3. Existing Bicycle Facilities and Programs

Class I bikeways are paths separated from the roadway.

Class II bike lanes provide a striped travel lane on roadways for bicyclists.

Class III bicycle routes are signed roadways indicating a preferred bicycle route.

As defined by the League of American Bicyclists, bicycle-friendly cities demonstrate achievements in each of five categories, often referred to as the Five Es of bicycle planning. The Five Es are:

- Engineering
- Encouragement
- Education
- Enforcement
- Evaluation

Engineering includes on-street bicycle facilities and bicycle parking as well as signage and maintenance. Programs are a great way to maximize use of bicycle facilities. Of the Five Es of bicycle planning, four are related to programs: encouragement, education, enforcement and evaluation. Production of bike maps and programs to celebrate Bike to Work Day encourage people to ride bicycles. Education programs improve safety and awareness. Programs that enforce legal and respectful driving and bicycling make novice bicyclist feel more secure. Evaluation programs provide a method for monitoring improvements and informing future investments. All Five Es work together to enhance the bicycling experience in San Mateo. Analysis of San Mateo's existing facilities and programs within the framework of the Five Es is one way to assess the City's bicycle-friendly status.

The City of San Mateo has a growing network of bicycle paths, lanes and routes throughout the City. It has also implemented programs to support bicycling. This chapter presents existing facilities and programs in order to identify where new facilities are needed and what programs will better support bicycling in San Mateo.

This Plan refers to standard bikeway definitions identified by Caltrans in Chapter 1000 of the Highway Design Manual. **Figure 3-1** illustrates these three types of bikeways.

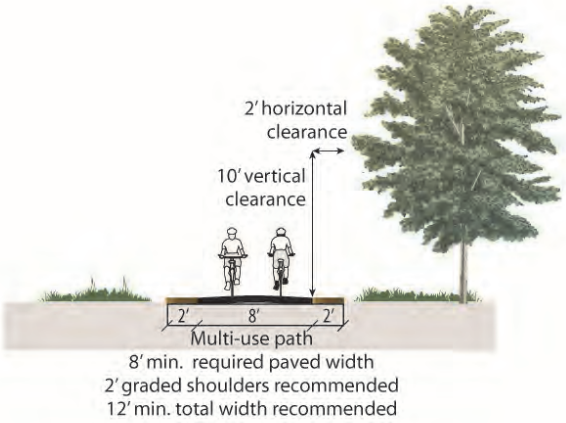
Class I Multi-Use Path: A Class I Bikeway provides for bicycle travel on a paved right-of-way completely separated from any street or highway.

Class II Bicycle Lane: A Class II Bikeway provides a striped and stenciled lane for one-way travel on a street or highway.

Class III Bike Route: A Class III Bikeway provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing.

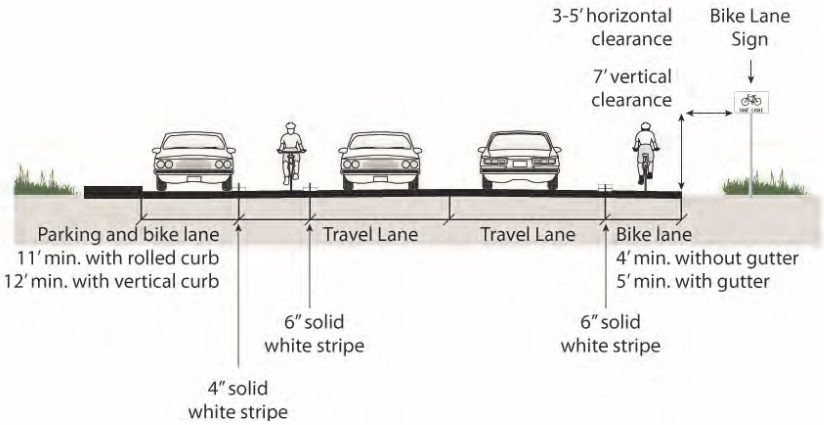
CLASS I
Multi-Use Path

Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized.



CLASS II
Bike Lane

Provides a striped lane for one-way bike travel on a street or highway.



CLASS III
Bike Route
Signed Shared Roadway

Provides for shared use with motor vehicle traffic, typically on lower volume roadways.

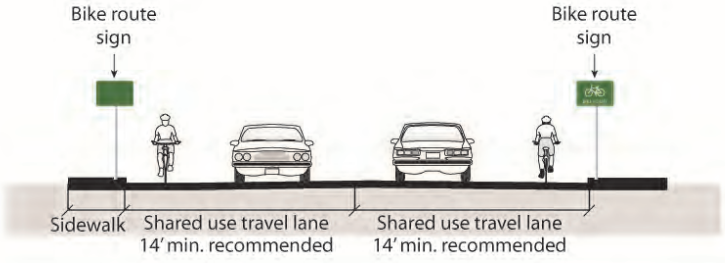


Figure 3-1: Caltrans Bikeway Classifications

3.1. Engineering

3.1.1. Existing Bikeways

The City has installed 39.42 miles of bikeways, which is comprised of 11.67 miles of Class I multi-use paths, 13.10 miles of Class II bike lanes, and 14.65 miles of Class III bike routes. **Table 3-1** lists all the existing bikeways by class and street. Not all listed facilities are operated or managed by the City of San Mateo; however the bikeways attract users from the City and region. The longest bikeway is the Shoreline Path, at a length of 3.57 miles and running from Airport Boulevard to the southern city limit. **Figure 3-2** maps San Mateo's existing bikeways.

In recent years, the City of San Mateo has invested nearly $450,000 in bicycle facilities. The investments include bridge railing safety improvements, street widening to include a Class II bike lane and a road diet to include Class II bike lanes.

3.1.2. Signing

The California Manual on Uniform Traffic Control Devices (CA MUTCD) and the California Highway Design Manual outline the requirements for bikeway signage. The Bike Lane Sign (R81) is required at the beginning of each designated bike lane and at each major decision point. The Bike Route Sign (D11-1) is required on Class III facilities. Multi-use paths require additional standardized signs to help manage different user groups. The City has installed CA MUTCD standard signs along its bikeways.

Caltrans Bikeway Signs

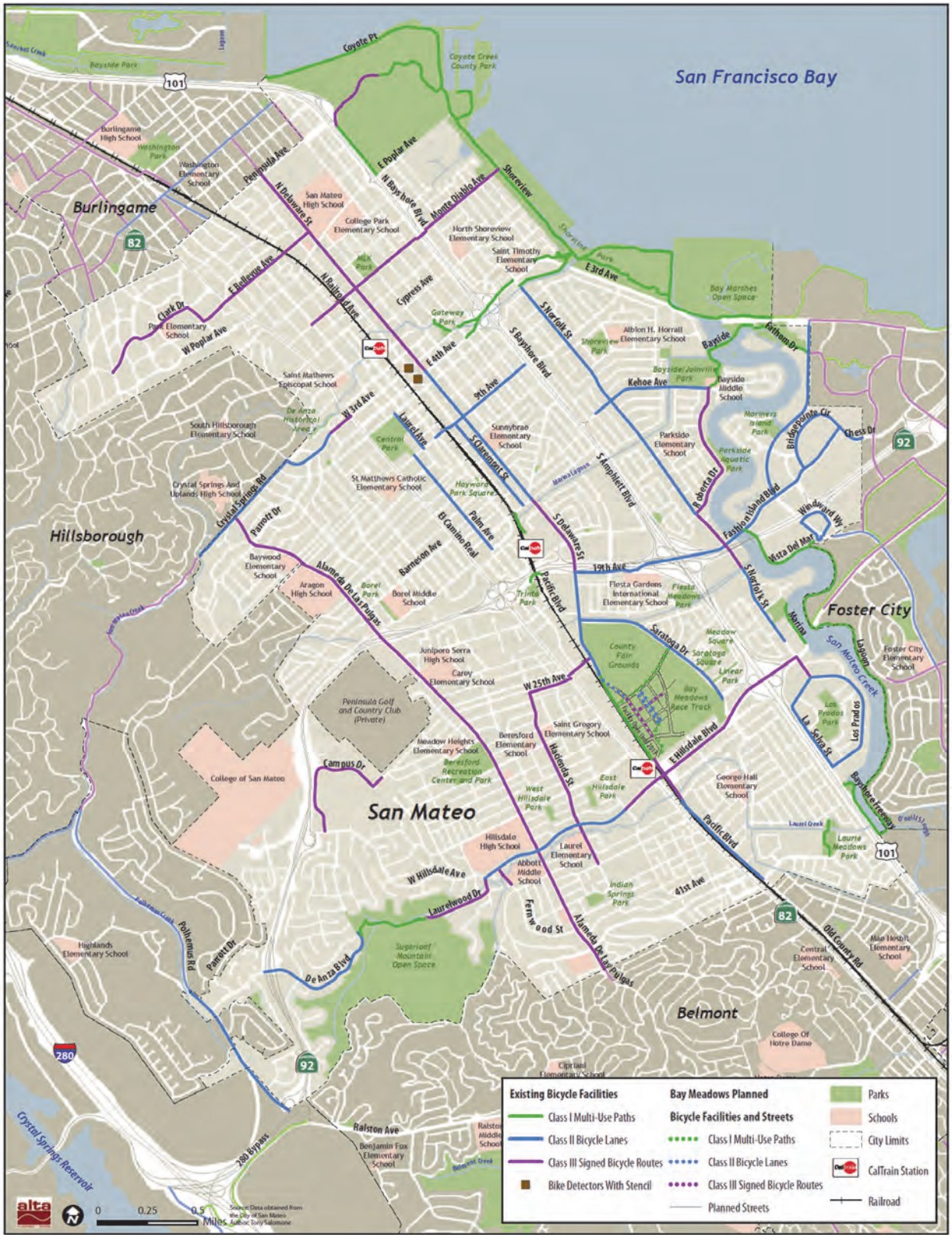


Figure 3-2: Existing Bikeways Map (2011)

Table 3-1: Existing Bikeways

Name	Start	End	Length (mi)
Class I Multi-Use Pathways			
16th Caltrain	Railroad Ave	Hayward Park Caltrain Station	0.11
Bay Meadows	Saratoga Dr	Franklin Dr	0.39
Bayshore Freeway	Kimberly Way	Port Royal Ave	0.44
Bayside Park Path	Kehoe Ave	Anchor Rd	0.50
Coyote Pt	Coyote Point Dr	Shoreview Path	0.45
E 3rd Ave	Hwy 101	S Norfolk St	0.24
Fathom Dr	Anchor Rd	Mariners Island Blvd	0.31
Lagoon	O'Neill Slough	Vista Del Mar	1.93
Laurie Meadows Park	Laurie Meadows Dr	Casanova Dr	0.20
Marina	Lakeshore Recreation Center And Park	E Hillsdale Blvd	0.23
N Bayshore Blvd	Coyote Point Dr	E Poplar Ave	0.32
Sawyer Camp Trail	Crystal Springs Reservoir (South)	Crystal Springs Reservoir (North)	0.66
Shoreline Bayfront Path	San Mateo Creek	Marina Lagoon	0.48
Shoreline Park Paths	Ryder St	Shoreview Path	0.14
Shoreline Parks Paths	J Hart Clinton Dr	Norfolk Dr	0.26
Shoreview Path	Airport Blvd	City Limit	3.57
Sugarloaf Mountain Path	Laurelwood Dr	De Anza Blvd	0.45
Vista Del Mar	Shoal Dr	Windward Wy	0.99
		Class I Total	**11.67**
Class II Bike Lanes			
9th Ave	Amphlett Blvd	B St	0.58
Bridgepointe Cir	Fashion Island Blvd	Chess Dr	0.73
Chess Dr	Bridgepointe Pkwy	City Limit	0.14
Claremont St	9th Ave	16th Ave	0.53
Coyote Point Dr	N Bayshore Blvd	Coyote Point Path	0.38
De Anza Blvd	Sugarloaf Mountain Path	State Hwy 92	0.68
Fashion Island Blvd	S Norfolk St	Bridgepointe Pkwy	0.56
Kehoe Ave	Cobb St	Roberta Dr	0.49
La Selva St	Norfolk St	Los Prados	0.54
Laurel Ave	5th Ave	9th Ave	0.23
Los Prados	Norfolk St	La Selva	0.72
Mariners Island Blvd	Fashion Island Blvd	City Limit	0.93
Pacific Blvd	Otay Ave	Laurie Meadows Dr	0.58
Palm Ave	9th Ave	South Blvd	0.61
S Delaware St	4th Ave	16th Ave	0.83
S Delaware St	Bermuda Dr	25th Ave	0.38
S Norfolk St	Marina Lagoon	Hillsdale Blvd	0.42
S Norfolk St	San Mateo Creek	Roberta Dr	1.43
Saratoga Dr	S Delaware St	Franklin Pkwy	0.86

