



Bicycle FINAL Plan Update 2009



Prepared by
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September 14, 2009

Plan Background, Goals, and Safety Programs Best Practices

Plan Background and Goals

The City of Santa Clara's 2009 Bicycle Plan Update is a blueprint for expanding the bicycle network that will promote safer alternative modes of transportation and help position the City for future funding for bicycle projects and roadway improvements benefiting the cycling community. The current plan was last completed in 2002. The focus of the Bicycle Plan Update is adherence to the provision of the California Streets and Highways Code, in order to remain eligible for Bicycle Transportation Account (BTA) funds for City and County projects that improve safety and convenience for bicycle commuters. The following requirements are set forth by the Code and are listed alongside the section titles discussing these requirements:

- 891.2a An estimation of current and future bicycle commuters (Bicycle Survey Results)
- 891.2b A map of existing and proposed land uses including residential neighborhoods, schools, shopping centers, public buildings, and major employment centers (Inside Map)
- 891.2c A map of existing and proposed bikeways (Inside Map)
- 891.2d A map of existing and proposed route end bicycle parking facilities (Inside Map)
- 891.2e A map of existing and proposed bicycle transport and parking facilities connecting with other transportation modes (Inside Map)
- 891.2f A map of publicly owned existing and proposed facilities for changing and storing clothes and equipment (Inside Map)
- 891.2g Bicycle safety and education programs, as well as California Vehicle Code bicycle enforcements efforts, and their effect on bicycle collisions (Safety Programs)
- 891.2h Citizen and community involvement (Bicycle Survey Results & Plan Background and Goals)
- 891.2i Bicycle plan coordination with other local and regional planning efforts and bicycle incentive programs (Plan Background and Goals)
- 891.2j Proposed and prioritized bicycle design and education projects (Safety Programs Best Practices, Bike Facility Cross Sections, and Bikeway Planning and Design—**Appendix D**)
- 891.2k Past bicycle facility expenditures and future project financial needs (Past Expenditures and Priority Ranking)

The update of the bicycle plan was completed in coordination with the bicycle plans from the neighboring cities of San Jose and Sunnyvale as well as the Santa Clara County bicycle plan which includes the cross county corridors listed in **Appendix E** and included herein. The Bicycle Advisory Committee (BAC) has been exposed to the 2009 update of the bicycle plan numerous times throughout the creation of the document and was active in providing suggestions and feedback. If any opportunities arise in the planning and construction of the California High Speed Rail project, the City is interested in potentially coordinating improvement projects in the City within the High Speed Rail study area.

Safety Programs Best Practices

Other bicycle plans were surveyed for the best practices, and are summarized below.

1. Educate cyclists and motorists of all ages on the rules and safety measures that lie within bicycling on roadways with vehicles.
2. Offer cycling and motorists seminars/classes teaching attendees the rules and consequences of sharing the road with motorists on-road as well as in the classroom. Educating various age groups on safety topics:
 - a. Motorists
 - i. Rules for motorists regarding cyclists & motorists
 - ii. Precautions when opening doors
 - iii. Parking in Bike Lanes
 - iv. Maneuvering around cyclists
 - b. Cyclists
 - i. Use of lights and reflective clothing at night.
 - ii. Where to ride bicycle
 - iii. How to signal to motorists
 - iv. Preventing bicycle theft
 - v. Always show intentions to motorists
 - vi. Proper helmet and safety equipment
 - vii. How to maneuver within traffic
 - viii. Common collisions or instances where cyclists interfere with motorists or pedestrians
 - ix. What to watch out for and avoid



Safety Programs Best Practices (cont.)

- a. Motorists & Cyclists
 - i. Traffic signs and signals
 - ii. Right-of-way
1. Offer web courses teaching attendees the rules and consequences of sharing the road with cyclists.
2. Offer courses demonstrating bicycling techniques for inexperienced riders.
 - a. Make bicycle safety a part of traffic school curriculum.
 - b. Administer bicycle safety education classes.
 - c. For bicycle infractions (i.e. running stop signs), consider utilizing local League of American Bicyclists or other education programs as a “bicycle traffic school” in lieu of fines.
 - i. The City of Santa Clara has a Juvenile Traffic Diversion Program in place that provides a ticket to education through enforcement of bicycle, pedestrian and other non-motor vehicle violations and includes education of juveniles and encouragement of safety practices through helmet distribution and support. When law enforcement officers issue a citation, youth under the age of 18 years are offered the opportunity to attend a traffic safety class in lieu of paying the fines and fees associated with the ticket.
3. Offer Bike Mentor Programs to match experienced and beginner bicyclists.
 - a. Would provide a good opportunity for beginner bicyclists to learn first-hand from experienced bicyclists.
 - b. Allows bicyclists to travel with someone, which may reduce safety concerns and provides companionship.
4. Survey bicyclists and motorists to determine safety issues in a particular corridor that can be improved.
 - a. Survey cyclists at common destinations to determine where many potential collisions may happen.
 - b. Survey cyclists on improper signage and potholes or unsafe objects interfering with bike facility.
5. Offer brochures and pamphlets at popular cycling destinations informing proper techniques and rules on sharing the road.
 - a. Develop a safety handbook outlining and explaining bicycle safety.
 - b. Develop a map for cyclists displaying Bike Paths, Bike Lanes, and Bike Routes.
 - c. Include a citywide bicycle facility map.
 - d. Map in pamphlet should show facility types (Class I, II, or III) as well as suggested routes relative to bicyclist skill level (beginner, intermediate, advanced).
6. Coordinate with other local agencies and partners to inform the public about cycling.
 - a. Develop outreach programs with various agencies:
 - i. Silicon Valley Bicycle Coalition
 - ii. City of Santa Clara Police Department
 - iii. Santa Clara University
 - iv. Local school districts
 1. Work with schools to develop an Effective Cycling certification so that students understand bicycle safety laws.
 2. Continue to work with schools on the Safe Routes to School program to educate students on basic pedestrian and bicycle safety skills.
 - b. Sponsor events that promote bicycling.
 - c. Work with local agencies to promote Bike to Work Day program and to implement Bike to School Day program.
 - d. Help facilitate the development of employer incentive programs.

Bicycle Survey Results, Past Expenditures and Collision Summary

Bicycle Survey Results

An online survey was sent to City of Santa Clara employees as well as Santa Clara University faculty, staff, and students as members of a major employer or organization within the City and therefore a potential primary user of the bicycle network. The survey was created to help the City of Santa Clara assess the current status of the bicycle network as well as potential future priorities. The detailed results of the 630 survey responses received are included in **Appendix A**.

The results of the survey show that 87% of the participants own a bicycle and the majority of the participants ride their bicycle one to three days a week. Results also show that 60% of the survey participants ride their bicycles for recreation and exercise. Approximately 50% of all of the survey participants cycle to work or school. This statistic was found to be overstated due to the students who participated in the survey. Taking the Santa Clara University participants out of the result, only 13% of the survey participants bicycle to work.

The most common reasons that participants don't commute to work or school by bike are that they don't feel safe commuting by bike, there aren't any showers or change facilities at their workplace or school, and that commuting by bicycle takes too much time.

The most common reasons that participants do commute to work or school by bike are that it is more economically beneficial and environmentally friendly to ride their bikes than using other forms of transportation and that riding a bike is good exercise.

The survey participants use the existing facilities on Homestead Road, Lafayette Street, Monroe Street, and Scott Boulevard more than other facilities in the City. New facilities are desired most on El Camino Real, Saratoga Road, and Benton Street as well as additional facilities are desired

on Scott Boulevard, Monroe Street, and Lafayette Street. With the existing bicycle facilities 35.5% of the survey participants ride their bicycles more than four days a week, for commuting and recreational purposes. With improved bicycle facilities an additional 15.5% of the survey participants (for a total of 51% of the participants) would ride their bicycle more than four days a week.

Past Expenditures

The expenditures on bicycle facilities installed since the 2002 Bicycle Plan update are summarized below and included in **Appendix C**.

