just south of the BART parking garage. Site 5B would be accessed via the improved Garden Lane extension to the west of Rollins Road between Site 5A and 5B. The hotel and restaurant on Site 6A and the retail development on 6B would be accessed by either Rollins Road or the new Garden Lane extension to the east. Site 8 would be accessed by the Aviador Avenue, which crosses over the Highland Canal.

The proposed TOD #2 project would include a station drop-off driveway and new station plaza at Millbrae Station. Bus access would also be provided within the TOD #2 project site, connecting to Millbrae Avenue.

As shown on Figure 3-28, emergency response vehicles would have access to the TOD #2 project site on all sides. Emergency response vehicles would access the TOD #2 project site via Rollins Road from Millbrae Avenue. From this point, they can access the proposed TOD #2 project's components from Rollins Road, Garden Lane, Aviador Avenue, and the new Kiss and Ride area. The Garden Lane Paseo would also have emergency access from the Garden Lane roundabout, as well as the roundabout at the terminus of the Kiss and Ride area. No through access is granted at Aviador Drive north of the Highline Canal. Therefore, emergency response vehicles would not be able to access the TOD #2 project site from this point.

The TOD #2 project site is within approximately one (1) mile from the nearest fire station, located at 511 Magnolia Avenue in downtown Millbrae. Under current traffic conditions, it takes approximately four (4) minutes to access the TOD #2 project site from this fire station.

The proposed TOD #2 project would result in slightly increased traffic congestion and delay at study intersections along emergency vehicle access routes under Existing (2014) Plus Project (TOD #2) and Cumulative (2040) Plus Project (TOD #2) conditions. This additional traffic congestion could potentially slow emergency response and evacuation. However, the proposed TOD #2 project is required to comply with all City roadway and access standards as well as the minimum specifications in Municipal Code Chapter 9.30, which includes the California Fire Code, adopted by reference and local amendments[28] that insures emergency access is adequate in the city. Additionally, the proposed TOD #2 project site is well-served by public streets. For these reasons, the proposed TOD #2 project would not result in inadequate emergency access and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

[28] Millbrae Municipal Code, Title 9, Building Regulations, Chapter 9.30, Fire Code.

TRANS-20	The proposed TOD #2 project would 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 following presents an analysis of other transportation issues associated with the TOD #2 project site, including transit, pedestrian and bicycle circulation.

Transit Operations

Transit Trips Generated by the proposed TOD #2 Project

Transit trips generated by the proposed TOD #2 project were estimated and assigned to BART, Caltrain, or bus/shuttle modes. BART only provides access to destinations north of the station, while Caltrain and buses provide access to destinations both north and south of the station. For rail trips, these were assigned to BART north, Caltrain north, or Caltrain south. Bus/shuttle trips are inclusive of demand for SamTrans fixed route service (Route ECR) as well as first/last mile shuttle activity. Both boardings and alighting trips were identified, and daily, AM peak hour, and PM peak hour trips were estimated.

Transit ridership generated by the proposed TOD #2 project under Existing 2014, Near Term 2020 and Cumulative 2040 conditions was forecasted using a four-step modeling process including: 1) trip generation, 2) mode choice, 3) trip distribution, 4) trip assignment.

Trip Generation

First, total daily trips generated were estimated using Fehr & Peers' MXD+ tool. This tool uses site-specific information, including intensity and size of land uses, as inputs and produces trip generation estimates that take into account reductions in trips due to internal capture of trips among mixed uses. Initial vehicle trip generation estimates are derived from standard ITE trip generation rates; the MXD+ tool then estimates internalization based on national research by the US EPA on the impact of smart growth factors such as development density, scale, design, accessibility, transit proximity, demographics and mix of uses on site trip generation. Output of the tool includes trips generated by each land use and by trip purpose.