Name	Start	End	Length (mi)
Vista Del Mar	Windward Way	State Hwy 92	0.17
W 3rd Ave	Dartmouth Rd	Crystal Springs Rd	0.30
W Hillsdale Blvd	Edison St	E Laurel Creek Dr	0.81
Windward Way	State Hwy 92	Vista Del Mar	0.21
		Class II Total	**13.10**
Class III Bike Routes			
19th Ave	Fashion Island Blvd	Ginnever St	0.13
Alameda De Las Pulgas	Crystal Springs Dr	City Limit	3.00
Campus Dr	W Hillsdale Blvd	26th Ave	0.71
Crystal Springs Rd	3rd Ave	City Limit	0.65
E 25th Ave	El Camino Real	S Delaware St	0.15
E 3Rd Ave	S Humboldt St	Hwy 101	0.13
E 4th Ave	S Humboldt St	Hwy 101	0.13
E Bellevue Ave	Occidental Ave	N Delaware St	1.34
E Hillsdale Blvd	S Norfolk St	El Camino Real	0.94
Fashion Island Blvd	19th Ave	S Norfolk St	0.46
Fernwood St	W Hillsdale Ave	Abbott Middle School	0.10
Hacienda St	W 25th Ave	37th Ave	0.92
Monte Diablo Ave	N San Mateo Dr	Shoreview Path	1.22
N Delaware St	Peninsula Ave	Cypress Ave	0.97
Norfolk	Roberta Dr	Marina Lagoon	0.36
Pacific Blvd	Delaware St	Otay Ave	0.19
Polhemus Rd	Bunker Hill Dr	City Limit	0.18
Polhemus Rd	Ticonderoga Dr	Tower Rd	0.13
Roberta Dr	S Norfolk St	Kehoe Ave	0.71
S Delaware St	Cypress Ave	4th Ave	0.32
S Delaware St	16th Ave	Bermuda Dr	0.50
S Delaware St	25th Ave	Pacific Blvd	0.65
S Norfolk St	Hillsdale Blvd	Los Prados	0.23
W 25th Ave	Hacienda St	El Camino Real	0.22
W 3rd Ave	El Camino Real	Dartmouth Rd	0.13
W Hillsdale Blvd	El Camino Real	Edison St	0.20
		Class III Total	**14.65**
		Bikeways Total	**39.42**

3.1.3. Bicycle Signal Detection

Bicycle signal detection actuates traffic signals when bicycles are present, turning the light green for bicyclists. Loop detectors use the disturbance of an electromagnetic current running through an in-pavement coil and video cameras use pixel analysis to actuate traffic signals. The City has installed both types of detection. However, only select intersections have bicycle pavement stencils to help position bicyclists at the intersection. **Table 3-2** identifies intersections with bicycle detection and stencils.

Table 3-2: Existing Bicycle Detection

Intersection	Direction	Loop Detection	Video Detection	Stencil
E 25th & S El Camino Real	NB	N	N	N
	SB	N	N	N
	EB	N	Y	N
	WB	N	Y	N
E 3rd & S Claremont	EB	N	N	N
	WB	N	N	N
	NB	Y	N	Y
	SB	Y	N	Y
E 3rd & S Delaware	EB	N	Y	N
	WB	N	Y	N
	NB	N	Y	Y
	SB	N	Y	Y
E 4th & S Claremont	EB	N	N	N
	WB	N	N	N
	NB	Y	N	Y
	SB	Y	N	Y
E 4th & S Delaware	NB	N	Y	N
	SB	N	Y	N
	EB	N	Y	N
E 5th & S El Camino Real	NB	N	N	N
	SB	N	N	N
	EB	Y	N	N
	WB	Y	N	N
E Bellevue & N El Camino Real	NB	N	N	N
	SB	N	N	N
	WB	Y	N	N
	EB	Y	N	Y

3.1.4. Bicycle Parking

Bicycle parking is located throughout the City. The bicycle racks pictured here are at City Hall.

Bicycle storage can range from a simple and convenient bicycle rack to storage in a bicycle locker or cage that protects against weather, vandalism and theft. Bicycle parking facilities are concentrated in Downtown San Mateo and near the three Caltrain stations. Across the rest of the City, bicyclists visiting stores, restaurants, places of employment and community facilities may not reliably find racks to temporarily store their bicycles. Many bicyclists resort to securing their bike to street fixtures such as trees, lights, telephone poles, and stop signs when parking facilities are not provided. Use of these street fixtures is problematic for a variety of reasons including pedestrian accessibility and stability of the locked bicycle. **Figure 3-3** maps the rack and locker locations in San Mateo. Bicycle parking is available throughout the City at retail destinations such as the Bridgepointe Center, the Hillsdale Shopping Center, and the Los Prados Shopping Center and grocery stores like Trader Joe's, Whole Foods, and Safeway. It is also provided at city facilities including multiple locations at Seal Point Park, Martin Luther King Jr. Park, the Joinville Swim Center, Central Park, Main Street Garage and City Hall. These facilities are generally concentrated in the vicinity of San Mateo and Hillsdale Caltrain Stations, with smaller pockets scattered elsewhere in the City. While many of the existing bicycle parking facilities meets the current City standard U-rack, not all do.

These bike parking locations are mapped in **Figure 3-3** below. In addition, bicycle lockers are available for rent at the following Caltrain stations:

- San Mateo Station (24 lockers)
- Hayward Park Station (12 lockers)
- Hillsdale Station (22 lockers)

3.1.5. Multi-Modal Connections

Approximately 18 percent of San Mateo Caltrain riders access stations by bicycle.

Approximately 8.4 percent of San Mateo residents use public transit.[3-1] While the City cannot directly improve bicycle accommodations on public transit vehicles, it can improve access and recommend additional accommodations to transit agencies. Two public transit agencies operate within the City, Caltrain and SamTrans.

On average, 2,614 people board Caltrain each weekday in San Mateo and 18 percent have a bicycle.[3-2] The Hillsdale and Hayward Park Caltrain Station have connecting bikeways, while the downtown station does not. Caltrain provides bicycle racks and lockers at its San Mateo stations and allows bicycles on its trains. Stainless steel gallery

[3-1] American Community Survey, United States Census, 2006-2008.
[3-2] Ridership Counts, Caltrain, 2009.

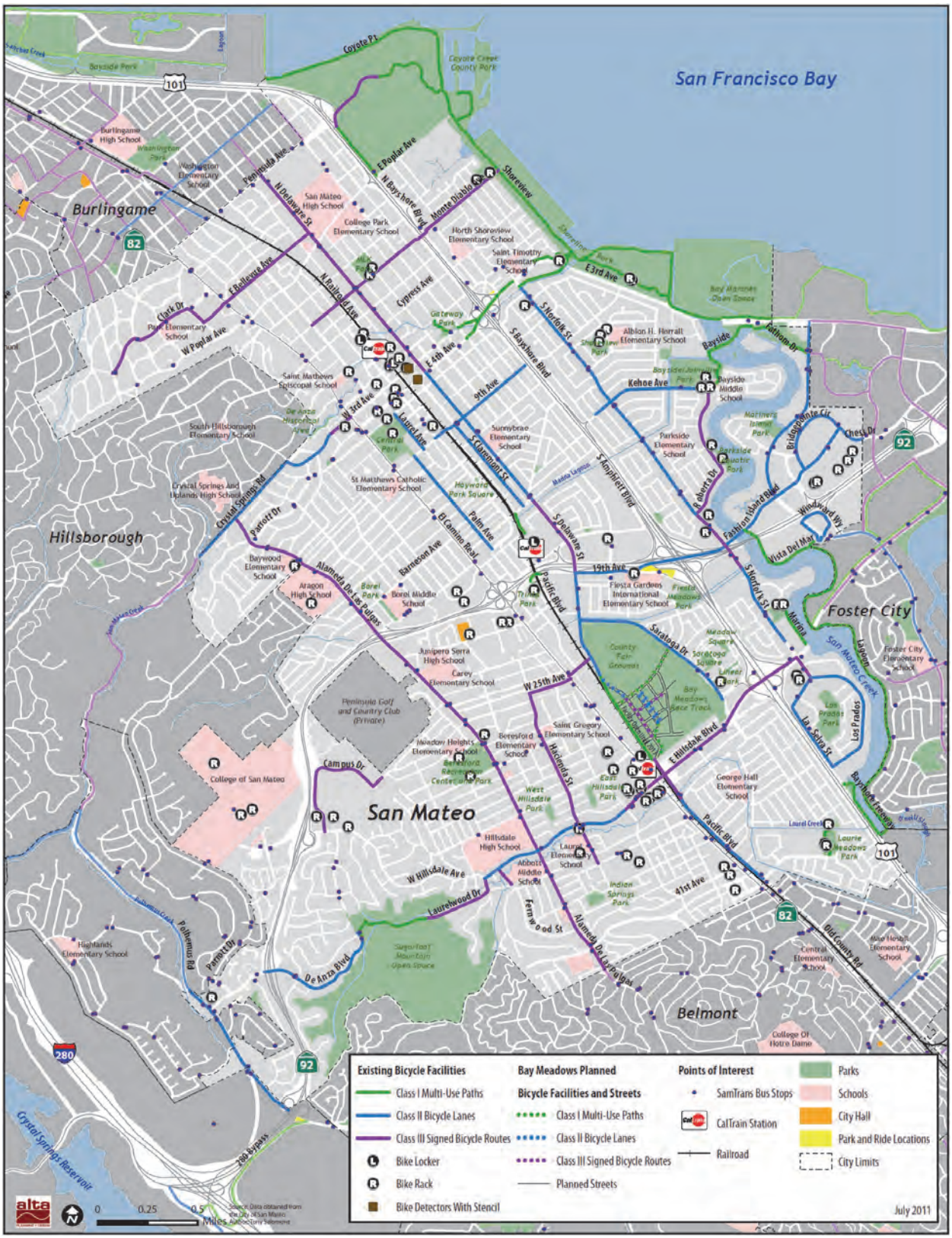


Figure 3-3: Existing Bicycle Parking in San Mateo (2011)

cars hold up to 40 bikes and grey Bombardier cars hold up to 24 and travel in pairs. Bicycle boarding is on a first-come, first-served basis.

SamTrans operates bus routes throughout the City and provides front-loading bicycle racks. The racks can carry up to two bicycles, and two bicycles are also allowed inside the bus if room is available. The City has installed bicycle lanes and routes along major bus routes, including Norfolk Street, Delaware Street/Pacific Boulevard, and Alameda De Las Pulgas.

3.1.6. Maintenance

Street and Bike Path Sweeping

Street sweeping clears the road of debris that would otherwise make bicycling difficult. Streets are the primary focus of the City's street sweeping program; however, Class II and III bike facilities are typically covered by this work. The San Mateo Public Works Department has a rotating street sweeping schedule for residential roadways, which are swept bi-weekly. Commercial roadways, i.e. 19th Street, are swept bi-monthly. The City sweeps the Monte Diablo pedestrian overcrossing at a minimum of once per week and aims to sweep the Third Avenue Class I path over US 101 at the same frequency. The City maintains the Shoreline bike path, the bike path from Mariner's Boulevard to Anchor Road, and the path along the water from Lakeshore Park to Hillsdale Boulevard. The City does not sweep these areas but trims and sprays to control vegetation.