City of Santa Clara Bicycle Facilities Installed Since 2002

BICYCLE TRAILS	TOTAL COST
River Oaks Bicycle/Pedestrian Bridge (Santa Clara Contribution)	\$600,000
San Tomas Aquino Creek (Reach 1 - SR-237 to Agnew Rd)	\$3,276,359
Agnew Road At-Grade Signal @ San Tomas Aquino Creek (Reach 1)	\$220,750
San Tomas Aquino Creek (Reach 2 - Agnew Rd to Scott Blvd)	\$5,970,271
San Tomas Aquino Creek (Reach 3 - Scott Blvd to Monroe St)	\$7,479,180
Monroe Street At-Grade Signal @ San Tomas Aquino Creek (Reach 3)	\$503,855
Creek Trailhead @ Monroe Street & San Tomas Aquino Creek - Land Purchase	\$1,250,000
Creek Trailhead @ Monroe Street & San Tomas Aquino Creek	\$860,255
San Tomas Aquino Creek (Class I portion of Reach 4 - Creek Trailhead to Cabrillo Ave)	\$544,113
BICYCLE LANES	
Bowers Avenue (US-101 to Chromite Dr)	\$81,286
Great America Parkway (Yerba Buena Way to US-101)	\$69,056
Homestead Road (Lawrence Expwy to Lafayette St - Bicycle Lane & Bicycle Route)	\$213,062
Hope Drive (Lafayette St to Lick Mill Blvd)	\$12,232
Lafayette Street (Calle De Luna to Agnew Rd)	\$24,166
Los Olivos Drive (Homestead Rd to Forbes Ave)	\$8,719
Mission College Boulevard (Marriott to Wyatt Dr)	\$12,556
Old Mountain View - Alviso Road (Sunnyvale City Limit to Great America Pkwy)	\$8,786
Poplar Street (Washington St to Park Ave)	\$6,806
The Alameda (Bellomy St to Mission St)	\$14,812
Winchester Boulevard (Bellomy St to Newhall St)	\$4,249
Scott Boulevard (Garrett Dr to Central Expwy)	\$74,503
BICYCLE ROUTES	
Bowers Avenue (Chromite Dr to Cabrillo Ave)	\$8,116
Flora Vista Avenue (Benton St to Granada Ave)	\$743
Forbes Avenue (Harvard Ave to Los Padres Blvd)	\$33,062
Granada Avenue (Flora Vista Ave to Pomeroy Ave)	\$990
Park Avenue (Bellomy St to Newhall St)	\$11,060
Warburton Avenue (Los Padres Blvd to Monroe St)	\$1,733
TOTAL	\$21,290,719



Bicycle Collision Summary

Bicycle collision data was provided by the City of Santa Clara from 2002 through 2007 throughout the City. There were a total of 181 bicycle collisions during the time period analyzed. As seen in the Percent of Injury Collisions Summary table, 77% of the accidents resulted in an injury and none of the collisions resulted in a fatality. The remaining 23% of the accidents did not include an injury.

Percent of Injury Collisions Summary							
Year	Injury		Fatal		None		Total
2002	22	71%	0	0%	9	29%	31
2003	23	88%	0	0%	3	12%	26
2004	13	52%	0	0%	12	48%	25
2005	29	88%	0	0%	4	12%	33
2006	27	84%	0	0%	5	16%	32
2007	25	74%	0	0%	9	26%	34
Total	139	77%	0	0%	42	23%	181

Collision Time of Day Summary					
Year	Daytime		Nighttime		Total
2002	24	77%	7	23%	31
2003	23	88%	3	12%	26
2004	22	88%	3	12%	25
2005	24	73%	9	27%	33
2006	23	72%	9	28%	32
2007	30	88%	4	12%	34
Total	146	81%	35	19%	181

The Collision Time of Day Summary table shows that 81% of the accidents occurred during the day, and 19% occurred during nighttime hours.

The results of the two summaries are considered typical for collisions involving bicycles since injuries to cyclists during a collision occur at relatively low speeds and the population of cyclists is much greater during the daylight hours.

The Collision Summary by Street table lists the roadways with an average of at least one collision per year. It should be noted that most of the locations with the highest percentage of collisions are streets without existing bicycle facilities.

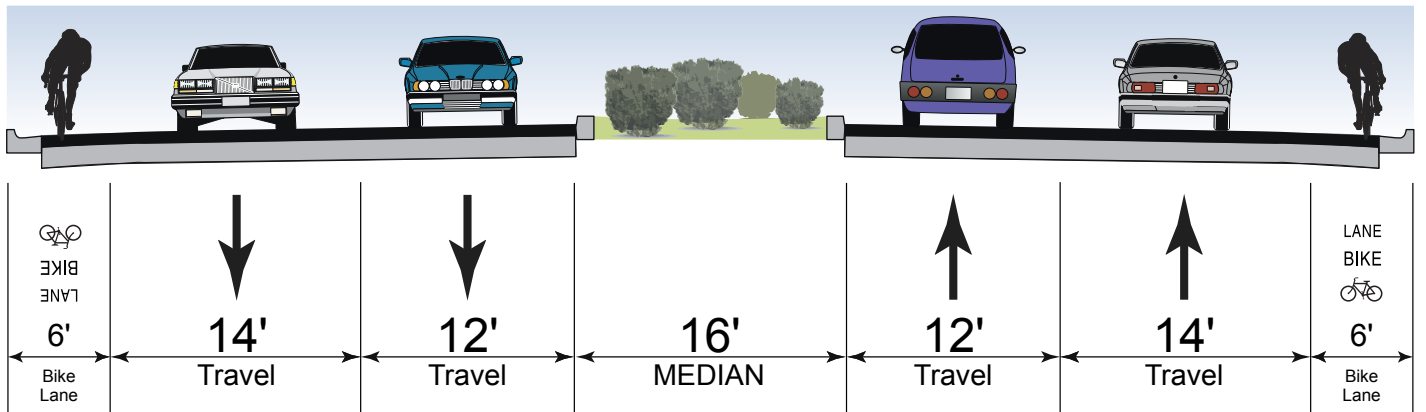
This plan proposes adding bicycle facilities to Lafayette Street, Monroe Street, Scott Boulevard, Benton Street, Bowers Avenue, Pruneridge Avenue, Winchester Boulevard, and Saratoga Avenue. The addition of bicycle facilities on these roadways will likely reduce the number of bicycle collisions in the future.

Additional information regarding the bicycle collisions that took place between 2002 and 2007 is included in the **Appendix B**.

Collision Summary by Street	
Street	Percentage
El Camino Real	10.0%
Lafayette Street	5.0%
Monroe Street	5.0%
Kiely Boulevard	4.4%
Scott Boulevard	4.2%
Homestead Road	3.9%
Benton Street	3.6%
Stevens Creek Boulevard	2.8%
Bowers Avenue	2.5%
Pruneridge Avenue	2.2%
Warburton Avenue	1.9%
Winchester Boulevard	1.9%
Saratoga Avenue	1.9%
Cabrillo Avenue	1.7%
Lawrence Expressway	1.7%
Calabazas Avenue	1.7%
Central Expressway	1.7%
Other Streets	43.9%
Total	100.0%

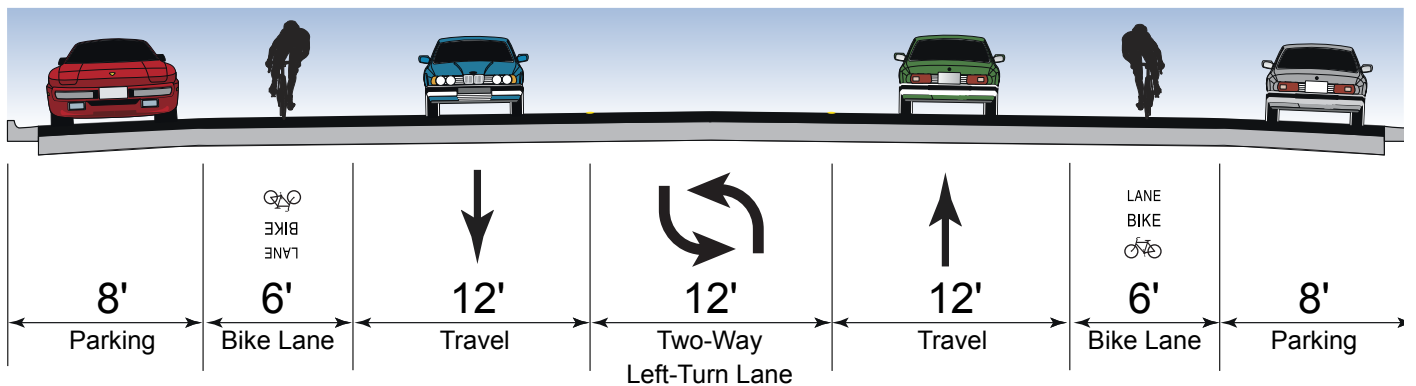
Bicycle Facility Cross Sections and Bicycle Detection

Below are examples of potential Class II Bike Lane, Class II Bike Lane with Road Diet, and Class III Bike Route with Sharrow cross-sections to be installed in Santa Clara with the proposed improvements included in this plan. These cross sections were chosen because they are considered to represent a typical application of a bicycle lane and sharrow facility. Actual design of bicycle facilities, implementation of a road diet, and use of sharrows would be dependent on further study.



