

1477 Huntington

Administrative Draft Transportation Impact Analysis

Prepared for:

Raney Planning & Management, Inc.

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FEHR  PEERS

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1. Project Description

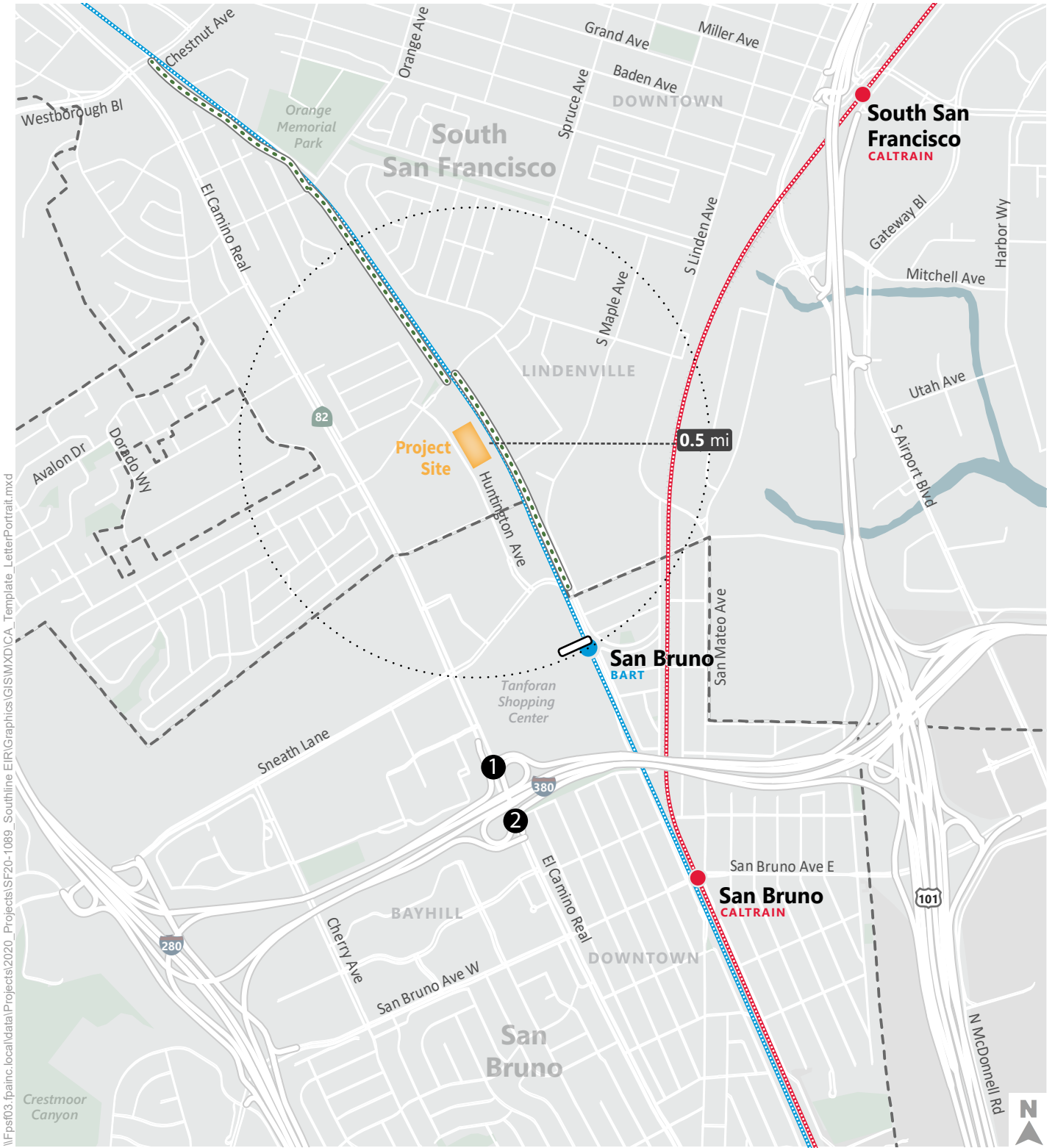
The transportation impact analysis (TIA) evaluates potential transportation impacts associated with the 1477 Huntington Avenue development project ("Project"). The Project consists of a demolition of a 8,350 square foot single story office building and the development of an eight-story structure with 262 apartment units on a 1.98 acre site in the City of South San Francisco. The City of South San Francisco General Plan designates the site as Business Commercial.

The Project site is bound by Huntington Avenue to the west and the Centennial Way Trail to the east. San Mateo County Human Services Office borders the Project site to the north, and an office building complex borders the site to the south. Bicycle, pedestrian, and motor vehicle site access is provided via a driveway on Huntington Avenue on the southern end of the site. A separate driveway on Huntington Avenue for loading/move-in is available at the northern end of the site, and short-term on street parking is proposed between these driveways. The Project site is located approximately 0.5 miles north of the San Bruno BART Station and approximately 1.2 miles north of the San Bruno Caltrain Station. The site is proposed to be developed with 262 apartment units, 309 parking stalls on the first two stories, 144 long-term bike parking stalls, and 11,670 square feet of indoor amenities. Apartment amenities will include bike storage, co-working space, a club room, fitness center, courtyards, and outdoor space on the top floor. The FAR for the building is 3.7.

The Project site is in the Business Commercial zoning district. To accommodate the proposed residential use, the Project site will need to be rezoned to be consistent with the proposed land use for Multi-Family Residential over Parking. The Project has developed a Transportation Demand Management Plan (TDM Plan) to reduce vehicle trips and justify a parking supply that is lower than required by City code. The TDM Plan serves to encourage non-auto trips and specifically seeks to reduce non-drive-alone vehicle trips.

Figure 1-1 shows the Project location, study intersections, and the surrounding roadway system. **Figure 1-2** presents the Project site plan received from Raney Planning & Management. All figures in the report can be found at the end of their respective sections.





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- 1 Study Intersections
- Project Site
- Centennial Way Trail
- City Limits
- BART
- Caltrain
- SamTrans Hub



Figure 1-1
Project Location



Figure 1-2
Project Site Plan

2. Environmental Setting

This section describes the existing transportation and circulation setting in the vicinity of the Project site: the existing roadway network, transit network and service, pedestrian conditions, bicycle conditions, and emergency vehicle access. A description of agencies with jurisdiction over transportation in South San Francisco and a summary of relevant plans and policies are provided in **Appendix A**.

2.1 Roadway Facilities

The Project is located southeast of the intersection of South Spruce Avenue and Huntington Avenue. Regional access to the site is provided via El Camino Real to the west and I-380 to the south. Relevant roadway plans and policies (e.g. South San Francisco General Plan, South San Francisco Pedestrian Plan, South San Francisco Bicycle Plan, San Bruno Walk 'N Bike Plan) are discussed in Appendix A. Vehicular access to the Project site is provided via a driveway on Huntington Avenue, approximately 500 feet south of the intersection of South Spruce Avenue and Huntington Avenue, and a separate driveway for loading/move-in is provided on the northern side of the site.

Key local roadways in the vicinity of the Project site are described below:

- *I-380 is an east-west highway that serves as a connection between I-280 and US 101 just north of the San Francisco International Airport, and splits San Bruno creating a barrier to north-south bicycle and pedestrian connectivity. Access to I-380 is provided along El Camino Real south of the Project site, southwest of The Shops at Tanforan.*
- *US 101 is an eight-lane freeway and principal north-south roadway connection between San Francisco, San Jose, and intermediate San Francisco Peninsula cities. In South San Francisco, US 101 is located east of the Project Site and can be accessed via El Camino Real and I-380. Near the Project, US 101 carries about 220,000 vehicles per day and defines the East of 101 area's western edge and barrier to east-west bicycle and pedestrian connectivity. Access from the Project site to US 101 is available at the I-380 on- and off-ramps at El Camino Real.*
- *I-280 is a major north-south eight-lane highway that runs from San Jose to San Francisco mostly parallel to US 101 serving San Francisco Peninsula cities west of US 101 and El Camino Real. Connection to I-280 from the Project site is provided at on- and off-ramps at Sneath Lane, and through the I-380 on- and off-ramps at El Camino Real.*
- *State Route 82/El Camino Real is a highway that runs north-south from I-880 in San Jose to I-280 in San Francisco following the San Francisco Peninsula. Within the vicinity of the Project, El Camino Real is a six-lane roadway operating parallel to US 101, approximately 0.3 miles west of the Project site.*
- *South Spruce Avenue is an east-west four lane arterial that connects Huntington Avenue with downtown South San Francisco to the north and El Camino Real approximately 0.3 miles to the west.*
- *Sneath Lane is a four lane east-west arterial. South of the Project site, Sneath Lane connects Huntington Avenue with El Camino Real.*



- *Huntington Avenue is a four lane north-south arterial which serves the San Bruno BART and San Bruno Caltrain Stations and provides access to the Project site. Huntington Avenue north of Sneath Lane has no on street parking and the Project is proposing street parking in front of the apartment building between the site driveways. Pedestrians and bicyclists may access the Centennial Way Trail along Huntington Avenue approximately 250 feet east of the intersection of Sneath Lane and Huntington Avenue. Huntington Avenue is being considered for a road diet from five lanes to three lanes to provide space for bike lanes in each direction of travel. See Section 3.4.4 and Appendix A for more information on proposed changes along Huntington Avenue.*

2.2 Transit Facilities and Service

The Project site is served by regional rail and bus transit services. The San Bruno BART Station is located approximately 0.5 miles south of the Project site and local shuttle service is provided at the Station, including the Bayhill San Bruno Shuttle. SamTrans bus service runs along Huntington Avenue immediately adjacent to the Project site and many SamTrans routes connect at a hub adjacent to the San Bruno BART Station. The San Bruno Caltrain Station is also located along Huntington Avenue, approximately 1.2 miles south of the Project site. The existing transit services are shown in **Figure 2-1**. Relevant transit plans and policies are discussed in Appendix A.

Descriptions of transit service in this section reflect conditions prior to the COVID-19 pandemic. Due to the atypical travel patterns during the COVID-19 pandemic, transit service has been temporarily reduced. Agencies plan to restore service to comparable levels once the effects of the pandemic begin to subside.

2.2.1 Regional Transit Service

The following transit services operate within South San Francisco and San Bruno, and are accessible from the Project site by walking, bicycling, first- and last-mile shuttle connection, or parking at the rail service stations:

Bay Area Rapid Transit (BART) provides regional rail service between the East Bay, San Francisco, and San Mateo County, connecting San Francisco International Airport and Millbrae Intermodal Station to the south, San Francisco to the north, and Oakland, Richmond, Pittsburgh/Bay Point, Dublin/Pleasanton and Fremont in the East Bay. The San Bruno BART Station is the closest station to the Project site, located approximately 0.5 miles to the south of the Project at 1151 Huntington Avenue. The Station provides service along the Richmond-Millbrae Line and the Antioch-SFO/Millbrae Line with transfer to other BART lines at Balboa Park. Trains provide service from 5:00 AM to 12:00 AM on weekdays, 6:00 AM to 12:00 AM on Saturdays, and 8:00 AM to 9:00 PM on Sundays. Trains operate on 15-minute headways during peak hours and 20-minute headways during off-peak hours.

Caltrain provides passenger rail service on the Peninsula between San Francisco and San Jose and limited-service trains to Morgan Hill and Gilroy during weekday commute periods. The San Bruno Caltrain Station is located approximately 1.2 miles south of the Project at 833 San Mateo Avenue. The Caltrain Station serves local and limited-service trains. The Station provides weekday service from 5:40 AM to 12:00 AM with



headways varying between 15-45 minutes during peak hours and 60-minute headways during off-peak hours.

San Mateo County Transit District (SamTrans) provides bus service in San Mateo County. Two bus stops exist along the Project site frontage serviced by Route 141, which operates every 30-40 minutes on weekdays and every 60 minutes on weekends. Additional SamTrans stops are within walking and biking distance from the Project site, including a major transit stop located adjacent to the San Bruno BART Station which currently serves Routes 140, 141, and ECR. Route 140 operates every 60 minutes and Route ECR operates every 15 minutes. Additional ECR bus stops are approximately 0.4 miles from the Project site. A southbound ECR bus stop is located at the intersection of Brentwood Drive and El Camino Real, approximately 250 feet south of the intersection of South Spruce Avenue and El Camino Real, and northbound and southbound ECR bus stops are located on Sneath Lane, approximately 300 feet west of the intersection of Sneath Lane and Huntington Avenue. SamTrans is in the process of evaluating existing routes and developing additional routes to improve the experience for existing riders, grow new and more frequent ridership, and improve the efficiency and effectiveness of SamTrans as a mobility provider. *Reimagine SamTrans*¹ is a comprehensive operational analysis (COA) that is considering changes to trip-making patterns in response to COVID-19 and conducting public outreach to better serve San Mateo County. Bus routes within proximity to the Project site are expected to change under cumulative conditions. Routes 140, 141, and ECR are all being studied to increase frequency of service, expand operational hours, and improve on-time performance and speed. Additional information on how changes to bus service may affect future residents of the Project is discussed in Section 3.6.2.

2.2.2 Shuttle Service

The Bayhill San Bruno shuttle provides commute period first- and last-mile connections from major employers in San Bruno to the San Bruno BART Station and operates every 15 minutes during the AM and PM peak periods. The shuttle runs in a clockwise loop along Sneath Lane, Huntington Avenue, San Bruno Avenue, and Cherry Avenue with stops at the San Bruno BART Station (approximately 0.5 miles from the Project site) and at 850 Cherry Avenue (approximately 1.7 miles from the Project site). Residents of the Project may take the Bayhill San Bruno Shuttle to reach employment centers west of Huntington Avenue. The free South City shuttle offers commute period first- and last-mile connections from the South San Francisco BART Station to the City of South San Francisco including to downtown, South San Francisco schools and parks, and SamTrans bus routes. The shuttle operates in a clockwise and counterclockwise loop every 45-50 minutes. Residents of the Project may take the free South City shuttle from El Camino Real at West Orange Avenue, approximately 1.1 miles north of the Project site, to travel within South San Francisco.

Three *Peninsula Traffic Congestion Relief Alliance (Commute.org)* shuttles provide weekday service through South San Francisco; however, no stops exist near the Project site. Commute.org has a Bicycle to Work Rewards Program that runs from July 2020 through December 2021 where commuters who live and work in San Mateo County are eligible for the Guaranteed Ride Home program, in which Commute.org will cover

¹ <https://www.reimaginesamtrans.com/project-overview/>



the cost of a ride home in case of bad weather or bicycle theft/breakage, and commuters can receive up to \$100 for logging bicycle commutes to work in San Mateo County.

2.3 Pedestrian Facilities

Pedestrian facilities include trails, sidewalks, crosswalks, and pedestrian signals.

The Centennial Way Trail is a 2.85-mile rail-trail that begins north of the San Bruno BART Station along Huntington Avenue and continues north until the South San Francisco BART Station at Bart Road. The Trail runs parallel to Huntington Avenue near the Project site and is an approximately 10 feet wide paved trail suitable for pedestrians and bicyclists and is lit for night use. Residents of the Project, along with other members of the community, will be able to access the Trail behind the Project site via a public access easement along the provided trail connection from the perimeter sidewalk adjacent to the main driveway. Specific details of the trail connection are still being finalized; however, the trail will be a minimum of five feet wide and will likely include pedestrian amenities such as benches, trashcans, pedestrian-scaled lighting, and bicycle racks. Residents may also access the Centennial Way Trail along South Spruce Avenue north of the Project, and at the end of the trail on Huntington Avenue north of the San Bruno BART Station.