Pothole Repairs

Potholes are a hazard to bicyclists that can cause damage to bicycles and cause crashes. Residents may report potholes to the Public Works Department, which will repair them within 72 hours. The phone number to report potholes is (650)-522-7300.

Pavement Management Program

The Public Works Pavement Management Program identifies roadways to be repaved, surfaced, and striped, which can improve bicycling conditions. The Public Works Department uses a set of criteria to score and prioritize roadway improvements. The presence of bikeways is not included in the prioritization process.

3.2. Encouragement

San Mateo residents benefit from encouragement programs administered or funded by numerous organizations, including the Peninsula Traffic Congestion Relief Alliance, City/County Association of Governments, San Mateo County Transportation Authority, Metropolitan Transportation Commission, the Bay Area Air Quality Management District, the California Office of Traffic and Safety, and the City of San Mateo. Together, these programs establish the current setting for encouragement in San Mateo.

3.2.1. Transportation Demand Management

The Peninsula Traffic Congestion Relief Alliance (Alliance) is the transportation demand management agency for San Mateo County and funded by the City/County Association of Governments, San Mateo County Transportation Authority, Metropolitan Transportation Commission and the Bay Area Air Quality Management District. The Alliance administers a range of programs that work to reduce the number of

single-occupancy drivers and commuters.[3-3] Employers that wish to install bicycle parking facilities may receive up to $500 per unit from the agency for the cost of facilities.[3-4]

Employers who have taken advantage of this reimbursement program are listed below.

- 58 El Camino Condominium Association (Apartments)
- Akamai Technologies
- CarrAmerica Realty Corp
- City of San Mateo
- Cornerstone Properties/Bayshore Corporate Center
- Equity Office (Campus Drive)
- Glenborough Property Management
- Glu Mobile
- Guidewire Software
- Hillsdale High School
- Nandi Yoga
- PML Management Corp
- Prometheus-2 (Atrium & Waters Park)
- Skytide Inc.
- Stottler Henke
- Wilson Meany Sullivan

3.2.2. Bicycle Helmet Giveaway

In 2009, the San Mateo Police Department gave away bicycle helmets to children at schools, a program funded by a California Office of Traffic Safety (OTS) grant. Police officers also gave helmets to children observed bicycling without wearing helmets. In order to receive the helmet, the children's parents were required to return a "citation" issued by the officer.

The Police Activities League (PAL), a non-profit organization within the Police Department, continues to give away helmets from the same OTS grant. PAL's intention is to reinforce laws requiring safe bicycle use and promote trust between police officers and children.

3.2.3. Bike to Work Day

Bike to Work Day is a region wide event promoting bicycling to work and is typically the third Thursday in May. The Bay Area's traffic management organization, 511.org, organizes Bike to Work events throughout the Bay Area, including San Mateo. One of the most popular activities are energizer stations, where volunteers set up a table with promotional items, coffee and snacks along popular bicycle commuting routes during the morning and afternoon commute hours.

Bike to Work Day 2010.

Businesses and organizations located within the City played host to variety of Bike to Work events in recent years. In 2008, a private building company with its headquarters in San Mateo

[3-3] For more information visit www.commute.org.

[3-4] There is no limit to number bicycle parking units an employer purchases. However, this benefit is only available if there are remaining funds.

kicked off Bike to Work Week with an address discussing how to improve bicycling in San Mateo by its CEO. In 2010, the San Mateo and Hillsdale Caltrain stations hosted energizer stations.

3.2.4. Bicycle Resource Website

The City of San Mateo hosts a bicycle resource website. To visit the website, follow the links from the City's home page: Living › Getting Around › Bike Information, or try the link below. This webpage provides a bicycle map of the City, bicycle parking locations and information about the Bicycle and Pedestrian Advisory Committee and local advocacy groups.

http://www.cityofsanmateo.org/bikesanmateo

The City dedicates a page of its website to bicycle information.

3.2.5. San Mateo Acting Responsibly Together

SMART is a citywide public outreach campaign encouraging businesses, schools and individuals to engage in behavior that reduces their carbon footprint. The City provides a website where participants can pledge to reduce their carbon footprint, calculate that reduction, and print flyers encouraging others to do so. Interested parties can request a SMART speaker to present about climate change and sustainable lifestyles that include bicycling as an integral transportation mode. The website below provides more information about the SMART program.

http://www.ci.sanmateo.ca.us/index.aspx?NID=1536

3.3. Education

3.3.1. Skills Classes

The Peninsula Traffic Congestion Relief Alliance offers a bicycle skills course for employers to host, though no employers in San Mateo have taken advantage of this free program, which also allows participant to enter a raffle for a $50 bike shop gift certificate. The Silicon Valley Bicycle Coalition offers bicycle safety and maintenance classes regularly.

3.3.2. Bicycle Rodeo

Bicycle rodeos are events where police officers teach children safe bicycling skills and the rules of the road. In 2005, the Police Department hosted a bicycle rodeo that was open to the public, advertising through its website and the City's newspaper. Approximately 75 children participated in the event.

A bicycle rodeos, participants learn about safe bicycling skills and rules of the road.

3.4. Enforcement

3.4.1. Bicycle Patrol

Police bicycle patrols not only increase the mobility of officers in dense areas but it also provide law enforcement officers with an opportunity display safe and legal bicycle skills. Bicycle patrols also show the community that the City is

engaged in sustainable transportation. The Police Department deploys up to two bicycle patrol officers in the Downtown area on an as needed basis, typically Thursday through Sunday.

3.4.2. Speed Feedback Signs

Speed feedback signs display the speed of passing motor vehicles, with the intent that motorists will slow down if they are aware of their speed. The City has installed permanent speed feedback signs at eight locations throughout the City. There are three signs on Alameda de las Pulgas near Carey School and Baywood School, signs installed in each direction on Third Avenue, signs in each direction on Delaware Street near Sunnybrae Elementary School, and a sign westbound on Kehoe Avenue near Bayside Academy. The Police Department and Department of Public Works operate two mobile speed feedback signs, which are deployed in response to resident complaints about speeding.

3.4.3. Targeted Enforcement

Targeted enforcement is focused efforts by police officers. For example, the Police Department conducts pedestrian stings at locations where pedestrians and motorists conflict and do not comply with traffic signals. Similar strategies may be applied to areas with bicycle traffic, although the Police Department has not implemented such strategies.

3.5. Evaluation

Evaluation programs measure and evaluate the impact of projects, policies and programs. Typical evaluation programs range from a simple year-after-year comparison of US Census Journey to Work data to bicycle counts and community surveys. Bicycle counts and community surveys act as methods to evaluate not only the impacts of specific bicycle improvement projects but can also function as way to measure progress towards reaching the City's Sustainable Initiatives Plan goals such as increased bicycle travel for trips one mile or less and the reduction of single-purpose school trips by automobile.

The City of San Mateo does not currently have bicycle-related evaluation programs. However, bicycle counts were conducted as part of this Master Plan process. This count effort is intended to be a benchmarking effort continuing on an annual basis to measure and evaluate projects, policies and programs.

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4. Needs Analysis

The needs of San Mateo bicyclists are diverse, depending on level of experience, confidence, age, trip type and many other factors. This examination begins with a review of trip attractors and generators to identify where residents are likely to bicycle to and from. Travel mode choice and typical travel time are then reviewed to understand the current and potential rates of bicycling. Bicycle collision locations and rates are also reviewed to understand locations likely in need of bicycle related improvements. The needs analysis concludes with a summary of community input gathered from a community survey and a workshop.

4.1. Types of Bicyclists

This Plan seeks to address the needs of all bicyclists and potential bicyclists and therefore it is important to understand the needs and preferences of all types of bicyclists to develop a successful plan. Bicyclists' needs and preferences vary between skill levels and their trip types. In addition, the propensity to bicycle varies from person to person, providing insight into potential increases in bicycling rates. Generally, bicycling propensity levels can be classified into four categories:[4-1]

- *Strong and Fearless* bicyclists will ride on almost any roadway despite the traffic volume, speed and lack of bikeway designation and are estimated to be less than one percent of the population.
- *Enthused and Confident* bicyclists will ride on most roadways if traffic volumes and speeds are not high. They are confident in positioning themselves to share the roadway with motorists and are estimated to be seven percent of the population.
- *Interested but Concerned* bicyclists will ride if bicycle paths or lanes are provided on roadways with low traffic volumes and speeds. They are typically not confident cycling with motorists. Interested but Concerned bicyclists are estimated to be 60 percent of the bicyclist population and the primary target group that will bicycle more if encouraged to do so.
- *No Way No How* are people that do not consider cycling part of their transportation or recreation options and are estimated to be 33 percent of the population.

Figure 4-1 presents a breakdown of these bicyclist types.

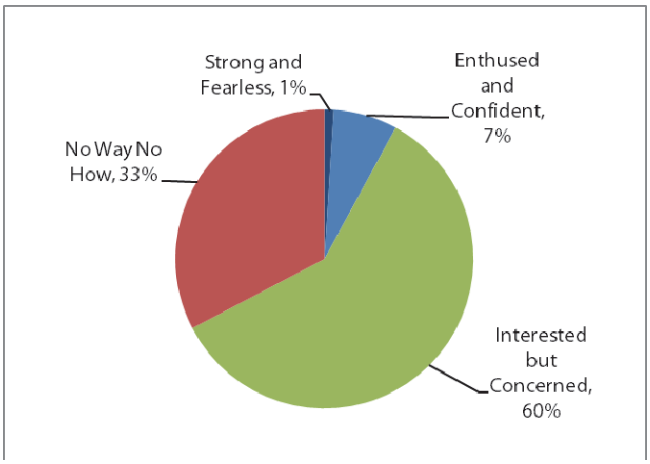

Figure 4-1: Bicyclist Typology Scale

[4-1] Source: Roger Geller, Bicycle Coordinator, City of Portland, Oregon

The needs of bicyclists also vary between trip purposes. For example, people who bicycle for performance-recreational purposes may prefer long and straight unsignalized roadways, such as Crystal Springs Road, while bicyclists who ride with their children to school may prefer direct roadways with lower vehicular volumes and speeds. This Plan considers these differences and develops a bikeway network to serve all user types. This section describes the different types of bicyclists and the respective needs for these categories of bicyclists.

- Commuters - adults who regularly bicycle between their residences and work.
- Enthusiasts - skilled adults.
- Casual / Family / Elderly riders - adults who use bicycles for running errands, exercise, or as a family activity
- School Children - children who bicycle to school.

An effective bicycle network accommodates bicyclists of all abilities. Casual bicyclists generally prefer roadways with low traffic volumes and low speeds. They also prefer paths that are physically separated from roadways. Because experienced bicyclists typically ride to destinations or to achieve a goal, they generally choose the most direct route, which may include arterial roadways with or without bike lanes.

Bicyclists of all abilities and purposes ride every day in San Mateo. Parents bicycle with their children to school, people bicycle to work in San Mateo and the surrounding communities, community members bicycle to Caltrain stations, and recreational bicyclists ride through San Mateo on extended bicycle trips.