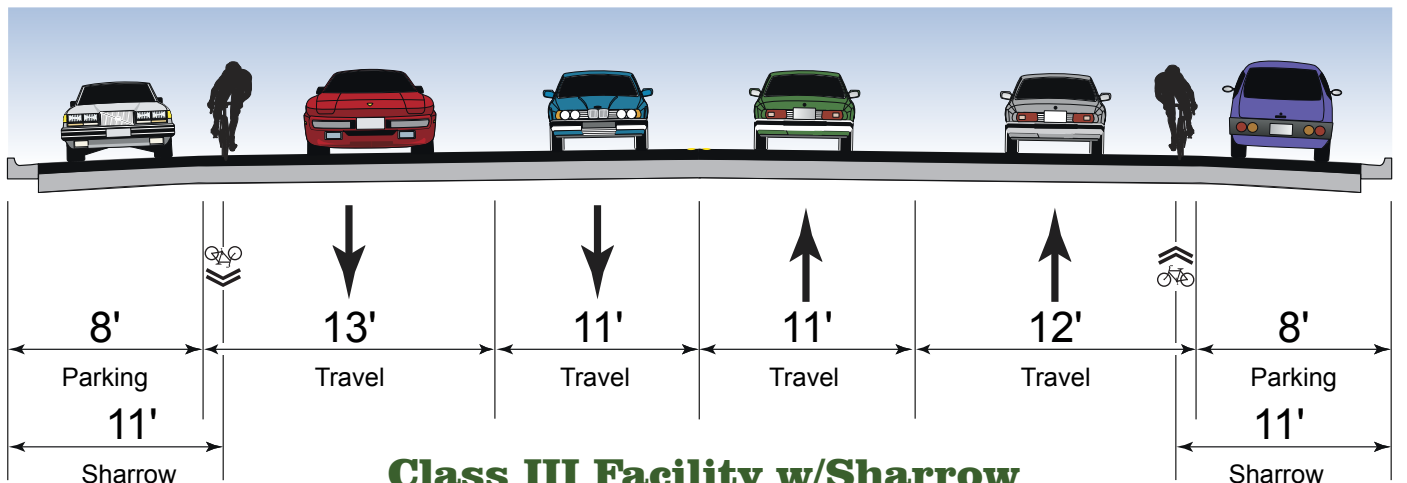
Class II Facility

Northbound Lafayette Street between Yerba Buena and Calle de Luna



Class II Facility (with Road Diet)

Eastbound Benton Street between Kiely Boulevard and White Drive



Class III Facility w/Sharrow

Westbound Monroe Street west of Calabazas Avenue



Santa Clara Bicycle Detection Strategy

The City of Santa Clara uses the following strategy for bicycle detection. Additional information is included in **Appendix F**.

- 1) Operational parameters
 - a) Video detection and in-pavement loop detectors
 - i) Video detection is preferred but may not always be feasible, in which case in-pavement loop detectors may be utilized for detection
 - ii) At locations where a striped bike lane is located between a left-turn lane and through lane, video detection may be used but in-pavement detection is preferred to better control signal timing for cyclists.
- 2) Design and construction constraints
 - a) Not all controllers can accommodate bicycle detection technology
 - b) Consult traffic operations to discuss constraints of overall detection system
- 3) Cost estimation
 - a) In-pavement loops are approximately \$2,500 per approach
 - b) Video detection is approximately \$7,500 per approach, but same camera unit can be used for vehicular detection
- 4) Prioritization of locations for implementation
 - a) Rank intersections by:
 - i) Bicycle volume
 - (1) Cycling peak-hour volume
 - (2) Proximity to schools and parks
 - ii) Safety
 - (1) Number of bicycle related accidents within a specific time window
 - iii) Citizen requests
 - (1) Review history of public complaints within a specific time window
 - iv) Cost
 - (1) Adopt policy that requires new installation of presence detection system to include bike detection on all Class II facilities, and recommends bike detection on Class III facilities
 - b) Rank corridor by:
 - i) Bike Facility classification
 - ii) Available funding
 - iii) Safe routes to school
 - c) Ranking Criteria (as outlined in the “Ranking Criteria for Bicycle Detection Implementation at Signalized Intersections” document in **Appendix F**)

Priority Ranking and Project Costs



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Ranking

The project ranking was determined using the same methodology as the 2002 Bicycle Plan Update. The evaluation criteria used to identify the relative advantages of projects along specific corridors in the City of Santa Clara are:

- Rider Stress (Evaluates need to reduce rider stress and project's ability to create comfortable passage throughout the city)
- Collision History (Evaluates number of bicycle collisions between 2002 and 2007)
- Average Daily Vehicular Traffic Volumes (Evaluates the vehicular volume on the roadways)
- Gap Closure (Evaluates ability to provide a link between existing facilities)
- Cost/Funding (Evaluates preliminary cost estimates)
- Connectivity (Evaluates the location and number of activity centers along the corridor)
- Complexity (Evaluates the ROW required, number of agencies involved, and the community reaction)

The proposed bikeway segments were assessed to determine whether they rated a high, medium, low, or no rating for each criterion and given a numerical value of 3, 2, 1, or 0, respectively. Segments were rated for each evaluation criteria, the ratings were weighted giving a total maximum segment score of 3 points and a minimum score of 0 points. A detailed explanation of each factor is included in the **Appendix G**.

Priority Location Project Cost Estimate

Rank	Roadway	Recommended Facility	Score	Length	Cost	Outside Funding	City Match
1	Bowers Avenue (Cabrillo - El Camino)	Class III	2.64	0.6 miles	\$24,500	\$19,600	\$4,900
2	Benton Street (Lawrence Expwy - San Tomas Expwy)	Class II	2.32	2.4 miles	\$365,000	\$292,000	\$73,000
	Benton Street (San Tomas Expwy - Monroe)	Class III		1.7 miles	\$25,000	\$20,000	\$5,000
	Benton Street (Monroe - El Camino Real)	Class II		0.7 miles	\$68,000	\$54,400	\$13,600
3	North Winchester (Bellomy - Homestead)	Class III	2.29	0.4 miles	\$5,500	\$4,400	\$1,100
4	Lafayette Street (Yerba Buena - Calle De Luna)	Class II	2.22	0.7 miles	\$38,500	\$30,800	\$7,700
	Lafayette Street (Laurelwood - Central Expwy)	Class II		0.4 miles	\$40,500	\$32,400	\$8,100
	Bassett (Agnew - Laurelwood)	Class II		1.3 miles	\$144,500	\$115,600	\$28,900
5	Monroe Street (Lawrence Expwy - San Tomas Aquino Creek Trail)	Class III	2.17	1.8 miles	\$74,000	\$59,200	\$14,800
	Monroe Street (San Tomas Aquino Creek Trail - Scott)	Class II		0.4 miles	\$53,500	\$42,800	\$10,700
6	Market Street (Monroe - the Alameda)	Class III	2.15	0.5 miles	\$12,500	\$10,000	\$2,500
7	Saratoga Avenue (San Tomas Expwy - Los Padres)	Class II	2.12	0.7 miles	\$60,500	\$48,400	\$12,100
8	Lick Mill Boulevard (Tasman - Hope)	Class II	2.03	0.7 miles	\$8,000	\$6,400	\$1,600
	Lick Mill Boulevard (Hope - Montague Expwy)	Class III		0.8 miles	\$53,500	\$42,800	\$10,700
9	Pruneridge Avenue (Pomeroy - San Tomas Expwy)	Class II	1.99	1.3 miles	\$194,000	\$155,200	\$38,800
	Pruneridge Avenue (San Tomas Expwy - Winchester)	Class II		1.0 miles	\$136,500	\$109,200	\$27,300
10	Scott Boulevard (N/O Central Expwy - Monroe)	Class II	1.77	0.9 miles	\$120,000	\$96,000	\$24,000
11	Woodhams Road (Stevens Creek - Homestead)	Class III	1.68	1.1 miles	\$21,500	\$17,200	\$4,300
12	Bohannon (Los Padres - Cypress)	Class III	1.68	0.2 miles	\$2,500	\$2,000	\$500
	Cypress (Bohannon - Stevens Creek)	Class III		0.6 miles	\$13,000	\$10,400	\$2,600
13	Chromite Drive (Monroe - Bowers)	Class III	1.59	0.4 miles	\$12,500	\$10,000	\$2,500

Most of the corridors listed involve restriping existing travel lanes and adding appropriate signage to create new bicycle facilities. These signing and striping costs as well as other project costs such as engineering design, survey, mobilization, and project contingencies were evaluated to determine the total project costs and are included in the **Appendix H**.

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Bowers Avenue

Bowers Avenue is proposed to have a Class II bicycle route from the existing Class III facility at Catalina Avenue south to El Camino Real. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane.

Chromie Drive

Chromie Drive is proposed to have a Class II bicycle route from Monroe Street to Bowers Avenue. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane.

Cypress Drive

Cypress Drive is proposed to have a Class II bicycle route from Bohannon Drive to Stevens Creek Boulevard. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane.