Centennial Way Trail entrance along South Spruce Avenue facing south.

Source: Fehr & Peers, 2021

Continuous sidewalks exist along roadways within the Project vicinity, including both sides of Huntington Avenue and South Spruce Avenue. Continuous sidewalks also exist for pedestrians traveling between the San Bruno BART Station and the Project site, and sidewalks are generally in good condition with no physical obstructions in the sidewalk and few minor cracks in the pavement. Sidewalk widths vary along Huntington Avenue from eight to ten feet near the San Bruno BART Station to about five feet between the Project site and the intersection of Huntington Avenue and Sneath Lane. The photos below show Huntington Avenue near the near the Project site (left) and near the San Bruno BART Station (right).



Eastern side of Huntington Avenue north of Sneath Lane facing north. Attention to the sidewalk width and condition.

Source: Fehr & Peers, 2021



Western side of Huntington Avenue south of Sneath Lane facing south and approaching the San Bruno BART Station to the right. Attention to the sidewalk width and condition.

Source: Fehr & Peers, 2021

Most of the driveway locations along the eastern side of Huntington Avenue north of Sneath Lane are designed so the sidewalks dip down to roadway level, which can be problematic for wheelchair users to travel along the sidewalk. Sight distance at driveways is a potential safety concern as drivers' sight may be obstructed by landscaping and signposts, making it difficult to spot a pedestrian crossing.

Huntington Avenue and Sneath Lane, both major arterials, intersect just north of the San Bruno BART Station. Pedestrians will likely cross this intersection when walking to the San Bruno BART and Caltrain Stations, as well as to the shops at Tanforan. The roadways serve vehicles at relatively high speeds, and the wide crossing distances for pedestrians make it a potential challenge for bicycle and pedestrian activity. Bicyclists and pedestrians traveling north from the transit stations to the Project site may avoid the intersection by traveling along the Centennial Way Trail. However, bicyclists and pedestrians traveling to



downtown San Bruno will likely travel through the intersection of Huntington Avenue and Sneath Lane, as many commercial uses are west of Huntington Avenue.

Pedestrians traveling between the Project site and the San Bruno BART Station are likely to cross Huntington Avenue along the east leg of the Huntington Avenue and Sneath Lane intersection. The east leg crossing is split into two stages and a refuge island at the southeast corner of the intersection is available for pedestrians to wait to either cross the southern leg or cross the yield-controlled slip lane to reach the San Bruno BART Station. The pedestrian refuge island is wide and provides minimal protection for pedestrians waiting at street level. The photos below are taken from the pedestrian refuge island.



East leg crossing at Huntington Avenue and Sneath Lane facing north. Attention to the approximate 90 ft. wide crossing distance and the large pedestrian refuge island.

Source: Fehr & Peers, 2021



East leg crossing at Huntington Avenue and Sneath Lane facing south. Attention to the approximate 30 ft. wide slip lane and angle at which vehicles turning right will approach the pedestrian crossing.

Source: Fehr & Peers, 2021

The first phase of crossing Huntington Avenue along the east leg heading south is approximately 90 feet, and the second stage is approximately 30 feet. The relatively large crossing distances may be a safety concern for pedestrians as the distance exposes pedestrians to oncoming vehicles for a longer time. Additionally, the wide slip lane allows for vehicles exiting the San Bruno BART parking garage to travel at higher speeds, and because drivers are not able to view pedestrians head on, sight distance can make it difficult for drivers to spot pedestrians.

At the intersection of Huntington Avenue and Sneath Lane, pedestrian signal heads display a countdown to let pedestrians know how much time they have remaining to cross, and the standard crosswalk striping is in good condition and visible to drivers. A continental or ladder crosswalk would provide higher visibility



for pedestrians than a standard crosswalk and these have been shown to increase motorist yielding to pedestrians. The curb cuts align well with the crosswalk striping; however, do not have tactile domes for ADA accessibility.

East of the intersection of Huntington Avenue and Sneath Lane on the southern sidewalk adjacent to the San Bruno BART Station, pedestrians pass two driveway crossings where buses travel in and out of the SamTrans hub. These crossing have faded striping and are missing tactile pads, which are important for ADA accessibility.



Pedestrian crossing along Huntington Avenue facing east where buses enter the SamTrans hub.
Source: Fehr & Peers, 2021

The Southline EIR Development is proposing a new intersection connecting Sneath Lane, Huntington Avenue, Maple Avenue, and Southline Avenue; extending the Centennial Way Trail to the San Bruno BART Station; providing a signalized driveway to the SamTrans Transit Center; and enhancing pedestrian access to the San Bruno BART Station with new bulbouts and high visibility crosswalks.

Relevant pedestrian plans and policies are discussed in Appendix A.

2.4 Bicycle Facilities

Bicycle facilities consist of separated bikeways, bicycle lanes, routes, trails, and paths, as well as bike parking, bike lockers, and showers for cyclists. Caltrans recognizes four classifications of bicycle facilities:

- Class I – Shared-Use Pathway: Provides a completely separated right-of-way for the exclusive use of cyclists and pedestrians with cross-flow minimized (e.g. off-street bicycle paths).



- Class II – Bicycle Lanes: Provides a striped lane for one-way travel on a street or highway. May include a “buffer” zone consisting of a striped portion of roadway between the bicycle lane and the nearest vehicle travel lane.
- Class III – Bicycle Route: Provides for shared use with motor vehicle traffic; however, are often signed or include a striped bicycle lane.
- Class IV – Separated Bikeway: Provides a right-of-way designated exclusively for bicycle travel adjacent to a roadway and which are protected from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

The area surrounding the Project site has disconnected bicycle facilities with planned bikeways that will complete the bike network. Many bicycle routes in South San Francisco are Class III bicycle routes that are connected facilities throughout downtown South San Francisco. The majority of San Bruno does not have existing bikeways, and several roadways downtown and along transit corridors have planned Class III and Class IV bikeways. Current bicycle facilities and planned bikeways in the Project vicinity, as designated by the South San Francisco Bicycle Master Plan (2011) and the draft Active South City Plan (ongoing), are shown in **Figure 2-2**, and discussed below.

- Huntington Avenue has a proposed Class IV protected bikeway between downtown San Bruno near the San Bruno Caltrain Station and the intersection of Huntington Avenue and Sneath Lane to the north. This pathway would join the Centennial Way Trail near the Huntington Avenue and Sneath Lane intersection to the San Bruno BART and San Bruno Caltrain Stations to provide a completely protected, car free path for bicyclists along the transit corridor. North of the intersection of Huntington Avenue and Sneath Lane, Huntington Avenue is a Class III bicycle route, which continues as a Class III bicycle route along South Spruce Avenue through downtown South San Francisco. A Class II bicycle lane is planned to connect the intersection of Huntington Avenue and Sneath Lane with the Class III bicycle route on Huntington Avenue to the north.
- Class II bicycle lanes are provided on Sneath Lane; however, disconnect through the intersection of Sneath Lane at El Camino Real, and at the I-280 on- and off- ramps. Class II bicycle lanes are planned to continue the bike facilities through these intersections.
- The Centennial Way Trail is a Class I mixed-use trail that runs north-south connecting the South San Francisco BART Station to the San Bruno BART Station. The Trail borders the Project site to the east.

Bicyclists primarily access the Project site via Huntington Avenue and the Centennial Way Trail. The lack of separation from higher speed vehicle traffic, protected intersections, and a bicycle network are all challenges to cycling in the area. Challenges to cycling related to safety, comfort, access, and circulation, create barriers for people who may bike but have access to other forms of mobility, such as people who own a vehicle. Huntington Avenue between South Spruce Avenue and Sneath Lane is being considered for a road diet to reduce vehicle lanes from two lanes in each direction with a center left-turn lane to one vehicle lane and bike lanes in each direction. With the addition of the Project, bike lanes will be present along Huntington



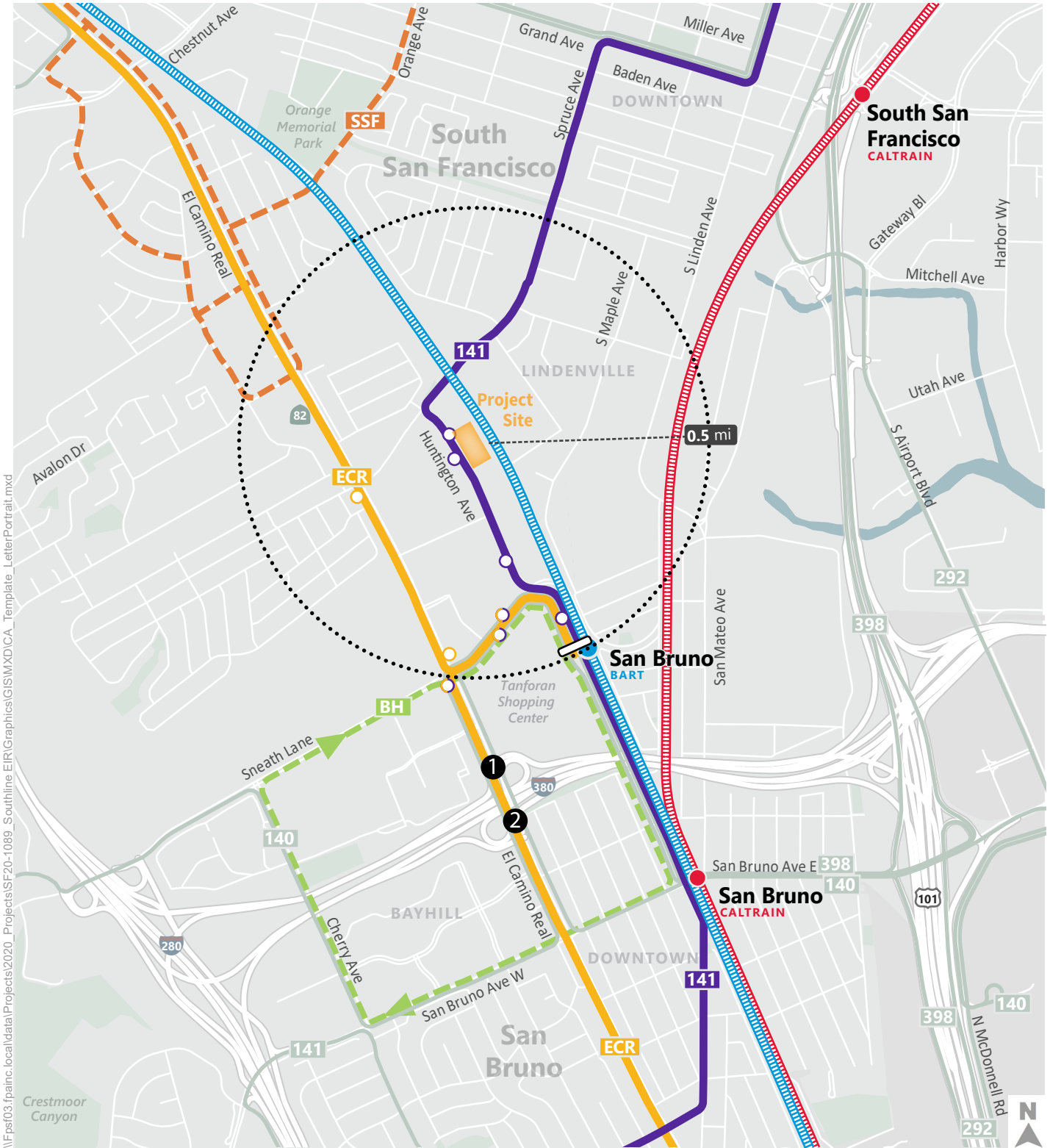
Avenue as well as on street short term vehicle parking in front of the Project site. Bicyclists must take precaution when traveling adjacent to vehicle parking. A buffer space or wider bicycle lane will provide bicyclists more comfort and protection from vehicle doors opening in the on-street parking space.

Additional relevant bicycle plans and policies are discussed in Appendix A.

2.5 Emergency Vehicle Access

Emergency vehicles typically use major streets through the study area when heading to and from an emergency and/or emergency facility. Arterial roadways allow emergency vehicles to travel at higher speeds and provide enough clearance space to permit other traffic to maneuver out of the path of the emergency vehicle and yield the right-of-way. The Project site is located approximately 1.8 miles north of the San Bruno Fire Department at 555 El Camino Real. Emergency vehicle access to the Project site is along arterials, primarily from El Camino Real, Sneath Lane, and Huntington Avenue. El Camino Real has three travel lanes in each direction, and Sneath Lane and Huntington Avenue have two travel lanes in each direction. Travel time is approximately five minutes from the San Bruno Fire Station to the Project site. The second closest fire station is the South San Francisco Fire Station 62, located approximately 2.1 miles east of the Project site at 249 Harbor Way. The Station travel time is approximately six minutes and travel to the Project site is primarily along South Spruce Avenue or Sneath Lane. South Spruce Avenue has two travel lanes in each direction and a center left turn lane. The planned road diet along Huntington Avenue, which is considered in the Existing Plus Project and Cumulative scenarios, is not expected to increase vehicle travel times significantly. A discussion of the planned road diet is provided in Section 3.4.4 and in Appendix A. The Project site has a 26-foot-wide emergency vehicle access space situated near the main building entrance. The lawn supports quick response times in an emergency and allows for larger vehicle turning movements.