4.2. Bicycle Attractors and Generators

Bicycling can be a viable means of transportation if schools, employment centers, shopping centers and parks are accessible by bikeways and have adequate bicycle parking. These bicycle "attractors" and "generators" are examined below and are used to identify potential recommended bicycle facilities. San Mateo's top bicycle attractors and generators are outlined below and shown in **Figure 4-2.**

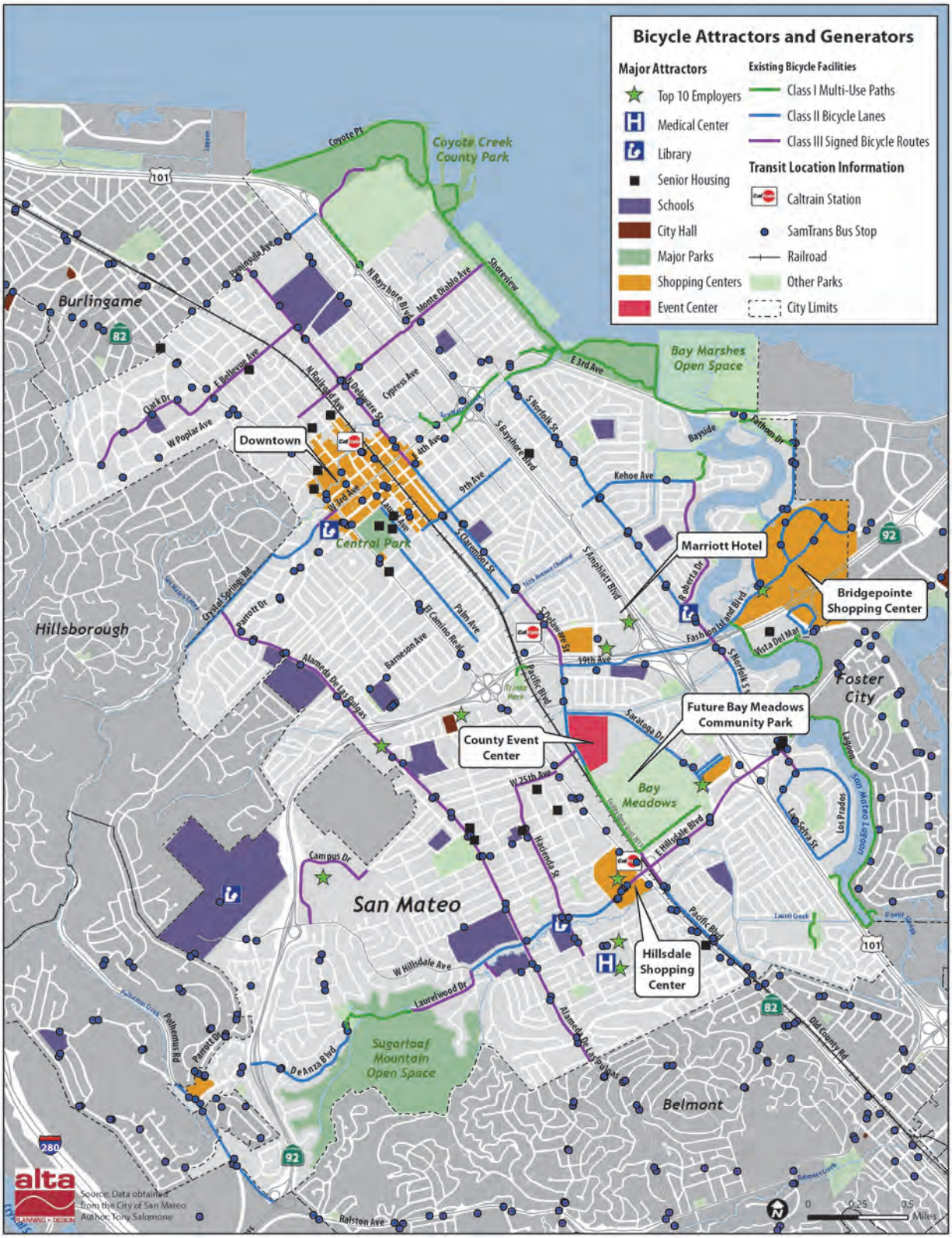

Figure 4-2: San Mateo's Bicycle Attractors and Generators

4.2.1. Parks and Community Centers

San Mateo has a variety of park facilities including playgrounds, ball fields, courts, and picnic areas that serve as recreational destinations for the community. These outdoor amenities attract individuals, families, local residents and tourists. San Mateo's larger park destinations are described below.

Sugarloaf Mountain can be accessed from the west by Class II bicycle lanes on De Anza Boulevard and from the east by Class III bicycle route on Laurelwood Drive. The park features several hiking trails and can be accessed from the west by Class II bicycle lanes on De Anza Boulevard.

CuriOdyssey is a 600-acre San Mateo County park located on the border of Burlingame and San Mateo. The park provides opportunities for picnicking, swimming, fishing, bicycling, sailing, and hiking, as well as several playgrounds. The Coyote Point Museum for Environmental Education, an environmental science center, is located within the park. The park can be accessed by Class II bicycle lanes on Cypress Road and via the San Francisco Bay Trail.

Central Park and Recreation Center is a 16-acre park located in downtown San Mateo. The park is a central city landmark and includes lighted tennis courts, playground, baseball field, Japanese Tea Garden, and Mini Train for children. The recreation center offers community classes and rental space. The park can be accessed by Class II bicycle lanes on Laurel and Palm Avenues.

Shoreline Parks consist of several different parks and open spaces along the shoreline and San Mateo Creek between U.S. 101 and the Bay. The system consists of 177 acres. Its more recent components are Ryder Park, which includes a renovated water feature, creative play areas, and a barbeque and picnic area, and 60-acre Seal Point Park, which features a 3-acre off-leash dog park and several walking and bicycling paths. Harborview Park and a portion of the Bayfront Nature area were also recently established. The park can be accessed by a Class III bicycle route on Monte Diablo Avenue and the 3rd Avenue Class I path.

Shoreline Park is a popular destination

Beresford Recreation Center and Park is on 18.5-acres located on Alameda de las Pulgas between Dolores Street and 28th Avenue. Beresford Park is known for its many amenities, including one of two San Mateo skate board plazas, the Gary Yates lighted bocce ball complex, a fully enclosed tot playground, and tennis and basketball courts. Activities offered at Beresford Recreation Center include preschool activities, after school care, and youth and adult classes. The park is accessible from a Class III bike route along Alameda de las Pulgas.

Bay Meadows Community Park is currently in the planning stages. This 12-acre community park will be located adjacent to Saratoga Drive between the County Expo Center property and the proposed 28th Avenue extension. Once completed, the park will be accessible from Class II bike lanes on Saratoga Drive as well as a proposed Class I path along 28th Avenue identified in the Hillsdale Station Area Plan.

Other City parks can also potentially draw large numbers of cyclists. These include Parkside Aquatic Park, Los Prados Park, Bayside/Joinville Park and Joinville Swim Center, Martin Luther King Junior Park and Recreation Center, Trinta Park, Lakeshore Park, and Shoreview Park. The San Mateo Senior Center is located at 2645 Alameda de las Pulgas. Providing bicycle facilities and wayfinding signage to all City parks would help to implement the Parks and Recreation Strategic Plan policy of designing pedestrian and bicycle trails that connect parks and recreational facilities.

4.2.2. Schools

Over 23,000 students, 24 percent of the population, are enrolled at schools in San Mateo, representing a large population of potential bicycle riders. Half of these students are enrolled at the College of San Mateo, which hosts the San Mateo Farmers' Market on Wednesdays and Saturdays, an event that commonly draws bicyclists. **Table 4-1** lists the schools in San Mateo and their enrollment.

Table 4-1: San Mateo School Enrollment

School	Enrollment	School	Enrollment
Abbott Middle School	752	Highlands Elementary	451
Aragon High School	1,670	Hillsdale High School	1,171
Bayside Middle School	504	Horrall Elementary	437
Baywood Elementary	509	Junipero Serra High School	162
Beresford Elementary	238	Laurel Elementary	417
Borel Middle School	953	Meadow Heights Elementary	313
Carey Elementary	238	North Shoreview Montessori	311
College of San Mateo	11,000	Park School	452
College Park Elementary	265	Parkside Elementary	420
Fiesta Gardens International School	447	San Mateo High School	1,396
George Hall Elementary	433	Sunnybrae Elementary	470
		Total Enrollment	**23,009**

4.2.3. County Event Center

The **San Mateo County Event Center** is a 48-acre facility with seven buildings, including the 100,000 square foot Expo Hall and 750,000 square feet of on-site parking. The Expo Hall hosts large events, trade shows, concerts, and corporate gatherings including many that attract significant number of bicyclists. The Maker Faire, a do-it-yourself family festival, is held annually at the Event Center and regularly attracts more than 1,000 bicyclists. The Event Center is bound by Class II bicycle lanes on Saratoga Avenue and South Delaware Street.

4.2.4. Retail Centers

Downtown San Mateo is the City's historic retail center. The area is comprised of several blocks and features restaurants, boutique retail, and entertainment uses, including a movie theater. The Central Park and Recreation Center is also located in Downtown San Mateo. Downtown

Downtown San Mateo

is home to a farmers market May through October as well as an annual "Wine Walk" each June. While downtown offers many locations for automobile parking including on-street parking, the central garage, the Main Street garage, and the transit center parking, it does not have a significant amount of bicycle parking. The North Delaware Street Class III bicycle route is the only bikeway accessing downtown.

Hillsdale Shopping Center is a large indoor shopping mall located west of the Hillsdale Caltrain Station. The center features three anchor stores, plus 130 specialty stores and restaurants and 5,800 parking spaces. Class II bicycle lanes provide access to the shopping center from the west. A Class III bike route on Hillsdale Boulevard provides access from the east; however, it has high traffic volumes and speeds and is not a route most San Mateo residents feel comfortable bicycling on.

Bridgepointe Shopping Center is a regional retail, dining, office, hotel, and residential center located at Mariner's Island, just west of Foster City. Bridgepointe also includes an ice skating rink, which offers public skating and youth hockey and skating programs. Class II bicycle lanes on Bridgepointe Circle and Fashion Island Boulevard access Bridgepointe Shopping Center.

Likewise, merchants in smaller neighborhood retail centers such as 20th Avenue, 25th Avenue, 37th Avenue, 41st Avenue and Norfolk Street are a valuable resource and destination for San Mateo residents. For example, the 25th Avenue retail area is a traditional shopping street with grocery stores, a pharmacy, post office and many restaurants. However, there is no bike parking and it is the only smaller retail district connected to the bikeway network.

4.2.5. Top Employers

Nearly 12,000 people are employed by San Mateo's top ten employers. These employees represent a large number of potential bicyclists if bicycling to work is made convenient by increased bicycle access to employment centers and City and privately sponsored encouragement programs. **Table 4-2** lists the top ten employers, their location and number of employees. This Plan's recommendations consider large employer locations.

Table 4-2: Top 10 Employers (2010)

Employer	Address	Number of Employees
Franklin Templeton Group	1 Franklin Pkwy and 960 Park Pl	5,900
San Mateo Medical Center	222 W 39th Ave	1,400
Hillsdale Shopping Center (Macy's, Sears and Nordstrom)	115 Hillsdale Mall	1,100
City of San Mateo	330 W. 20th Avenue	695
Campus Drive Businesses (Net Suite Inc. and Terarecon Inc.)	2955 Campus Dr #100 and #325	630
California Casualty Group	1900 Alameda De Las Pulgas	500
Salesforce.com	900 Concar Dr	400
Success Factors Inc	1500 Fashion Island Blvd # 300	350
YMCA	1877 S. Grant St	300
San Mateo County Psychological	225 37th Ave #125	285
	Total	**11,560**

4.2.6. Transit

Approximately 8.4 percent of San Mateo's working population take transit to work.[4-2] Transit opportunities in San Mateo include Caltrain and SamTrans. There are three Caltrain stations in San Mateo: San Mateo Station, Hayward Park, and Hillsdale. Provision of a bike station near the downtown transit stations, where transit users could safely park their bikes, would make biking to transit more convenient.

4.3. Commuter Travel

Monitoring the number of commuter bicyclists in the City provides a way to track the use of bicycle facilities. This Plan presents US Census Journey to Work data from the United State Census Bureau's 2008 American Community Survey. As bicycle facilities are built and education and encouragement programs implemented, Journey to Work data can be revisited to monitor changes in bicycling rates. The percentage of San Mateo residents that bicycle to work is about 1.1 percent, which is slightly higher than California and more than the United States as a whole. **Table 4-3** lists the mode choices of San Mateo, California and the United States.