Lafayette Street - Bassett Street

Lafayette Street is proposed to have a Class II bicycle lane from Yenta Buena Way to the existing bicycle lane at Calle de Luna. At the south end of the existing bicycle lane at Agnew Road, the bicycle lane is proposed to continue south onto Bassett Street, just parallel to Lafayette Street on the west side of the railroad tracks. The removal of parking on the west side of Bassett Street would be necessary to include a Class II bicycle lane from Agnew Road to Laurelwood Drive, where it would head east to connect back to Laurelwood Drive.

Bohannon Drive

Bohannon Drive is proposed to have a Class II bicycle route from Los Padres Boulevard to Cypress Drive. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane.

N. Winchester Boulevard

N. Winchester Boulevard is proposed to have a Class II bicycle route from Homestead Road to the existing Class II bicycle lane at Bellamy Street and again at the end of the Class II facility north of Newhall Street to Pruneridge Avenue. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane. It is proposed that N. Winchester Boulevard be a Class III bicycle route from Pruneridge Avenue to Stevens Creek Boulevard.

Pruneridge Avenue

Pruneridge Avenue is proposed to have a Class III bicycle route from Monroe Avenue to the Alameda. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane.

Lick Mill Boulevard

Lick Mill Boulevard is proposed to have a Class III bicycle route from Monroe Avenue to the Alameda. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane.

Saratoga Avenue

Saratoga Avenue is proposed to have Class I bicycle lanes from San Tomas Expressway to Los Padres Boulevard. The existing roadway is wide enough to resurface the travel lanes and resurface bicycle areas: from Los Padres Boulevard to Market Street, Saratoga Avenue is proposed as a Class I bicycle route.

Saratoga Creek Trail

It is proposed to put a Class I bicycle path along a portion of Saratoga Creek. The path would begin on the west side of Kelly Boulevard at Kaiser Drive and end where Saratoga Creek intersects the north side of Homestead Road.

Scott Boulevard

It is proposed to extend the existing Class II bicycle lanes on Scott Boulevard from the current terminus just north of Central Expressway to Monroe Street. Scott Boulevard is wide enough to resurface the travel lanes in this section to have enough room for bicycle lanes for the most part. On Scott Boulevard between Martin Avenue and Walsh Avenue there is existing parking in the southbound direction but there is off-street parking for those businesses as well. Parking is removed for this section then a Class I bicycle lane is feasible between Central Expressway and Monroe Street (including over the bridge section). A second alternative I bicycle lanes are not implemented is to add a Class II bicycle route to this section of the corridor.

Woodhams Road

Woodhams Road is proposed to have a Class II bicycle route from Homestead Road to Stevens Creek Boulevard. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane.

section of Monroe Street is wide enough to resurface lanes but for a short section near San Tomas Expressway some on-street parking may need to be removed.

N. Winchester Boulevard
N. Winchester Boulevard is proposed to have a Class II bicycle route from Homestead Road to the existing Class II bicycle lane at Bellamy Street and again at the end of the Class II facility north of Newhall Street to Pruneridge Avenue. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane. It is proposed that N. Winchester Boulevard be a Class III bicycle route from Pruneridge Avenue to Stevens Creek Boulevard.

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Saratoga Creek Trail
It is proposed to put a Class I bicycle path along a portion of Saratoga Creek. The path would begin on the west side of Kelly Boulevard at Kaiser Drive and end where Saratoga Creek intersects the north side of Homestead Road.

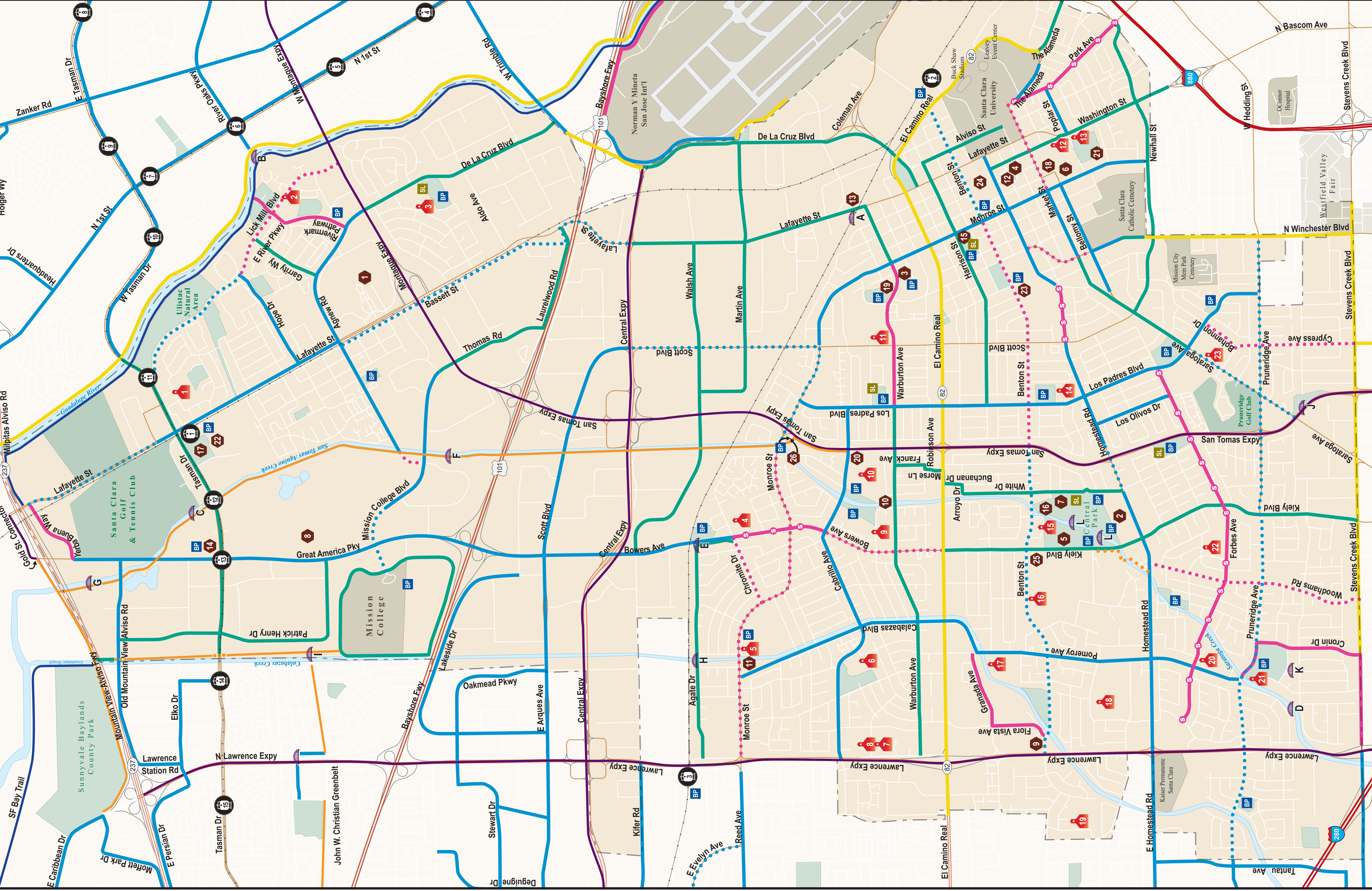
Scott Boulevard
It is proposed to extend the existing Class II bicycle lanes on Scott Boulevard from the current terminus just north of Central Expressway to Monroe Street. Scott Boulevard is wide enough to resurface the travel lanes in this section to have enough room for bicycle lanes for the most part. On Scott Boulevard between Martin Avenue and Walsh Avenue there is existing parking in the southbound direction but there is off-street parking for those businesses as well. Parking is removed for this section then a Class I bicycle lane is feasible between Central Expressway and Monroe Street (including over the bridge section). A second alternative I bicycle lanes are not implemented is to add a Class II bicycle route to this section of the corridor.

Woodhams Road
Woodhams Road is proposed to have a Class II bicycle route from Homestead Road to Stevens Creek Boulevard. The existing travel lanes will be narrowed to provide more room for the cyclists in the outside lane.