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1 Study Intersections

Project Site

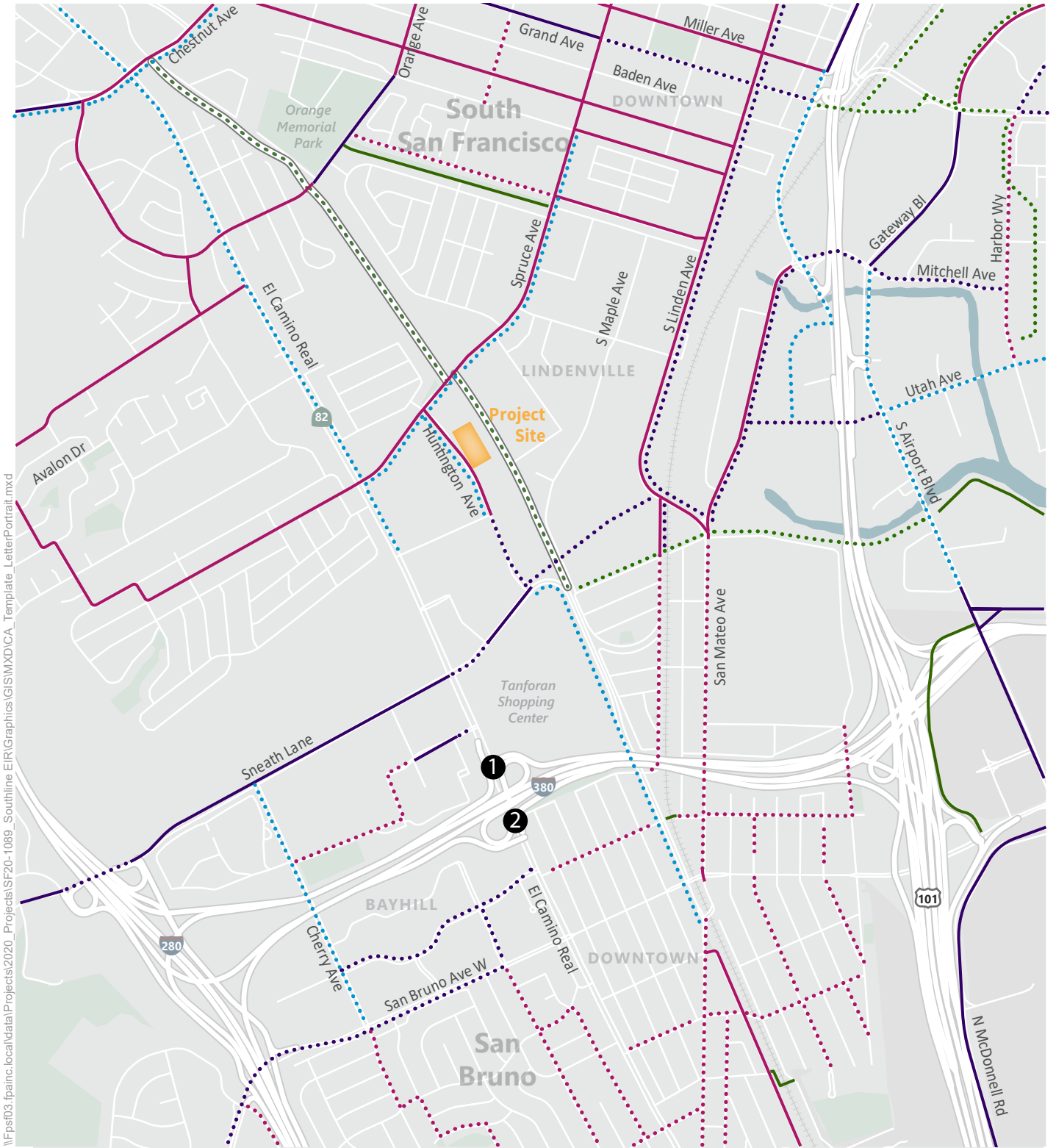
SamTrans Hub

Transit Services

- - - BART
- . . . Caltrain
- SamTrans Route ECR and nearest stops to project site
- SamTrans Route 141 and nearest stops to project site
- - - SamTrans other routes
- - - Free South City Shuttle
- - - Bayhill San Bruno Shuttle



Figure 2-1
Existing Transit Service



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1 Study Intersections

Project Site

Centennial Way Trail

Existing Bikeways

- Class I Shared Path
- Class II Bicycle Lane
- Class III Bicycle Route

Planned Bikeways

- ... Class I Shared Path
- ... Class II Bicycle Lane
- ... Class III Bicycle Route
- ... Class IV Separated Bikeway



Figure 2-2
Existing and Planned Bicycle Facilities

3. Transportation Analysis

This section includes analysis and findings of Project effects on transportation services and facilities, including motor vehicle travel and operations, transit service, pedestrian facilities and bicycle facilities. The amount and distance of motor vehicle travel was analyzed using vehicle miles traveled (VMT), while the motor vehicle operations analysis focused on weekday AM and PM peak hour queue conditions at freeway off-ramps. Technical context for VMT analysis is presented in **Appendix B**. Other vehicle operations measures, such as Project added trips to nearby intersections, are presented in **Appendix C** for informational purposes. Bicycle, pedestrian, and transit impacts were qualitatively assessed using transportation planning and engineering methods and practices.

3.1 Significance Criteria

The impacts of the Project related to transportation would be considered significant if any of the following Standards of Significance are exceeded, in accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) related to VMT;
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access

Thresholds of significance used in this document are based on Appendix G criteria as well as local considerations from adopted policies by the City of South San Francisco. The criteria of significance apply to all Project scenarios as measured against the corresponding no Project scenarios.

3.1.1 Vehicle Miles Traveled (VMT)

Pursuant to City of South San Francisco Resolution 77-2020 and CEQA Guidelines Section 15064.3, subdivision (b)(1), the following screening criteria applies to land use projects:

Presumption of Less Than Significant Impact Near Transit Stations: CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor will have a less-than-significant impact on VMT. This presumption would not apply, however, if Project-specific or location-specific information indicates that the Project will still generate significant levels of VMT. For example, the presumption might not be appropriate if the Project:



- Has a Floor Area Ratio (FAR) of less than 0.75
- Includes more parking for use by residents, customers, or employees of the Project than required by the jurisdiction (if the jurisdiction requires the Project to supply parking)
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization)
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units

If a land use Project is not presumed to have a less than significant impact, the following criteria applies:

- A significant impact would occur if development of the Project would generate per-capita vehicle miles traveled (VMT) greater than the City's adopted threshold of greater than 15 percent below the regional average.

3.1.2 Design Hazards

3.1.2.1 Geometric Design Hazards

- A significant impact would occur if the Project substantially increases hazards to street users due to a design feature or land use(s) incompatible with the surrounding street network.

3.1.2.2 Vehicle Queueing at Freeway Ramps

- A significant impact would occur if the Project causes vehicle queues approaching a given movement downstream of Caltrans freeway facilities to exceed existing storage space for that movement or would contribute to existing vehicle queues that exceed storage space for that movement.

3.1.3 Bicycle, Pedestrian, and Transit

- A significant impact would occur if Project traffic would produce a detrimental impact to the performance or safety of existing bicycle or pedestrian facilities, or conflict with adopted plans and programs.
- A significant impact would occur if Project traffic would produce a detrimental impact to the performance or safety of local transit or shuttle service or conflict with adopted plans and programs.

3.1.4 Emergency Access

- A significant impact would occur if the project would result in inadequate emergency access.

3.2 Analysis Scenarios

The impacts of the Project to the surrounding transportation system were evaluated for the four scenarios listed below:



- Scenario 1: Existing conditions
- Scenario 2: Existing Plus Project conditions
- Scenario 3: Cumulative conditions
- Scenario 4: Cumulative Plus Project conditions

A description of the methods used to estimate the amount of traffic and VMT generated by the Project is provided below. Project-specific impacts are described under Section 4. Freeway Queuing Reports from Synchro are provided in **Appendix D** and the expected traffic volumes at the El Camino Real and I-380 eastbound and westbound off-ramps during peak hours for each scenario are shown in Appendix C.

3.2.1 Existing Conditions

Existing conditions represent the baseline condition upon which Project impacts are measured. The baseline condition represents conditions in 2019 prior to the COVID-19 pandemic. Due to the atypical travel patterns and transit service levels during the COVID-19 pandemic, new data was not collected for this analysis.

3.2.2 Existing Plus Project Conditions

Existing Plus Project conditions represent the baseline condition with the addition of the Project. Traffic volumes for Existing Plus Project conditions include existing traffic volumes plus traffic generated by the Project. Existing Plus Project conditions were compared to Existing conditions to determine potential immediate project impacts.

3.2.3 Cumulative Conditions

Cumulative conditions include transportation demand resulting from reasonably foreseeable land use changes and conditions associated with funded transportation projects at year 2040. The Southline EIR Development, which adds a roadway, Southline Avenue, between Sneath Lane and Dollar & Linden Avenues just north of Tanforan Avenue, will include green space and retail as well as office and R&D uses. The Centennial Village will include a new Safeway and office / R&D uses at the corner of El Camino Real and South Spruce Avenue, an approximately eight-minute walk (0.4 miles) to the west of the Project site. Planned pedestrian and bicycle improvements at the intersection of El Camino Real and South Spruce Avenue will make it safer and more comfortable to walk and bike to Centennial Village. The Southline EIR Development is proposing a new intersection connecting Sneath Lane, Huntington Avenue, Maple Avenue, and Southline Avenue; providing a signalized driveway to the SamTrans Transit Center; and extension of various bicycle and pedestrian facilities, including extending the Centennial Way Trail to the San Bruno BART station and enhancing pedestrian access to the San Bruno BART station with new bulbouts and high visibility crosswalks. Cumulative conditions are based on land use and transportation conditions included in Plan Bay Area 2040, as represented in the C/CAG-VTA Bi-County Transportation Demand Model (C/CAG model). The C/CAG model is a four-step trip-based travel demand model designed to forecast how land uses and transportation interact within San Mateo and Santa Clara Counties.



3.2.4 Cumulative Plus Project Conditions

Cumulative Plus Project conditions represent the cumulative condition with the addition of the Project to determine the extent to which the Project would contribute to long-term cumulative transportation impacts.

3.3 Vehicle Miles Traveled

SB 743 applies to the Project, which is a qualifying residential Project located on an infill site within a transit priority area, as those terms are defined under Section 21099 of the Public Resources Code. CEQA Guidelines Section 15064.3(b)(1), implementing SB 743, establishes a presumption of less than significant for VMT impacts related to qualifying land use Projects. Projects located within 0.5 miles of a high-quality transit area are presumed to have less than significant VMT impacts unless any of the following is true:

- Floor Area Ratio (FAR) < 0.75
- More parking than required by City code
- Inconsistent with the applicable RTP/SCS, as determined by the City
- Replacing affordable housing units with market-rate units

The Project is located within 0.5 miles of the San Bruno BART Station and within 0.5 miles of a SamTrans ECR bus stop, as shown in Figure 2-1. The BART Station is a regional commuter rail station and is considered to be a major transit stop per the Governor's Office of Planning and Research (OPR) Guidance. The Project also qualifies as within a high-quality transit corridor based on the proximity to the ECR Route stops which operate buses with at least 15-minute headways during peak periods.

The FAR for the Project site is 3.7. Thus, the total FAR is higher than the 0.75 threshold.

While the Project site is not located in a current residential district, parking requirements for the Project will most closely match the requirements for an ECR/sub district, per City direction. For a multi-unit residential project in an ECR/sub district, the City of South San Francisco has a general parking maximum of two spaces per unit; however, no parking spaces are required for sites that are within a half-mile walking distance of public transit. A maximum total of 524² parking spaces would be allowed by the City code. A total of 290 secure resident parking, 19 future resident and visitor parking stalls are proposed to be provided with the Project for a total of 309 parking spaces. The Project will also comply with the City's reach code requirement for electric vehicle parking spaces. The Project has prepared a TDM plan as required by the City to support a reduction in parking spaces below City requirements. The TDM plan will help to encourage non-auto trips and further reduce non-drive alone vehicle trips. The number of vehicle parking spaces provided is therefore

² Section H, Required Parking, of Section 20.270.005 of the South San Francisco Municipal Code lists required parking for any use in ECR/sub-districts shall be established by the Chief Planner based on the particular characteristics of the proposed use and any other relevant data regarding parking demand. Generally, parking shall not exceed two spaces per unit for residential uses. The Project proposes to include 262 units and therefore parking shall not exceed 524 stalls. The Project proposed 309 parking stalls and the parking per unit ratio is 1.2 which is far below the maximum allowable parking spaces.



compliant with the South San Francisco Municipal Code and is in line with the South San Francisco General Plan policies and goals to promote alternate modes of transportation.

Additionally, the Project proposes 144 bike parking stalls with a mix of 28 standard stalls and 116 stacked two-tiered stalls. The City requires one long term bicycle parking stall per four vehicle parking stalls provided, which amounts to 78 stalls. The number of long-term bicycle parking stalls provided is therefore higher than required by the City, which supports General Plan policies and goals. The Project will also include short-term bicycle parking near building entrances, in coordination with City staff.

Plan Bay Area is the relevant Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for South San Francisco and seeks to prioritize development in transit priority areas, which includes the area surrounding the Project site. The Project's proposed land use is consistent with the use and intensity that is included in *Plan Bay Area* and the Project falls within the projected land use totals for South San Francisco.

The Project is not proposing to replace affordable housing units with market-rate units.

The Project is presumed to have a less than significant impact on VMT based on its proximity to high-quality transit; however, does not meet the above criteria for short term bicycle parking. Quantitative VMT analysis is provided for informational purposes only. Project-generated home-based work (HBW), home-based other (HBO), and non-home based (NHB) vehicle trip lengths were obtained from the most recently available California Household Travel Survey (CHTS)³ for San Mateo County. Based on CHTS trip lengths by trip purpose, the weighted average trip length for the Project is approximately seven miles. Multiplying the total net new daily trip generation as described in Section 3.4 by the average trip length, results in a daily net-added Project VMT of 6,230 miles.

3.4 Trip Generation, Distribution, and Assignment

The amount of traffic added to the roadway system by the Project was estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of traffic that would be generated once the Project was built and fully occupied. The second step estimates the direction of travel to and from the Project site. The third step assigns the Project trips to specific street segments and intersection turning movements. The results are described below.

3.4.1 Project Trip Generation

Project traffic added to the surrounding roadway system was estimated using a combination of driveway counts from the existing office building and the locally sensitive trip generation methodology known as MXD+ for the Project. Driveway counts can be found in **Appendix E**. The MXD+ methodology accounts for built environment factors such as the density and diversity of land uses, design of the pedestrian and bicycle environment, demographics of the site, and distance to transit to develop more realistic trip generation estimates than traditional traffic engineering methods.

³ Caltrans conducts the CHTS every ten years. The most recent survey started in 2010 and ended in 2013.



Driveway count data was collected at both driveways on the existing site using two video cameras to determine both light and heavy vehicle counts that represent existing trips for the 8,350 square foot building. The existing number of trips was then subtracted from the estimated trips for the Project to get the net new trips for the Project.

Vehicle trips from the existing building, the Project, and the calculated net new trips are shown in **Table 3.1**. The Project is expected to generate approximately 890 daily, 29 AM peak hour (-7 inbound and 36 outbound), and 56 PM peak hour (41 inbound and 15 outbound) net new trips.

Table 3.1 Project Trip Generation

Land Use	Size	Daily	AM Peak Hour		PM Peak Hour			
		Total	In	Out	Total	In	Out	Total
Project Apartments ¹	262 DUs	1,426	21	57	78	58	39	97
Trip Reductions (walk, bike, transit) ²	--	-404	-6	-16	-22	-16	-11	-27
Existing building (existing trips to be removed) ³	8,350 Sq. Ft.	-132	-22	-5	-27	-1	-13	-14
Net New Trips	262 DUs	890	-7	36	29	41	15	56

Notes:

1. Based on ITE 10th Edition (Land Use #221 – Multi-family Housing Mid-Rise)
2. Based on MXD+ trip generation methodology which accounts for built environment factors such as density and diversity of land uses, design of the pedestrian and bicycle environment, site demographics, and accessibility of transit, among other factors.
3. Based on 24-hour driveway counts collected at the existing site on May 26, 2021.

Source: Fehr & Peers, 2021

3.4.2 Project Trip Distribution

The directions of approach and departure for the Project traffic were estimated based on the City/County Association of Governments of San Mateo County (C/CAG)'s Travel Demand Model and the City of South San Francisco's Travel Demand Model, which has greater sensitivity to local travel patterns. Approximately 30 percent of the Project traffic and 40 percent of the Project traffic is projected to come from the north and south via US 101, respectively. Approximately five percent of the Project traffic is projected to come from the north and south via El Camino Real. Similarly, five percent of the Project traffic is projected to come from I-380 west of the El Camino on- and off-ramps which travel north and south on I-280. In addition, ten percent of the Project traffic is projected to come from local streets towards downtown South San Francisco, and five percent is projected to come from the East of 101 area. **Figure 3-1** shows the general trip distribution pattern for the Project.