Bicycle commuters at the Hillsdale Caltrain Station

Table 4-3: Journey to Work Data (2008)

Mode	San Mateo	California	United States
Bicycle	**1.1%**	**1.0%**	**0.5%**
Carpool	9.8%	11.9%	10.7%
Drive Alone	69.8%	72.7%	75.5%
Public Transit	8.4%	5.3%	5.0%
Walked	3.6%	2.8%	2.8%
Other	2.5%	1.5%	1.3%
Worked from Home	4.7%	4.8%	4.1%

Source: U.S. Census Bureau, 2008 American Community Survey

Review of travel time to work is important to estimate the potential number of bicycle commuters. Generally, a commute time of 15 minutes or less is equivalent to a 30 minute bicycle commute, assuming flat topography and light to moderate traffic. Based on a variety of factors, communities nationwide have demonstrated it is possible for San Mateo to shift a portion of the 29.7 percent of the 15 minute or less commuters to bicycle. **Table 4-4** compares average San Mateo commute times with California and the United States.

Table 4-4: Travel Time to Work

Travel Time to Work	San Mateo	California	United States
Less than 15 minutes	29.7%	25.3%	28.4%
15 to 29 minutes	35.2%	35.8%	36.1%
30 to 44 minutes	22.0%	21.1%	19.8%
45 to 59 minutes	7.7%	7.8%	7.5%
60 minutes or more	5.3%	10.0%	8.2%

Source: U.S. Census Bureau, 2008 American Community Survey

[4-2] American Factfinder, 2008

4.4. Estimated Commuter and Utilitarian Bicyclists

A key goal of this Plan is to maximize the number of bicyclists in order to realize multiple benefits, such as improved health, less traffic congestion, and maintenance of ambient air quality levels. In order to achieve this, a better understanding of the number of bicyclists is needed. The US Census collects only the primary mode of travel to work and it does not consider bicycle use when bicyclists ride to transit or school. Alta Planning + Design has developed a bicycle model that estimates usage based on available empirical data.

This model uses San Mateo specific data from the US Census American Community Survey; National Safe Routes to School survey information; and Federal Highway Administration college commute survey information. The steps are outlined below.

1. Bicycle to work mode share:
    a. Add number of bicycle commuters, derived from the US Census American Community Survey.
2. Work at home bicycle mode share:
    a. Add the number of those who work from home and likely bicycle, derived from assumption that five percent of those who work at home make at least one bicycle trip daily.
3. Bicycle to school mode share:
    a. Add the number of students biking to school, derived from multiplying the K-8 student population by the national bike to school average rate of two percent.
    b. Add the number of college students biking to the College of San Mateo, derived from an assumption that one percent of those students living in San Mateo bike.
4. Number of those who bike to transit:
    a. Add the number of people who bicycle to Caltrain and SamTrans, derived from an assumption that five percent of riders bike to transit.

As shown on **Table 4-5** there are an estimated 1,281 daily bicycle commuters and utilitarian riders in San Mateo. It is important to note that this is simply an order-of-magnitude estimate, based on available data and does not include recreational trips.

Table 4-5: Current Bicycle Trips

Data		Source
San Mateo Population	95,173	2008 US Census American Community Survey
Number of Commuters	48,512	2008 US Census American Community Survey (Employed persons minus those that work at home)
Number of Bicycle-to-Work Commuters	574	2008 US Census American Community Survey
Bicycle-to-Work Mode Share	1.1%	Mode share percentage of Bicycle to Work Commuters 2006 American Community Survey
Work at Home Mode Share	4.7%	2008 US Census American Community Survey
Estimated Work at Home Bicycle Commuters	113	Assumes 5% of population working at home makes at least one daily bicycle trip.
School Children Grades K-8	7,329	2008 US Census American Community Survey
Estimated School Bicycle Commuters	147	National average 2%. National Safe Routes to School Survey (2003)
Number of College Students	5,179	2008 US Census American Community Survey
Estimated College Bicycle Commuters	52	National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995. Review of bicycle commute share in seven university communities (5%), adjusted to consider site-specific topographic constraints (1%)
Estimated number of people who use Caltrain and SamTrans	4,293	2008 US Census American Community Survey
Number of commuters who bicycle to Caltrain and SamTrans	215	Estimated 5% of transit users access by bicycle
Estimated Total Number of Bicycle Commuters and Utilitarian Riders	1,281	Total of bike-to-work, transit, school, college and utilitarian bicycle commuters. Does not include recreation.
Estimated Adjusted Mode Share	1.35%	Estimated bicycle commuters divided by population

4.5. Collision Analysis

Safety is a major concern for current and potential bicyclists and can influence the decision whether or not to bicycle. Potential bicyclists that do not have experience riding, especially in traffic, typically will not ride if they perceive the roadway as dangerous. People who currently ride often express frustration when drivers do not see them or do not understand that bicyclists are afforded the same rights as vehicles. Similarly, many bicyclists do not know or follow the "rules of the road." Uninformed or unlawful roadway users, as well as roadway designs, can lead to collisions.

Table 4-6: Bicycle Related Collisions by Year

Year	Number of Collisions
2003	39
2004	44
2005	30
2006	36
2007	37
2008	43
Total	**229**

This section reviews collision data from the Statewide Integrated Traffic Report System (SWITRS) to identify where collisions frequently occur and where roadway design improvements are needed. In general, the number of bicycle collisions per year has remained fairly constant at around 40. **Table 4-6** presents the number of bicycle collisions in San Mateo from 2003 to 2008 and **Figure 4-3** shows annual bicycle collisions per 1,000 population in the City of San Mateo County.

Figure 4-4 maps these collisions. Between 2004 and 2008, the City of San Mateo experienced 0.43 bike-automobile collisions per 1,000 population per year and 0.12 bike-automobile collisions per bike commuter per year. This is higher than the average for San Mateo County of 0.34 bike-automobile collisions per 1,000 population per year and 0.06 bike-automobile collisions per bike commuter per year.

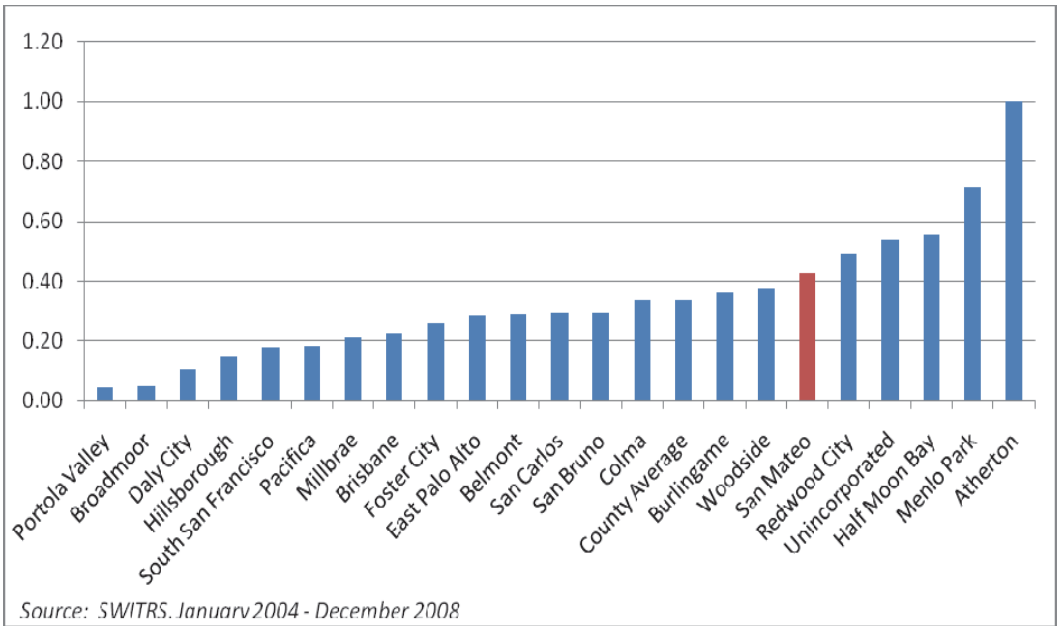

Figure 4-3: Annual Bicycle Collisions per 1,000 Population in San Mateo County

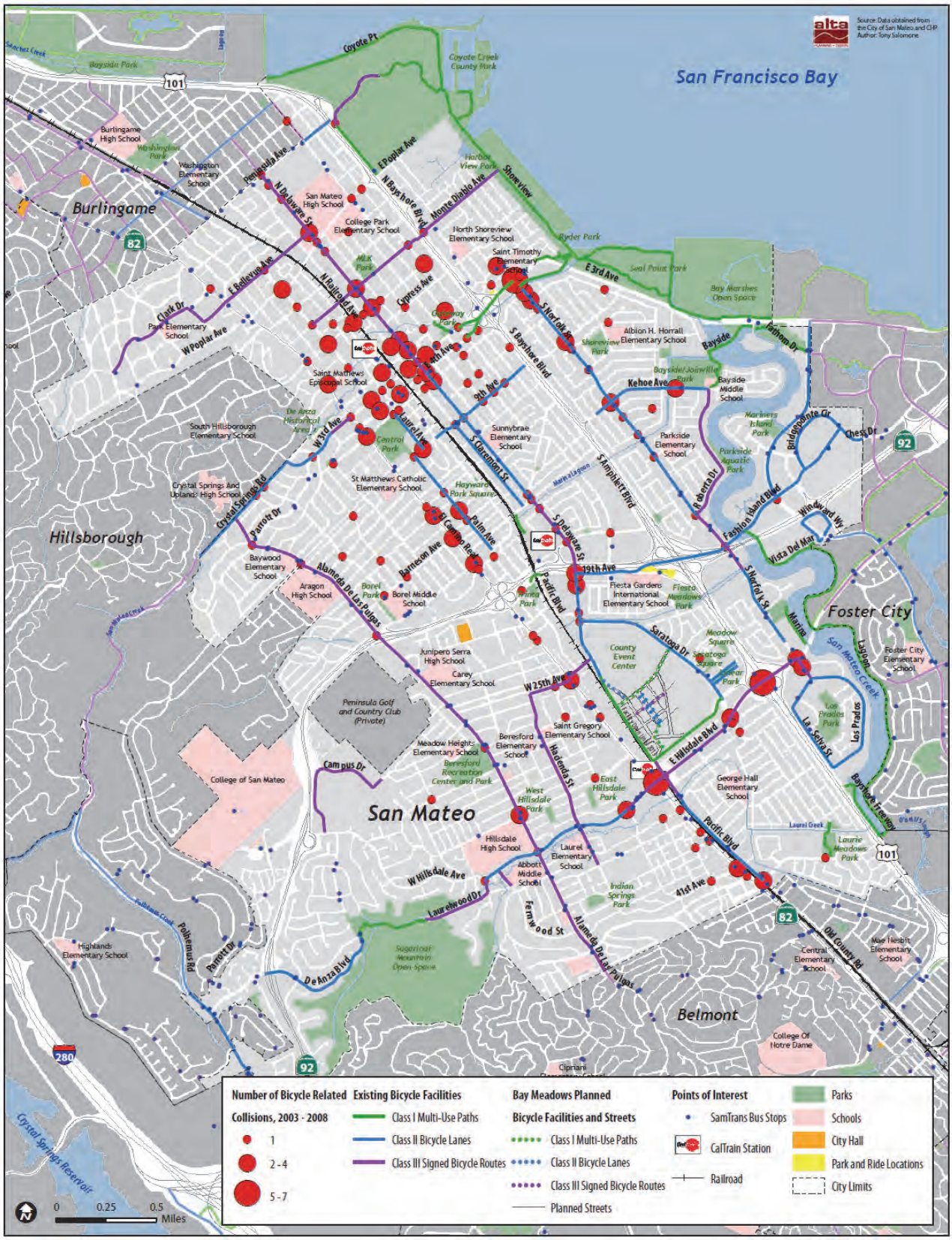

Figure 4-4: Bicycle Related Collisions

Table 4-7 shows that in 2008, bicycle related collisions totaled 13.2 percent of all collisions that resulted in either a fatality or injury in San Mateo. This is total is higher than the County average of 7.8 percent.