- LEGEND**
- Santa Clara City Limits
 - Existing Class I Bike Path
 - Existing Class II Bike Lane
 - Existing Class III Bike Route w/Sharrows
 - Existing Unpaved Bike Path
 - Existing County Bike Facilities
 - Proposed Class I Bike Path
 - Proposed Class II Bike Lane
 - Proposed Class III Bike Route
 - Future Proposed Routes
 - Future Partnering Agency Route
 - Rail
 - Bicycle Parking Location
 - Shows & Lockers
- SCHOOLS**
- 1 Hughes Elementary
 - 2 Don Callegon School
 - 3 Montague Elementary
 - 4 Bracher Elementary
 - 5 Wilcox High School
 - 6 Branwood Elementary
 - 7 New Valley High School
 - 8 Santa Clara Unified School District
 - 9 Bowers Elementary
 - 10 Capitola Middle School
 - 11 Scott Lane Elementary
 - 12 Buchser Middle School
 - 13 Washington Open Elementary
 - 14 Haman Elementary
 - 15 Millika School
 - 16 Santa Clara High School
 - 17 Pomeroy Elementary
 - 18 Curtis School
 - 19 Laurelwood Elementary
 - 20 Suter Elementary
 - 21 Eisenhower Elementary
 - 22 Carlen Encanto School
 - 23 Westwood Elementary

ACTIVITY CENTERS

- 1 Agnews Historic Park, Mansion & Auditorium
- 2 Central Park Library
- 3 City Hall
- 4 City Plaza Park & Gasbo
- 5 Community Recreation Center
- 6 Elmer Johnson Ballfield
- 7 George F. Holmes International Swim Center
- 8 Great America
- 9 Gymnastics Center
- 10 Lou Verra Baseball Field
- 11 Mission City Center for Performing Arts
- 12 Mission Library Family Reading Center
- 13 Reed Street Dog Park
- 14 Santa Clara Convention Center
- 15 Santa Clara Senior Center
- 16 Santa Clara Youth Soccer Park
- 17 Santa Clara Youth Soccer Park
- 18 Townsend Football Field/Handball Courts
- 19 Triton Museum of Art
- 20 Walter E. Schmitt Youth Activity Center
- 21 Washington Park Baseball Field & Leeway Event Center
- 22 War Memorial Playground
- 23 Wilson Adult Education Center
- 24 Post Office
- 25 Post Office
- 26 San Tomas Aquino Creek Trailhead



BRIDGES

- A Lafayette Street Pedestrian over-crossing
- B Southern Pacific RR (near El Camino)
- C River Oaks Bicycle Pedestrian Bridge over Guadalupe River
- D Bridge over San Tomas Aquino Creek (between Convention Center and Golf Course)
- E Pedestrian bridge between Tracy Drive and Maurice Avenue
- F Pedestrian Bridge at Bracher Park over Bowers Avenue
- G Pedestrian Bridge to Inlet near Mission College Boulevard (Private)
- H Pedestrian Bridge at old 30cm site near Old Mountain View-Alviso Road (Private)
- I Bridge over Calabazas Creek at Agate Drive north of Mission College
- J Bridge over San Tomas Expressway near Saratoga Avenue
- K Blue-Red land-bridge Maurice Ave to Allen Way/Maywood Park
- L Two blue/ped bridges in Central Park

TRAIN / LIGHT RAIL STATIONS

- 1 Ace-Great America Station
- 2 Caltrain-Santa Clara Station
- 3 Caltrain-Lawrence Station
- 4 Bonaventura Station
- 5 Orchard Station
- 6 River Oaks Station
- 7 Tasman Station
- 8 Cisco Way Station
- 9 Baypointe Station
- 10 Charming Station
- 11 Lick Mill Station
- 12 Great America Station
- 13 Old Ironsides Station
- 14 Pruneridge Station
- 15 Vannia Station



September 14, 2009

 Kimley-Horn
and Associates, Inc.



Bicycle appendix Plan Update

2009

Prepared for





APPENDICES

A. BICYCLE SURVEY RESULTS

B. BICYCLE COLLISION SUMMARY

C. PAST EXPENDITURES

D. BIKEWAY PLANNING AND DESIGN

E. CROSS COUNTY BICYCLE CORRIDORS

F. BICYCLE DETECTION RANKING

G. PRIORITY RANKING

H. COST ESTIMATES FOR PROPOSED FACILITIES



APPENDIX A

BICYCLE SURVEY RESULTS

Survey Email

The following email was sent out to the City of Santa Clara employees as well as Santa Clara University faculty, staff, and students requesting their participation in the online survey.

“You have been invited to participate in a brief 11 question online survey to help the City of Santa Clara assess the current status of the bicycle network as well as potential future priorities. You have been selected for this survey as a member of a major employer or organization within the City and therefore a potential primary user of the bicycle network. Your answers will help to set the path for the 2008 City of Santa Clara Bicycle Plan update. No personal information is requested, nor employer/ organization information collected. The survey should take about 5 minutes to complete. The web link to the online survey is listed below. We would appreciate your response to the survey before October 31st, 2008.

http://www.surveymonkey.com/s.aspx?sm=vOYmi3bowkHMiCDrmwwIgw_3d_3d

Thank you in advance or your cooperation and contributing to the understanding and improvement of the bicycle network in the City of Santa Clara!

Any questions concerning the online survey should be directed to Benjamin Huie at ben.huie@kimley-horn.com (Engineering Consultant). Any questions concerning the overall project should be directed to Lorenzo Lopez at llopez@santaclaraca.gov (City of Santa Clara Project Manager).”

City of Santa Clara Bicycle Survey

1.

In an effort to improve the citywide bicycle network, the City of Santa Clara is currently completing a 5-year update of the City of Santa Clara Bicycle Plan. The Plan will set forth a blueprint for expanding the existing bicycle network, promoting safer alternative modes of transportation as well as better position the City for future funding of bicycle projects and roadway improvements. Completion of the Plan will greatly benefit the bicycling community as well as support the City's commitment to reduce greenhouse gases and to further develop sustainable renewable energy and green power resources.

Definitions and terms:

Bike Lane - A portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.

Bike Route - A signed route on a roadway for bicycle use by sharing the roadway with motor vehicle traffic. Many bike routes in the City of Santa Clara have "sharrow" (bicyclist with arrows) markings on the pavement.

Enjoy! Thank you!

1. Do you own a bicycle? (Please respond to the remaining 10 questions below even if your answer is no.)

Yes

No

2. How many days do you bike on average in a week?

0 Days

1 Day

2 Days

3 Days

4 Days

5 Days

6-7 Days

3. Why do you bike? (Check all that apply)

Commuting (Work/School)

Errands/Shopping

Recreation

Exercise

Do not bike

City of Santa Clara Bicycle Survey

4. If you do not commute by bike to work or school, why not? Please rate each reason.

	Not True	Somewhat True	True
Work or school is too far from home.	jñ	jñ	jñ
I do not feel safe commuting by bike.	jñ	jñ	jñ
There is nowhere for me to park or store my bike.	jñ	jñ	jñ
There are no showers or change facilities at school or work.	jñ	jñ	jñ
There are no bike facilities along my route to school or work.	jñ	jñ	jñ
Commuting by bicycle will take too long.	jñ	jñ	jñ
I do not own a bike.	jñ	jñ	jñ

5. If you do commute by bike to work or school, why? Please rate each reason.

	Not True	Somewhat True	True
I work or go to school close to home.	jñ	jñ	jñ
The bicycle commute is faster than by car.	jñ	jñ	jñ
It is more economically beneficial to ride my bike than any other means of transportation.	jñ	jñ	jñ
It is more environmentally beneficial to ride my bike than any others means of transportation.	jñ	jñ	jñ
Riding a bicycle is good exercise.	jñ	jñ	jñ
I have a shower or changing facility at school or work.	jñ	jñ	jñ
I can park my bike in a safe place at school or work.	jñ	jñ	jñ
I do not own a bike.	jñ	jñ	jñ

City of Santa Clara Bicycle Survey

6. Which designated corridors with existing bike facilities do you use? (Check all that apply)

- None
- Great America Parkway / Bowers Avenue
- Calabazas Avenue
- Pomeroy Avenue
- Los Padres Boulevard
- Homestead Road
- Monroe Street
- Scott Boulevard
- Agnew Road
- Lafayette Street
- Yerba Buena Way
- Mission College Boulevard
- Cabrillo Avenue
- Market Street
- Bellomy Street
- Lawrence Expressway
- Central Expressway
- San Tomas Expressway
- Old Mountain View Alviso Road
- San Tomas Aquino Creek Trail

7. Would the addition of bike routes (designated bicycle facilities with no bike lane striping or bike icons on existing pavement) or bike lanes encourage you to cycle more?

- Yes, I would be comfortable enough to cycle more with the addition of more bike routes.
- Yes, I would be comfortable enough to cycle more with the addition of more bike lanes (as well as bike routes).
- No, I will ride whether or not there are additional facilities.
- No, I will continue to not ride my bike.

City of Santa Clara Bicycle Survey

8. If bicycle facilities were improved on your desired corridor, how many days would you ride a bicycle on average each week?

0 Days

1 Day

2 Days

3 Days

4 Days

5 Days

6-7 Days

9. Please list the top 3 streets in which you would like to see NEW bicycle facility improvements implemented in the City of Santa Clara to improve safety or appeal to riders.

- 1)
- 2)
- 3)

10. Please list the top 3 streets with EXISTING bicycle facilities that you would like to see improvements implemented in the City of Santa Clara to improve safety or appeal to riders.