3.4.3 Project Trip Assignment

The Project trips were assigned to the roadway system based on the directions of approach and departure discussed above. The locations of complimentary land use and local knowledge of the study area helped



determine specific trip routes. Figure 3-1 shows the expected net increase in peak hour intersection turning movement volumes due to the Project. Project traffic would access the roadway network via one of the two driveways on Huntington Avenue.

3.4.4 Huntington Avenue Road Diet

This section describes a potential road diet proposed for Huntington Avenue along the Project frontage. Specific details related to the road configuration, potential volumes, and general benefits of road diets are described below. It should be noted that a potential road diet as described below would be consistent with the City's Draft Bicycle and Pedestrian Plan, which is currently underway.

Huntington Avenue between South Spruce Avenue and San Mateo Avenue may present an opportunity for a "five to three" road diet to provide traffic calming and reduce conflicts for all modes. The existing roadway configuration includes two lanes in each direction plus one two-way left-turn lane (TWLTL). A road diet could modify the configuration to three lanes – one in each direction while maintaining the existing TWLTL. Under cumulative conditions, it is anticipated that traffic volumes on Huntington Avenue could be accommodated within three lanes without substantially degrading traffic operations, which provides an opportunity to add protected or buffered bike lanes and possibly on-street parking in some locations.

Three-lane road diets are typically most successful on streets that carry up to 18,000 to 22,000 vehicles per day. The existing volumes on Huntington Avenue (11,000 vehicles per day) and anticipated future conditions under the San Bruno Transit Corridors Plan (14,400 vehicles per day) are below this threshold. The projected peak directional volumes (about 720 vehicles per hour) would not exceed the typical directional capacity of one travel lane in each direction (about 900 vehicles per hour).

Road diets can offer benefits to all roadway users. The TWLTL benefits drivers as left-turning vehicles pull out of the through-travel lane to make turns, which reduces the need to either wait behind a turning vehicle or make a lane change. Pedestrians benefit as it reduces the number of travel lanes that must be crossed and the risk of multiple-threat crashes, and bicyclists benefit as dedicated roadway space is provided for them. Road diets also moderate travel speeds through a corridor, as speeds are governed by the lead vehicle, which not only improves the bicycle and pedestrian experience but in combination with the reduction in vehicle interactions, reduces crash frequency and severity.

A road diet would accommodate improvements to bicycle and pedestrian circulation as identified in the City of San Bruno Transit Corridors Plan (2014) and the City of San Bruno Walk N' Bike Plan (2016), which calls for Class II bicycle lanes along Huntington Avenue north of Sneath Lane and separated bikeways south of Sneath Lane. The Transportation Chapter of the South San Francisco General Plan section 4.2-I-10 prioritizes the incorporation of street design features and techniques that promote safe and comfortable travel by pedestrians, bicyclists, and users of public transportation, and identifies road diets as a means to support active transportation. Additionally, the Huntington Avenue road diet would be consistent with plans and policies outlined in the South San Francisco Draft Bicycle and Pedestrian Plan, which is currently being developed. Varying sources of data show a wide range of potential accident rate



reductions as a result of road diets; a study undertaken by the Federal Highway Administration (Publication number FHWA-HRT-10-053, June 2010) documents a 19 percent crash reduction factor for a suburban corridor⁴.

3.5 Freeway Ramp Queuing Analysis

Two freeway off-ramps were selected for queuing analysis to assess conditions where the addition of Project trips may result in hazards to road users. The study locations are listed below.

1. I-380/El Camino Real (westbound off-ramp)
2. I-380/El Camino Real (eastbound off-ramp)

Table 3.2 presents weekday PM peak hour vehicle queues at the two I-380 off-ramp study locations for Existing and Existing Plus Project conditions, and **Table 3.3** presents weekday PM peak hour vehicle queues for Cumulative and Cumulative Plus Project conditions. The PM peak hour was selected as the analysis period since the Project is a residential project and the majority of project-added off-ramp trips will be in the PM. Therefore, the off-ramps queuing analysis during the PM peak hour is expected to encompass all potential impacts. Cumulative Plus Project traffic volumes are presented in Appendix C. The Project would not extend or contribute to queues longer than storage distances at either off-ramp location. The Project therefore would not result in a hazardous condition at these locations.

Table 3.2 Existing Weekday PM Peak Hour 95th Percentile Queues

Approach Lanes	Storage Distance (ft)	Existing		Existing Plus Project	
		Volume	Queue Length	Volume	Queue Length
1. I-380 Westbound Off-Ramp at El Camino Real (PM Peak)					
Left	980	480	303	4480	303
Right	980	1212	835	1241	872
2. I-380 Eastbound Off-Ramp at El Camino Real (PM Peak)					
Left	520	278	340	280	341
Left/Through/Right	1760	-	263	-	263
Right	330	376	245	376	245

Notes: Queues do not take into account downstream spillover from adjacent intersections. Storage distance and queues in feet per lane.

Source: Fehr & Peers, 221

⁴ <https://www.fhwa.dot.gov/publications/research/safety/10053/>



Table 3.3 Cumulative Weekday PM Peak Hour 95th Percentile Queues

Approach Lanes	Storage Distance	Cumulative		Cumulative Plus Project	
		Volume	Queue Length	Volume	Queue Length
1. I-380 Westbound Off-Ramp at El Camino Real (PM Peak)					
Left	980	490	244	490	242
Right	980	1185	740	1214	788
2. I-380 Eastbound Off-Ramp at El Camino Real (PM Peak)					
Left/Through	520	345	378	347	378
Left/Through/Right	1760	-	312	-	310
Right	330	370	273	370	273

Notes: Queues do not take into account downstream spillover from adjacent intersections. Storage distance and queues in feet per lane.

Source: Fehr & Peers, 2021

3.6 Bicycle, Pedestrian, and Transit

3.6.1 Bicycle and Pedestrian Analysis

The project would generate new pedestrian and bicycle trips, particularly from residents walking to downtown South San Francisco to the north, and the San Bruno BART and Caltrain Stations and shops at Tanforan to the south. Trips may be taken along the Centennial Way Trail or Huntington Avenue. The expected additional trips along Huntington Avenue may increase conflicts between vehicles, pedestrians, and bicyclists given the number of driveways along the roadway. Trips from the Project site to transit stops and stations will likely be through the intersection of Huntington Avenue and Sneath Lane. This intersection is a safety concern for bicyclists and pedestrians due to relatively high speeds, large crossing distances, and minimal protection at crossings.

A road diet is planned along Huntington Avenue which may improve pedestrian and bicyclist comfort and safety. The Project is proposing on-street parking and sidewalk bulb-outs at the driveway entrances which will increase pedestrian visibility for drivers and reduce the pedestrian crossing distance along Huntington Avenue. The adjacent site at 410 Noor Avenue is also proposing sidewalk bulb-outs and on-street parking that support the road diet. Bicycle lanes are planned along Huntington Avenue adjacent to the Project Site and a separated bikeway is planned along Huntington Avenue south of Sneath Lane to the San Bruno Caltrain Station. The separated bikeway will connect to the Centennial Way Trail, which continues north to the South San Francisco BART Station. These plans are described in Section 3.4.4 and in Appendix A. The Project would not create inconsistencies with adopted bicycle or pedestrian system plans, guidelines, or policy standards.

The Project provides good site access and circulation for pedestrians and is supported by a sidewalk from Huntington Avenue across the entire frontage of the building and along the entire perimeter of the site



with several access points around the building periphery. Access to the building is provided at two doorways along Huntington Avenue through the leasing, lounge, and mail room spaces. Access is also provided to the building at the southeast of the site, to a second lobby with a fitness center, co-working space, and a bike room. Additional access is provided on the west side of the building at the loading/move-in area and at a stairwell behind the loading space.

Continuous sidewalks exist along the easement road and building periphery, with a walkway connecting the Centennial Way Trail at the back of the Project site to Huntington Avenue. The proposed midblock crossing across Huntington Avenue is to the west of the project driveway, close to the building's main entrance. The northbound bus stop along the Project frontage will be relocated due to the proposed driveway for loading/move-in and will likely be moved closer to the midblock crossing. Pedestrians traveling from the crossing will need to cross the driveway to access the pedestrian walkway to the outdoor amenities and the Centennial Way Trail at the back of the Project site. While this does not represent a project-level hazardous condition, the Project may consider pedestrian visibility improvements. The Project may consider adding signage for vehicles to yield to pedestrians at the driveway and should ensure landscaping does not obstruct drivers' view of pedestrians crossing along the driveway frontage and at the crosswalk. Improvements may include pedestrian-scale lighting along the Project frontage for bus stops, short term parking, and the midblock crossing, and lighting along the site's perimeter walkway to the Centennial Way Trail.

Bicycle access is provided through the main driveway plaza along Huntington Avenue. The Project includes 144 long-term protected (Class I) bicycle parking spaces, which exceeds the City's code requirement for the Project of 78⁵ spaces. Class I bicycle parking spaces at this site have restricted access and are intended for residents⁶. Per the City's Municipal Code (Section 20.330.008 B.2.a), long-term bicycle parking must be located on the same lot as the use it serves and must be located near an entrance to the facility in parking garages. The Project site plan shows the bike room with a bike repair station on the ground floor of the building with access through the lobby. Bicyclists can enter the bike parking room by entering a door to the lobby through the parking garage, or by biking past the driveway plaza to enter the lobby from the main entrance or the side entrance by the fitness center. Bicyclists must navigate through pedestrian spaces and two doorways to enter the room. The Project may consider providing direct access to the bike room from the parking garage and a bicycle-friendly doorway for people walking bikes into the room to make it more accessible and easy-to use for residents.

Per the City's Municipal Code (Section 20.330.008 A.2.a), short-term bicycle parking must be located outside of the public right-of-way and pedestrian walkways and within 50 feet of a main entrance to the building it serves. Short term bicycle parking spaces are intended for guests and short-term stays.

Figure 3-2 illustrates site circulation and access at the Project site and some recommended changes.

⁵ One bicycle parking space is required per four dwelling units.

⁶ Bicycle parking is on the ground floor and includes 28 standard parking stalls and 116 stacked two-tiered stalls.



3.6.2 Transit Analysis

The Project would generate vehicle trips in the vicinity of existing transit services and would generate some new transit trips to existing routes. The San Bruno BART Station is approximately 0.5 miles south of the Project site and the San Bruno Caltrain Station is approximately 1.2 miles south of the Project site, both of which are along Huntington Avenue. SamTrans bus routes travel along the Project's frontage on Huntington Avenue and a SamTrans hub is located at the front of the San Bruno BART parking garage, just north of the San Bruno BART Station. The addition of 56 net new vehicle trips during the PM peak hour, or approximately one new vehicle per minute, would not create a disruption to transit service surrounding the Project site. Project-added vehicle trips represent less than one percent of entering volumes at study intersections during the AM and PM peak hours. The Project may add net new transit trips to BART, Caltrain and other public transit routes, and ridership may be accommodated through available capacity.

The Project includes features that would disrupt existing or planned transit routes and service. The Project would conflict with adopted transit system plans, guidelines, policies, or standards, as described in Appendix A. The Project's driveway for loading/move-in would impact the location of the northbound SamTrans stop adjacent to the site that currently serves Route 141, as the proposed driveway is on the current bus stop location. The Project is proposing short-term on-street parking between the Project driveways. The northbound bus stop should be relocated to the far side of the proposed midblock crosswalk, which would remove two proposed parking spaces. The final location of the northbound bus stop should be located near the Project's main building entrance, the proposed midblock crosswalk, the proposed entrance for the redevelopment of the site across the street, and the adjacent southbound bus stop.

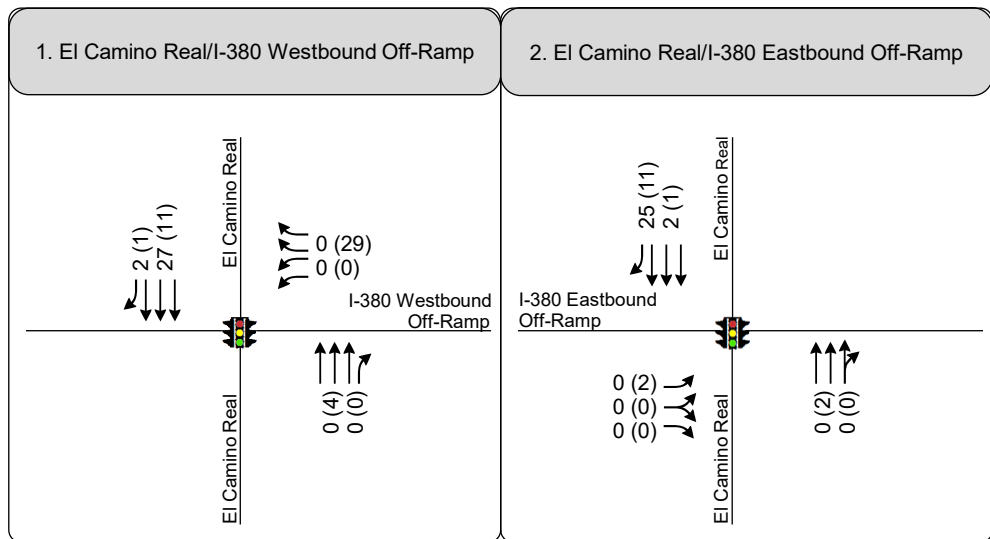
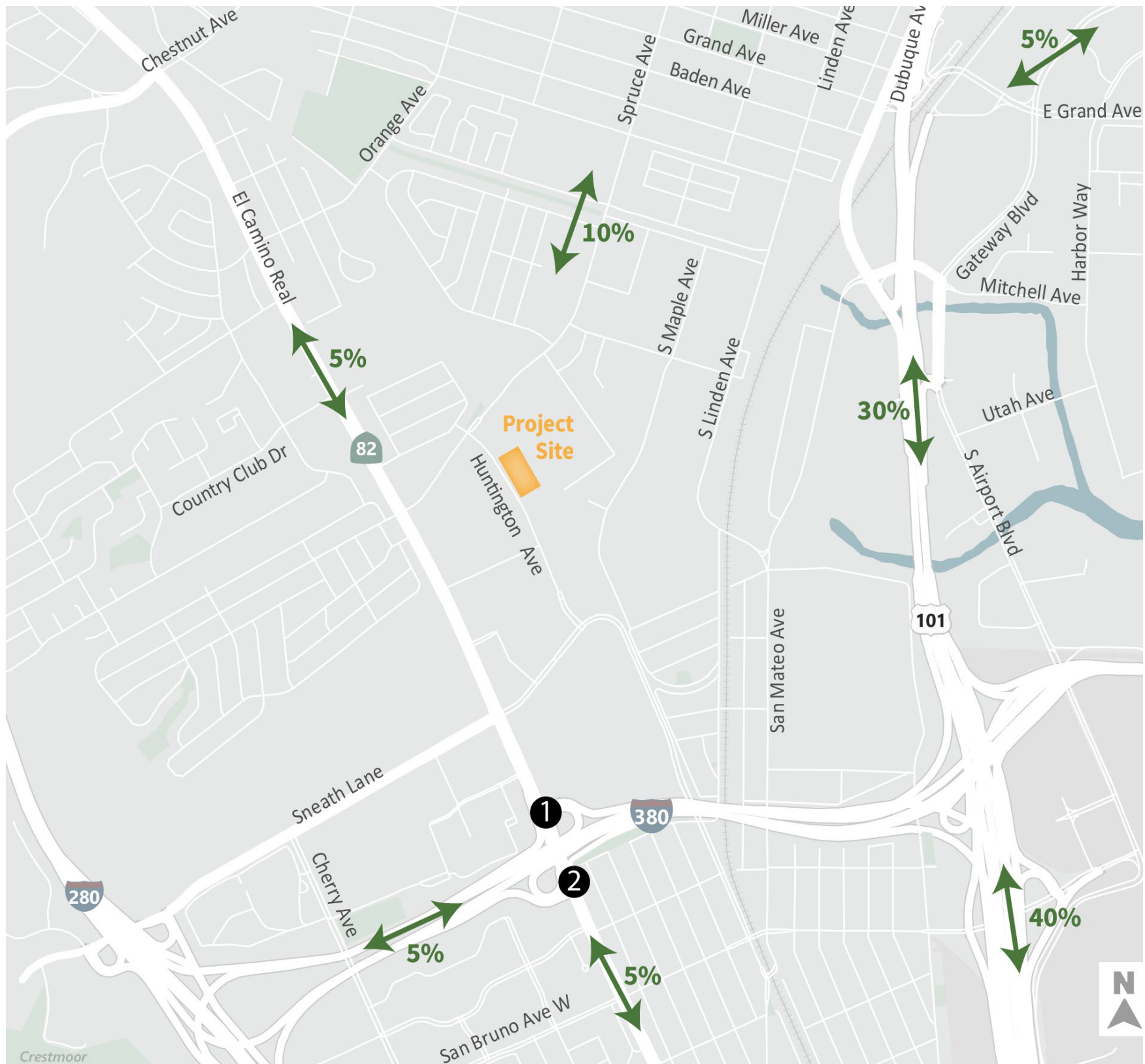
The Project's effects under Cumulative 2040 conditions would be similar to that of Existing Plus Project conditions as the Project is proposing a roadway configuration in front of the site that is consistent with planned roadway facilities. Residents of the Project will experience changes to SamTrans bus service in cumulative conditions. *Reimagine SamTrans* is a comprehensive operational analysis (COA) to evaluate existing routes and additional routes to improve the experience for existing riders, grow new and more frequent ridership, and improve the efficiency and effectiveness of SamTrans as a mobility provider. The COA is taking into account changes to trip-making patterns in response to COVID-19 and conducting public outreach to better serve San Mateo County. Bus routes within proximity to the Project site are expected to change under cumulative conditions. Routes ECR, 140, and 398 are being studied with options to increase the frequency of service, expand operational hours, and improve on-time performance and speed, which all come with tradeoffs. Changes to Route 140, the route most accessible to the Project, will likely affect new residents' travel behavior. According to *Reimagine SamTrans*, the route has low ridership and takes an indirect route to serve multiple destinations, and some school-day-only trips are included in the route schedule. The COA has received feedback on Route 140 requesting more frequent service and later weekend evening service. Route 140 may also be split and be part of alternative existing routes.