Mode Share

Literature on travel behavior of TOD residents and workers was reviewed to develop mode share estimates of trips generated by the TOD. Research shows that trips to and from TODs have higher transit mode shares than for locations not located near transit stations. Due to its proximity to two (2) rail lines, the proposed TOD #2 project is expected to have a high transit mode share. This mode share was applied to the trip generation results to estimate total daily rail and bus/shuttle boardings generated by the proposed TOD #2 project.

Trip Distribution and Assignment

Rail trip distribution and assignment of trips to either BART or Caltrain were determined using existing BART and Caltrain ridership data paired with intercept survey results. Those transferring at Millbrae were excluded from the analysis. Trips between Millbrae and downtown San Francisco in 2020 and 2040 would not match existing trip assignment due to planned changes to the transit system by 2040 such as the opening of the Caltrain Transbay Terminal Station. In order to determine future assignment of these trips, the ratio of total households and jobs located in each walk shed was used to assign the share of rail trips between Millbrae and downtown San Francisco which would use BART and Caltrain.

Existing (2014) Conditions

Table 4.13-59 summarizes the transit trips generated by the proposed TOD #2 project under Existing (2014) conditions.

TABLE 4.13-59 EXISTING (2014) TRANSIT TRIPS GENERATED BY TOD #2

	Daily		AM		PM	
Specific Plan Update Buildout	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
BART North	639	639	42	59	61	46
Caltrain North	103	103	8	3	5	8
Caltrain South	132	132	8	25	14	8
Bus/Shuttle	232	232	12	27	24	15
Total	1,106	1,106	70	115	104	77

Source: Fehr & Peers, 2015.

Near Term (2020) Conditions

Table 4.13-59 summarizes the transit trips generated by the proposed TOD #2 project under Near Term (2020) conditions. Due to the increased attractiveness of rail in 2020 due to transit system improvements, including increased capacity and service frequencies, a slight shift in trips towards more rail trips is forecasted.

TABLE 4.13-60 NEAR TERM (2020) TRANSIT TRIPS GENERATED BY TOD #2

	Daily		AM		PM	
Specific Plan Update Buildout	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
BART North	664	664	43	63	65	48
Caltrain North	130	130	10	3	6	11
Caltrain South	141	141	8	27	15	9
Bus/Shuttle	244	244	12	29	26	15
Total	1,179	1,179	74	122	112	82

Source: Fehr & Peers, 2015.

Cumulative (2040) Conditions

Table 4.13-61 summarizes the rail trips generated by the proposed TOD #2 project under Cumulative (2040) conditions. Due to the increased attractiveness of rail in 2040 due to transit system improvements, a travel mode shift towards a higher share of rail trips is forecasted. Furthermore, with the opening of the Caltrain Transbay Terminal, some ridership is expected to shift from BART to Caltrain. This shift is also accounted for in the forecasts of transit trips generated by the proposed TOD #2 project.

TABLE 4.13-61 CUMULATIVE (2040) TRANSIT TRIPS GENERATED BY TOD #2

	Daily		AM		PM	
Specific Plan Update Buildout	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
BART North	659	659	41	72	70	47
Caltrain North	288	288	21	6	13	22
Caltrain South	168	168	10	31	18	10
Bus/Shuttle	244	244	12	29	26	15
Total	1,360	1,360	84	139	128	94

Source: Fehr & Peers, 2015.

Transit Screenline Analysis – BART and Caltrain

Based on the transit impact criteria, the impact of additional transit ridership that would be generated by development of the proposed TOD #2 project was assessed based on transit capacity. This analysis incorporated a transit capacity utilization methodology that refers to transit riders as a percentage of the capacity of a transit line, or group of lines combined and analyzed as cordons or screenlines across which transit lines travel. The regional screenline analysis was conducted for the following three (3) screenline locations for the proposed TOD #2 project's trip making:

- **BART to/from downtown San Francisco:** The proposed TOD #2 project's contribution to the BART San Francisco screenline reflects the forecasted volume of Project Site development-generated transit trips to and from downtown San Francisco and the East Bay measured between Civic Center and 16th Street Mission BART stations.
- **Caltrain to/from South Bay:** The proposed TOD #2 project's contribution to the Caltrain South Bay screenline is based on transit ridership and capacity on the Caltrain line at the peak load point south of Millbrae measured between Millbrae and Burlingame Caltrain stations.
- **Caltrain to/from San Francisco:** The proposed TOD #2 project's contribution to the Caltrain San Francisco screenline is based on transit ridership and capacity on the Caltrain line at the peak load point north of Millbrae measured between Millbrae and San Bruno stations.