- 1)
- 2)
- 3)

11. Do you live in the City of Santa Clara?

Yes

No

City of Santa Clara Bicycle Survey Results

Q1. Do you own a bicycle?		
	Response (%)	Response (#)
Yes.....	86.9%	556
No.....	13.1%	84
Total.....		640

Q2. How many days do you bike on average in a week?		
	Response (%)	
0 Days.....	28.3%	
1-3 Days.....	36.4%	
More than 4 Days.....	35.3%	

Q3. Why do you bike? (Check all that apply)		
	Response (%)	
Exercise.....	62.4%	
Recreation.....	59.5%	
Commuting (Work/School).....	49.7%	
Errands/Shopping.....	33.3%	
Do not bike.....	17.9%	

Q4. If you do not commute by bike to work or school, why not?		
	Not True	Somewhat True or True
Work or school is too far from home.....	192	188
I do not feel safe commuting by bike.....	144	232
There is nowhere for me to park or store my bike.....	242	131
There are no showers or change facilities at school or work.....	187	193
There are no bike facilities along my route to school or work.....	196	168
Commuting by bicycle will take too long.....	174	203
I do not own a bike.....	294	79

Q5. If you do commute by bike to work or school, why?		
	Not True	Somewhat True or True
I work or go to school close to home.....	80	281
The bicycle commute is faster than by car.....	172	182
It is more economically beneficial to ride my bike than any other means of transportation.....	25	338
It is more environmentally beneficial to ride my bike than any others means of transportation.....	20	345
Riding a bicycle is good exercise.....	10	355
I have a shower or changing facility at school or work.....	170	185
I can park my bike in a safe place at school or work.....	36	327
I do not own a bike.....	275	58

Q6. Which designated corridors with existing bike facilities do you use? (Check all that apply)

	Response (%)
None.....	42.6%
Homestead Road.....	32.5%
Lafayette Street.....	26.8%
Monroe Street.....	21.9%
Market Street.....	19.8%
Bellomy Street.....	19.3%
Scott Boulevard.....	14.4%
San Tomas Aquino Creek Trail.....	11.8%
San Tomas Expressway.....	10.9%
Los Padres Boulevard.....	9.5%
Central Expressway.....	7.9%
Great America Parkway / Bowers Avenue.....	7.5%
Lawrence Expressway.....	7.0%
Pomeroy Avenue.....	5.3%
Cabrillo Avenue.....	4.6%
Calabazas Avenue.....	3.5%
Mission College Boulevard.....	3.5%
Agnew Road.....	3.0%
Old Mountain View Alviso Road.....	2.6%
Yerba Buena Way.....	0.4%

Q7. Would the addition of bike routes (designated bicycle facilities with no bike lane striping or bike icons on existing pavement) or bike lanes encourage you to cycle more?

	Response (%)
Yes, I would be comfortable enough to cycle more with the addition of more bike routes.....	14.1%
Yes, I would be comfortable enough to cycle more with the addition of more bike lanes (as well as bike routes).....	52.8%
No, I will ride whether or not there are additional facilities.....	17.6%
No, I will continue to not ride my bike.....	15.5%

Q8. If bicycle facilities were improved on your desired corridor, how many days would you ride a bicycle on average each week?

	Response (%)
0 Days.....	17.6%
1-3 Days.....	31.7%
More than 4 Days.....	50.7%

Q9. List the top 3 streets you would like to see NEW bicycle facility improvements.

Street Name	Total	%
El Camino Real	126	18.2%
Lafayette Street	74	10.7%
The Alameda	50	7.2%
Benton Street	34	4.9%
Saratoga Road	34	4.9%
Pruneridge Avenue	30	4.3%
Winchester Boulevard	25	3.6%
Monroe Street	22	3.2%
Kiely Boulevard	21	3.0%
Park Avenue	20	2.9%
Homestead Road	18	2.6%
Scott Boulevard	18	2.6%

Q10. List the top 3 streets with EXISTING bicycle facilities that you would like improvements implemented.

Street Name	Total	%
Lafayette Street	51	12.6%
Homestead Road	43	10.6%
San Tomas Expressway	30	7.4%
El Camino Real	28	6.9%
Monroe Street	27	6.7%
Scott Boulevard	21	5.2%
Park Avenue	21	5.2%
Market Street	16	3.9%
Lawrence Expressway	15	3.7%
Winchester Boulevard	13	3.2%
Central Expressway	13	3.2%



APPENDIX B

BICYCLE COLLISION SUMMARY

City of Santa Clara Collision Summary

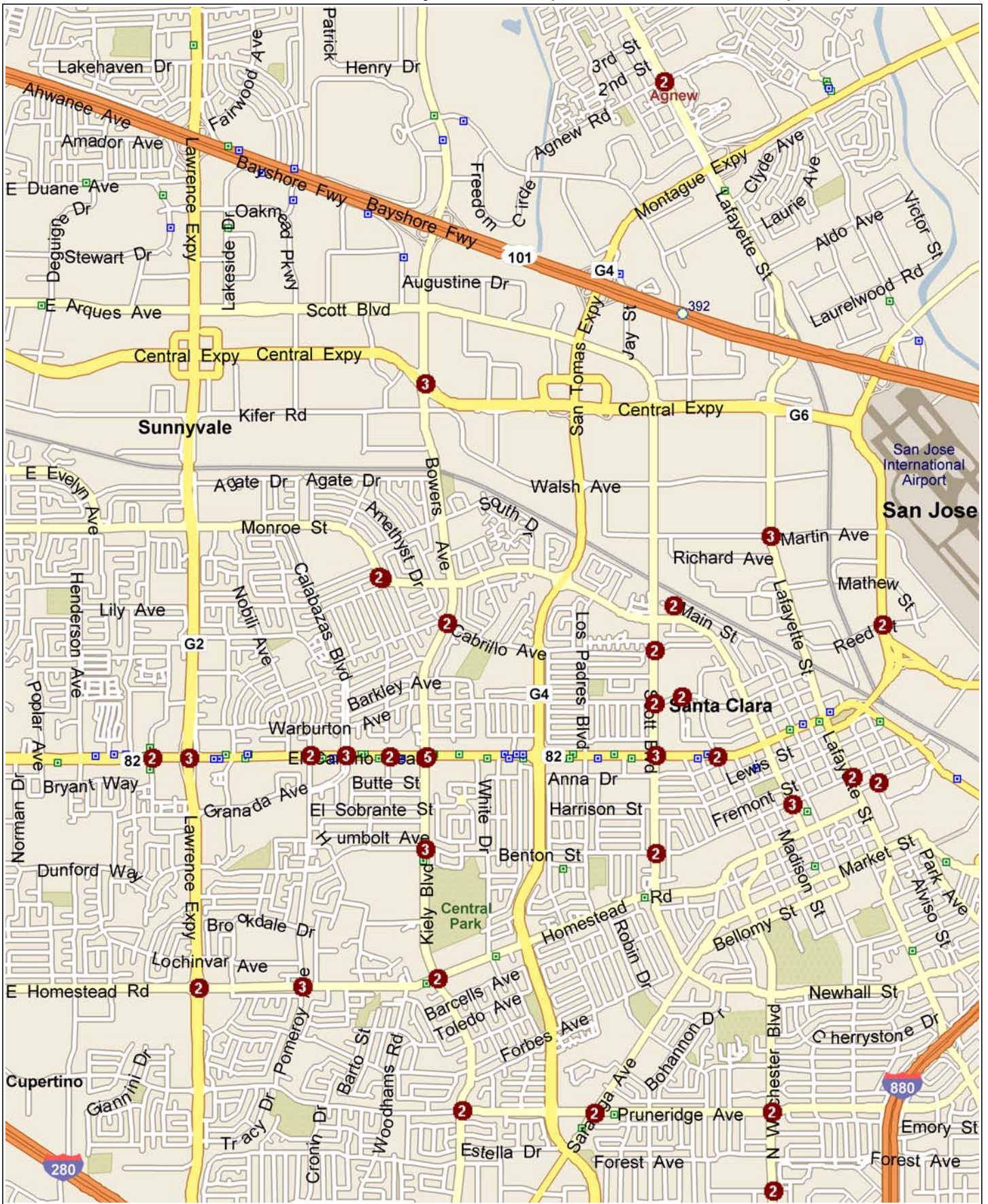
Bicycle collision data was provided by the City of Santa Clara from 2002 through 2007 throughout the City. There were a total of 181 bicycle collisions during the time period analyzed. The map on the following page illustrates the number of collisions between 2002 and 2007.

