CHAPTER SEVEN

transportation

IN THIS CHAPTER...

The Transit Corridors Plan establishes a comprehensive vision and outlines the redevelopment potential of land uses on select parcels along major corridors throughout the plan area. To support the proposed land use changes, transportation improvements are essential to activate the street spaces and move traffic through the area efficiently. As the community evolves into the 21st Century, the plan area must be planned to **enhance opportunities for all modes of transportation, with priority given to establishing strong connections and amenities for pedestrians, bicycles and transit.**

Proposed transportation improvements are based on the existing conditions analysis and information gathered through the outreach process. The identified transportation improvements support the community vision for creating a vibrant mixed-use Transit Corridors Area for San Bruno. These are summarized in Table 7.1 and are grouped into five areas; vehicle, transit, bicycle, walking, and parking and Transportation Demand Management (TDM).

The improvement strategies put special emphasis on increasing access and mobility for transit users, bicyclists, and pedestrians, while balancing the needs of vehicles. Complementary strategies for the different transportation modes provide a comprehensive framework to increase multi-modal access in and around the Transit Corridors Area. The strategy also seeks to improve connections to the San Francisco International Airport and capitalize on the potential economic benefits of thousands of airport workers and travelers.

The subsequent sections describe the transportation improvements in more detail; highlight innovative methods for dealing with parking and the balancing of modes; and provide recommended implementation policies for each method of transportation. This chapter is organized as follows:

- **7.1 Land Use and Transportation Analysis -** includes an analysis of daily trips generated per land use.
- **7.2 Roadway System -** provides an understanding of the existing conditions along the corridors within the plan area and a summary of potential improvements.
- **7.3 Parking Demand Management -** is a summary of existing parking demand and how the impact on parking from potential future development can be mitigated.

Table 7.1: Transit Corridors Plan Transportation Improvements

Improvement Area	Improvement Strategies
Vehicle	Note: Previous analyses conclude that overall intersection and roadway segments operate at acceptable levels. ▪ Evaluate opportunities for "road diets" on Huntington Avenue and San Bruno Avenue ▪ Evaluate opportunities to improve the San Mateo Avenue/El Camino Real intersection ▪ Evaluation opportunities for roundabouts at key locations to enhance the streetscape as a gateway feature, improve safety and reduce greenhouse gas emissions ▪ Reevaluate level of service policy for the Transit Corridors Area
Transit	▪ Implement a transit circulator shuttle route ▪ Enhance bus shelters and waiting areas ▪ Promote opportunities to grow transit ridership
Bicycling	▪ Develop network of bicycle priority streets, including bicycle boulevards ▪ Add bicycle lanes on streets with available right of way and higher traffic volumes ▪ Evaluate/develop a trail connection across US-101 to the San Francisco Bay Trail ▪ Implement bicycle parking requirements
Walking	▪ Promote a "complete streets" strategy for San Bruno's Transit Corridors ▪ Increase pedestrian comfort by adding bulbouts (also known as curb extensions) and refuge islands ▪ Improve street crossings by adding new crosswalks and enhancing existing crossings ▪ Promote walking connections from surrounding neighborhoods to the Downtown core
Parking and Transportation Demand Management (TDM)	▪ Develop a strategy for a Parking Management Program ▪ Promote a "Park Once and Walk" parking strategy ▪ Develop a Parking Implementation Plan ▪ Evaluate Metered Parking/Parking Pricing ▪ Create a Parking Benefits District ▪ Encourage unbundled parking ▪ Develop New Parking Standards for the Transit Corridors Area ▪ Consider a Transit Corridors Area TDM program

Source: Fehr & Peers, October 2009

7.1 LAND USE AND TRANSPORTATION ANALYSIS

The changes outlined in both the City's current 2025 General Plan and the Transit Corridors Plan are anticipated to increase the number of daily person-trips in San Bruno compared to today. The City's General Plan Environmental Impact Report (EIR) notes that citywide daily vehicle trips will increase by 69,000 over the life of the General Plan, meaning that new daily person trips will be in the range of 80,000 – 90,000 since not all trips will be taken by vehicle. Based on initial estimates, the Plan will increase daily person trips in the study area by approximately 8,700 trips as compared to the General Plan. This increase results from the increase in "net new development" (see Table 7.2).

Table 7.2: Land Assumptions

Land Use	Existing1	New Development Current General Plan Buildout	New Development with Transit Corridors Plan Buildout	Net New Development over GP
Residential (dwelling units)	Not estimated	720	1,610	890
Retail (square feet)	900,000	128,600	147,700	19,100
Office (square feet)	100,000	321,500	988,100	666,600
Hotel (rooms)	340	0	190	190

Notes:
1 Based on existing land use data estimations performed by Economics and Planning Systems, September 2009
2 Land use data for the study area under the Current General Plan were estimated based on general development assumptions contained in the General Plan Environmental Impact Report (EIR) and the City's General Plan Land Use classification map.
Source: Fehr & Peers, October 2009

Of these daily person trips, the Plan will increase pedestrian trips by approximately 1,300 trips, transit trips by 870 trips, and bicycle trips by 430 trips as compared to the General Plan. Table 7.3 summarizes the net new daily person trips generated by the Plan and the associated mode splits.

Table 7.3: Transit Corridors Plan Daily Person Trip Estimates

Transportation Mode	Transit Corridors Plan		
	Daily Person Trips 1	Mode Split 2	Trips By Mode
Vehicle	8,670	70%	6,070
Pedestrian		15%	1,300
Bicycle		5%	430
Transit		10%	870

Notes:
1 Based on existing land use data estimations performed by Economics and Planning Systems, September 2009
2 Land use data for the study area under the Current General Plan were estimated based on general development assumptions contained in the General Plan Environmental Impact Report (EIR) and the City's General Plan Land Use classification map.
Source: Fehr & Peers, October 2009

Guiding Policies

A set of guiding transportation policies supports the Plan's overall vision of creating a vibrant plan area that enhances community identity and sense of place. These include:

TRANS-A	Promote the development of the Transit Corridors Area's street and intersection network that supports the proposed intensification of land uses, while providing mobility for all travel modes.
TRANS-B	Ensure increased transit connectivity within and to/from the Transit Corridors Area and provide for transit amenities at stops and stations that increase the visibility of stops/stations and improve the comfort and convenience for transit riders.
TRANS-C	Encourage improved bicycle connectivity and enhanced bicycle parking opportunities within the Transit Corridors Area linking the surrounding land uses and future Caltrain station.
TRANS-D	Facilitate pedestrian access and safety through pedestrian enhancements, including the provision of enhanced crosswalks at all intersections and wider sidewalks and pedestrian amenities along the transit corridors.
TRANS-E	Develop and implement a parking management strategy for the Plan area that makes efficient use of the City's parking supply through shared parking strategies and that provides the lowest number of parking spaces while still maintaining the viability of the Plan through efficient use of the parking supply within the Plan Area.
TRANS-F	Develop and implement a Transportation Demand Management (TDM) Program that reduces the amount of peak period motor vehicle traffic and encourages the use of modes other than the single-occupant vehicle.

Implementation Policies

The following implementation policies and strategies support the guiding policies. These include:

Street System

TRANS-A.1 Support the Caltrain grade separation project and continue coordination with Caltrain to ensure that desired enhancements as part of the Transit Corridors Area are incorporated in conjunction with the Caltrain improvements.

TRANS-A.2 Study a redesign of San Mateo Avenue/El Camino Real intersection to create a highly visible gateway to downtown and an outdoor public plaza, as well as improve access and enhance the intersection. Evaluate the concepts such as realigning the intersection to be centered on the San Mateo Avenue–El Camino Real junction, rather than the Taylor Avenue–El Camino Real junction, and creating a 90-degree intersection into San Mateo Avenue from El Camino Real to maintain truck and service access (discussed in greater detail in the San Mateo Avenue/El Camino Real Intersection segment in the following chapter).

TRANS-A.3 Evaluate the option of implementing a round-about at the San Mateo Avenue/Huntington Avenue intersection in conjunction with improvements related to the Caltrain station relocation and grade separation project. Consider alternative locations for future implementation of roundabouts.

TRANS-A.4 In the long term, study the option of implementing "road diets" on San Mateo Avenue and Huntington Avenue (north of San Bruno Avenue) after the Caltrain grade separation project is completed and traffic flows are understood. The road diet could be a feasible alternative if it is determined that adequate traffic flow is maintained, and pedestrian, bicycle, and transit access in the Plan Area are enhanced.

Transit Facilities

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.

Bicycle Facilities

TRANS-C.1 Provide Class II bicycle lanes on Huntington Avenue north of San Bruno Avenue.

TRANS-C.2 Provide a network of bicycle priority streets that provide linkages throughout the Plan area. As appropriate, bicycle priority streets should provide traffic-calming measures to limit vehicle travel and speeds.

TRANS-C.3 In the long-term, determine the best route for an East-West connection from the Caltrain station to the regional San Francisco Bay Trail on the east side of Highway 101, potentially along San Bruno Avenue East or a via a new Highway101 pedestrian and bicycle overpass and a new bicycle path north of Pine Street.

TRANS-C.4 Implement a citywide bicycle parking ordinance that specifies bicycle parking, locker, and shower requirements.

Pedestrian Facilities

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.

TRANS-D.2 Provide raised crosswalks on San Mateo Avenue and other locations as appropriate in order to maintain slow vehicle speeds and promote a walkable Downtown.

TRANS-D.3 Provide additional pedestrian crossings on El Camino

Real at Angus Avenue and Kains Avenue.

Parking Management

TRANS-E.1 Promote a "Park Once and Walk" parking strategy for the Transit Corridors Area. This strategy aims to pool all available parking spaces within the Transit Corridors Plan, including public and private parking spaces, and make these available for everyone to use. This will allow visitors to park once and then walk to several different destinations within the Downtown; thus reducing the number of overall parking spaces needed for the Plan.

TRANS-E.2 Implement parking pricing strategies that seek to achieve a target 85% occupancy rate in all areas.

TRANS-E.3 Create a Parking Benefits District such that future parking revenue is reinvested in the Transit Corridors Area.

TRANS-E.4 Unbundle parking supply from residential developments so that residents will know the price of parking and can make informed decisions on their transportation options.

TRANS-E.5 Develop a Parking Implementation Plan that details the approach and timing for new parking strategies and potential additional parking capacity in the Transit Corridors Area. The implementation Plan should seek to achieve the following:

- Strategy for defining and regularly evaluating parking demand
- Strategy for evaluating and setting parking pricing and timeline for implementation
- Strategy for funding construction of future parking facilities

TRANS-E.6 Promote a new parking standard for the Transit Corridors Area that provides flexibility to developers, reflects actual market demand for parking and demonstrates the City's increased commitment to creating a district that relies less on the automobile and promotes travel by walking, bicycling and transit (see proposed standards on page 203).

7.2 ROADWAY SYSTEM

The term "complete streets" describes a comprehensive approach to the practice of mobility planning. Complete streets principles recognize that transportation corridors have multiple users with different abilities and mode preferences (driving, biking, walking and taking transit). Adjacent land use influences the functionality and character of the street environment. A well-integrated street system considers the complementary relationship between land use, local and regional travel needs, and the context that it serves. Complete streets consider the range of users including children, the disabled and seniors. They can accommodate expected traffic demand yet also provide additional facilities to support travel by other modes.

The Plan proposes to develop the area with new mixed-use and transit-oriented developments with a goal of increasing multi-modal access to and within the Transit Corridors Area. The principles of complete streets should be an integral part of the Plan development in San Bruno to provide for a transportation network that successfully integrates bicyclists, walkers and transit users, along with vehicle drivers.

Traffic Volumes on Transit Corridors

The goal of the Plan is to prioritize transportation conditions for trips by transit, walking and bicycling. However, automobile circulation needs are also evaluated as part of the Plan. Based on the proposed land use intensification under the Plan, there would be some additional traffic demand on the transit corridors.