Rail transit ridership, capacity and capacity utilization were evaluated across each transit screenline during both the AM and PM peak hours, since this is when transit capacity utilization is the highest. For BART, the AM analysis represents travel in the northbound direction, while the PM analysis represents travel in the southbound direction, since those are the directions of peak travel for each time period. Ridership represents the passenger load on all of

the trains during the peak hour when crossing the screenline. Capacity represents the number of passengers that can be accommodated by the transit service during the specified time period. Capacity utilization is the percent of total capacity being used. Transit trips generated by the proposed TOD #2 project were added to the transit network to show the increase in transit capacity utilization with the proposed TOD #2 project.

Existing (2014) Conditions

The transit screenline analysis results for Existing (2014) conditions are shown in Table 4.13-62. All screenlines evaluated are operating at below 100 percent capacity utilization, meaning that there is enough capacity to accommodate all riders both without and with the proposed TOD #2 project. Capacity utilization is highest on Caltrain during the PM peak hour, immediately south of the Millbrae Station. Under Existing (2014) conditions without the proposed TOD #2 project, the capacity utilization across this screenline is 86 percent. The capacity utilization increases to 87 percent under with the proposed TOD #2 project. The total screenline capacity utilization does not increase by more than two (2) percent between the baseline and the proposed TOD #2 project. Therefore the project's impact to transit capacity is *less than significant*.

TABLE 4.13-62 EXISTING (2014) SCREENLINE ANALYSIS (TOD #2)

Regional Screenline	Existing AM Peak Hour			Existing PM Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
BASELINE						
BART						
16th Street – Civic Center	10,680	14,910	72%	10,680	14,910	72%
Caltrain						
NB: Millbrae – San Bruno	2,440	3,275	75%	1,800	3,275	55%
SB: Millbrae – Burlingame	1,930	3,275	59%	2,830	3,275	86%
Screenlines Total	15,050	21,460	70%	15,310	21,460	71%
Specific Plan Buildout						
BART						
16th Street - Civic Center	10,722	14,910	72%	10,726	14,910	72%
Caltrain						
NB: Millbrae - San Bruno	2,448	3,275	75%	1,805	3,275	55%
SB: Millbrae - Burlingame	1,938	3,275	59%	2,844	3,275	87%
Screenlines Total	15,108	21,460	70%	15,375	21,460	72%

Source: Fehr & Peers, 2015.

Near Term (2020) Conditions

The transit screenline analysis results for Near Term (2020) conditions are shown in Table 4.13-63. Both BART and Caltrain are expected to increase capacity by 2020 through providing new trains with higher rider capacity and through increases in service frequency. All screenlines evaluated are expected to be operating at below 100 percent capacity utilization, meaning that there will be enough capacity to accommodate all riders both without and with

the proposed TOD #2 project. The total screenline capacity utilization does not increase by more than two (2) percent between baseline and the proposed TOD #2 project. Therefore the project's impact to transit capacity is *less than significant*.