Collision Summary by Street	
Street	Percentage
El Camino Real	10.0%
Lafayette Street	5.0%
Monroe Street	5.0%
Kiely Boulevard	4.4%
Scott Boulevard	4.2%
Homestead Road	3.9%
Benton Street	3.6%
Stevens Creek Boulevard	2.8%
Bowers Avenue	2.5%
Pruneridge Avenue	2.2%
Warburton Avenue	1.9%
Winchester Boulevard	1.9%
Saratoga Avenue	1.9%
Cabrillo Avenue	1.7%
Lawrence Expressway	1.7%
Calabazas Boulevard	1.7%
Central Expressway	1.7%
Other Streets	43.9%
Total	100.0%

Collision Time of Day Summary					
Year	Daytime		Nighttime		Total
2002	24	77%	7	23%	31
2003	23	88%	3	12%	26
2004	22	88%	3	12%	25
2005	24	73%	9	27%	33
2006	23	72%	9	28%	32
2007	30	88%	4	12%	34
Total	146	81%	35	19%	181

Percent of Injury Collisions Summary							
Year	Injury		Fatal		None		Total
2002	22	71%	0	0%	9	29%	31
2003	23	88%	0	0%	3	12%	26
2004	13	52%	0	0%	12	48%	25
2005	29	88%	0	0%	4	12%	33
2006	27	84%	0	0%	5	16%	32
2007	25	74%	0	0%	9	26%	34
Total	139	77%	0	0%	42	23%	181

2009 Santa Clara Bicycle Plan Update - Collisions Map



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City of Santa Clara
Traffic Engineering Department
Collision Report Summary

81412008

Date Range Reported: 1/1/02 - 12/31/07

Total Number of Collisions: 181

Report#	Date	Time	Location	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Coli. 1	Dir. of Travel 2	Movement Prec. Coli. 2	PCF	Inj.	Kil.
0033653	1/10/02	08:33	Fordham Dr & Monroe St	5'	South	Vehicle - Pedestrian	Bicycle	South	Making Left Turn	West	Proceeding Straight	Other	0	0
0095146	2/4/02	11 :36	Stevens Creek Blvd & Winchester Blvd	0'	In Int.	Broadside	Bicycle	South	Making Right Turn	East	Proceeding Straight	Auto RIW Violation	0	0
0010124	2/8/02	16:27	Alviso 8t & Franklin St	0'	In Int.	Sideswipe	Bicycle	South	Proceeding Straight	South	Parked	Improper Turning	0	0
0010129	2/12/02	18:54	Scott Blvd & El Camino Real	9'	South	Broadside	Bicycle	West	Proceeding Straight	South	Proceeding Straight	Wrong Side of Road	1	0
0010108	2/18/02	19:01	Calabazas Blvd & Machado Ave	0'	In Int.	Broadside	Bicycle	South	Proceeding Straight	West	Proceeding Straight	Auto RIW Violation	1	0
0104589	3/12/02	11 :46	Homestead Rd & Quince Ave	0'	In Int.	Vehicle - Pedestrian	Bicycle	South	Proceeding Straight	East	Proceeding Straight	Wrong Side of Road	1	0
0134419	3/19/02	12:02	Tasman Dr & Centennial Blvd	50'	East	Sideswipe	Bicycle	West	Making Left Turn	West	Making Left Turn	Other	1	0
0104639	3/25/02	22:08	Homestead Rd & Lawrence Expy	120'	East	Broadside	Bicycle	North	Proceeding Straight	East	Proceeding Straight	Auto RIW Violation	1	0
0160562	4/22/02	20:00	Cisco Way & Tasman Dr	0'	In Int.	Sideswipe	Bicycle	Not State	Proceeding Straight	Not Stat	Proceeding Straight	Other	1	0
0198341	5/4/02	08:56	Scott Blvd & Benton St	80'	North	Broadside	Bicycle	North	Proceeding Straight	East	Making Right Turn	Wrong Side of Road	1	0
0198345	5/4/02	14:33	El Camino Real & Lafayette St	0'	In Int.	Broadside	Bicycle	West	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	1	0
0307873	5/15/02	18:58	Lafayette St & Parker St	50'	North	BrOC!dside	Bicycle	East	Entering Traffic North		Proceeding Straight	Unsafe Starting or Backing	1	0
0238957	5/29/02	11 :51	Central Expy & Bowers Ave	0'	In Int.	Not Stated	Bicycle	North	Proceeding Straight	East	Proceeding Straight	Auto RIW Violation	1	0

Report#	Date	Time	Location	Dist. Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Coli. 1	Dir. of Travel 2	Movement Prec. Coil. 2	PCF	Inj.	Kil.
0308894	6/12/02	06:27	Saratoga Ave & Los Padres Blvd	0' In Int.	Sideswipe	Bicycle	East	Changing Lanes	East	Proceeding Straight	Unsafe Lane Change	1	0
0308892	6/19/02	17:57	Los Padres Blvd & Serra Ave	0' In Int.	Other	Bicycle	West	Making Left Turn	North	Making Left Turn	Auto RIW Violation	1	0
0312816	6/20/02	16:57	De La Cruz Blvd & Reed St	535' South	Broadside	Bicycle	North	Entering Traffic	South	Traveling Wrong Way	Auto RIW Violation	0	0
0308758	6/25/02	12:30	Stevens Creek Blvd & Saratoga Ave	475' East	Broadside	Bicycle	East	Proceeding Straight	Not Stat	Proceeding Straight	Wrong Side of Road	0	0
0368380	7/17/02	18:17	Lafayette St & Homestead Rd	0' In Int.	Broadside	Bicycle	North	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	0	0
0368355	7/29/02	15:32	El Camino Real & Lincoln St	23' East	Not Stated	Bicycle	North	Making Right Turn	North	Proceeding Straight	Other Hazardous Movement	1	0
0368357	8/6/02	08:39	Martin Ave & De La Cruz Blvd	900' South	Other	Bicycle	East	Changing Lanes	North	Proceeding Straight	Wrong Side of Road	0	0
0368473	8/9/02	17:22	Stevens Creek Blvd & Harold Ave	0' In Int.	Head-On	Bicycle	South	Making Right Turn	East	Entering Traffic	Auto RIW Violation	1	0
0368341	8/10/02	14:08	El Camino Real & Pomeroy Ave	510' East	Other	Bicycle	, East	Entering Traffic	East	Proceeding Straight	Other Hazardous Movement	1	0
0444799	8/26/02	20:12	Pruneridge Ave & Kiely Blvd	0' In Int.	Vehicle - Pedestrian	Bicycle	West	Making Right Turn	South	Proceeding Straight	Improper Turning	1	0
0445572	9/13/02	18:38	Bowers Ave & Cabrillo Ave	0' In Int.	Broadside	Bicycle	West	Making Left Turn	East	Proceeding Straight	Auto RIW Violation	1	0
0448189	9/16/02	17:54	Mckinley Dr & Blake Ave	50' West	Broadside	Bicycle	East	Proceeding Straight	East	Other Unsafe Turning	Other Improper Driving	0	0
0448177	9/19/02	07:42	El Camino Real & Alpine Ave	11' West	Broadside	Bicycle	North	Proceeding Straight	West	Proceeding Straight	Auto RIW Violation	2	0
0445594	9/20/02	19:37	Pruneridge Ave & Mark Twain Ct	0' In Int.	Rear-End	Bicycle	West	Proceeding Straight	West	Proceeding Straight	Wrong Side of Road	1	0
0548640	10/17/02	14:39	Winchester Blvd & Dorcich St	140' North	Broadside	Bicycle	North	Making Right Turn	North	Proceeding Straight	Other	1	0
0536371	11/18/02	05:51	Lafayette St & Di Guilio Ave	0' In Int.	Other	Bicycle	North	Proceeding Straight	North	Proceeding Straight	Unknown	0	0