Intensification of land use and a mix of land uses generally means more traffic is generated on a net basis but due to type and location of the development, the result is that fewer trips will be generated on a per capita basis than typical isolated, single use land uses. The factors typically described as the "Ds" include Density, Diversity of uses, Distance to transit, and Design of internal roadway system and pedestrian and bicycle facilities. These factors have been shown to reduce per capita vehicle trips by up to 50 percent in Center city mixed-use environments where high quality transit service is nearby.

By applying the "D" factors to the Transit Corridors Area, it is estimated that even though land use intensity increases by 150 percent for Downtown parcels that are part of the Plan, vehicle trips for these same parcels would only increase by approximately 50 percent more vehicle trips compared to the City's General Plan buildout land use assumptions. The expected increase in traffic would result in approximately 6,100 daily vehicle trips by the year 2035. By comparison, the remainder of San Bruno is expected to have an additional 60,000-65,000 daily vehicle trips by the year 2035.

Vehicle trips were distributed and assigned to the following roadways in the Downtown area: San Bruno Avenue (25%), El Camino Real (40%), Huntington Avenue (10%) and San Mateo Avenue (25%). Table 7.5 shows the approximate Average Daily Traffic (ADT) estimated for the main roadway segments in the Transit Corridors Area.

Based on the anticipated traffic volumes under the Plan, the following table shows the anticipated street configurations for the transit corridors. These configurations balance the need for accommodating traffic demand with improvements for other travel modes.

Even if future traffic volume forecasts are accounted for, reductions in the number of travel lanes (road diets) on certain roadways such as San Bruno Avenue and Huntington Avenue could be considered feasible. Potential "road diets" are discussed in more detail in the following section.

Road Diets

In the long term, the Plan recommends evaluating a reduction of the travel lanes from four travel lanes to two lanes to provide bicycle and other pedestrian amenities on San Bruno Avenue and Huntington Avenue north of San Bruno Avenue. This road diet alternative would be based on a study of traffic patterns after the completion of the Caltrain station and grade separation project. Roadway narrowing, commonly called road diets, has the benefit of providing enhanced access and mobility for pedestrians, bicyclists and transit users, as well as motorists.

Table 7.4: Traffic Volumes and Road Diet Feasibility

Average Daily Traffic Volume Range	Road Diet Feasibility	Local Bay Area Examples
Less than 12,000 vehicles/day	High Potential (center turn lane/turn pockets beneficial, though not necessary for traffic capacity)	Castro Street, Mountain View (~9,000 vehicles/day)
12,000 – 18,000 vehicles/day	High Potential (center turn lane/turn pockets likely needed; may require traffic microsimulation analysis to confirm signal timings and turn pocket lengths)	Valencia Street, San Francisco (~17,000 vehicles/day)
18,000 – 23,000 vehicles/day	Moderate Potential (center turn lane/ turn pockets needed; typically requires traffic simulation analysis to confirm feasibility)	Marin Avenue, Berkeley, (~20,000 vehicles/day)
Greater than 23,000	Road diet generally not appropriate	N/A

Notes:
1 Based on existing land use data estimations performed by Economics and Planning Systems, September 2009
2 Land use data for the study area under the Current General Plan were estimated based on general development assumptions contained in the General Plan Environmental Impact Report (EIR) and the City's General Plan Land Use classification map.
Source: Fehr & Peers, October 2009

Evidence from case studies from different Northern American cities where road diets were successfully implemented notes that streets have substantially fewer traffic collisions after road diets have been implemented. In many cases roadway capacity is not reduced because road diets enable left-turning vehicles to have a dedicated turn lane rather than having to stop in a through lane before executing a left turn. To be considered good candidates for road diets, roadways should have moderate volumes (up to 18,000 daily vehicles), though many cities have successfully implemented road diets on facilities that carried up to 23,000 daily vehicles. Table 7.4 summarizes the general feasibility of road diets based on average daily traffic volumes and provides local Bay Area Examples. (See Figure 7.1: Road Diet) Figures 7.2 through 7.11 provide a conceptual layout of the existing and proposed street configurations.

One travel lane on a major street can typically carry 8,000 to 10,000 vehicles per day. While many factors influence street capacity, including peak hour traffic volume, intersection spacing, presence of on-street parking, traffic speeds and other factors, a street with one travel lane in each direction and a center turn lane/median normally has a capacity of 16,000 to 20,000 vehicles per day.

Figure 7.1: Road Diet

Table 7.5: Transit Corridors Plan Street Configurations

Corridor	Existing Conditions		Future Conditions under Transit Corridors Plan	
	Daily Traffic Volume	Roadway Configuration	Daily Traffic Volume	Roadway Configuration
San Bruno Avenue (West)	13,000	▪ 4 travel lanes ▪ No median ▪ No bike lanes ▪ Narrow sidewalks ▪ On-street parking	~ 17,500	▪ In the long term, consider potential for road diet, consisting of- 2 travel lanes, center median/turn lane with pedestrian refuge islands at crosswalks ▪ 2 bike lanes ▪ Wide sidewalks with landscaping ▪ On-street parking
San Bruno Avenue (East)	11,000	▪ 4 travel lanes ▪ No median ▪ No bike lanes ▪ Narrow sidewalks ▪ No on-street parking	~ 16,000	▪ In the long term, consider potential for road diet, consisting of- 2 travel lanes, center median/turn lane with pedestrian refuge islands at crosswalks ▪ Standard sidewalks ▪ On-street parking on one side of roadway
El Camino Real	41,000	▪ 6 travel lanes ▪ Center median ▪ No bike lanes ▪ Standard sidewalks ▪ On-street parking	~ 52,900	▪ 6 travel lanes ▪ Center median/turn lane with enhanced pedestrian refuge islands ▪ Additional crosswalks ▪ No bike lanes ▪ Standard sidewalks ▪ On-street parking

Table 7.5: Transit Corridors Plan Street Configurations (cont.)

Corridor	Existing Conditions		Future Conditions under Transit Corridors Plan	
	Daily Traffic Volume	Roadway Configuration	Daily Traffic Volume	Roadway Configuration
San Mateo Avenue	11,000	▪ 2 travel lanes ▪ No median ▪ No bike lanes ▪ Wide sidewalks ▪ High visibility crosswalks ▪ On-street parking	~ 17,000	▪ 2 travel lanes ▪ No median ▪ No bike lanes ▪ Wide sidewalks ▪ Raised crosswalks ▪ On-street parking- evaluate changing to angled street parking.
Huntington Avenue (between San Bruno Avenue and BART)	11,000	▪ 4 travel lanes ▪ Center median ▪ No bike lanes ▪ Standard sidewalks ▪ On-street parking	~ 14,400	▪ 4 travel lanes ▪ Center median/turn lane ▪ 2 bike lanes ▪ Standard sidewalks ▪ On-street parking ▪ Opportunity to reduce through lanes

1. Transit Corridors Plan traffic volumes are planning-level estimates only.
2. Existing traffic volumes are based on the Caltrain Grade Separation TIA prepared by Kimley-Horn and Associates, 2009 and by the San Bruno 2025 General Plan Final EIR prepared by Dyett & Bhatia, 2008.

Source: Fehr & Peers, October 2009

Based on the future roadway volumes outlined in the following Table 7.5, San Bruno Avenue west of Huntington Avenue is estimated to carry approximately 17,500 vehicles on an average mid-weekday and east of Huntington Avenue San Bruno Avenue is estimated to carry 16,000 vehicles. Huntington Avenue is estimated to carry approximately 14,000 daily vehicles.

Based on the research presented on road diets, San Bruno Avenue and Huntington Avenue will be able to accommodate these volumes and will not likely result in a significant amount of traffic diversion to parallel neighborhood facilities such as Kains Avenue or Euclid Avenue. This assumes that separate left turn pockets are provided at each public street intersection as is currently proposed as part of the Transit Corridors Plan. Successfully implementing a road diet project is oftentimes helped by a public information campaign to notify drivers of the proposed reconfiguration and encourage them to consider alternate routes if possible.

Overall, the analysis indicates that the proposed narrowing of San Bruno Avenue and Huntington Avenue from a 4-lane roadway to a 2-lane roadway with enhanced pedestrian and bicycle facilities will be able to accommodate the projected traffic volumes. Diversion of traffic from San Bruno Avenue to local parallel facilities is estimated to only occur during the most congested periods with higher traffic volumes, such as on days with special events.

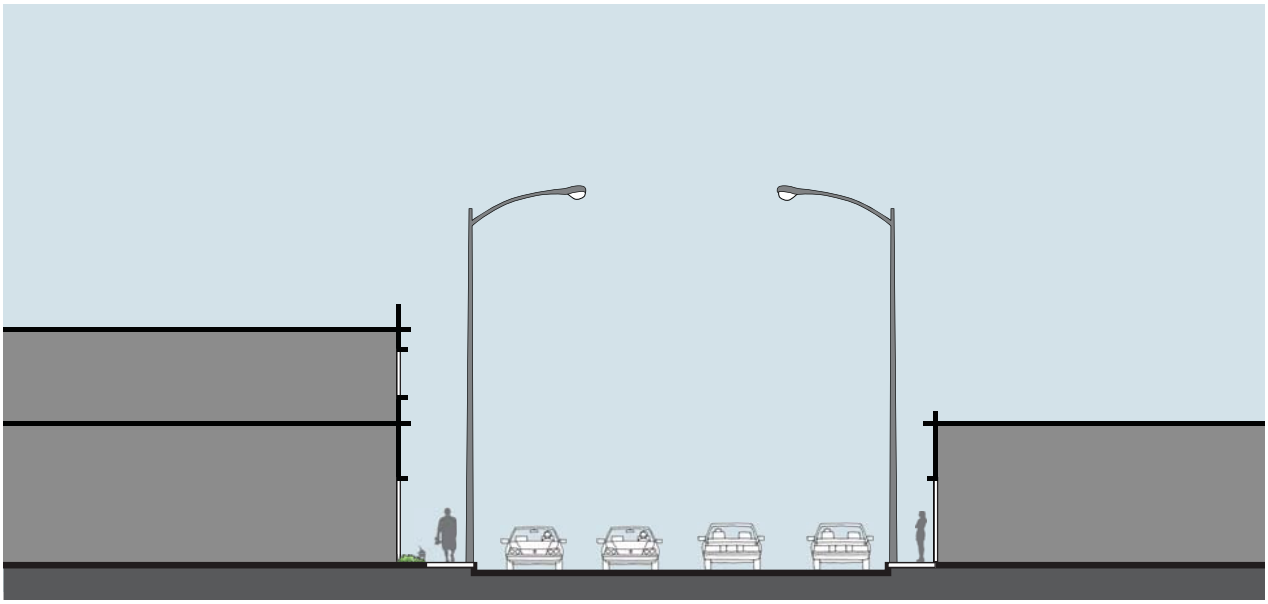


Figure 7.2: Existing Conditions (San Bruno Avenue facing west between San Mateo Avenue and US 101)