Improvements to Caltrain via the Peninsula Corridor Electrification would provide enhanced connectivity and capacity to accommodate project trips. Caltrain will be running electric trains (EMU's) that will run more efficiently and will enable more frequent and/or faster train service to more riders compared with the current



diesel-powered trains. The electric trains will also allow for future expansion of train lengths to accommodate more riders, and electric trains are quieter than diesel-powered trains, which may improve the rider experience. There are no fully funded changes to bicycle, pedestrian, or transit conditions adjacent to the Project site at this time.





- 1** Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Project Site
- Lane Configuration
- Signalized

Figure 3-1
Project Trip Distribution and Assignment



4. Impacts and Mitigations

This section includes the evaluation of the Project's potential impacts under Existing Plus Project and Cumulative Plus Project conditions. This section also describes associated mitigation measures that would reduce impacts of the Project.

4.1 Vehicular Traffic

This section includes the evaluation of the Project's potential VMT and freeway ramp queuing impacts.

4.1.1 Vehicle Miles Traveled

Impact TRANS-1: Based on OPR and City of South San Francisco guidelines, the Project is located within 0.5 miles of a major transit stop and is presumed to have no impact on vehicle miles traveled (VMT) under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant*)

As documented in Section 3.3, the Project meets all of the screening criteria to presume the impact to VMT is less than significant. The Project site is located within 0.5 miles of a major transit stop and high-quality transit corridor, has a FAR greater than 0.75, does not provide more parking than required by City code, is consistent with the RTP/SCS Plan Bay Area, and does not replace affordable housing units with market-rate units.

Additionally, the Project has prepared a TDM plan with a minimum of 28% mode reduction, to support the reduced parking proposed at the site. The TDM Plan serves to encourage non-auto trips and specifically seeks to reduce non-drive-alone vehicle trips which will help to further reduce the Project's impact on VMT. The Project's TDM plan includes infrastructure on-site to support pedestrians and bicyclists, programmatic elements to educate and incentivize residents to commute by carpool, transit, and biking, and contains monitoring and reporting requirements to analyze the program's effectiveness at further reducing VMT and increase multi-modal trips. The Project site will have a bicycle parking and repair station, a fitness center, and Wi-Fi throughout the building that is free in co-workspace to support work from home. Additionally, the Project will contribute to off-site improvements to support bus service, commuter shuttles, and pedestrian and bicycle connectivity in the community. The Plan should have a demonstratable effect of reducing the vehicle trips to achieve the minimum 28% trip reduction from ITE levels.

The plan outlines TDM measures and the appointed person responsible for implementing the measure (either the Developer or the Transportation Coordinator who is designated by the Developer). The Transportation Coordinator's role is to be the primary contact with the City and provide transportation information packets to new residents, maintain the on-line kiosk/TDM Information Board, provide trip planning and/or ride-matching assistance, and manage the annual residential travel surveys. The TDM Plan requires the Developer to provide a \$100 welcome transit pass to all new residents during the first year following building occupancy and the plan recommends the Project set up a bikeshare program with electric



bikes and/or cargo bikes that residents can rent for free, to make bikes available for short journeys and reduce the use of single occupancy vehicle trips. In addition to the annual commute survey to monitor and report residents' commute patterns, the Project will conduct annual AM and PM peak hour driveway counts to assess whether the peak hour trips meet the 28% reduction from ITE trip generation. The Project will provide a rideshare pick up/drop off space on Huntington Avenue.

Mitigation Measures: None Required

4.1.2 Freeway Ramp Queuing

Impact TRANS-2: Development of the Project would not cause vehicle queues approaching a given movement downstream of Caltrans freeway facilities to exceed existing storage space for that movement or add vehicle trips to existing freeway off-ramp vehicle queues that exceed storage capacity resulting in a potentially hazardous condition under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant*)

As documented in Section 3.5, Project vehicle trips that could affect the freeway mainline are concentrated at the I-380 Westbound and Eastbound Off-Ramps at El Camino Real, and Project trips would not exceed ramp storage capacities or interfere with the freeway mainline. Therefore, the Project would have a less-than-significant impact on freeway ramp queuing under Existing Plus Project conditions and would not be a cumulatively considerable contributor to significant cumulative impacts under Cumulative Plus Project conditions.

Mitigation Measures: None required

4.2 Bicycle, Pedestrian, and Transit

Impact TRANS-3: Development of the Project may conflict with adopted plans and programs under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant*)

The Project does not produce a detrimental impact to existing bicycle or pedestrian facilities nor does it conflict with adopted policies and adopted city plans summarized in Appendix A. Therefore, the Project's impacts to walking and biking are less than significant under Existing Plus Project conditions and the Project would not be a cumulatively considerable contributor to significant cumulative impacts under Cumulative Plus Project conditions. The Project does not conflict with adopted plans or programs.

Mitigation Measures: None Required

While no mitigation is required, the applicant may provide funding toward the City's design and construction of the following off-site improvements to support the connectivity of the Project site, improve accessibility to high-quality transit, and enhance the Project's first- and last-mile TDM strategies necessary to support auto trip reduction measures.



- The Project may contribute towards the installation of pedestrian-scale lighting along the Project's frontage on Huntington Avenue. This improvement would provide a safer and more supportive pedestrian route connecting the Project site to SamTrans bus stops along the Project frontage and increase visibility of the proposed mid-block crosswalk. Additional pedestrian-scale lighting along Huntington Avenue south towards the San Bruno BART Station and the shops at Tanforan would help encourage pedestrian activity as it creates a safer and more comfortable pedestrian experience.
- The Project may contribute towards pedestrian-scale lighting along the Project site frontage and perimeter walkway. This improvement measure would increase pedestrian visibility at the proposed midblock crossing, the connection to the Centennial Way Trail, the short-term parking/rideshare hailing, and the SamTrans bus stop along the Project frontage.

Impact TRANS-4: Project development or Project traffic may produce a detrimental impact to local transit or shuttle service under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant with Mitigation*)

The Project may produce a detrimental impact to existing transit facilities or conflict with adopted policies and adopted city plans summarized in Appendix A. Therefore, the Project's impacts to transit are significant under Existing Plus Project conditions and the Project may be a cumulatively considerable contributor to significant cumulative impacts under Cumulative Plus Project conditions. The proposed Project driveway for loading/move-in will displace the SamTrans northbound bus stop and thus create an impact on transit service. The Project will be considered less than significant with mitigation under Existing Plus Project conditions and Cumulative Plus Project conditions with implementation of the mitigation measure listed below.

Implementation of Mitigation Measure TRANS-1 would improve access between the Project site and existing/future transit stops and would be consistent with relevant city plans and policies.

Mitigation Measures: The following mitigation measure seeks to reduce the impact to transit service along Huntington Avenue adjacent to the Project site. Components of Mitigation Measure TRANS-1 are shown in Figure 4-1.

MITIGATION MEASURE TRANS-1:

The project shall relocate the existing SamTrans northbound bus stop to the far side of the proposed midblock crosswalk. The bus stop shall include a covered shelter, pedestrian-scale lighting, and other pedestrian amenities which support General Plan policies. The bus stop shall be designed in coordination with the bike lanes proposed on Huntington Avenue and constructed in coordination with City staff and SamTrans staff.

Significance after mitigation: Implementation of Mitigation Measure TRANS-1 would reduce the Project's impacts to less-than-significant under Existing Plus Project conditions and less than cumulatively considerable under Cumulative Plus Project conditions.



4.3 Hazards

Impact TRANS-5: Development of the Project would not substantially increase hazards due to a geometric design feature under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant*)

The Project design does not create any new geometric design features that cause hazards. The Project provides a main driveway on Huntington Avenue to access the parking garage, and a separate driveway on Huntington Avenue allows vehicles to enter the site for loading/move-in only. The driveways on Huntington Avenue change the existing roadway geometry and align with the City's vision for a road diet and bicycle lanes on Huntington Avenue. Addition of this project under Existing Plus Project conditions would be the same as Cumulative conditions and Cumulative Plus Project conditions. Sight distance at the proposed driveways is expected to change from what is available under existing conditions. Any future vegetation located within the sight triangles at the driveways should be maintained so as not to restrict drivers sight distance when exiting the driveways.

As the Project is expected to increase pedestrian and bicycle trips to the main driveway it may increase risk to pedestrians and bicyclists. Ensuring adequate pedestrian-scale lighting around the Project perimeter, adjacent sidewalks, and at the midblock crossing will help to make pedestrians and bicyclists visible to drivers. The Project will be considered less than significant under Existing Plus Project conditions and Cumulative Plus Project conditions.

Mitigation Measures: None Required

4.4 Emergency Access





Impact TRANS-6: Development of the Project would not result in inadequate emergency access under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant*)

Vehicle trips generated by the Project would represent a very small percentage of overall daily and peak hour traffic on roadways and freeways in the study area. The Project generates 29 AM peak hour and 56 PM peak hour net new vehicle trips which are distributed to study intersections. Project-added vehicle trips represent less than one percent of entering volumes at study intersections during the peak hours. The Project does not include features that would alter emergency vehicle access routes or roadway facilities; fire and police vehicles would continue to have access to all facilities around the entire city. Upon construction, emergency vehicles would have full access to the Project site, with a designated emergency vehicle access space near the main building entrance. Therefore, the Project is expected not to result in inadequate emergency access, and the Project's impacts to emergency access are less-than-significant under Existing Plus Project conditions and less than cumulatively considerable under Cumulative Plus Project conditions.

Mitigation Measures: None required





-  Project Site
-  Centennial Way Trail
-  SamTrans Route 141 nearest stops to project site
-  Proposed midblock crosswalk

- 1** Contribute towards pedestrian-scale lighting along Project site frontage and perimeter walkway to increase pedestrian visibility at the proposed midblock crossing, the connection to the Centennial Way Trail, the short-term parking/rideshare hailing, and the SamTrans bus stop along the Project frontage.
- 2** Relocate existing northbound bus stop to far side of proposed midblock crosswalk. Bus stop shall include covered shelter, pedestrian-scale lighting, and other pedestrian amenities. Bus stop shall be designed and constructed in coordination with City staff and SamTrans staff.

Figure 4-1

Project Mitigation and Improvement Measures



Appendix A: Relevant Plans & Policies

Relevant Plans and Policies

State of California Senate Bill 743

Discussed in Appendix B.

City of South San Francisco General Plan Transportation Chapter

The following City of South San Francisco General Plan policies relate to the Project and walking, biking, and transit.¹ A new 2040 General Plan (Shape SSF) is currently being prepared by the City, but the City has not yet adopted new policies.

- 3.2-G-3 Enhance the appearance of the area by undertaking streetscape and other improvements.
- 4.2-G-2 Improve connections between different parts of the city.
- 4.2-G-8 Use the Bicycle Master Plan to identify, schedule, and implement roadway improvements that enhance bicycle access.
- 4.2-G-9 Use the Pedestrian Master Plan to identify, schedule, and implement roadway improvements that enhance pedestrian access.
- 4.2-G-10 Make efficient use of existing transportation facilities and, through the arrangement of land uses, improved alternate modes, and enhanced integration of various transportation systems serving South San Francisco, strive to reduce the total vehicle-miles traveled.
- 4.2-G-13 Integrate Complete Streets infrastructure and design features into street design and construction to create safe and inviting environments for people to walk, bicycle, and use public transportation.
- 4.2-I-10 In planning, designing, and constructing Complete Streets:
 - Include infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared use paths, bicycle lanes, and paved shoulders.
 - Include infrastructure that facilitates safe crossing of the right of way, such as accessible curb ramps, crosswalks, refuge islands, and pedestrian signals; such infrastructure must meet the needs of people with different types of disabilities and people of different ages.
 - Ensure that sidewalks, crosswalks, public transportation stops and facilities, and other aspects of the transportation right of way are compliant with the Americans with

¹ The City of South San Francisco General Plan includes policies related to automobile LOS for certain locations, however, General Plan Policy 4.2-G-17 exempts development within one-quarter mile of a Caltrain or BART station, or a City-designated ferry terminal, from LOS standards, which applies to the Project. Moreover, under SB 743, LOS or similar measures of traffic congestion are no longer considered a significant impact under CEQA.