Table 4-7: Office of Traffic and Safety Rankings for the City of San Mateo, 2008

Type of Collision	Fatal and Injury Collisions	Ranking by Daily Vehicle Miles Driven	Ranking by Average Population
Total Fatal and Injury	365	38/103	55/103
Alcohol Involved	35	53/103	66/103
HBD Driver < 21	6	24/103	27/103
HBD Driver 21 - 34	4	91/103	94/103
Motorcycles	8	70/103	78/103
Pedestrians	53	9/103	6/103
Pedestrians < 15	8	23/103	29/103
Pedestrians 65+	10	3/103	4/103
Bicyclists	41	16/103	22/103
Bicyclists < 15	7	28/103	38/103
Speed Related	64	33/103	50/103
Nighttime (9:00pm -2:59am)	24	55/103	70/103
Hit and Run	27	31/103	45/103
Composite		49/103	61/103

Source: California Office of Traffic and Safety. Retrieved on October 20, 2010.

The vast majority of collisions occurred in the downtown area near 3rd and 4th Avenues and along Delaware Street. **Table 4-8** lists the intersections with the most collisions. High concentrations of collisions have also occurred along Norfolk Street, El Camino Real and Hillsdale Boulevard. While the City has not historically conducted bicycle counts, it is likely that the collision locations are popular bicycle routes, provide logical and direct north/south connections, and are near attractor or popular destinations.

Table 4-8: Top Collision Intersections

Intersection	No. of Collisions
3rd Ave & Norfolk St	7
Hwy 101 & Hillsdale Blvd	7
El Camino Real & Hillsdale Blvd	5
3rd Ave & San Mateo Dr	4
Delaware St & Tilton Ave	4
San Mateo Dr & Tilton Ave	4
Delaware St & 1st Ave	3
Delaware St & 2nd Ave	3
Delaware St & Bellevue Ave	3
Delaware St & Bermuda Dr	3
Hillsdale Blvd & Norfolk St	3
Poplar Ave & San Mateo Dr	3
San Mateo Dr & 4th Ave	3
Tilton Ave & Railroad Ave	3
Total	**55**

Further analysis of the data reveals a high number of collisions on Wednesdays. **Table 4-9** shows 21 percent of collisions occur on Wednesdays, while 12 to 15 percent of collisions occur the other days of the week. No factors are found to correlate with this trend. Wednesday collisions occurred throughout the City and not in concentrated areas.

Table 4-9: Collisions by Day of Week

Day of Week	% of Collisions
Monday	12%
Tuesday	12%
Wednesday	**21%**
Thursday	15%
Friday	15%
Saturday	11%
Sunday	14%

Identification of the most common violations in bicycle-related collisions and the locations where they occur can inform the City of possible engineering or education needs. A specific recurring violation can be the result of unclear traffic controls or roadways not designed for bicycle use. It can also be the result of bicyclists not aware of or complying with the "rules of the road" or not feeling comfortable riding with traffic. **Table 4-10** lists the top five most common traffic violations implicated in bicycle-related collisions for San Mateo and the specific locations where these violations most frequently occur.

The most common traffic violation is bicyclists riding on the wrong side of the road, which occurs on roadways with and without bikeways. South Delaware and South Norfolk Streets have bicycle lanes but also have a high number of "wrong side of the road" violations. Violators may not know the rules of the road or may not feel comfortable riding with traffic. In other circumstances, such as on El Camino Real, East 5th Street and East Hillsdale Avenue, the roadways do not provide bikeways and are designed to carry high traffic volumes.

Other frequent traffic violations include right of way, traffic signals and signs and improper turning. Again these violations may indicate that bicyclists or motorists do not know the rules of the road or choose not to follow them.

This analysis of violations informs the Plan's recommendations. These violations identify the need for bicycle and motorist education, outreach and direct and logical bikeways on or parallel to busy roadways.

Table 4-10: Common Violations in Bicycle Related Collisions Violations

Violation	% of Collisions	Locations where Violation Frequently Occurs
Wrong Side of Road	27%	• South Delaware Street (Bermuda Drive to 1st Avenue) • South Norfolk Street (2nd Avenue to Lago Street) • El Camino Real (Barneson Avenue to 41st Street) • East 5th Street (Laurel Avenue to Delaware Avenue) • East Hillsdale Avenue (Saratoga Drive to Norfolk Street)
Right of Way	16%	• Delaware Street (Bellevue Avenue to 9th Street)
Traffic Signals and Signs	14%	• South Norfolk Street and 3rd Street • South Delaware Street (Multiple Intersections) • Tilton Avenue (Multiple Intersections)
Other Hazardous Violation	11%	• South San Mateo Drive (3rd and 4th Streets) • South Delaware Street and East 4th Street • El Camino Real and Hillsdale Avenue
Improper Turning	10%	• South Delaware Street (Bermuda Drive and Saratoga Drive) • Palm Avenue (11th and 13th Streets)

Bicyclists were most commonly cited at fault for bicycle related collisions between 2003-2008. They were most at fault for riding on the wrong side of the road and disobeying traffic signals and signs. Motorists, including truck drivers, were at fault for 23 percent of collisions, mostly for disobeying bicyclist right of way. This data indicates a need for bicyclist and motorist education as well as the infrastructure improvements recommended in this plan. **Table 4-11** lists the traffic violations by the at fault party.

Table 4-11: Traffic Violation Type by Party at Fault

Violation	Bicycle	Vehicle	Not Stated	Other
Not Stated	3		5	
Unknown			7	
Under the influence	2	1	1	
Impeding Traffic		1		
Unsafe Speed	7	3		
Following Too Closely		1		
Wrong Side of Road	**59**		3	
Improper Passing	2	3		3
Unsafe Lane Change	1		1	
Improper Turning	11	8	3	
Right of Way	16	**18**	2	
Traffic Signals and Signs	**22**	9	1	
Other Equipment	1			
Other Hazardous Violation	17	5	4	
Other the Drive or Pedestrian			3	
Unsafe Starting or Backing	1	1		
Other Improper Driving			1	
Total	**142**	**43**	**31**	**3**
% Party at Fault	**62%**	**23%**	**14%**	**1%**

4.6. Community Identified Needs

The public outreach process for the Bicycle Master Plan included a community survey and a public workshop to gather information on resident and employee travel patterns in the City, opinions and suggestions on opportunities, challenges and potential facilities and programs from a large and diverse population of San Mateo residents. The survey is reproduced in **Appendix F**. The purpose of the survey was to help inform the development of bicycle facilities and programs as well as to serve as a benchmark for travel patterns.

4.6.1. Survey Approach

The survey was distributed in five ways to community members including those who bicycle and those who do not. It was open from May 1, 2010 through June 30, 2010. In total, the City received more than 600 survey responses. The survey instrument used throughout this effort is included as **Appendix F**.

Intercept Surveys

Intercept surveys of community members were collected in June 2010. Flyers with information on the plan, the survey and the survey website address were distributed at the following locations in the City:

- San Mateo Caltrain Station
- Whole Foods Grocery, Park Place
- Hillsdale Caltrain Station
- SamTrans Stop: El Camino Real at 4th Avenue
- 3rd Avenue and San Mateo Drive
- 3rd Avenue and B Street

Project Website

The survey was available on the project website (www.sanmateobikeplan.com) from May 1, 2010 through June 30, 2010. The City of San Mateo also posted the survey information on the City's home page and the City's Bike Information page.

Email Distribution

Local community groups were also notified of the survey effort through email newsletters. These groups include:

- San Mateo neighborhood associations
- United Homeowners Association
- Bicycle and pedestrian related advocacy organizations, including the Silicon Valley Bicycle Coalition (SVBC)
- Peninsula Traffic Congestion Relief Alliance newsletter recipients

Flyer Distribution

Survey flyers were distributed to:

- Public libraries (Main, Hillsdale and Marina)
- Community centers (Beresford, MLK and Central Park recreation centers)
- Bicycle shops (Cyclepath of San Mateo, The Sports Authority and Talbots Toyland)
- Peninsula Traffic Congestion Relief Alliance Bike to Work Day energizer stations
- Maker's Fair

Employee and Spanish Language Distribution

Surveys and flyers were distributed to the following organizations and retail locations to reach local employers and increase the response rate among San Mateo's Spanish speaking population.

- Worker Resource Center
- San Mateo Health Center
- Safeway stores
    - San Mateo (two)
    - Burlingame (at city limit)
    - Foster City (at city limit)

4.6.2. Community Workshop

In addition to the survey, a community workshop was held to gather input on where the public likes to bicycle, program areas, and where they would like to bicycle but are not comfortable doing so.

The workshop was held at San Mateo City Hall on July 14, 2010. In attendance were 41 members of the public including members of the Public Works Commission. At the workshop, the community provided input on suggested bikeways, areas of opportunities and challenges, and bicycle parking downtown.

4.6.3. Community Identified Needs

The following summarizes the desired programs and facilities identified by the community. This section begins with an overview of community bicycle ownership, use and typical travel patterns for trips less than five miles. Factors that prevent bicycling are then discussed followed by community suggested bikeways and policies for creating bicycle space. The section concludes with community identified needs for support facilities such as wayfinding signage and bicycle parking as well as programmatic needs.

Bicycle Ownership and Use

Of the survey respondents, 79 percent own a bicycle (**Figure 4-5**) and most, 94 percent, consider their bicycle to be in good working order. Despite this high rate of bicycle ownership, 59 percent of survey respondents stated they rode their bicycle less than five times in the last month. Of those surveyed, 16 percent state they ride their bicycle daily (**Figure 4-6**).

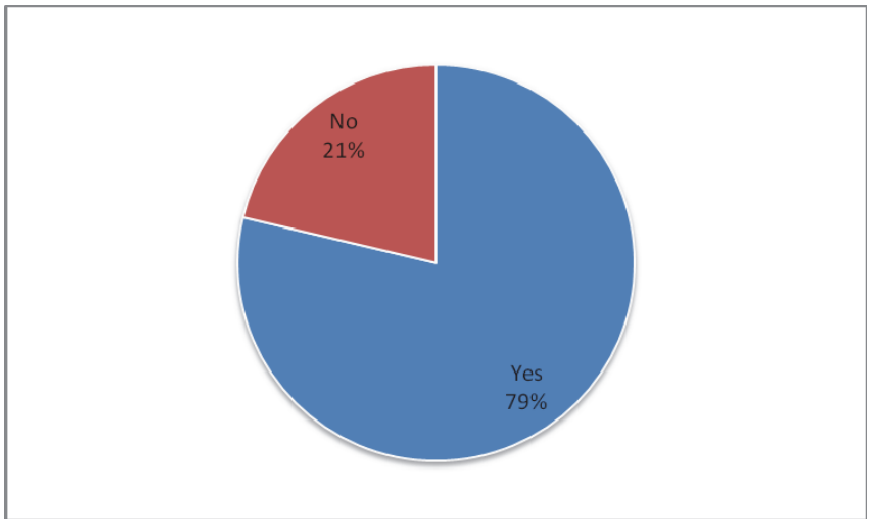

Figure 4-5: Survey Respondents Bicycle Ownership Distribution

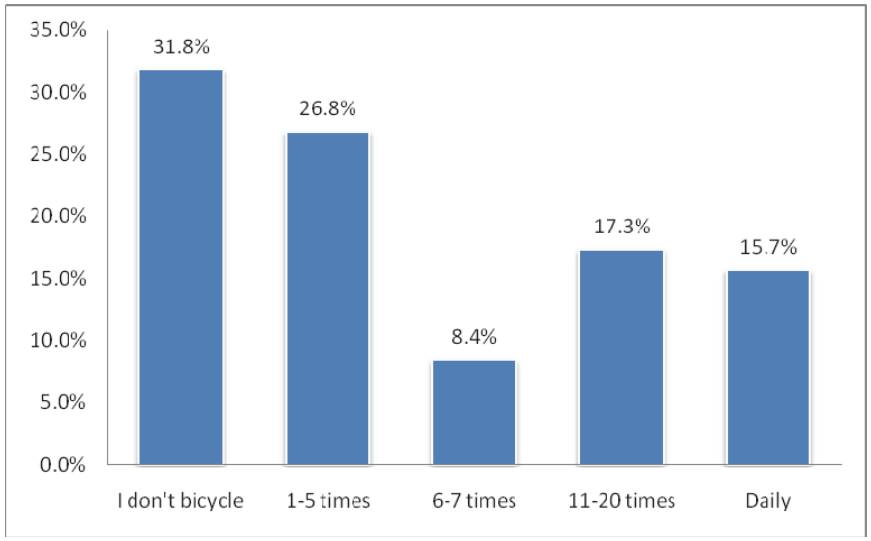

Figure 4-6: Times Respondents Bicycled in Past Month

Travel Patterns for Trips Less Than Five Miles

The majority of survey respondents, 64 percent, typically drive alone when traveling less than five miles (**Figure 4-7**), a trip that can be made in 30 minutes biking at a comfortable speed of 10 miles per hour. **Figure 4-8** shows this is a trip that for nearly 60 percent of respondents is an average bicycle ride.