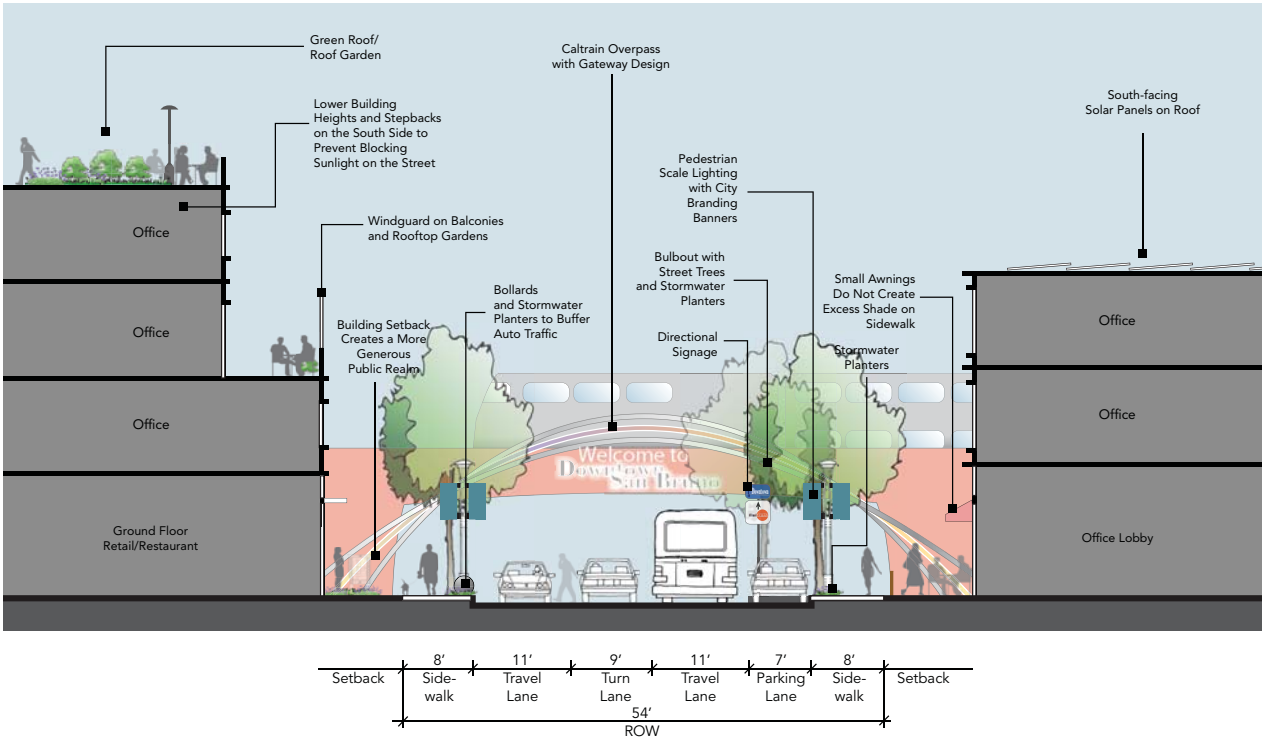


Figure 7.3: Proposed Improvements (San Bruno Avenue facing west between San Mateo Avenue and US 101)

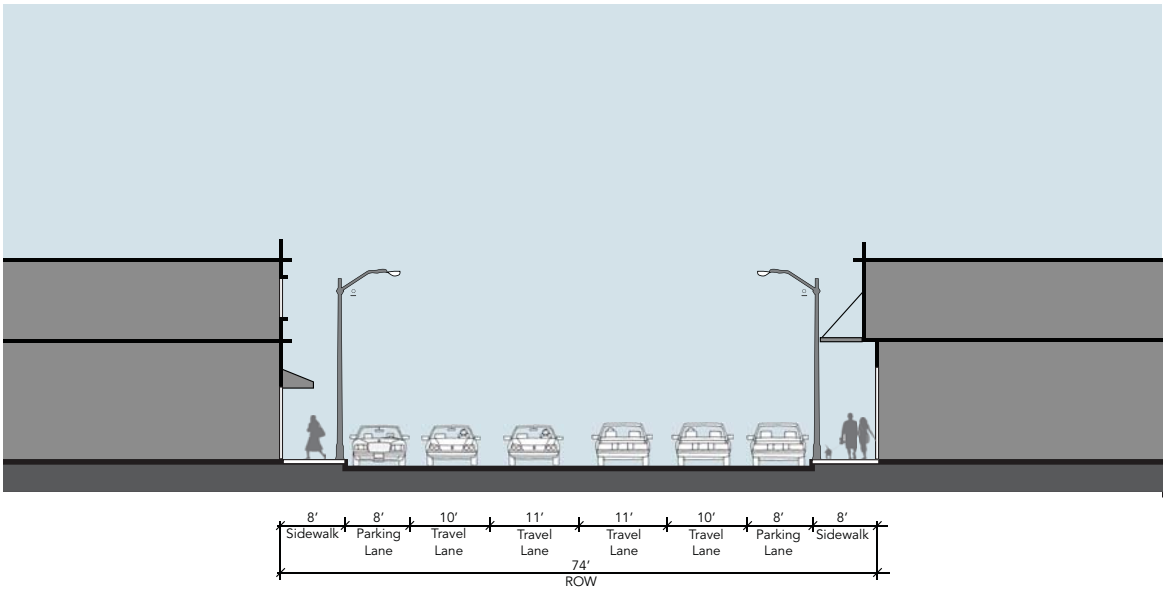


Figure 7.4: Existing Conditions (San Bruno Avenue facing East between El Camino Real and Huntington Avenue)

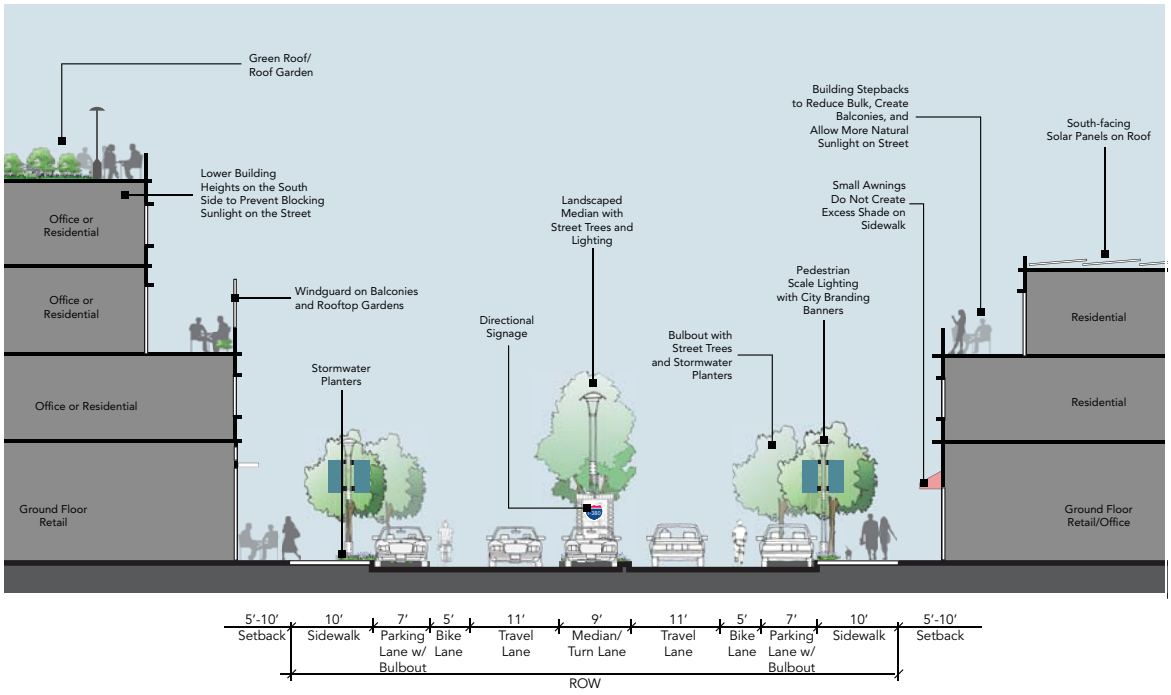


Figure 7.5: Proposed Improvements (San Bruno Avenue facing East between El Camino Real and Huntington Avenue)

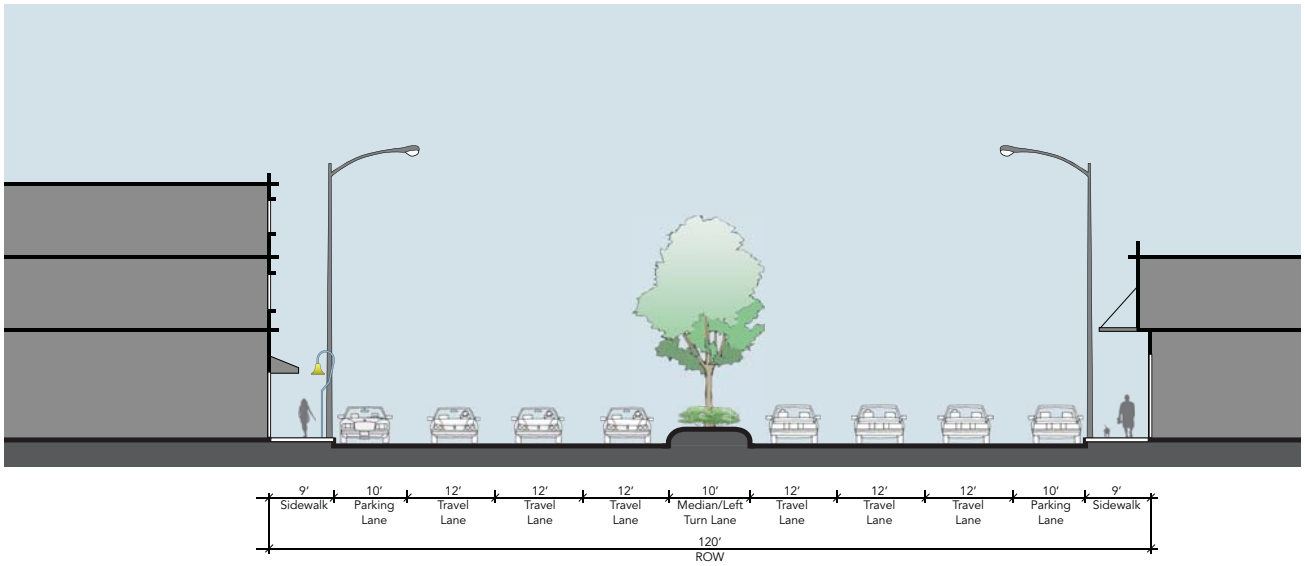


Figure 7.6: Existing Conditions (El Camino Real facing south)

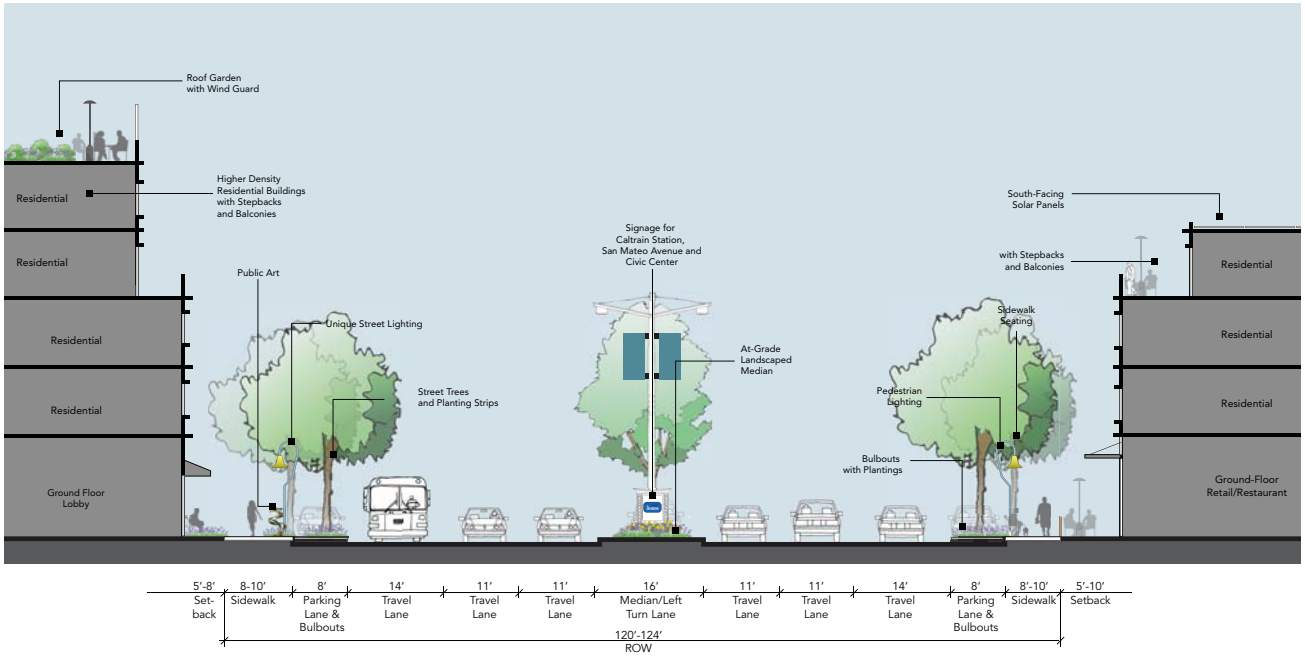


Figure 7.7: Proposed Improvements (El Camino Real facing south)