Disabilities Act and meet the needs of people with different types of disabilities, including mobility impairments, vision impairments, hearing impairments, and others. Ensure that the South San Francisco ADA Transition Plan includes a prioritization method for enhancements and revise if necessary.

- Prioritize incorporation of street design features and techniques that promote safe and comfortable travel by pedestrians, bicyclists, and users of public transportation, such as traffic calming circles, additional traffic calming mechanisms, narrow vehicle lanes, raised medians, dedicated transit lanes, transit priority signalization, transit bulb outs, road diets, high street connectivity, and physical buffers and separations between vehicular traffic and other users.
 - Ensure use of additional features that improve the comfort and safety of users: Provide pedestrian-oriented signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, and comfortable and attractive public transportation stops and facilities. Encourage street trees, landscaping, and planting strips, including native plants where possible, in order to buffer traffic noise and protect and shade pedestrians and bicyclists. Reduce surface water runoff by reducing the amount of impervious surfaces on the streets.
- 4.2-I-11 In all street projects, include infrastructure that improves transportation options for pedestrians, bicyclists, and users of public transportation of all ages and abilities.
 - Ensure that this infrastructure is included in planning, design, approval, construction, operations, and maintenance phases of street projects.
 - Incorporate this infrastructure into all construction, reconstruction, retrofit, maintenance, alteration, and repair of streets, bridges, and other portions of the transportation network.
 - 4.3-I-14 Undertake a program to improve pedestrian connections between the rail stations—South San Francisco and San Bruno BART stations and the Caltrain Station—and the surroundings. Components of the program should include:
 - Installing handicapped ramps at all intersections as street improvements are being installed;
 - Constructing wide sidewalks where feasible to accommodate increased pedestrian use; • Providing intersection “bulbing” to reduce walking distances across streets in Downtown, across El Camino Real and Mission Road, and other high use areas;
 - Continuing with the City’s current policy of providing pedestrian facilities at all signalized intersections;
 - Providing landscaping that encourages pedestrian use

South San Francisco Bicycle Master Plan

The City of South San Francisco Bicycle Master Plan (2011) identifies and prioritizes street improvements to enhance bicycle access. The plan analyzes bicycle demand and gaps in bicycle facilities and recommends

improvements and programs for implementation. The Bicycle Master Plan establishes the following policy related to the Project:

- *Policy 3.2-1: All development projects shall be required to conform to the Bicycle Transportation Plan goals, policies and implementation measures.*

South San Francisco Pedestrian Master Plan

The City of South San Francisco Pedestrian Master Plan (2012) identifies and prioritizes street improvements to enhance pedestrian access. The plan analyzes pedestrian demand and gaps in pedestrian facilities and recommends improvements and programs for implementation. The Pedestrian Master Plan establishes the following policy related to the Project:

- *Policy 3.2: Pedestrian facilities and amenities should be provided at schools, parks, and transit stops, and shall be required to be provided at private developments, including places of work, commercial shopping establishments, parks, community facilities and other pedestrian destinations.*

South San Francisco Transportation Demand Management Ordinance

The City of South San Francisco TDM Ordinance (Ord. 1432 § 2, 2010) seeks to reduce the amount of traffic generated by nonresidential development and minimize drive-alone commute trips. The ordinance establishes a performance target of 28 percent minimum alternative mode share for all nonresidential projects resulting in more than 100 average daily trips and identifies a higher threshold for projects requesting a floor area ratio (FAR) bonus.

As documented in Section 1, while the City's TDM Ordinance does not require a specific alternate mode-share (AMS) requirement for residential projects, the Project has prepared a TDM Plan, consistent with the City's goals of increasing AMS and decreasing single occupancy vehicle traffic.

C/CAG Congestion Management Program Guidelines

City/County Association of Governments of San Mateo County (C/CAG) has adopted guidelines as a part of its Congestion Management Program (CMP), which are intended to reduce the regional traffic impacts of substantive new developments. The guidelines apply to all projects in San Mateo County that will generate 100 or more net new peak-hour trips on the CMP network and are subject to CEQA review. C/CAG calls for projects that meet the criteria to determine if a combination of acceptable measures is possible that has the capacity to "fully reduce," through the use of a trip credit system, the demand for net new trips that the project is anticipated to generate on the CMP roadway network (including the first 100 trips). C/CAG has published a list of mitigation options in a memorandum. The Project does not generate more than 100 net new peak one-hour trips and therefore is not subject to C/CAG's ordinance.

San Bruno Bicycle and Pedestrian Master Plan (Walk N' Bike Plan)

The City of San Bruno Walk 'N Bike Plan was adopted July 26, 2016. The plan presents the desired state of walking and biking in San Bruno ten years out that would result from implementation of the Walk 'N Bike Plan.

In recognizing the public's desire for an improved network of sidewalks, street crossings, bike lanes, bike routes, and walking and biking paths and trails to access more destinations, the City aims to provide access to an expanded range of programs, events, and activities in the areas of pedestrian and bicycle safety, education, encouragement, and promotion.

The public views walking and biking in a positive light by recognizing the benefits of these modes to personal and public health, mobility, neighborhood livability, social interaction, the local economy, and the environment, and it supports continued improvements. The City administration also recognizes the benefits and embraces opportunities to integrate walking and biking as vital parts of a more balanced multi-modal transportation network by developing new facilities, improving existing ones, enhancing traffic enforcement, and adopting other supportive policies and practices. The City of San Bruno is experiencing a trend of an ever-increasing transportation mode shift away from driving and toward walking and biking.

Chapters 5 through 8 of the Walk 'N Bike Plan identify specific infrastructure projects and program action items that would implement the City's vision. Many of these projects are adjacent to or near the Project Site.

Streetscape improvements, including bike lanes and expanded sidewalks, are proposed along Huntington Avenue to create a more comfortable, safer connection between the Centennial Way Trail and the San Bruno BART and Caltrain Stations. A Class IV separated bikeway is proposed between the San Bruno Caltrain Station at the intersection of San Mateo Avenue and Huntington Avenue, up to the intersection of Sneath Lane and Huntington Avenue. A road diet from five lanes to three lanes and bi-directional bike lanes are proposed along Huntington Avenue north of Sneath Lane. Additionally, repurposing the fenced in parking lot beneath I-380 between the BART and Caltrain Stations to be recreational space is thought to make the bicycle and pedestrian travel between Stations more pleasant.

A pedestrian and bicycle only path is planned along the south side of Tanforan alongside parking lots and the unnamed access road connecting Huntington Avenue to El Camino Real/Tanforan Way. The goal of the path is to promote pedestrian activity south of the BART Station and also provide a safer, more comfortable connection from El Camino Real/Sneath Lane to the BART Station, as currently pedestrians travel along Sneath Lane, a higher speed vehicle-oriented roadway.

Sneath Lane and Huntington Avenue are recognized as two of the city's busiest thoroughfares that have high historical rates of collisions. The intersection of Sneath Lane and Huntington Avenue is a safety concern for pedestrians and crossing improvements are established to support travel to transit stations and the surrounding commercial area. Short- and medium-term pedestrian improvements are also proposed at El Camino Real/I-380 ramps to increase visibility of pedestrians and reduce conflicts with drivers. High-visibility

pedestrian crosswalks, rectangular rapid flashing beacons, yield lines and warning signs, and relocating a curb ramp for a higher visibility crossing of the I-380 westbound on-ramps are considered to address pedestrian safety concerns. Suggestions to realign the on ramps, install a sidewalk, and shorten pedestrian crossing distances are being considered as a long-term solution.

San Bruno Transit Corridors Specific Plan (TCP)

The TCP, adopted February 12, 2013, articulates the community's vision for revitalized commercial corridors in proximity to the San Bruno Avenue Caltrain Station and BART Station. The TCP Plan Area includes portions of El Camino Real and San Mateo Avenue and its frontage properties, San Bruno Avenue and a portion of Huntington Avenue up towards Sneath Lane. While the TCP's land use planning area does not include the Project site, it applies to roadways and transportation facilities and services in the vicinity that will serve and be affected by the Project and includes policies whose implementation may have an effect on the Project.

Transportation Policies include those that encourage improved bicycle connectivity, bicycle parking opportunities, pedestrian access, safety, and amenities, and transit stop amenities within the Transit Corridors Area. A few policies that apply to roadways and transportation facilities and services in the vicinity are listed below.

- TRANS C.1 – Provide Class II bicycle lanes on Huntington Avenue north of San Bruno Avenue
- TRANS B.1 – Provide a local circulator shuttle service between the Downtown, BART station, and Caltrain station, with potential stops at the San Francisco International Airport
- TRANS B.2 – Enhance bus stops with appropriate amenities (shelters, benches, lighting, real-time passenger information) to improve the overall comfort and safety for transit riders
- TRANS D.1 – Provide enhanced crosswalks at all crossings in Transit Corridors Area. As appropriate, enhanced crosswalks should include pedestrian bulbouts, median refuge islands or special paving treatments.

Additionally, a road diet along Huntington Avenue between San Bruno Avenue and BART is being considered to improve bicycle conditions. Huntington Avenue is a four-lane roadway with a center median and serves approximately 11,000 vehicles per day. Research has shown that a road diet from four lanes to two lanes is feasible as Huntington Avenue will likely be able to accommodate future volumes and not result in a significant amount of traffic diversion to adjacent parallel streets.

Appendix B: VMT Technical Context

Senate Bill 743 (Stats. 2013, ch. 386) (SB 743) is intended to better align CEQA transportation impact analysis practices and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. The law creates several key statewide changes to the California Environmental Quality Act (CEQA).

First, the law requires the Governor's Office of Planning and Research (OPR) to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allows OPR to extend use of the metrics beyond TPAs. OPR selected vehicle miles of travel (VMT) as the preferred transportation impact metric and applied their discretion to require its use statewide.

Second, this legislation establishes that aesthetic and parking impacts of a residential, mixed-use residential, or employment center projects on an infill site within a TPA shall not be considered significant impacts on the environment.

Third, the new CEQA Guidelines that implement this legislation state that generally, vehicle miles traveled is the most appropriate measure of transportation impacts, and that as of July 1, 2020, this requirement shall apply statewide, but that until that date, lead agencies may elect to rely on VMT rather than LOS to analyze transportation impacts.

Finally, the law establishes a new CEQA exemption for a residential, mixed-use, and employment center project a) within a transit priority area, b) consistent with a specific plan for which an EIR has been certified, and c) consistent with a Sustainable Communities Strategy (SCS). This exemption requires further review if the project or circumstances changes significantly.

To aid in SB 743 implementation, the following state guidance has been produced:

- *Technical Advisory on Evaluating Transportation Impacts in CEQA*, California Governor's Office of Planning and Research, December 2018²
- *California Air Resources Board (CARB) 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals*, California Air Resources Board, January 2019³
- *Local Development – Intergovernmental Review Program Interim Guidance, Implementing Caltrans Strategic Management Plan 2015-2020 Consistent with SB 743*, Caltrans, November 9, 2016⁴

The California Air Resources Board 2017 *Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals* provides recommendations for VMT reduction thresholds that would be necessary to achieve the State's GHG reduction goals. CARB finds per-capita light-duty vehicle travel would need to be

² http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

³ https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf

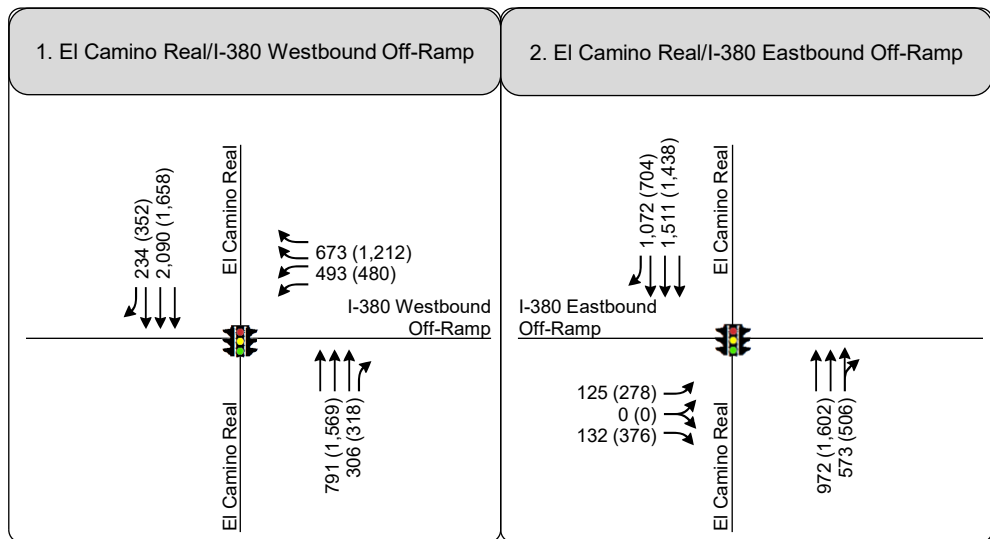
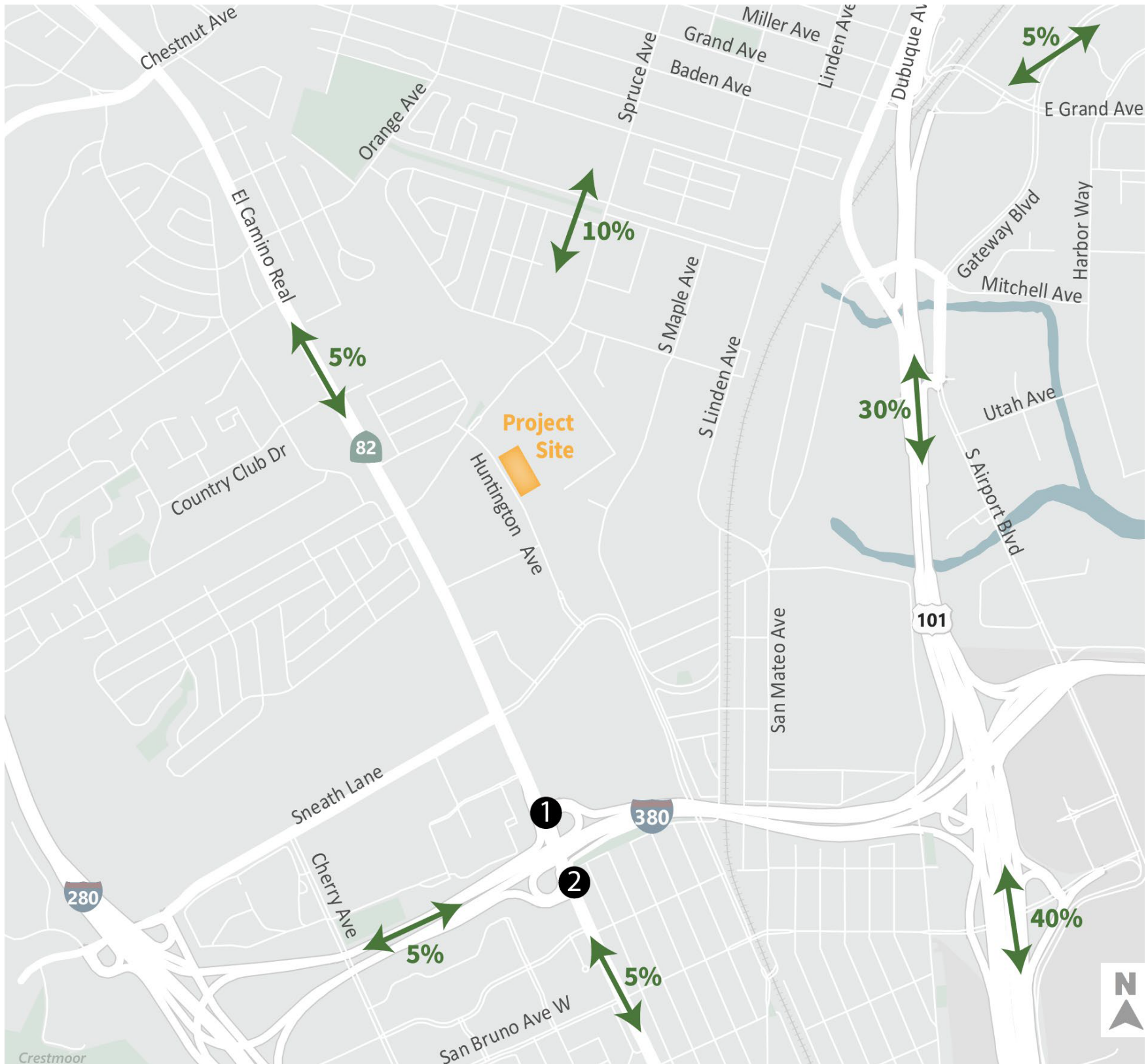
⁴ <https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743>

approximately 16.8 percent lower than existing by 2050, and overall per-capita vehicle travel would need to be approximately 14.3 percent lower than existing levels by 2050 under that scenario. CARB also acknowledges that the SCS targets are not sufficient to meet climate goals. As stated in the report, "...the full reduction needed to meet our climate goals is an approximately 25 percent reduction in statewide per capita on-road light-duty transportation-related GHG emissions by 2035 relative to 2005."