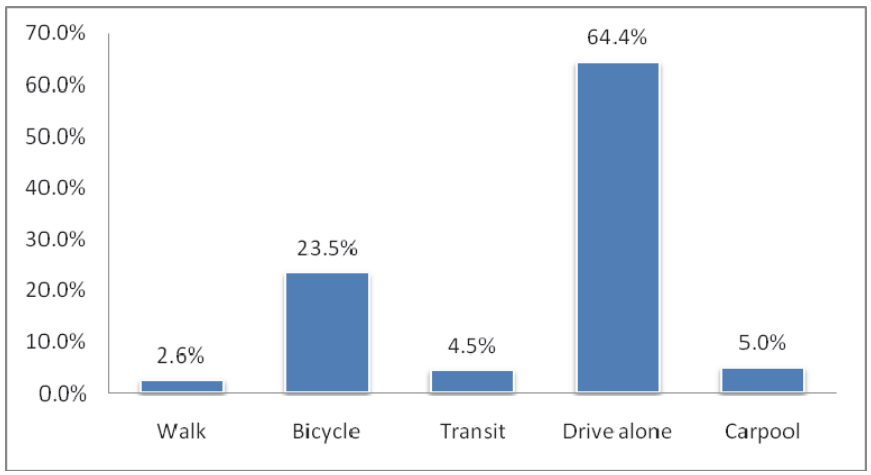

Figure 4-7: Respondent Mode of Choice for Trips Less than Five Miles

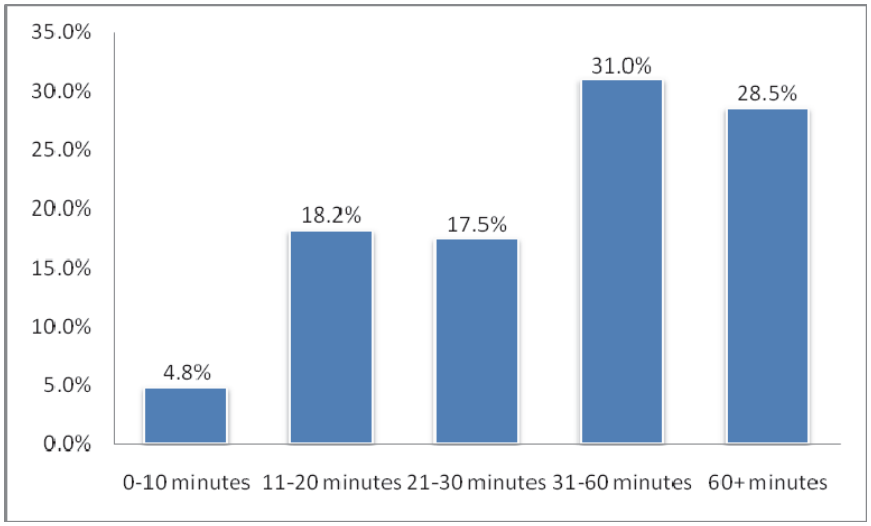

Figure 4-8: Average Time of Bicycle Ride

Factors Preventing Bicycling

Figure 4-9 shows that the most common reasons respondents cited as the reason they do not bike more often include that cars drive too fast or there are too many cars, there are no bikeways, they have to carry items and that destinations are too far away. Thirteen percent of respondents cited other reasons for not biking more often, including not having a bike, lack of time, poor weather, lack of shower and/or locker facilities at work, steep terrain and safety concerns. Other respondents stated they do not bike more often due to a lack of secure bike parking and because they travel with children.

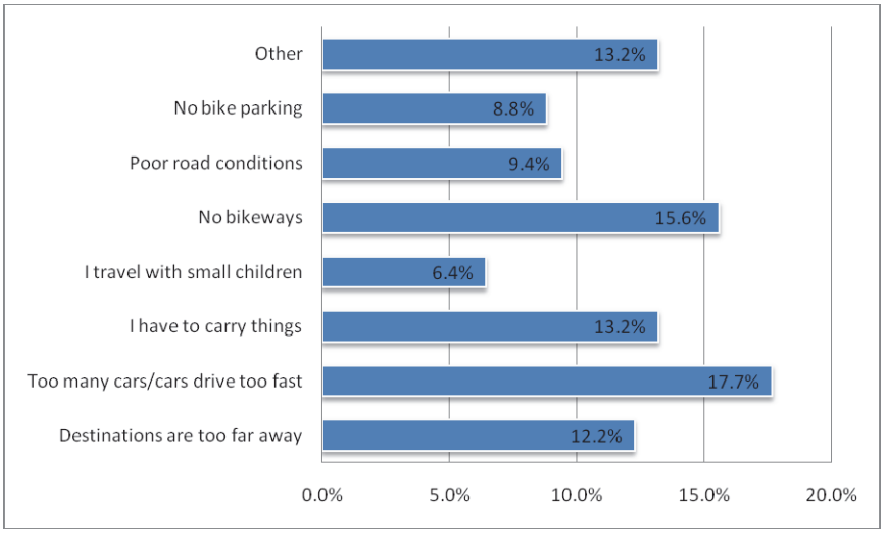

Figure 4-9: Factors Preventing More Bicycle Use

The responses indicate that respondents are not comfortable biking with cars and may feel more comfortable on separated bikeways or traffic calmed streets. Another common reason cited for not biking is the need to carry items. This can be addressed with information about how to travel by bicycle including the use of bicycle baskets, racks and panniers (bicycle bags).

Finally, respondents noted that destinations are too far away to bicycle. San Mateo's Sustainable Initiatives Plan notes that about 99 percent of all origins and destinations for trips within San Mateo are within five miles of each other (p.8). Many of the respondents noted that when they travel less than five miles they typically drive alone, however 60 percent of respondents normally bicycle more than 30 minutes, the time needed to travel five miles. The reason distance may be a concern may have to do with being uncomfortable traveling with cars, the lack of bikeways connecting to destinations, the lack of knowledge about how to carry items on a bicycle or time constraints.

Respondents indicated one of the reasons they do not bike more often is the lack of bikeways. In their survey responses, they indicated their preferred types of bicycle facilities to be off-street bike paths, bicycle boulevards and bike lanes. **Figure 4-10** indicates respondents prefer either a dedicated bicycle space such as a bike path or a bike lane or a bicycle boulevard. Bicycle Boulevards are shared low traffic volume roadways with various treatments that prioritize bicycle travel. Treatments may include oversized stencils and traffic calming devices. Respondents did not find bike routes, or shared-use travel lanes, a desirable bicycle facility. This was also reflected in respondent's reasons for not biking more often: cars drive too fast, there are too many cars and there are no bikeways.

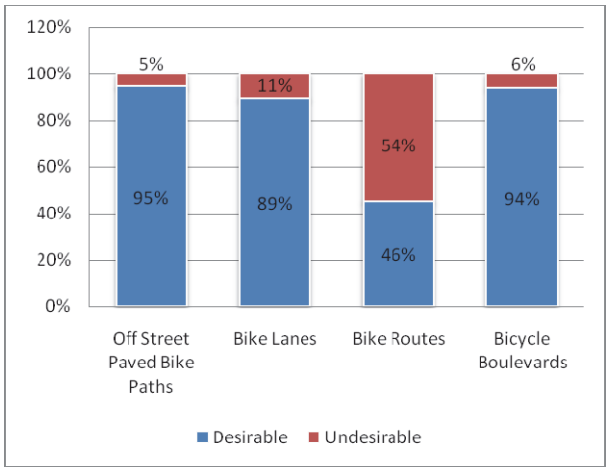

Figure 4-10: Bicycle Facility Preference

Community Suggested Bikeways

The community provided input on suggested bikeways, areas of opportunities and challenges, and bicycle parking downtown both at the workshop and on the project website.

Generally the community recommended:

- Improved crossings over US 101, SR 92 and El Camino Real
- Improved connections to Bay Trail, Downtown, San Mateo College, Hillsdale Shopping Center, schools
- North-South and East-West bikeways
- Recommended bikeway routes included a bike superhighway along the Caltrain corridor, bike path along the 16th Avenue Channel, and a bikeway on Claremont Street.
- Improved bikeway pavement maintenance

Figure 4-11 shows the community suggested bikeway facilities. **Figure 4-12** shows the community identified opportunities and challenges. Major community-identified opportunities include:

- Hwy 101 bicycle/pedestrian path
- Bicycle signage in the Downtown area
- Bike boulevards
- Good destinations or attractors

Major community-identified challenges include:

- Poor connection to Shoreline Park paths from western San Mateo
- Peninsula Ave. railroad crossing
- Idaho St. and Monte Diablo Ave.
- Kingston Ave. and Monte Diablo Ave.
- No facility connection at end of path at San Mateo Creek and N. Norfolk St.
- 19th Ave. and Hwy 101/92
- Pacific Blvd. and Saratoga Dr.
- 19th Ave. and Hwy 101/92