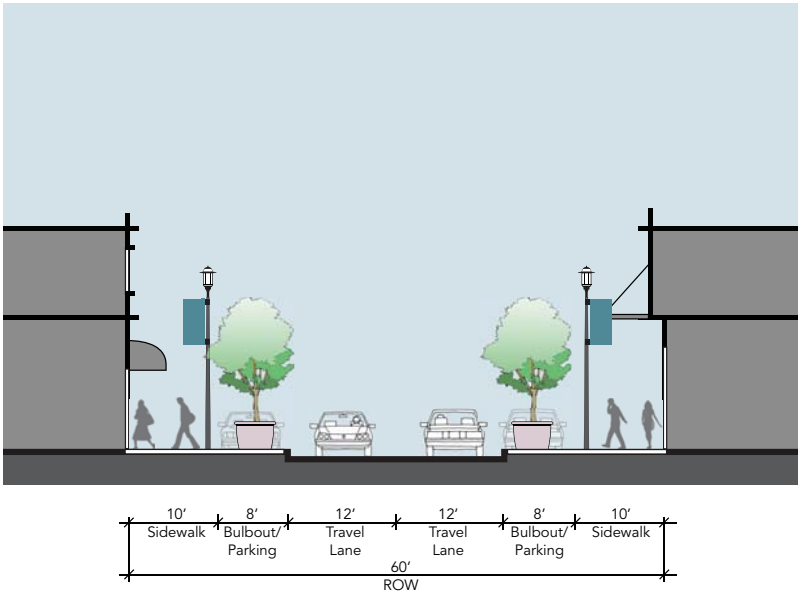


Figure 7.8: Existing Conditions (San Mateo Avenue)

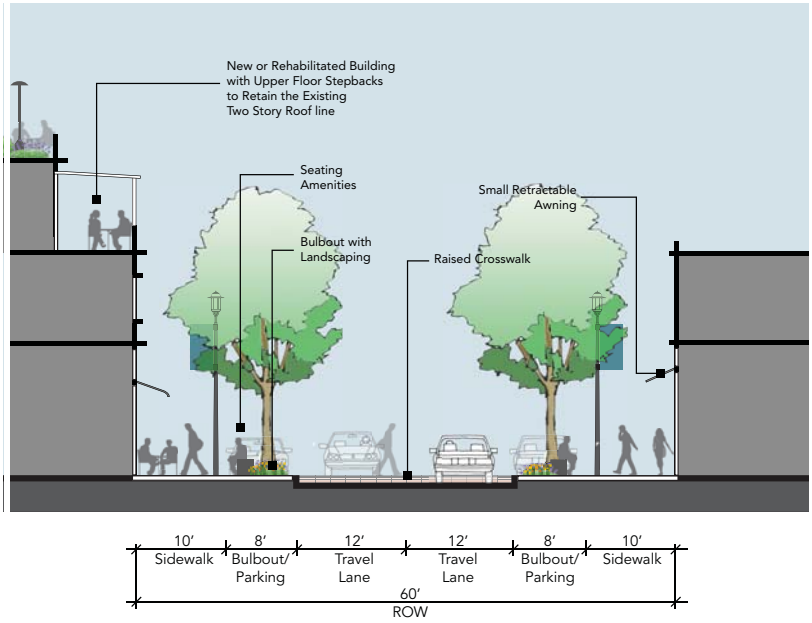


Figure 7.9: Proposed Improvements (San Mateo Avenue)

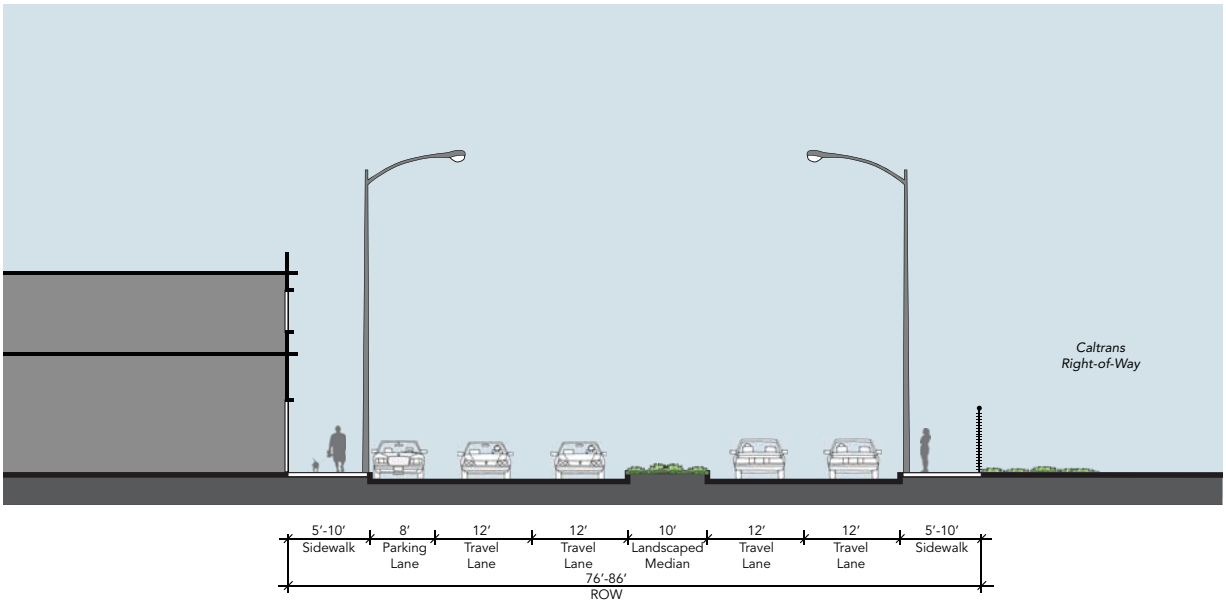


Figure 7.10: Existing Conditions (Huntington Avenue north of San Bruno Avenue facing north)

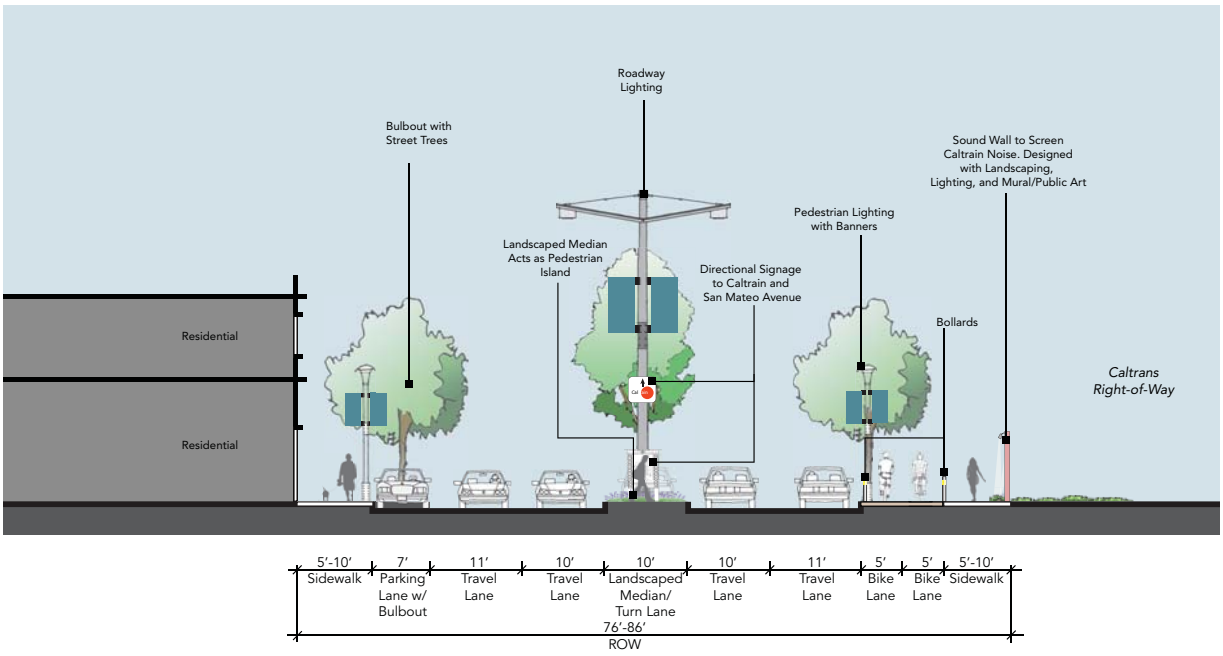


Figure 7.11: Proposed Improvements (Huntington Avenue north of San Bruno Avenue facing north)

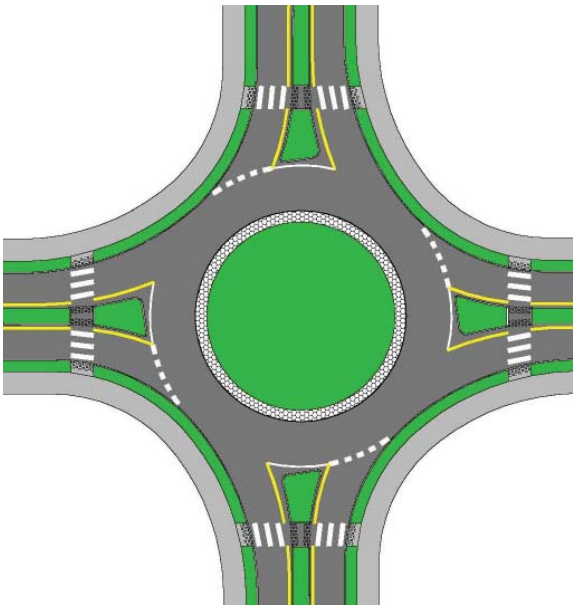
Intersections on the Transit Corridors

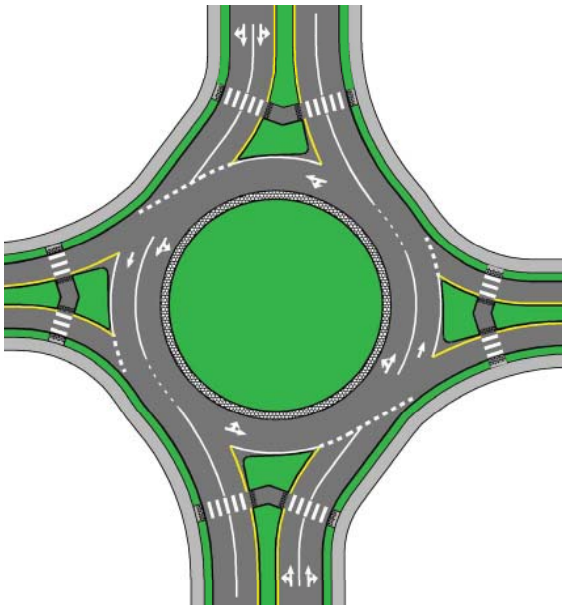
Intersection operations represent an important element of a transportation network. Since intersections are control points for roadway volumes, they typically are the largest source of delay on a corridor. Also, they serve as preferred locations for pedestrian crossings since they allow for controlled crossing points.