TABLE 4.13-63 NEAR TERM SCREENLINE ANALYSIS (TOD #2)

Regional Screenline	Near Term AM Peak Hour			Near Term PM Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
BASELINE						
BART						
16th Street – Civic Center	11,650	17,760	66%	11,650	17,760	66%
Caltrain						
NB: Millbrae – San Bruno	2,600	3,990	65%	2,340	3,990	59%
SB: Millbrae – Burlingame	2,500	3,990	63%	2,640	3,990	66%
Screenlines Total	16,750	25,740	65%	16,630	25,740	65%
Specific Plan Buildout						
BART						
16th Street - Civic Center	11,693	17,760	66%	11,698	17,760	66%
Caltrain						
NB: Millbrae - San Bruno	2,610	3,990	65%	2,346	3,990	59%
SB: Millbrae - Burlingame	2,508	3,990	63%	2,655	3,990	67%
Screenlines Total	16,812	25,740	65%	16,699	25,740	65%

Source: Fehr & Peers, 2015.

Cumulative (2040) Conditions

The transit screenline analysis results for Cumulative (2040) conditions are shown in Table 4.13-64. BART is expected to increase capacity by 2040 through increases in service frequency. All screenlines evaluated are expected to be operating at below 100 percent capacity utilization, meaning that there will be enough capacity to accommodate all riders both without and with the proposed TOD #2 project. Caltrain is expected to have high increases in ridership by 2040 with service improvements due to Caltrain electrification as well as through the opening of the Transbay Terminal in the San Francisco Financial District, which is expected to cause some shifts in ridership from BART to Caltrain. As a result, Caltrain capacity utilization, particularly in the AM peak hour, across both the screenlines directly north of and directly south of the Millbrae Station are expected to be operating at near capacity. Capacity utilization across these screenlines during the AM peak hour is forecasted to be 98 percent with and without the proposed TOD #2 project north of the station. The total screenline capacity utilization does not increase by more than two (2) percent between the baseline and the proposed TOD #2 project. Therefore the project's impact to transit capacity is *less than significant*.

TABLE 4.13-64 CUMULATIVE (2040) SCREENLINE ANALYSIS (TOD #2)

Regional Screenline	Cumulative AM Peak Hour			Cumulative PM Peak Hour		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Baseline						
BART						
16th Street – Civic Center	14,400	24,180	60%	14,400	24,180	60%
Caltrain						
NB: Millbrae – San Bruno	3,902	3,990	98%	3,325	3,990	83%
SB: Millbrae – Burlingame	3,898	3,990	98%	3,559	3,990	89%
Screenlines Total	22,200	32,160	69%	21,284	32,160	66%
Specific Plan Update Buildout						
BART						
16th Street - Civic Center	14,441	24,180	60%	14,447	24,180	60%
Caltrain						
NB: Millbrae - San Bruno	3,923	3,990	98%	3,338	3,990	84%
SB: Millbrae - Burlingame	3,908	3,990	98%	3,577	3,990	90%
Screenlines Total	22,272	32,160	69%	21,362	32,160	66%

Source: Fehr & Peers, 2015.

Transit Access

Shuttles are a primary mode of access from BART/Caltrain to nearby employment (shuttles solve the "last mile" transportation problem from regional transit) and will continue to play an important role in the future of the Millbrae Station for both transfers from regional rail as well as the proposed TOD #2 project's new residents traveling to/from work. The existing eastern bus loop/transit center contains 11 sawtooth bus bays that can accommodate a range of vehicle sizes (up to 60 foot articulated transit buses) and approximately 560 feet of linear layover space. Public and private first/last mile shuttles as well as SamTrans Route 397 (owl) serve the Millbrae Station via the eastern bus loop/transit center.

A total of seven (7) bus bays are needed on the eastside to accommodate future projected bus and shuttle service. The proposed TOD #2 project proposes to relocate shuttle access east of Rollins Road on Garden Lane. This development proposal provides approximately 200 feet of linear curb space on the north side of Garden Lane for shuttle pickup and drop off as well as two (2) 70-foot loading/layover zones in front of the bus turnaround at the end of the road. A total of five (5) bays for shuttles (including layover) are being proposed.

Under this proposal, the number of bus and shuttle bays will not be sufficient to accommodate the projected bus and shuttle service. The walking distance to the shuttle stops on the east side of Rollins Road will be greater than the walking distance to the existing bus facility and shuttle riders will be required to cross Rollins Road with potential pedestrian safety concerns. This would result in a *significant* impact under existing and cumulative conditions.