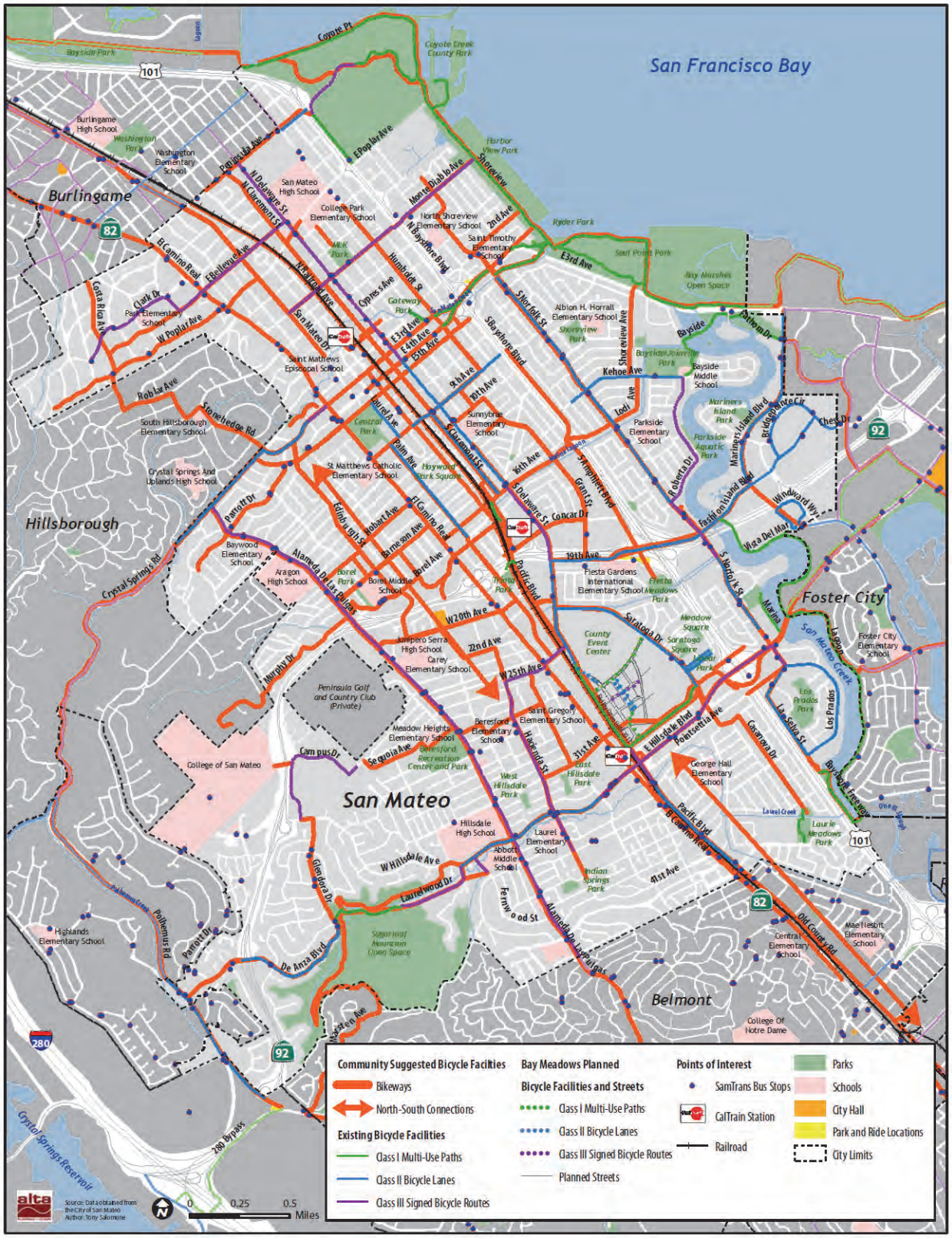

Figure 4-11: Community Identified Bikeways

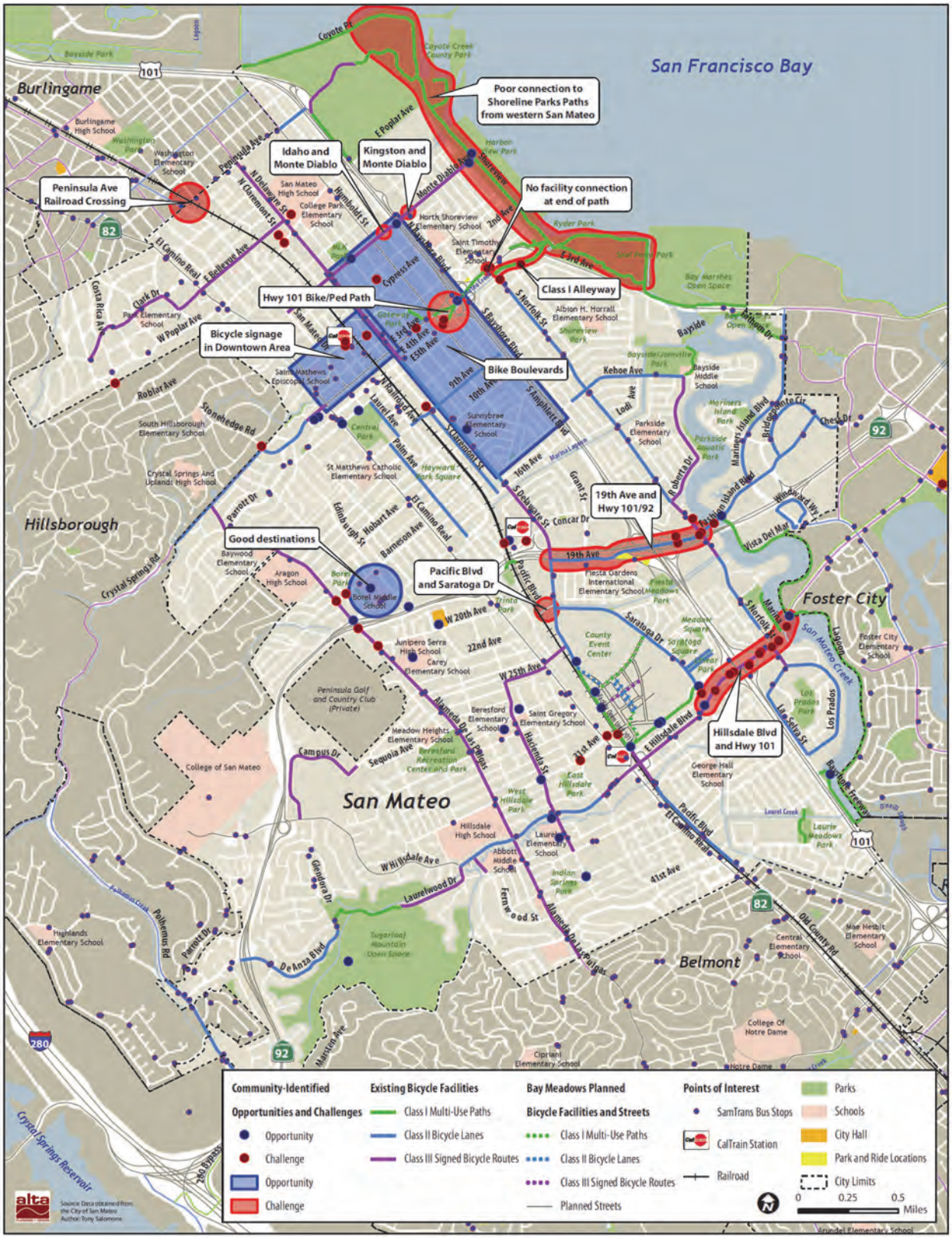

Figure 4-12: Community Idenfitied Opportunities and Challenges

Support for Creating Space for Bikeways

Dedicated bicycle space requires reallocation of the public right-of-way. The survey asked respondents what changes to city streets are acceptable to create space for bikes. Creation or expansion of bicycle space can be accomplished through travel lanes removal or narrowing, car parking removal, relocation or redesign, street widening and traffic calming.

Figure 4-13 shows respondents preferred methods to create or expand bicycle space include car parking relocation, street widening, traffic calming, redesign of on-street parking and travel lane narrowing. The majority of survey respondents supported replacing diagonal parking with parallel parking, car parking removal, travel lane narrowing and travel lane removal. Bicycle boulevards do not require the reallocation of space but are enhanced roadways that can include through traffic calming on residential streets. Eighty-four percent of respondents supported traffic calming.

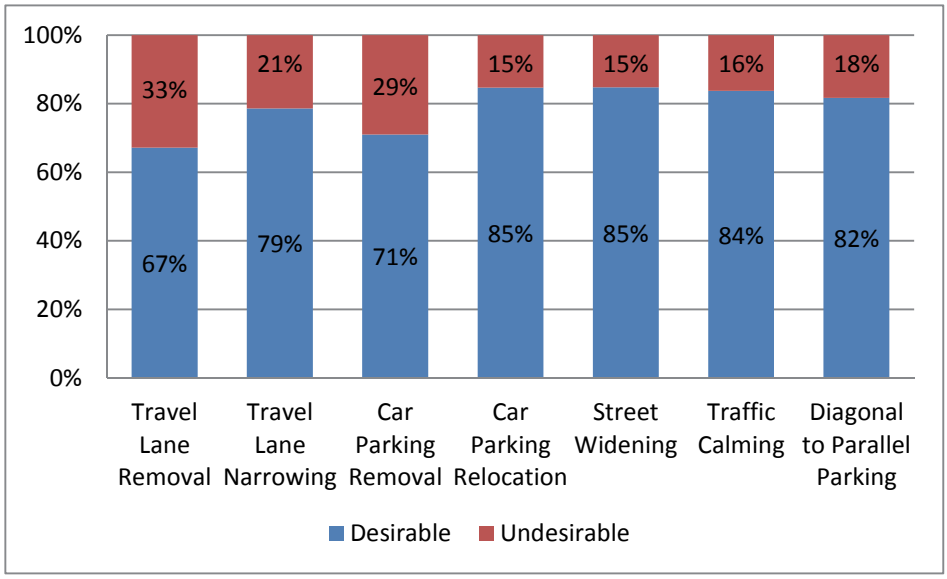

Figure 4-13: Street Modification Preference

When asked what would encourage them to bike more, respondents indicated their interest in more bike paths, improved safety from cars and more on-street bike lanes, more routes and more route and destination signage. In their open-ended responses, respondents expressed an interest in the provision of shower and locker facilities at work, a bike share program, improved accommodation for bikes on Caltrain and at Caltrain's San Mateo station and financial assistance to purchase a bicycle.

4.6.4. Wayfinding Signage

Bikeway wayfinding signage not only identifies a route, it can include directional and distance information to major destinations or connecting bikeways. Investment in wayfinding can greatly increase the transparency and visibility of the existing bicycle network as demonstrated by many Bay Area cities.

As described in the Design Guidelines, the California Manual on Traffic Control Devices and the California Highway Design Manual outline requirements for signage. However, these manuals do not require wayfinding signage, only identification signage. Community members identified the need for wayfinding signage.

4.6.5. Bicycle Parking

As San Mateo continues to build its bikeway network and more residents bicycle, bicycle parking will become an increasingly important issue. Some bicyclists currently park or lock their bikes along the transit routes at inappropriate locations, using street signs or trees near bus stops. Community members identified the need for bicycle parking at the community workshop by marking specific locations for proposed racks on workshop maps of downtown. **Figure 4-14** shows the community suggested downtown bike parking locations.

Other areas recommended for improved bike parking include:

- San Mateo's libraries: Main, Hillsdale and Marina
- Caltrain Stations
- Parks and recreational areas

The community also made the following bike parking related recommendations:

- Provide a map with locations of bike parking
- Place parking in a observed and convenient area
- Identify and consider for replacement bike racks that do not meet the City standard requirements (inverted u-rack)

Figure 4-14: Community Suggested Bike Parking Locations

4.6.6. Programmatic Needs

Bicycle programs can complement the bikeway infrastructure with encouragement, education, enforcement and evaluation. Community members identified need for the following programs:

- Encouragement
    - Bike tours and races to reintroduce bicycling as a fun activity
    - Street closures similar to San Francisco's Sunday Streets to encourage free health and community events where streets are opened to the community and closed to automobile traffic
    - Employer based bicycle encouragement programs including bicycle parking
    - Programs for seniors
- Education
    - Adult bike classes
    - Senior bike classes
    - Youth bike classes
- Enforcement
    - Targeted enforcement of traffic laws

4.7. Summary of Bicyclists Needs

Infrastructure and programmatic improvements are both needed in San Mateo. Infrastructure improvements such as bikeways are needed to connect attractors and generators, improve safety at high collision areas and provide a greater measure of protection for interested but concerned bicyclists. Other infrastructure improvements including signage and parking will support the on-street network. Programmatic improvements such as education, outreach and encouragement may help reduce conflict and also encourage more bicycling.

Bicycle attractors and generators such as parks, schools, event centers, retail and major employers are not well served by existing bikeways. While the City of San Mateo has invested in its bikeway network, it is fragmented. Additionally, the City has invested in both bike lanes and routes but community input indicates preference for paths and bike boulevards.

The need for bikeways to serve attractors is also evident in the bicycle related collision data. The highest rates of collisions occur near attractors near downtown, along Norfolk Street, El Camino Real and Hillsdale Boulevard. Investment in community preferred bikeways to community destinations as well as bicycle education and outreach is needed.

The US Census and survey data show the bicycle mode share to be lower than the City's goals. The community survey indicated the lack of bikeways and traffic speeds as the primary deterrents to bicycling more often. Traffic calming, bikeways on quiet streets may encourage more bicycling.

Collision data and the community survey also revealed programmatic needs. The collision analysis indicates bicycle education and outreach for both drivers and bicyclists about rights, responsibilities and the rule of the road are needed. Additionally, collision data suggest the need for bicycle facilities and spot improvements particularly at the high collision areas. As San Mateo's bikeway network is developed, bikeway map and a

distinctive wayfinding signage program will help bicyclists travel on bicycle priority streets. Bicycle parking at trip origin and destinations is also a community identified need.

Finally, the community survey revealed the need for employer based bicycle encouragement programs and outreach programs. These programs can include travel reimbursement; workplace shower and changing facilities; secure parking; company bicycle user groups; and promotional material on how to commute by bicycle.

The following chapters recommend programs and facilities intended to address these needs.

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