Roundabouts

A roundabout is a circular intersection with yield control on entry points with splitter islands to direct traffic through the intersection. Roundabouts provide several key safety benefits such as fewer conflict/collision points (nationally resulting in a 39 percent reduction of collisions) and slower intersection speeds that improve safety for pedestrians and bicyclists.

Roundabouts also result in lower average delays than stop or signal control intersections for locations with less than 20,000 daily vehicles. This in turn results in environmental benefits, since less idling time and delay equates to lower emission of air pollution, greenhouse gases, and reduced fuel consumption.





One potential drawback to roundabouts is that they typically require more land area at the intersection than conventional intersections. However with the added area in the center of the roundabout they can have the benefit of serving as a gateway feature into the Downtown with the provision of sculptures, signs, or landscaping.

Roundabouts are typically designed as one-lane or two-lane roundabouts (see Figure 7.12). One-lane roundabouts provide one lane for internal circulation and typically have a diameter between 100 and 150 feet, while two-lane roundabouts with two internal circulation lanes are typically between 150 and 230 feet (see Figure 7.12: Roundabouts).

Figure 7.13: Potential Roundabout Locations identifies three potential locations for roundabouts. Preliminary analysis with microsimulation to evaluate the feasibility of these four locations determined that there are no fatal flaws that would limit these three from being considered for full evaluation in the future.

One location that presents the greatest opportunity for a round-about is the Huntington Avenue/San Mateo Avenue intersection. The image to the right shows a conceptual drawing of how a round-about could be implemented at this location with the proposed improvements related to the Caltrain relocation and grade separation project (discussed below).

Figure 7.13: Potential Roundabout Locations

Caltrain Grade Separation Project

Currently Caltrain service runs parallel and east of the Transit Corridors Area. San Bruno Avenue crosses the rail tracks between the two closely spaced intersections of San Bruno Avenue/Huntington Avenue and San Bruno Avenue/San Mateo Avenue. One of the Transit Corridors Plan area's main roadway operations constraint points is the Caltrain rail crossing points where during the peak periods extensive delays and queues can develop.

Caltrain is currently constructing a grade separation and station relocation project, which should be complete by late 2013. This project will move the Caltrain station from its current location on Sylvan Avenue to the north-east corner of the San Bruno Avenue/Huntington Avenue intersection. This station is on an elevated structure spanning San Bruno Avenue and built as part of the grade separation process. Three roadway grade separations will be built at San Bruno Avenue, San Mateo Avenue and Angus Avenue. Three pedestrian under-crossings will also be constructed at Scott Street, Euclid Avenue/Walnut Street and Sylvan Avenue. Roadway realignments and closures are also part of this project.

The Caltrain grade separation project will greatly improve operations at the most congested crossing points on San Bruno Avenue and will help to facilitate connectivity for all travel modes on San Bruno Avenue east and west of the train tracks.

Figure 7.12: Roundabouts

San Mateo Avenue/El Camino Real Intersection

The San Mateo Avenue/Taylor Avenue intersection is the main entry point into the south end of the Downtown area. The intersection is a historical landmark since it marks the beginning of the California State Highway system. Currently, when traveling northbound on El Camino Real, it is not obvious to drivers that San Mateo Avenue is the southern entry to the Downtown area. The Plan recommends evaluating a redesign of this intersection to create a highly visible gateway to downtown and an outdoor public plaza, as well as improving access in and out of downtown. The study should consider the alternative of realigning the intersection to be centered on the San Mateo Avenue–El Camino Real junction, rather than the Taylor Avenue–El Camino Real junction, and creating a 90-degree intersection into San Mateo Avenue from El Camino Real to ease fro truck and service access. To further enhance this intersection the Plan recommends that it be clearly marked as a gateway feature, which could include a combination of special paving, landscaping treatments, a rebuilt plaza or other urban design features (see Figure 7.14: Conceptual Realignment).

Figure 7.14: Conceptual Realignment

Intersection Level of Service Policy

A level of service policy is a tool for achieving certain transportation network performance objectives throughout a planning horizon. The City of San Bruno currently has a policy of maintaining level of service (LOS) D on its intersections and roadways. However, from a policy perspective, maintaining a LOS policy of "D" for vehicles is not conducive to mixed-use, high density TOD areas which enhance pedestrian, bicycle and transit activity. Under current City policy, intersections that do not meet the City's current LOS D standard require improvements, primarily by adding capacity through vehicle travel lanes which can widen roadways and worsen conditions for bicycle and pedestrian travel by increasing riders' and walkers' level of exposure to vehicles. The current policy, by limiting vehicle congestion, reduces the incentive for San Bruno citizens to use non-automotive modes such as transit, ridesharing, bicycling and walking; all of which are vital modes for the success of the Plan.

There are three primary ways in which a change in LOS policy for the Transit Corridors Plan area could be considered:

- Change the target LOS from D to E for intersections in the Transit Corridors Area.
- Eliminate any LOS policy for the Transit Corridors (development would instead mitigate impacts through payment of a multimodal transportation impact fee program that would be established by the City).
- Create a multi-modal LOS policy that also evaluates bicycle, pedestrian and transit access in conjunction with vehicle LOS.

The Plan recommends that the City either lower its LOS policy from "D" to "E" or implement at multi-modal LOS policy for the Transit Corridors Area. The benefit of reducing the LOS from "D" to "E" is that it allows for intersection designs to accommodate more growth than the existing policy, since LOS "E" typically refers to "at capacity" operations. LOS is typically measured during the morning and evening peak 15 minutes of the peak hour when vehicle volumes are the highest. Thus, intersections

operating at LOS E will operate at better LOS for the remainder of the day. The added benefit of allowing more vehicles to operate at intersections is that it reduces cost for new development, since the City will not be required to provide improvements to improve LOS to "D".

A multi-modal LOS policy would allow the City to evaluate potential transportation improvements from a multi-modal perspective in order to determine optimal improvements that balances the needs of all users, including bicycles, pedestrian, transit and vehicles. A multi-modal approach results in better choices that can be made based on the respective transportation, design, aesthetic and economic objectives for the Transit Corridors Area.

Transit Facilities

Access and connectivity to and from nearby transit facilities is critical to take full advantage of the mixed-use and high density development proposed under the plan.

The Transit Corridors Area has several key transit facilities, including the San Bruno BART station located approximately 0.5 miles north of the core of the plan area and the San Bruno Caltrain station that will be relocated to the north-east corner of the San Bruno Avenue/San Mateo Avenue/ Huntington Avenue intersection. Additionally, there are several SamTrans bus stops throughout the plan area that provide vital transit connections.

Transit ridership along the transit corridors will increase substantially as a result of the Plan. It is estimated that approximately ten percent of daily trips due to the new development will be taken by transit. By contrast, only five percent of daily trips in San Mateo County are transit trips (Bay Area Travel Survey 2000, MTC).

Connectivity to Rail Stations

The Plan will have two rail stations, with Caltrain being centrally located in the plan area and the BART station being located on the northern edge of the plan area approximately a half-mile north of the core

area. In evaluation of transit, access a quarter- to a half-mile is typically considered a reasonable walking distance that most individuals are willing to walk to/from transit facilities.

Local Transit Shuttle

To enhance the transit connectivity in the Plan area a local transit shuttle between the Downtown Caltrain and BART would improve connections for those areas that are beyond a half mile from either station. The shuttle could use some existing SamTrans transit stops; though the Plan recommends the provision of additional stops near the El Camino Real/San Mateo Avenue, El Camino Real/San Bruno Avenue and San Bruno Avenue/Huntington Avenue intersections. Figure 7.2 outlines the proposed shuttle route and stops for the Plan.

To be effective, the proposed shuttle would need to circulate the Plan area at relatively frequent and regular intervals. The shuttle would need to run at higher frequencies during the morning and evening peak hours to provide convenient connections for employees. Shuttle frequency could be reduced during non-peak hours, but nonetheless should provide service three to four times per hour to provide adequate connectivity and to increase the vitality of transit service in the Plan area.

The Bayhill Office Park would be served by the stop at the El Camino Real/San Bruno Avenue intersection. While providing a route into the office park would serve those employees, it would result in a substantial amount of additional travel time on the shuttle route and make the shuttle service less efficient and attractive for other users.

Connectivity to San Francisco International Airport

Because Downtown San Bruno is located in close proximity to the San Francisco International Airport, the City may also consider a second shuttle that serves the airport at regular intervals. Because no transit service currently connects the Airport with Downtown, this strategy may help provide economic benefits due to airport employees and travelers utilizing City services.

Bus Stops

The majority of the existing bus stops in the Transit Corridors Area are simply marked by a sign and do not provide any transit amenities such as shelters, benches and lighting. Such amenities enhance comfort and safety for transit riders. The Plan recommends that transit stops on San Mateo Avenue, San Bruno Avenue and El Camino Real be enhanced to increase the viability of bus service within the Plan area and to the surrounding land uses. Installation of transit amenities should be evaluated on a case by case basis to ensure that the amenities are appropriate for a given transit stop and fit within the available right of way.

The addition of real-time passenger information displays for SamTrans buses and the proposed local shuttle would provide passengers with an added benefit that would improve the waiting experience and help make transit a more effective travel option.

Real-time information and technology is important for 21st century transit systems.

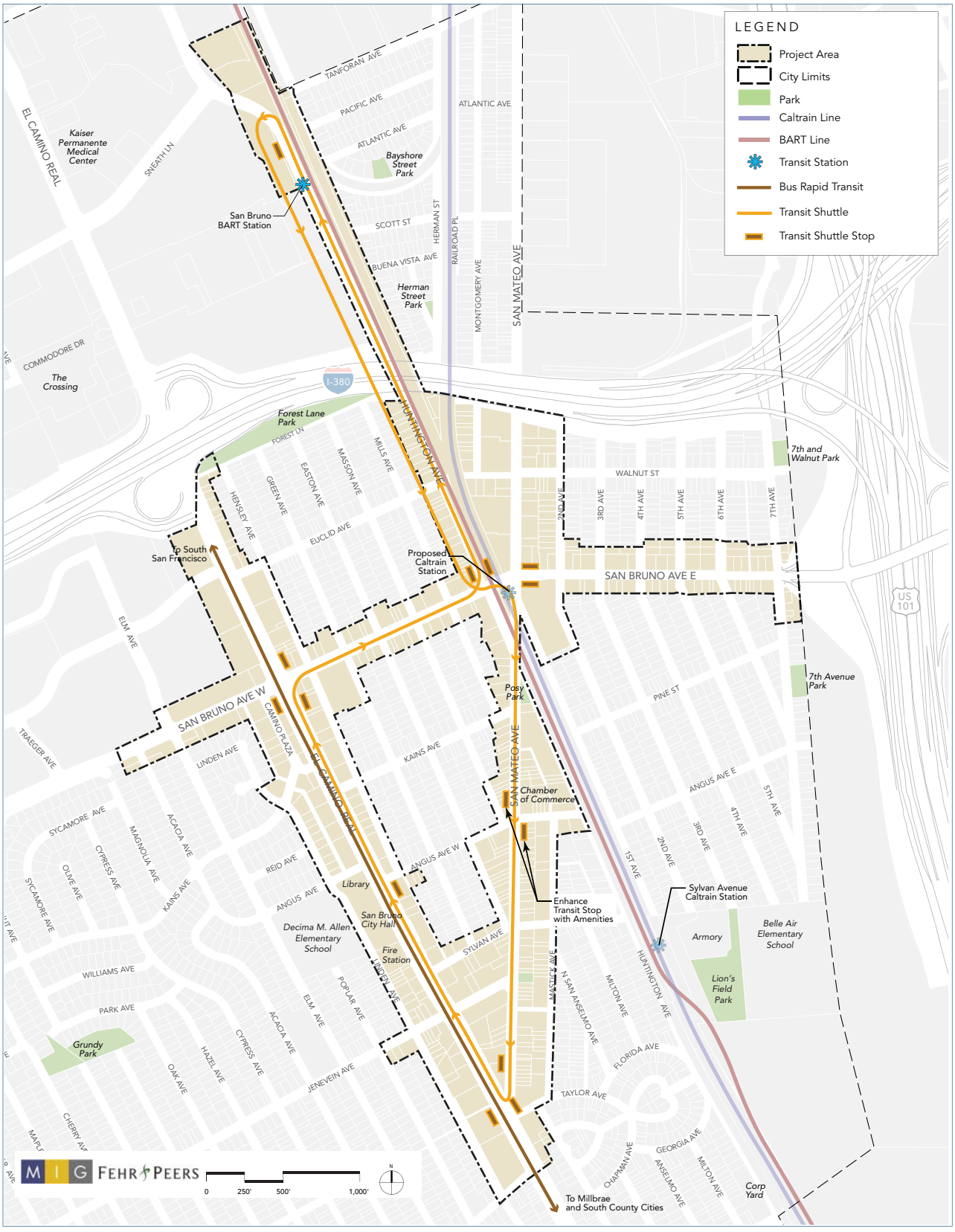


Figure 7.15: Recommended Transit Facility Improvements

Bicycle Facilities

The proposed Land Use Plan will provide a mix of uses and increased densities along the San Bruno Avenue, San Mateo Avenue, El Camino Real and Huntington Avenue corridors within the plan area. It is vital to the Plan's success to not only enhance bicycle connectivity within the Plan area but also to provide bicycle access from the surrounding land uses, including the transit stations, to the Transit Corridors Area.