OPR considered this research when developing recommended VMT thresholds. In the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018), OPR recommends that a per capita or per employee VMT that is 15 percent below that of existing development may be a reasonable threshold. This threshold is based on the above mentioned research documents from CARB as well as evidence that suggests a 15 percent reduction in VMT is achievable at the project level in a variety of place types⁵ and would help the State towards achieving its climate goals. However, each jurisdiction must apply the statewide VMT analysis guidance based on available travel data and tools.

⁵ CAPCOA (2010) Quantifying Greenhouse Gas Mitigation Measures, p. 55, available at <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

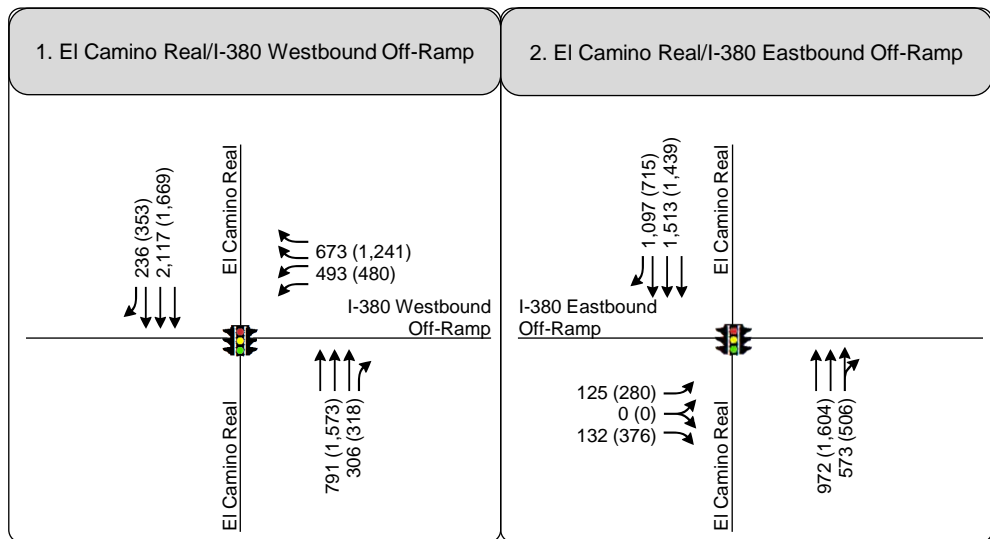
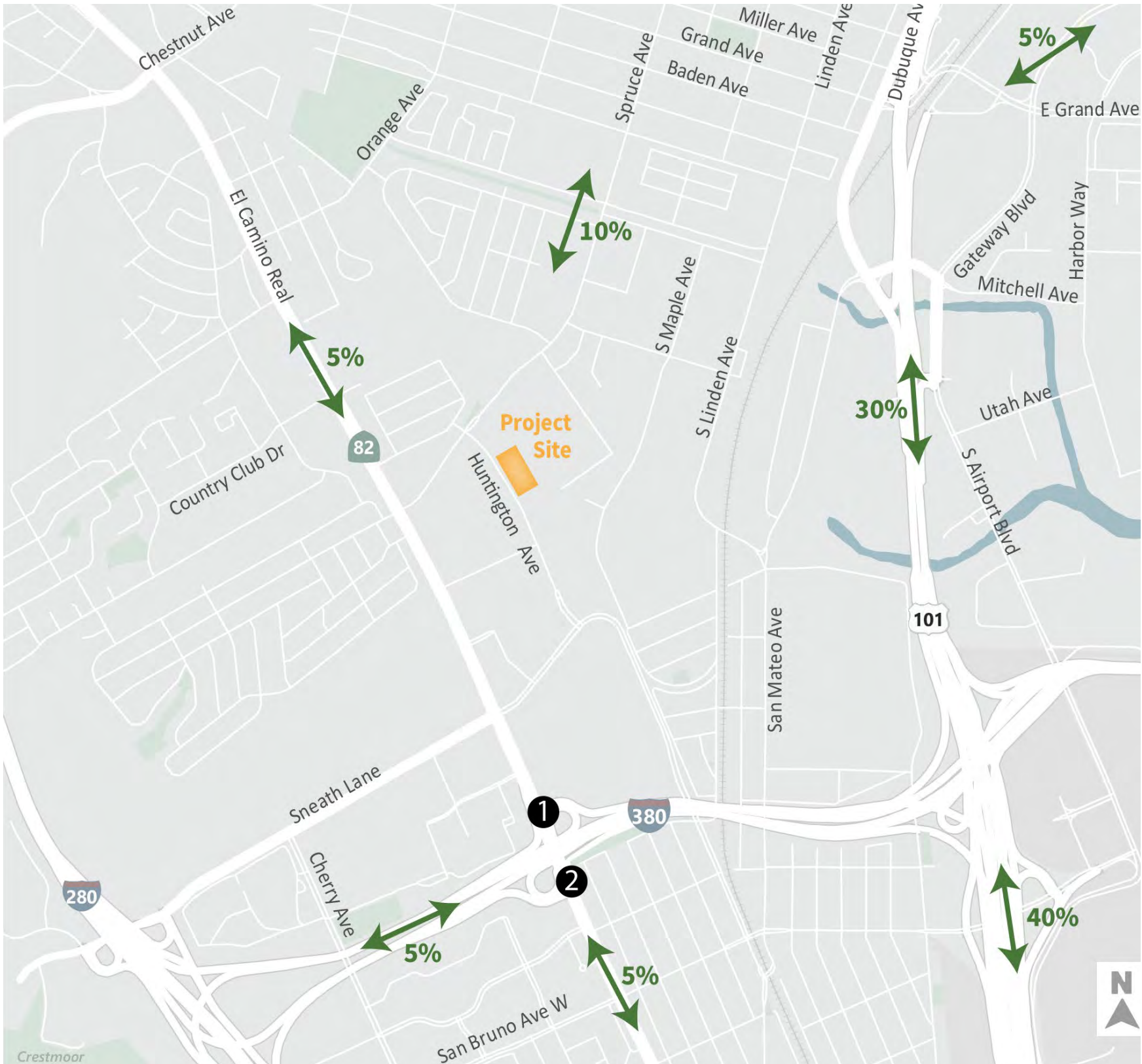
Appendix C: Peak Hour Intersection Volumes



- 1** Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Project Site
- Lane Configuration
- Signalized



Figure C-1
Peak Hour Traffic Volumes and Lane Configurations - Existing

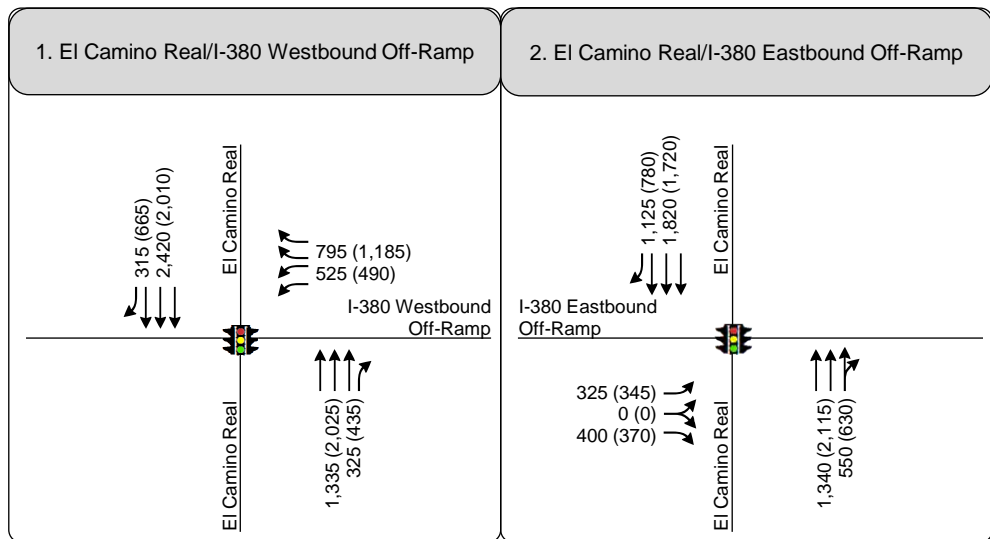
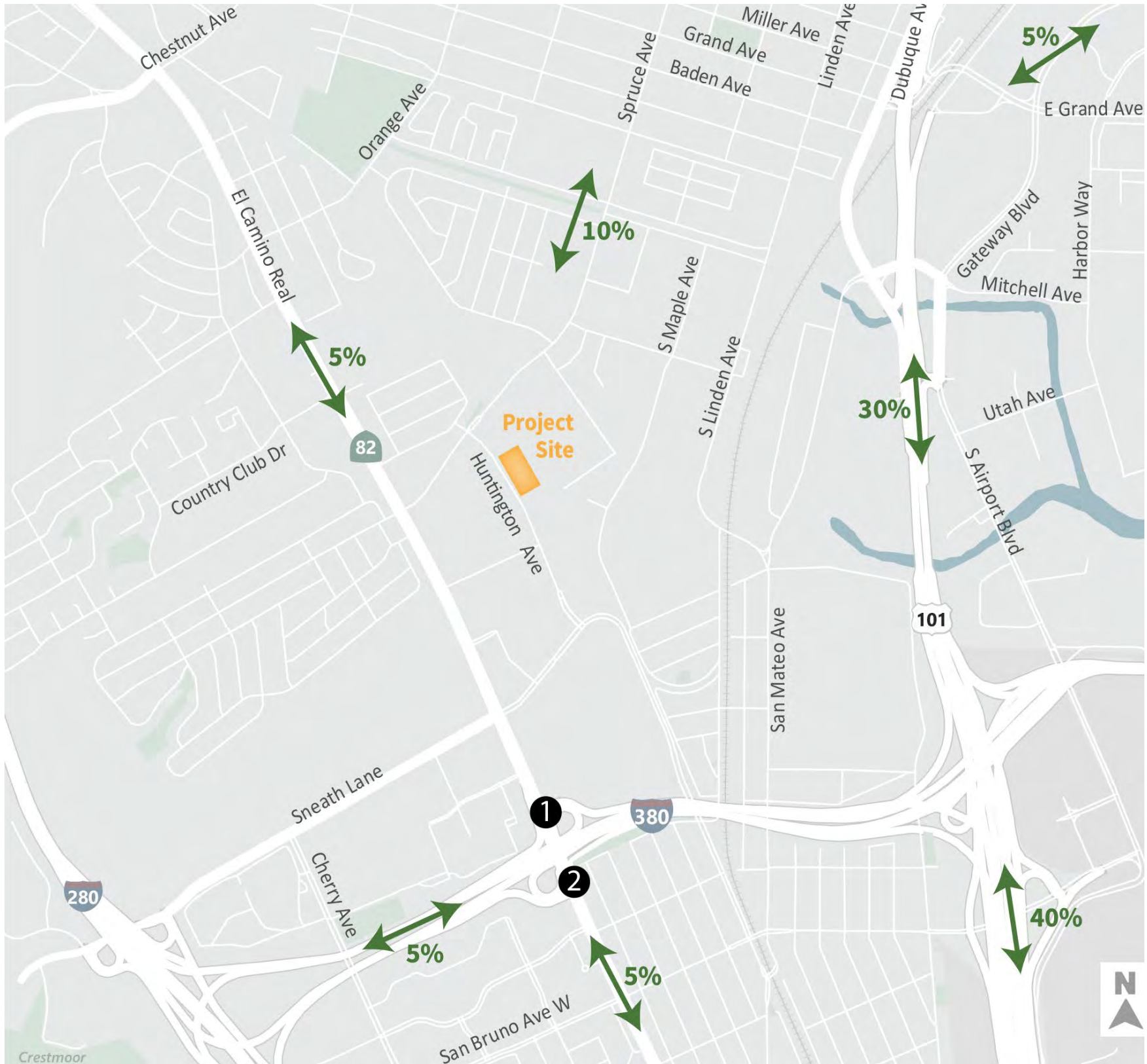


- 1** Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Project Site
- Lane Configuration
- Signalized