Impact TRANS-TOD#2-20: The proposed TOD #2 project would reduce access to transit service or create unsafe access for transit passengers.

Mitigation Measure TRANS-TOD#2-20: The project shall provide shuttle access on the eastside of the station as close to the Millbrae Station entrance as possible taking into consideration the design constraints of the proposed TOD #2 project. Cutaway shuttles (35 feet and smaller) should be allowed to use the East Station Access Road with accommodations for four (4) bays while the three (3) bays and two (2) layover spots included in the TOD #2 project site would provide access to larger (up to 45 feet) OTR coaches and transit buses. Garden Lane east of Rollins Road shall be widened to 12-foot travel lanes to safely accommodate bi-directional bus activity. The intersection crossing at Garden Lane and Rollins Road shall be designed with improvements to enhance the safety and convenience of pedestrian access to shuttle access on Garden Lane.

Significance With Mitigation: Less than significant.

Pedestrian and Bicycle Facilities

The proposed TOD #2 project would result in increased pedestrian and bicycle activity in and around the TOD #2 project site. To accommodate this growth, the proposed TOD #2 project would provide a network of "complete streets" that serve multiple travel modes, including walking and biking. The proposed TOD #2 project would enhance pedestrian and bicycle operations through new and widened sidewalks and on-site bicycle facilities. As shown on Figure 3-28 in Chapter 3, Project Description, of this Draft EIR, the sidewalk width in the TOD #2 project site would vary from eight (8) to 22 feet in width around the perimeter of the building. With the exceptions of the east-west sidewalk on the southwest corner and the north-south sidewalk on the northeast corner of Garden Lane and Rollins Road, these sidewalks vary between 20 and 22 feet in width. Pedestrian and bicycle access is also provided via the 50-foot wide Garden Lane paseo.

As shown in Figure 3-35, the proposed TOD #2 project would provide bicycle access along the new Rollins Road, Garden Lane, and Aviador Avenue. A Class I bicycle facility would be provided on Aviador Avenue and would connect to the planned Bay Trail. A Class III bicycle facility would also be included along Aviador Avenue and the new Garden Lane. Additional bicycle connections would be included on Aviador Avenue and the new Garden Lane, as well as the Garden Lane Paseo and the north side of Millbrae Avenue west of Rollins Road. Pedestrian connections will lead from Millbrae Avenue, the Site 6A parking lot, and the Site 8 parking lot, to the Station Plaza. Retrofitted bicycle parking will be included in the current station parking structure; Staple style bike racks will be included at the western terminus of the Garden Lane Paseo; Secure bike parking would be located in the Site 5A and Site 5B parking garages; BART bike lockers would be placed at the station plaza; and a bike kitchen would be placed in the Site 5B parking garage.

On site pedestrian and bicycle facilities would include lighting for safety.

The proposed TOD #2 project is designed to be consistent with the Specific Plan Update and would not preclude the development of bicycle and pedestrian facilities on the TOD #2 project site or in the Specific Plan Area. Considering the pedestrian and bicycle improvements associated with the proposed TOD #2 project, the project would improve existing pedestrian and bicycle conditions, minimize on-site potential conflicts between various modes, and provide safe and efficient pedestrian, bicycle, and vehicle connections on the TOD #2 project site and

the surrounding circulation systems. Therefore, impacts to bicycle and pedestrian conditions would be *less than significant*.

Significance Without Mitigation: Less than significant.

TRANS-21	Implementation of the proposed TOD #2 project, in combination with past, present, and reasonably foreseeable projects, would result in additional cumulatively considerable impacts.

The analysis of the proposed TOD #2 project, above, addresses cumulative impacts to the transportation network in the city and its surroundings; accordingly, cumulative impacts would be the same as proposed TOD #2 project-specific impacts.

Significance With Mitigation: Significant and unavoidable.