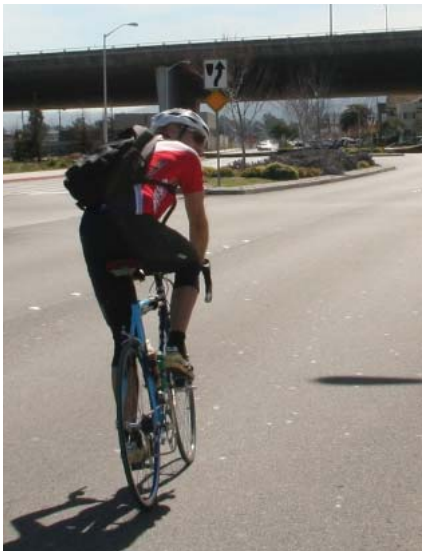
The overall goal of the bicycle facilities recommendations is to provide access to and from the surrounding transit centers (BART and Caltrain), the Downtown, and surrounding land uses but also to provide a direct connection to the Bay Trail, which is a regional bicycle facility located east of Highway 101 (see Figure 7.15: Recommended Transit Facilities Improvements).

Bicycle facilities comprise bike paths, bike lanes, bike routes and bicycle priority streets. Bike paths (Class I) are paved pathways separated from roadways. Bike lanes (Class II) are lanes for bicyclists adjacent to the outside vehicle travel lanes. These lanes have special lane markings, pavement legends and signage. Bike routes are generally located on low traffic volume streets that provide alternative routes for recreational, and in some cases, commuter, and schoolchildren cyclists. These facilities are designated Class III and are signed for bike use but have no separated bike right-of-way or lane striping. Bicycle priority streets are similar to Class III bike routes, though they might have special treatments to keep vehicle volumes and speeds low.

Bike Lanes

Where possible Class II bike lanes should be provided on the major roadways within the Plan area. Bike lanes require a minimum right of way of five feet per direction of travel, and therefore the provision of bicycle lanes is usually limited to those roadways that can accommodate the extra right of way. As appropriate, this can either be accomplished within the existing roadway width through the narrowing of vehicle travel lanes, through removal of on-street parking or through the reduction of travel lanes (the concept of "road diets" is discussed previously). Alternatively, bicycle lanes can be accommodated through widening of the roadway, though in most cases this is not an option to due physical constraints adjacent to the roadway.

The Plan plans to reduce the travel lanes on San Bruno Avenue from four travel lanes to two lanes to provide bicycle and other pedestrian amenities. The narrowing of San Bruno Avenue is discussed in more detail in the Street System section above. Bike lanes on San Bruno Avenue would provide a direct east-west bicycle connector in the Plan. Similar to San Bruno Avenue, the plan recommends the narrowing of Huntington Avenue to provide bike lanes north of San Bruno Avenue. This would provide a critical and direct bicycle connection between the Transit Corridors Area and the BART station and facilitate bicycle connectivity within the Transit Corridors Area.



Bicycle mobility and facilities are essential elements of the Transit Corridors Plan.

Bicycle Priority Streets

Based on the Grand Boulevard Initiative and C/CAG policies to maintain all travel lanes on El Camino Real for potential future BRT lines, there are no current opportunities to provide bicycle lanes on El Camino Real. Street width constraints on San Mateo Avenue and on other roadways within the Transit Corridors Area do not allow for the provision of bicycle lanes without significantly impeding vehicle travel. Therefore, to facilitate cross-town bicycle travel, the Plan identifies a network of "bicycle priority streets" as indicated in Figure 7.16.

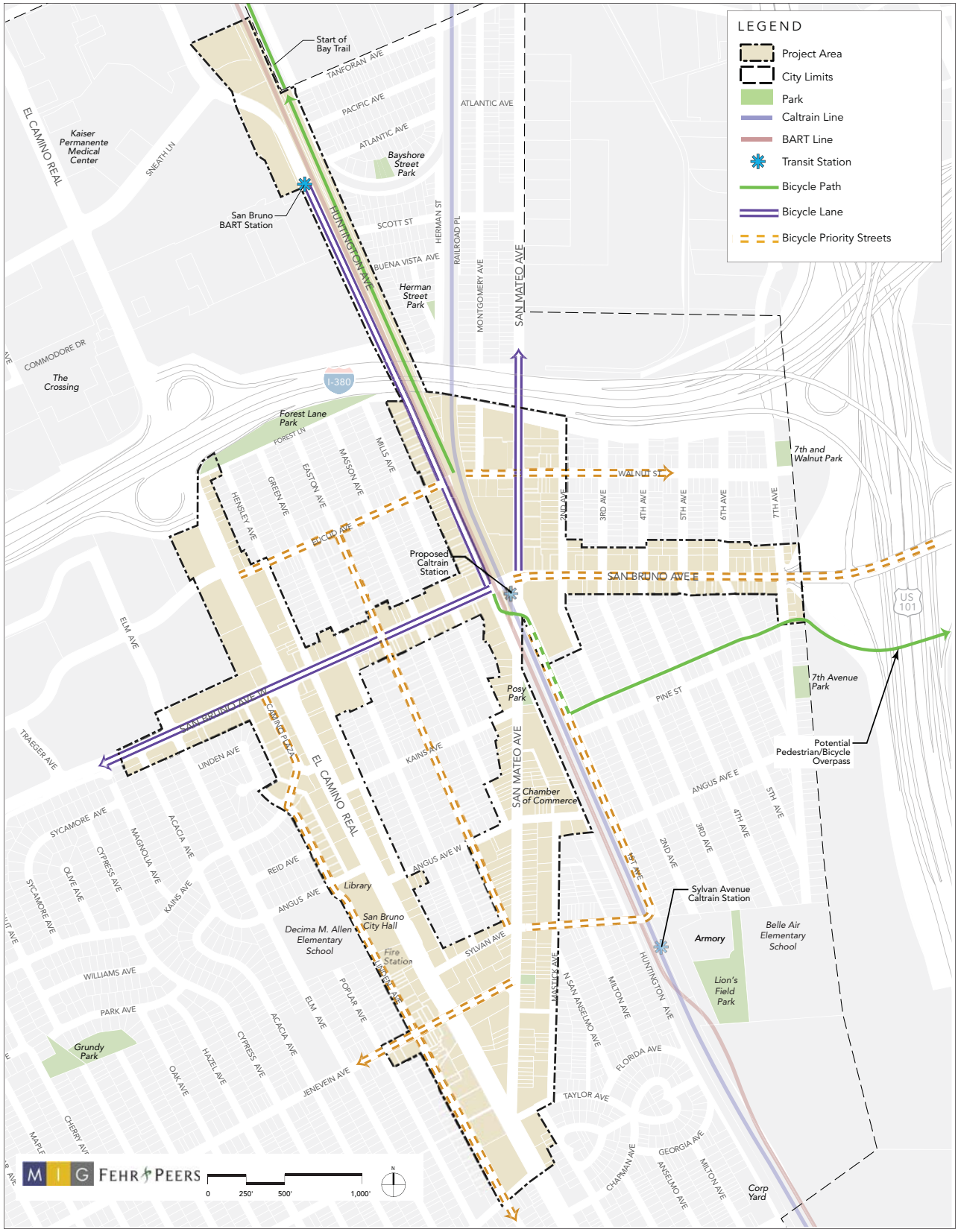


Figure 7.16: Recommended Bicycle Facility Improvements

Bicycle priority streets run primarily on smaller roadways parallel to the main roadways, such as El Camino Real and San Mateo Avenue, and provide bicycle linkages throughout the Plan area and to surrounding neighborhoods. Bicycle priority streets are on roadways that have slower travel speeds and discourage vehicle through access. Bicyclists do not have separate right of way but share the road with vehicles. As appropriate, bicycle priority streets should provide traffic-calming measures (such as speed humps, diagonal diverters and chicanes) to limit vehicle travel and speeds.

San Francisco Bay Trail.

San Francisco Bay Trail

The City of San Bruno and the Plan do not have a good connection the San Francisco Bay Trail, which is a regional bicycle facility east of US-101. As a long-term goal the Plan recommends that the City provide a new connection between the City and the trail via a new pedestrian path in the right of way approximately 100 feet north of Pine Street and a exploring the opportunity for a potential new pedestrian/bicycle overpass just south of the existing US101/I-380 interchange. Design constraints, feasibility and cost of a new overpass would need to be evaluated further to determine the best route for crossing US-101 and connecting to the Bay Trail. In the interim, adding bicycle lanes to the San Bruno Avenue / US-101 overpass and providing bicycle enhancements at freeway ramp crossings could serve as an alternate connection to the Bay Trail (see Figure 7.16: Recommended Bicycle Facility Improvements).

Example of bike lockers and bike racks.

Bicycle Parking

To enhance the viability of bicycle travel within the Transit Corridors Area it is vital that the Plan area provide sufficient bicycle parking opportunities. Bicycle parking ranges from short-term parking amenities, such as bicycle racks in highly visible and secure locations near building entrances, to long-term parking facilities, such as lockers or cages where bicycles are either locked individually (lockers) or with limited access (cages).

In conjunction with bicycle parking facilities, the employers are encouraged to provide shower opportunities for its employees. As part of the Plan it is recommended that the City implement a bicycle parking ordinance that clearly defines bicycle parking requirements and shower requirements for different land uses. Table 7.6 summarizes some sample bicycle parking requirements.

Table 7.6: Sample Bicycle Parking Requirements

Land Use	Long-Term Parking Requirement1	Short-Term Parking Requirement1	Shower Requirement1
Residential	1 to 2 per two units	1 to 2 per ten units	None
Commercial	1 to 2 per three ksf	1 to 2 per ten ksf.	0-9.9 ksf.: 0 shower
Office	1 space for every 20 code-required auto parking spaces	1 space for every 40 code-required auto parking spaces	10 ksf – 20 ksf: 1 shower 20 ksf – 50 ksf: 2 showers 50+ ksf: 4 showers

Notes:
1 ksf = 1,000 square feet
Source: Fehr & Peers, October 2009.