Figure C-2

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project



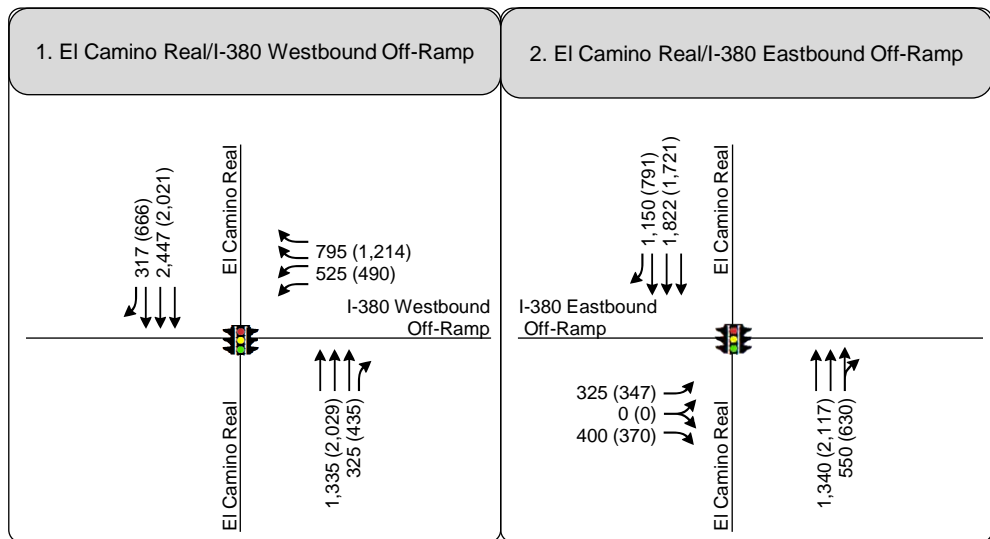
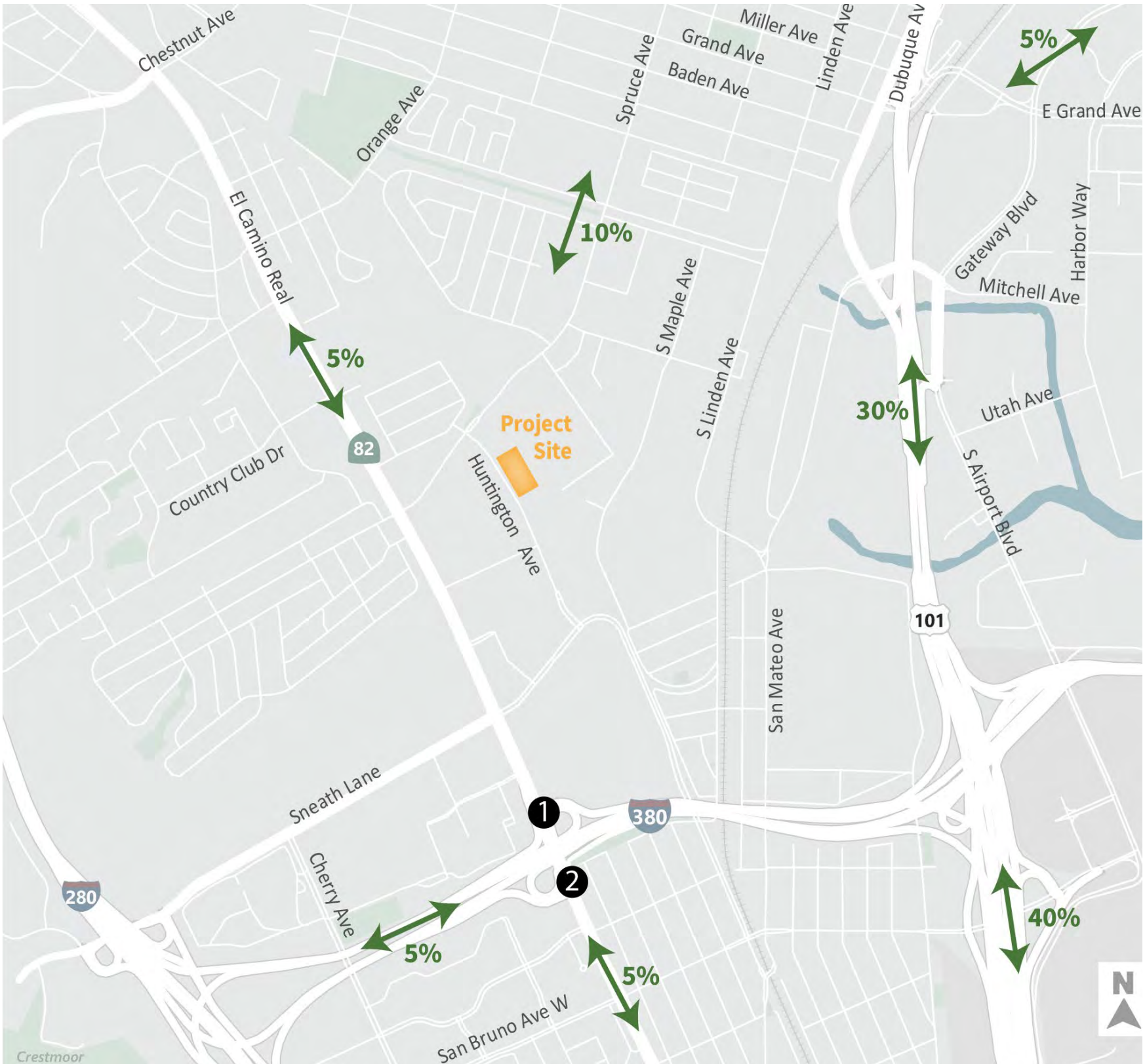


- Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Project Site
- Lane Configuration
- Signalized

Figure C-3

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project





- Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Project Site
- Lane Configuration
- Signalized

Figure C-4

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project



Appendix D: Freeway Queuing Reports

Existing PM



Queues

25: El Camino Real & 380 WB On-Ramp/380 WB Off-Ramp

06/11/2021



Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	500	1263	1634	331	1727	367
v/c Ratio	0.74	0.96	0.67	0.37	0.45	0.29
Control Delay	64.1	54.7	27.5	4.5	7.9	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	54.7	27.5	4.5	7.9	1.1
Queue Length 50th (ft)	238	655	426	49	218	0
Queue Length 95th (ft)	303	#835	452	48	244	25
Internal Link Dist (ft)			891		976	
Turn Bay Length (ft)	140			400		300
Base Capacity (vph)	693	1332	2435	884	3825	1255
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.95	0.67	0.37	0.45	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Queues

26: El Camino Real & 380 EB Off-Ramp/380 EB On-Ramp

06/11/2021



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	240	227	222	2219	1514	741
v/c Ratio	0.91	0.77	0.75	0.59	0.38	0.54
Control Delay	96.8	58.9	56.2	10.8	8.0	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	96.8	58.9	56.2	10.8	8.0	3.7
Queue Length 50th (ft)	245	165	152	205	227	41
Queue Length 95th (ft)	340	263	245	429	338	292
Internal Link Dist (ft)		1043		567	891	
Turn Bay Length (ft)	520		500			500
Base Capacity (vph)	339	355	359	3754	4023	1363
Starvation Cap Reductn	0	0	0	0	0	77
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.64	0.62	0.59	0.38	0.58

Intersection Summary

Existing Plus Project PM



Queues

25: El Camino Real & 380 WB On-Ramp/380 WB Off-Ramp

06/11/2021



Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	500	1293	1639	331	1739	368
v/c Ratio	0.73	0.97	0.68	0.38	0.46	0.29
Control Delay	63.2	57.5	28.0	4.5	8.1	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	57.5	28.0	4.5	8.1	1.1
Queue Length 50th (ft)	238	685	427	49	220	0
Queue Length 95th (ft)	303	#872	453	48	246	25
Internal Link Dist (ft)			891		976	
Turn Bay Length (ft)	140			400		300
Base Capacity (vph)	693	1331	2416	879	3806	1250
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.97	0.68	0.38	0.46	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Queues

26: El Camino Real & 380 EB Off-Ramp/380 EB On-Ramp

06/11/2021



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	242	227	222	2221	1515	753
v/c Ratio	0.91	0.77	0.75	0.59	0.38	0.55
Control Delay	97.0	58.5	55.9	10.9	8.0	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	97.0	58.5	55.9	10.9	8.0	3.8
Queue Length 50th (ft)	247	164	152	206	228	41
Queue Length 95th (ft)	341	263	245	429	337	297
Internal Link Dist (ft)		1043		567	891	
Turn Bay Length (ft)	520		500			500
Base Capacity (vph)	339	355	359	3750	4019	1365
Starvation Cap Reductn	0	0	0	0	0	77
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.64	0.62	0.59	0.38	0.58

Intersection Summary

Cumulative PM



Queues

25: El Camino Real & 380 WB On-Ramp/380 WB Off-Ramp

06/11/2021



Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	510	1234	2109	453	2094	693
v/c Ratio	0.42	0.93	0.88	0.49	0.69	0.58
Control Delay	38.4	49.3	41.0	8.0	22.8	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	49.3	41.0	8.0	22.8	3.4
Queue Length 50th (ft)	192	614	572	56	512	9
Queue Length 95th (ft)	244	740	703	161	565	63
Internal Link Dist (ft)			891		976	
Turn Bay Length (ft)	140			400		300
Base Capacity (vph)	1248	1367	2405	930	3041	1194
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.90	0.88	0.49	0.69	0.58

Intersection Summary

Queues

26: El Camino Real & 380 EB Off-Ramp/380 EB On-Ramp

06/11/2021



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	283	243	226	2889	1811	821
v/c Ratio	0.88	0.78	0.72	0.79	0.47	0.61
Control Delay	86.5	66.7	61.5	27.5	2.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	86.5	66.7	61.5	27.5	2.0	4.2
Queue Length 50th (ft)	286	219	190	837	30	30
Queue Length 95th (ft)	378	312	273	m929	149	599
Internal Link Dist (ft)		1043		567	891	
Turn Bay Length (ft)	520		500			500
Base Capacity (vph)	419	398	399	3635	3893	1338
Starvation Cap Reductn	0	0	0	0	0	142
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.61	0.57	0.79	0.47	0.69

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Cumulative Plus Project PM



Queues

25: El Camino Real & 380 WB On-Ramp/380 WB Off-Ramp

06/11/2021



Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	510	1265	2114	453	2105	694
v/c Ratio	0.41	0.94	0.89	0.49	0.70	0.59
Control Delay	37.6	49.9	42.4	8.4	23.7	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	49.9	42.4	8.4	23.7	3.7
Queue Length 50th (ft)	191	636	589	59	523	14
Queue Length 95th (ft)	242	#788	719	173	577	72
Internal Link Dist (ft)			891		976	
Turn Bay Length (ft)	140			400		300
Base Capacity (vph)	1264	1380	2369	920	3005	1183
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.92	0.89	0.49	0.70	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Queues

26: El Camino Real & 380 EB Off-Ramp/380 EB On-Ramp

06/11/2021



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	285	243	226	2891	1812	833
v/c Ratio	0.88	0.78	0.72	0.80	0.47	0.62
Control Delay	85.8	66.3	61.2	28.1	1.9	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	85.8	66.3	61.2	28.1	1.9	4.4
Queue Length 50th (ft)	288	220	191	848	30	36
Queue Length 95th (ft)	378	310	273	m944	143	624
Internal Link Dist (ft)		1043		567	891	
Turn Bay Length (ft)	520		500			500
Base Capacity (vph)	429	405	406	3626	3883	1340
Starvation Cap Reductn	0	0	0	0	0	139
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.60	0.56	0.80	0.47	0.69

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Appendix E: Count Sheets

South SF - Huntington Ave Driveway Counts
 Wednesday, May 26, 2021
 IDAX Data Solutions

Direction	In		Out		Hourly In	Hourly Out	Hourly In & Outs	Notes
	Lights	Heavies*	Lights	Heavies*				
0:00	0	0	0	0	-	-	-	
0:15	0	0	0	0	-	-	-	
0:30	0	0	0	0	-	-	-	
0:45	0	0	0	0	0	0	0	
1:00	0	0	0	0	0	0	0	
1:15	0	0	0	0	0	0	0	
1:30	0	0	0	0	0	0	0	
1:45	0	0	0	0	0	0	0	
2:00	0	0	0	0	0	0	0	
2:15	0	0	0	0	0	0	0	
2:30	0	0	0	0	0	0	0	
2:45	0	0	0	0	0	0	0	
3:00	0	0	0	0	0	0	0	
3:15	0	0	0	0	0	0	0	
3:30	0	0	0	0	0	0	0	
3:45	0	0	0	0	0	0	0	
4:00	0	1	0	1	0	0	0	
4:15	0	0	0	0	0	0	0	
4:30	0	0	0	0	0	0	0	
4:45	0	0	0	0	0	0	0	
5:00	0	0	0	0	0	0	0	
5:15	0	0	0	0	0	0	0	
5:30	0	0	0	0	0	0	0	
5:45	0	0	0	0	0	0	0	
6:00	1	0	0	0	1	0	1	
6:15	0	0	0	0	1	0	1	
6:30	2	0	0	0	3	0	3	
6:45	0	0	1	0	3	1	4	
7:00	2	0	0	0	4	1	5	
7:15	9	0	1	0	13	2	15	
7:30	5	0	3	0	16	5	21	
7:45	6	0	1	0	22	5	27	7:00-8:00 AM
8:00	1	0	0	0	21	5	26	
8:15	2	0	0	0	14	4	18	
8:30	0	0	7	0	9	8	17	
8:45	0	0	4	0	3	11	14	
9:00	0	0	6	0	2	17	19	
9:15	0	0	0	0	0	17	17	
9:30	0	0	0	0	0	10	10	
9:45	1	0	0	0	1	6	7	
10:00	0	0	1	0	1	1	2	
10:15	1	0	1	0	2	2	4	
10:30	1	0	0	0	3	2	5	
10:45	2	0	1	0	4	3	7	
11:00	1	0	0	0	5	2	7	
11:15	1	0	0	0	5	1	6	
11:30	0	0	0	0	4	1	5	
11:45	0	0	2	0	2	2	4	
12:00	0	0	2	0	1	4	5	
12:15	0	0	2	0	0	6	6	
12:30	0	0	0	0	0	6	6	
12:45	1	0	0	0	1	4	5	
13:00	1	0	1	0	2	3	5	
13:15	0	0	1	0	2	2	4	
13:30	0	0	0	0	2	2	4	
13:45	1	0	0	0	2	2	4	
14:00	0	0	2	0	1	3	4	
14:15	1	0	0	0	2	2	4	
14:30	0	0	0	0	2	2	4	
14:45	1	0	0	0	2	2	4	
15:00	1	0	0	0	3	0	3	
15:15	0	0	0	0	2	0	2	
15:30	13	0	0	0	15	0	15	
15:45	3	0	7	0	17	7	24	
16:00	0	0	5	0	16	12	28	
16:15	0	0	6	0	16	18	34	
16:30	1	0	2	0	4	20	24	
16:45	0	0	0	0	1	13	14	4:00-5:00 PM
17:00	1	0	1	0	2	9	11	
17:15	1	0	1	0	3	4	7	
17:30	0	0	0	0	2	2	4	
17:45	0	0	1	0	2	3	5	
18:00	0	0	1	0	1	3	4	
18:15	1	0	0	0	1	2	3	
18:30	0	0	0	0	1	2	3	
18:45	0	0	1	0	1	2	3	
19:00	4	0	1	0	5	2	7	
19:15	0	0	3	0	4	5	9	
19:30	0	0	0	0	4	5	9	
19:45	0	0	0	0	4	4	8	
20:00	0	0	0	0	0	3	3	
20:15	0	0	0	0	0	0	0	
20:30	0	0	0	0	0	0	0	
20:45	0	0	0	0	0	0	0	
21:00	0	0	0	0	0	0	0	
21:15	0	0	0	0	0	0	0	
21:30	0	0	0	0	0	0	0	
21:45	0	0	0	0	0	0	0	
22:00	0	0	0	0	0	0	0	
22:15	0	0	0	0	0	0	0	
22:30	0	0	0	0	0	0	0	
22:45	0	0	0	0	0	0	0	
23:00	0	0	0	0	0	0	0	
23:15	0	0	0	0	0	0	0	
23:30	0	0	0	0	0	0	0	
23:45	0	0	0	0	0	0	0	
TOTAL	65	1	65	1	AM PEAK PERIOD			7:00-8:00 AM
					PM PEAK PERIOD			4:00-5:00 PM
TOTALS	66		66		DAILY TOTAL			132

* Heavy vehicles not converted to Passenger Car Equivalent (PCE) due to low heavy vehicle count