Pedestrian Facilities

Pedestrian activity along the transit corridors will experience the greatest increase compared to the other modes because the Plan lays the foundation for walkable corridors throughout the study area. Based on the proposed Land Use Plan, there are several areas that are expected to have the greatest concentration of pedestrian activity. These areas are marked in Figure 7.4 as pedestrian nodes.

One of the goals of the pedestrian facilities recommendations is to facilitate pedestrian access through pedestrian enhancements, including the provision of enhanced crosswalks at all intersections and wider sidewalks and pedestrian amenities along the transit corridors.

Enhanced crosswalks can help create a safer pedestrian environment.

Crosswalks

This section discusses some of the recommended crosswalk improvements within the Transit Corridors Area. In general the Plan recommends that all crosswalks in the Transit Corridors Area be enhanced crosswalks with bulbouts to reduce the pedestrian crossing distances and where appropriate provide pedestrian refuge islands to allow pedestrians to cross one direction of travel at a time. Additionally the Plan recommends that crosswalks be marked with special paving treatments or paint to highlight the presence of the crosswalks. Figure 7.17: Recommended Pedestrian Facilities Improvements illustrates the recommended improvements at the specified locations. To help determine the appropriate location and type of crosswalk improvements the City should consider developing pedestrian crossing guidelines, which would provide evaluation criteria for when and where crosswalks should be installed. Before the crosswalk guidelines would include information on enhanced pedestrian treatments including raised crosswalks.

San Mateo Avenue

San Mateo Avenue currently has fairly good pedestrian access within the downtown. All crosswalks on San Mateo Avenue are high visibility "ladder" crosswalks that are used in conjunction with pedestrian curb extensions, or bulbouts, to increase the visibility of pedestrians and to reduce crossing distances. To further enhance these crosswalks the Plan recommends raised crosswalks on San Mateo Avenue. Raised crosswalks serve two purposes: they increase the visibility of pedestrians while at the same time acting as traffic-calming measures by reducing vehicle speeds in areas where pedestrian activity is high.

El Camino Real and San Bruno Avenue

The Plan includes land use changes both east and west of El Camino Real. However, crossings on El Camino Real are limited to two crossings between the 0.6 miles stretch between the San Mateo Avenue and San

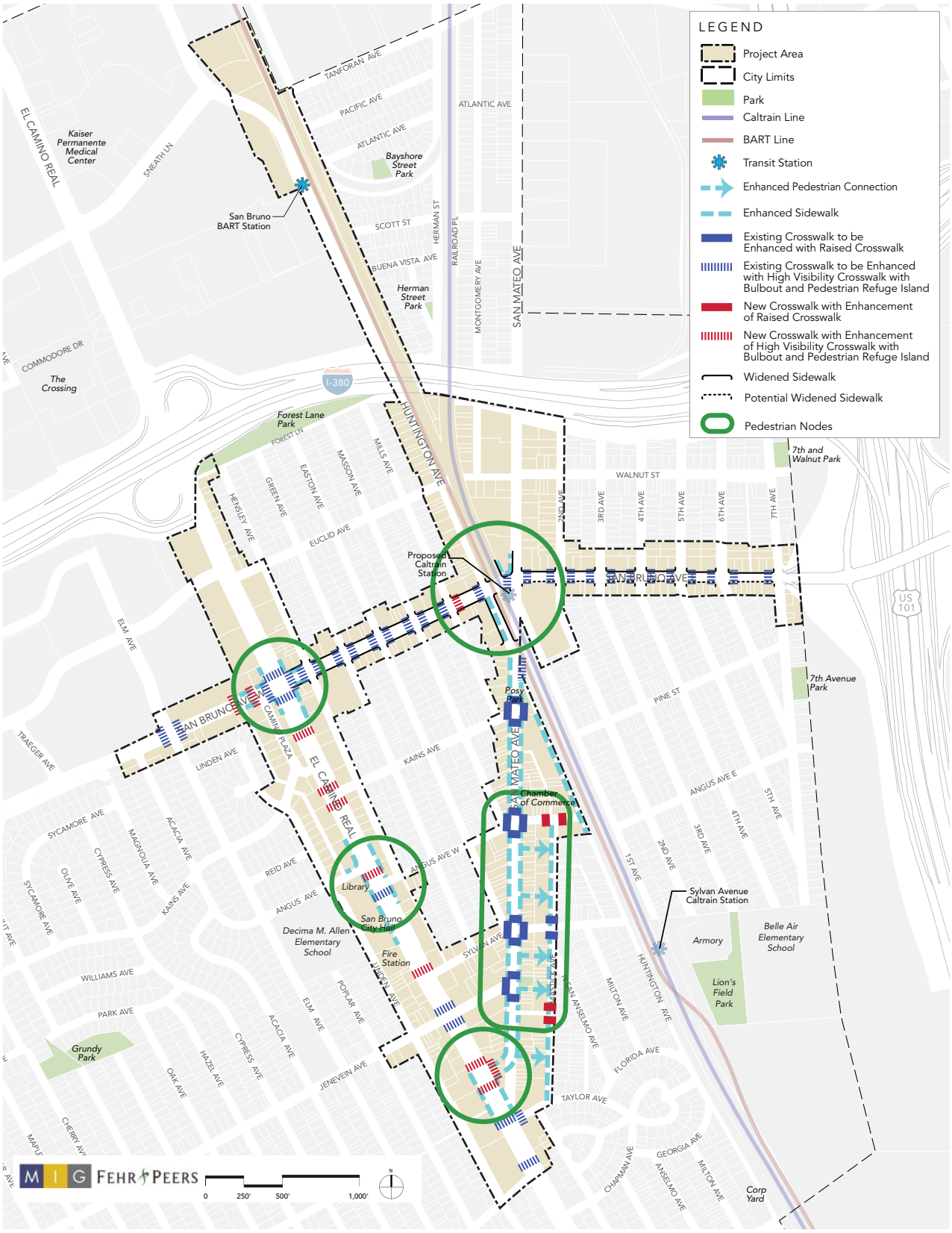


Figure 7.17: Recommended Pedestrian Facilities Improvements

Bruno Avenue intersections. Thus the Plan recommends the provision of additional crossing on El Camino Real.

The signalized intersection at El Camino Real/Angus Avenue includes crosswalks and pedestrian signals across its south and east legs. Because many of the key civic uses (City Hall, Public Library, Fire Station) are located on the west side of the intersection, an additional pedestrian crossing on the north leg of the intersection would help promote convenient street crossings of El Camino Real. Additionally, improved pedestrian amenities on Angus, such as raised crosswalks and bulbouts, would be beneficial due to its function as a key pedestrian link between City Hall and downtown.

Because of the distance between marked pedestrian crossings, adding an additional crosswalk across El Camino Real at the West Kains Avenue intersection would also be useful for improving pedestrian connectivity. The Plan recommends that this new crosswalk be an enhanced high-visibility crosswalk with "bulbouts," a pedestrian refuge and a pedestrian signal to alert vehicles of the presence of pedestrians.

The Grand Boulevard Initiative outlines enhancements to the streetscape and roadway for communities along its entire length.

San Bruno Avenue provides crosswalks at all intersections and the Plan recommends further evaluating the installation of crosswalks at three additional locations based on expected demand, safety and benefit to pedestrian connectivity:

- Midblock between Elm Avenue and El Camino Real
- The east leg of the Mills Avenue intersection

As discussed above, all crosswalks should be enhanced crosswalks with bulbouts and median refuge islands. (See Figure 7.4: Recommended Pedestrian Facilities Improvements)

Sidewalks

Sidewalks are a critical element in the creation of good pedestrian environments. Based on preliminary recommendations, the Plan plans to reduce the travel lanes on San Bruno Avenue east of Huntington Avenue from four travel lanes to two lanes to provide wider sidewalks and enhance pedestrian amenities. As part of the Plan it is recommended that sidewalks be improved to provide convenient, comfortable and connected pedestrian access throughout the plan area.

7.3 PARKING DEMAND MANAGEMENT

This section summarizes the City of San Bruno's existing parking demand and makes recommendations on parking management strategies and implementation programs. This section also provides an analysis and recommendation of the City's current parking standards for the Transit Corridors Area.

Currently the City of San Bruno has approximately 1,460 on- and off-street parking spaces within the Transit Corridors Area. In addition, a new parking garage on the Artichoke Joe's parking lot has recently been approved. Motorists can park free of charge in all of the parking spaces, though approximately 810 parking spaces have posted time restrictions ranging from one to five hours. Parking surveys were conducted in June 2008 to collect data on the location and temporal distribution of parking demand in the Downtown area of San Bruno.

Table 7.7 summarizes the results of the parking surveys by facility type and availability of excess parking supply. A parking occupancy rate of 85 percent is considered the optimal parking rate because it provides for full use of the existing parking supply while providing sufficient vacancy so that vehicles trying to park can find a space fairly easily without having to unnecessarily circulate around the transportation network looking for a parking space.

Table 7.7: Existing Excess Peak Period Parking Supply in Transit Corridors Area

Parking Facility	Parking Supply (Number of Spaces)	Excess Capacity
San Mateo Avenue On-Street Parking	137	No
Other On-Street Parking	263	Yes
City Parking Lots	506	Yes
Private/Commercial Parking Lots	552	Yes

Notes:
1 Parking facilities with occupancy rates of less than 85 percent are considered to have excess capacity.
Source: Fehr & Peers, October 2009.

Parking Management Strategies

The parking management strategies recommended below aim to utilize the City of San Bruno's parking supply within the Plan to its fullest extent by targeting an 85 percent occupancy rate.

Promote a "Park Once and Walk" Parking Strategy

The "Park Once and Walk" strategy aims to pool all available parking spaces within the Transit Corridors Plan, including public and private parking spaces, and make these available for everyone to use. This will allow visitors to park once and then walk to several different destinations within the Downtown; thus reducing the number of overall parking spaces needed for the Plan.

The "Park Once and Walk" strategy achieves two goals:

1. Make efficient use of the parking supply by including as many spaces as possible in the common pool of shared, publicly available parking space, and

2. Facilitate and promote pedestrian travel within the Transit Corridors Area.

To make this strategy successful within the Transit Corridors Area, the Plan recommends eliminating time restrictions for all parking spaces; demand would instead be managed through pricing strategies, which are discussed in more detail in the following section.

To increase the common pool of available parking spaces that can be used to manage parking demand and parking supply, the a purchase/lease of existing private lots or encourage private commercial parking lots to share parking with other commercial land uses, may be considered.

Example of multi-space electronic parking pay station.

Study Metered Parking/Parking Pricing

The Plan recommends that the City study the implementation of a multi-spaced, pay-by-space parking meters to allow visitors to pay with cash, credit card or even through cell phones/PDAs. This could create a convenient metered parking program that allow visitors flexibility in how they pay for parking.

The Parking Implementation Plan section below outlines strategies to help ensure that the parking pricing strategies are implemented in a strategic and cost-effective way and are regularly monitored for effectiveness.

One of the initial impediments to parking pricing is the perception that charging for parking will reduce the number of visitors to the Downtown. However, if pricing strategies are set up effectively by varying cost by location and by setting cheaper cost based at cheaper rates (e.g. $0.25/hour) then the implementation of metered parking should not reduce the number of visitors to the Downtown. Pricing strategies should be set up so that higher prices are charged for those areas that have the greatest demand (e.g. San Mateo Avenue) and less expensive or nearly free for parking spaces that are less convenient or underutilized (e.g. Huntington Avenue and Sylvan Avenue). Additionally, if the City decides to construct parking garages then parking in the structures should be cheap as well. Some cities have employed parking pricing strategies where parking garages are free of charge for the first hour or two hours and then charge a fee for the subsequent hours; thus increasing the desirability of spaces in parking garages. Such location-specific pricing strategies will help to distribute the parking demand throughout the Transit Corridors Area and help the City achieve the 85 percent occupancy goal.

To prevent vehicles from shifting from the paid parking spaces to the surrounding neighborhood streets, the City could also consider implementing parking meters on the blocks immediately adjacent to the Transit Corridors Area and residential permit parking on blocks not immediately adjacent.

The structure of parking pricing needs to be carefully reviewed before implementation so that the 85% parking occupancy rate can be achieved. This might require periodic review and adjustment of the pricing system to most effectively make use of the City's parking supply.

Example of an innovative pay station powered by a solar panel.

Create Parking Benefits District

Other cities in California that have implemented parking meters/pricing strategies have been able to do so successfully through the creation of "Parking Benefit Districts". Parking Benefit Districts are similar to Business Improvement Districts in that all or portions of parking revenues can be returned to the district where the revenues are collected. Parking Benefit Districts are an attractive tool for local communities seeking to gain access to revenue and to ensure there is sufficient parking turnover for their business district and sufficient parking reserved for local residents.

The goal of Parking Benefit Districts is to reinvest meter revenues into the Transit Corridors Area and to potentially fund transportation demand management (TDM) programs (such as shuttles and transit passes) or to provide improvements such as benches, street trees, street sweeping and other public amenities serving the Transit Corridors Area. The revenues that are collected in the adjacent neighborhood streets could be used to directly fund improvements to those streets, such as repairing sidewalks, installing lighting and filling potholes.

The City of Pasadena has used Parking Benefit Districts for the provision of parking garages and parking credits. The City allows businesses to pay an annual fee (in this case $115) per space in the public parking garage rather than requiring businesses to provide their own off-street parking spaces.

Combined with the elimination of time limits and the implementation of metered parking, the Parking Benefits District can help make the most efficient and effective use of the City's parking supply in the Transit Corridors Area.

Encourage Unbundled Parking

When parking is bundled into tenant leases, the true cost of parking is hidden. For example the price for an apartment with two parking spaces may be $1,500 per month. However, if the parking spaces were unbundled, the price for rent for the apartment would be $1,300 per month, plus $100 per month for each space. Unbundled parking helps tenants to understand the cost of parking and may influence a resident's decision to own a car (Reforming Parking Policies To Support Smart Growth, MTC, 2007).

Unbundling parking especially makes sense in mixed-use development areas within walking distance to transit; therefore unbundled parking would be especially applicable to the Transit Corridors Area.

The effect of unbundled parking can be evaluated in the shared parking model by reducing the number of "reserved" resident spaces which are not available for sharing with other land uses. A "reserved" space rate of zero represents a policy of completely unbundled parking, where residents park in a garage shared with other uses and without any assigned spaces or reserved sections. Unbundled parking spaces could also be set aside for carsharing providers such as ZipCar or CityCarShare.

Implement Parking Implementation Plan

Once the City of San Bruno decides to implement a parking management plan, it will be vital to the plan's success to prepare a detailed Parking Implementation Plan. The implementation plan helps to ensure that the parking strategies are implemented in a strategic and cost-effective way and are monitored for effectiveness.

In the first phase of the Parking Implementation Plan the City should evaluate existing and future parking demand patterns and develop a plan that matches the parking demand to future parking strategies, including parking demand for special events. Once the City has identified appropriate parking management strategies, it should form a Parking Benefits District as a second phase of the implementation plan. The formation of the benefits district should include clear guidelines on the operating principles of the parking plan; define a monitoring plan to ensure that the parking pricing strategies are appropriate for the Plan and meet the City's goal of maintaining 85 percent parking occupancy. The City would designate a parking manager to oversee the Plan's implementation and creation of the Parking Benefits District.

As part of the Parking Benefits District formation the City should also revise its parking regulations to reduce current minimum parking requirements, create the in-lieu parking fee program and set up the residential parking permit program.

In the long-term the plan should include ongoing monitoring of the parking management plan and evaluation of how the parking revenue is used for transportation, parking, and TDM programs within the Transit Corridors Area.

Develop New Parking Standards for the Transit Corridors Area

The City's current parking standards require each individual land use to provide a specified number of parking spaces. These standards are typically established based on national guidelines that are based on suburban locations and do not take into consideration access to other

modes (such as transit and walking) and the principles of shared parking. Because households in mixed-use developments near transit stations generate substantially fewer vehicle trips, there is a reduced demand for residential parking in these areas. Similarly, commercial areas near transit support a greater percentage of trip-making by modes other than private automobile, reducing the need to provide dedicated parking for all customers or employees.

The City of San Bruno should consider allowing lower requirements for parking for new development projects in the Plan, and collect in-lieu fees to help fund centrally located public parking structure(s). Additionally, consideration may be given toward exempting the reuse of existing buildings from parking requirements in order to attract business to downtown. Potential new parking standards for the Transit Corridors Area are discussed in more detail below. The draft parking standards are based estimated parking demand in similar types of mixed use, in downtown areas near rail transit. Table 7.8 summarizes the City's current off-street parking requirements based on its Municipal Code, and the proposed parking requirements.

Based on the current Municipal Code and the proposed development of 1,610 residential units, 147,000 square feet of retail uses, 988,100 square feet of office uses, and 190 hotel rooms, the Plan would need to provide over 7,400 new parking spaces at full buildout to meet City requirements.

Office parking standards are proposed at a maximum of 3 spaces per 1,000 gross square feet of office space. As parking needs for office development near the Caltrain Station are better understood, and if actual parking demand is demonstrated to be lower than 3 spaces per 1,000 square feet due to increased transit use, the allowed number of spaces may be lowered in the future.

Table 7.8: Transit Corridors Plan Parking Requirements

Land Use Category	Current Requirement 1	Proposed Transit Corridors Plan Standard
Residential		
Studios	2 per unit	0.75 per unit
Single-Family and Two-Family Dwelling Units	2 per unit (If unit>2,800 sqft, 3 spaces)	1 - 2 per unit (generally 1 per bedroom)
1 Bedroom Apartments or Condos	2 per unit	1 per unit
1+ Bedrooms Apartments or Condos	2 per unit	1 - 2 per unit (generally 1 per bedroom)
Commercial		
General Retail	4 per ksf GFL	1.5 per ksf GFL minimum 3 per ksf GFL maximum
Shopping Centers	4 per ksf GFL (LU has min. lot area of 3 acres)	Combine classification with "general retail" – see row above
Theaters	1 per 5 seats	1 per 5 seats minimum
Restaurants	10 per ksf GFL (40 + 20 per ksf GFL over 4ksf)	3 per ksf GFL minimum 6 per ksf GFL maximum
Medical Office Building	5 per ksf GFL	3 per ksf GFL maximum
General Office	3 per ksf GFL (Min. of 4 spaces)	3 per ksf GFL maximum (*)
Downtown Existing Groundfloor	4 per ksf GFL	Exempt
Downtown New	4 per ksf GFL	3 per ksf GFL

Notes:
1. City of San Bruno Municipal Code, Chapter 12.100.090
ksf = thousand square feet, GFL = gross floor area
(*). This table is not intended to set a strict control on the amount of parking provided for any one development. Developments desiring to provide parking in excess of the maximum standard should be permitted but charged a fee to be set by the City for each parking space above the maximum.
Source: Fehr & Peers, 2009

Shared Parking Analysis

A sketch-level "shared parking" analysis was prepared to estimate the parking demand expected in the Plan assuming implementation of a shared parking strategy. Shared parking occurs when complementary land uses in close proximity to each other are able to utilize the same parking spaces because they have different peak parking characteristics. To evaluate the potential for shared parking, the project's parking demand was calculated using the methodology presented in the Urban Land Institute's (ULI) Shared Parking (2nd Edition) manual.

The results of the shared parking analysis, summarized in the Table 7.9 below, conclude that during most of the year the average peak parking demand in the Transit Corridors Area would be for approximately 4,100 parking spaces, which represents a 45 percent reduction in the parking requirement. However, the project's overall peak parking demand would occur during the last two weeks of December during pre-holiday peak shopping period when retail land uses have the greatest parking demand. During this peak parking period the estimated demand for the Transit Corridors Plan area is for approximately 4,250 parking spaces. Approximately 35 percent of the project's 4,100 space parking demand represents residential demand, and the remaining 65 percent account for the parking the demand associated with the other land uses proposed as part of the Transit Corridors Plan area.

The analysis estimates that sharing parking results in a peak demand of approximately 3,300 spaces less than the amount that would otherwise be required under the City's existing requirements. This illustrates the value of creating a parking district to manage parking demand, as well as the value of centralized parking available for general public use. A parking district would oversee a shared parking program by managing parking supply in centralized parking locations where the advantages to shared parking could be realized. The analysis described above shows one of the benefits of mixed-use development is the opportunity for shared parking, which results in a reduction in the required parking supply.

Table 7.9 outlines the recommended parking requirements for the Transit Corridors Area. Using the average parking requirements for all of the land uses, the Plan would require a parking supply of at most 4,300 spaces. This number would be even less if parking pricing strategies were also implemented. Thus the total parking supply would not exceed the shared parking estimates and would make full use of the area's parking supply.

Table 7.9: Transit Corridors Plan Parking Requirements Comparison

Land Use	Size	Existing City Parking Requirement1	Parking Demand Estimates under "Shared Parking" 1
Residential	1,610 units	3,220	1,755
Retail/Commercial	147,700 s.f.	740	1,940
Office	988,100 s.f.	3,295	405
Hotel	190 rooms	190	115
Total		**7,445**	**4,215**

Notes:
1 Based on City of San Bruno Municipal Code, Chapter 12.100.090 (see Table 7.8 for rates).
2 Based on sketch-level analysis using data from Urban Land Institute, Shared Parking, 2nd ed. (2005)
Source: Fehr & Peers, October 2009.

Transportation Demand Management

The intent of Transportation Demand Management (TDM) programs is to reduce the amount of peak period motor vehicle traffic on roadways and parking. TDM programs encourage the use of modes other than single-occupant vehicles for travel. The implementation of a TDM program is an essential part to the Plan area's parking management strategies, since TDM programs have the potential to reduce parking demand.

Funding of an area-wide TDM program could be provided through annual assessments on new development. A successful TDM program can have a substantial impact in reducing automobile traffic. Some potential TDM strategies that could be considered for the Plan area include:

- Transit subsidies/reimbursements to residents and employees ("commuter check" or "EcoPass");
- Pedestrian/bicyclist subsidies for those who primarily walk/bike to work;
- Car-Share programs and neighborhood electric vehicle programs to reduce the need to have a car or second car;
- Area-wide TDM Coordinator to manage and promote TDM programs and oversee monitoring to determine program effectiveness;
- Guaranteed ride home program for employees in event of emergency;
- Incentives such as "parking cashout" program in which employees receive cash in lieu of receiving free parking, to encourage carpool and vanpool use;
- Marketing and information programs to encourage alternative transportation modes (which could include partnering with other local organizations such as the Peninsula Congestion Relief Alliance); and

- Strategies to make the cost of residential and commercial parking visible to households and commercial tenants.

Some of the recommended implementation policies discussed in the previous sections, such as for bicycle parking, unbundled parking, and reduced parking codes are also TDM measures commonly considered in programs to reduce vehicle travel.

Residential Parking Districts

For some residential neighborhoods nearby the Transit Corridors Area, spillover parking may be a concern.

To alleviate this issue, some cities establish a Residential Parking Permit District that reserves all curb spaces in a neighborhood for residents and their guests. Historically, San Bruno has created residential parking districts for the residential neighborhoods surrounding the existing Caltrain and BART Stations.

In the long-term the plan encourages ongoing monitoring of any spillover parking impacts on nearby residential neighborhoods to evaluate the need for a Residential Parking Permit District.


PASSENGER
LOADING ZONE
ENFORCED
WHEN SCHOOL IS IN
SESSION
MON - FRI
7:30 AM - 8:10 AM
2:00 PM - 3:30 PM
VEHICLES MAY NOT BE
LEFT UNATTENDED
NO DOUBLE PARKING
PASSENGER
LOADING ZONE
STOP