Report#	Date	Time	Location	Dist. Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Coil. 1	Dir. of Travel 2	Movement Prec. Coil. 2	PCF	Inj.	Kil.
0536382	11/20/02	15:48	El Camino Real & Kiely Blvd	160' West	Broadside	Bicycle	East	Making Right Turn	East	Proceeding Straight	Unsafe Lane Change	1	0
0536809	11/27/02	14:25	Bowers Ave & Agate Dr	353' South	Hit Object	Bicycle	East	Backing	South	Proceeding Straight	Unsafe Starting or Backing	1	0
0633882	1/3/03	18:13	Scott Blvd & Warburton Ave	0' In Int.	Head-On	Bicycle	East	Making Left Turn	West	Proceeding Straight	Improper Turning	1	0
0650876	1/26/03	09:56	El Camino Real & Pomeroy Ave	10' South	Broadside	Bicycle	South	Stopped in Road	East	Proceeding Straight	Auto RfW Violation	1	0
0743452	3/24/03	18:04	Pruneridge Ave & Winchester Blvd	0' In Int.	Sideswipe	Bicycle	East	Making Right Turn	East	Proceeding Straight	Improper Turning	1	0
0790506	4/28/03	15:00	Lafayette St & Hope Dr	0' In Int.	Broadside	Bicycle	Not State	Proceeding Straight	North	Proceeding Straight	Unknown	1	0
0869874	5/20/03	16:00	Main St & Warburton Ave	200' North	Other	Bicycle	South	Stopped in Road	South	Proceeding Straight	Other	1	0
0869898	5/26/03	15:04	Central Expy & Owen St	64' West	Rear-End	Bicycle	West	Not Stated	West	Proceeding Straight	Auto RfW Violation	1	0
0869964	5/31/03	18:49	Kiely Blvd & Homestead Rd	13' North	Broadside	Bicycle	West	Making Right Turn	West	Proceeding Straight	Improper Turning	1	0
0869966	6/1/03	17:38	Stevens Creek Blvd & Junipero Serra Fwy W	0' In Int.	Broadside	Bicycle	North	Making U Turn	West	Proceeding Straight	Traffic Signals and Signs	0	0
0869926	6/5/03	08:22	Kiely Blvd & Homestead Rd	528' North	Broadside	Bicycle	North	Proceeding Straight	East	Entering Traffic	Wrong Side of Road	1	0
0870424	6/8/03	18:30	Mission St & The Alameda	0' In Int.	Head-On	Bicycle	East	Traveling Wrong Way	North	Proceeding Straight	Unsafe Starting or Backing	0	0
0893695	6/13/03	11: 11	Homestead Rd & Pomeroy Ave	0' In Int.	Broadside	Bicycle	East	Traveling Wrong Way	South	Making Right Turn	Wrong Side of Road	1	0
0870345	6/17/03	10:09	De La Cruz Blvd & Reed St	205' South	Broadside	Bicycle	North	Making Right Turn	North	Proceeding Straight	Improper Turning	1	0
0893719	6/23/03	17:45	Monroe St & Newhall St	135' North	Broadside	Bicycle	East	Proceeding Straight	North	Proceeding Straight	Wrong Side of Road	1	0
0955342	7/10/03	17:20	Monroe St & Machado Ave	30' South	Sideswipe	Bicycle	South	Making Right Turn	South	Proceeding Straight	Improper Turning	1	0

Report#	Date	Time	Location	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Coil. 1	Dir. of Travel 2	Movement Prec. Coil. 2	PCF	Inj.	Kil.
0955288	7/16/03	16: 15	Winchester Blvd & University St (N)	7'	South	Head-On	Bicycle	North	Traveling Wrong Way	East	Making Right Turn	Wrong Side of Road	1	0
0955316	7/16/03	18:55	Lawrence Expy & El Camino Real	0'	In In1.	Broadside	Bicycle	East	Entering Traffic	South	Proceeding Straight	Wrong Side of Road	1	0
0955345	7/22/03	15:48	El Camino Real & Lincoln St	16'	East	Broadside	Bicycle	West	Proceeding Straight	North	Making Right Turn	Wrong Side of Road	1	0
0955272	8/1/03	07:55	Monroe St & Lawrence Expy	105'	East	Other	Bicycle	East	Proceeding Straight	East	Making Right Turn	Unsafe Speed	1	0
1015081	8/16/03	19:21	Civic Center Dr & Warburton Ave	400'	South	Broadside	Bicycle	North	Proceeding Straight	East	Entering Traffic	Wrong Side of Road	1	0
1016534	9/7/03	09:39	El Camino Real & Bowers Ave	0'	In In1.	Broadside	Bicycle	West	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	1	0
1016572	9/19/03	05:56	Bowers Ave & Central Expy	0'	In In1.	Broadside	Bicycle	South	Making Right Turn	North	Traveling Wrong Way	Wrong Side of Road	1	0
1073735	9/25/03	17:59	Tasman Dr & Centennial Blvd	0'	In In1.	Other	Bicycle	North	Making Right Turn	East	Proceeding Straight	Auto R/W Violation	1	0
1070924	10/2/03	15:03	Granada Ave & Mcpherson St	0'	In In1.	Rear-End	Bicycle	East	Proceeding Straight	East	Parked	Unknown	0	0
1127655	11/3/03	11 :32	Kiely Blvd & Benton St	150'	South	Other	Bicycle	South	Traveling Wrong Way	East	Entering Traffic	Wrong Side of Road	1	0
1233311	12/16/03	20:11	El Camino Real & Kiely Blvd	100'	East	Broadside	Bicycle	South	Entering Traffic	East	Proceeding Straight	Auto R/W Violation	1	0
1233685	12/17/03	17:04	Pruneridge Ave & Winchester Blvd	132'	West	Broadside	Bicycle	West	Traveling Wrong Way	South	Making Right Turn	Wrong Side of Road	1	0
1233389	1/14/04	19:14	Alviso St & Benton St	0'	In In1.	Broadside	Bicycle	North	Proceeding Straight	South	Making Left Turn	Lights	1	0
1271234	1/16/04	15:04	Jackson St & Santa Clara St	0'	In In1.	Broadside	Bicycle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	1	0
1233369	1/21/04	08:00	Amethyst Dr & Manhattan Pl	0'	In In1.	Sideswipe	Bicycle	South	Making Right Turn	South	Proceeding Straight	Auto R/W Violation	1	0
1271226	1/28/04	10:09	Robinson Ave & Oswald Pl	40'	East	Other	Bicycle	East	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	0	0

Report#	Date	Time	Location	Dist. Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Coli. 1	Dir. of Travel 2	Movement Prec. Coli. 2	PCF	Inj. Kil.
1316794	2/26/04	15:25	Central Expy & Bowers Ave	300' West	Sideswipe	Bicycle	East	Proceeding Straight	East	Proceeding Straight	Improper Turning	0 0
1349527	3/13/04	23:02	El Camino Real & Main St	0' In Int.	Broadside	Bicycle	South	Crossed Into Opposing	East	Proceeding Straight	Auto RfW Violation	1 0
1385169	3/31/04	14:37	Monroe St & Benton St	0' In Int.	Broadside	Bicycle	North	Entering Traffic	North	Making Right Turn	Auto RfW Violation	0 0
1410641	4/27/04	17:22	Jackson St & Homestead Rd	200' North	Broadside	Bicycle	South	Traveling Wrong Way	West	Entering Traffic	Wrong Side of Road	0 0
1410646	4/28/04	17:22	Franklin St & Alviso St	0' In Int.	Broadside	Bicycle	North	Entering Traffic	East	Proceeding Straight	Auto RfW Violation	0 0
1466209	5/23/04	19:06	Scott Blvd & Warburton Ave	0' In Int.	Broadside	Bicycle	South	Crossed Into Opposing	North	Proceeding Straight	Other Hazardous Movement	0 0
1466251	6/4/04	19:47	Monroe St & Machado Ave	57' South	Hit Object	Bicycle	North	Proceeding Straight	North	Making Right Turn	Unsafe Speed	0 0
1645176	7/8/04	17:40	Monroe St & Pacific Dr	195' West	Broadside	Bicycle	North	Proceeding Straight	West	Proceeding Straight	Auto RfW Violation	1 0
1543151	7/19/04	18:19	El Camino Real & Halford Ave	300' East	Broadside	Bicycle	North	Proceeding Straight	East	Proceeding Straight	Auto RfW Violation	0 0
1569002	7/26/04	12:19	De La Cruz Blvd & Clyde Ave	20' South	Broadside	Bicycle	East	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	1 0
1552208	7/29/04	13:59	El Camino Real & Flora Vista Ave	117' East	Broadside	Bicycle	West	Proceeding Straight	East	Making Right Turn	Wrong Side of Road	1 0
1612052	8/25/04	15:38	Scott Blvd & Cabrillo Ave	42' North	Other	Bicycle	West	Changing Lanes	North	Proceeding Straight	Unsafe Lane Change	1 0
1612071	9/2/04	12:45	El Camino Real & Bowe Ave	230' West	Broadside	Bicycle	East	Proceeding Straight	South	Entering Traffic	Wrong Side of Road	0 0
1639133	9/13/04	15:20	Monroe St & Homestead Rd	0' In Int.	Broadside	Bicycle	North	Proceeding Straight	West	Proceeding Straight	Unknown	0 0
1657904	9/17/04	18:36	Civic Center Dr & Main St	130' West	Sideswipe	Bicycle	West	Proceeding Straight	West	Parked	Improper Turning	1 0
1657859	9/18/04	14:36	Benton St & Alice Dr	50' East	Head-On	Bicycle	West	Traveling Wrong Way	East	Proceeding Straight	Wrong Side of Road	1 0

Report#	Date	Time	Location	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Call. 1	Dir. of Travel 2	Movement Prec. Call. 2	PCF	Inj.	Kil.
1754789	11/17/04	16:23	Lafayette St & Civic Center Dr	0'	In Int.	Broadside	Bicycle	South	Making Left Turn	West	Proceeding Straight	Improper Turning	1	0
1778470	11/30/04	07:45	Homestead Rd & Layton St	0'	In Int.	Broadside	Bicycle	West	Proceeding Straight	North	Stopped in Road	Wrong Side of Road	1	0
1788927	12/7/04	15:23	Winchester Blvd & Dorchich St	21'	South	Broadside	Bicycle	South	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	0	0
1797009	12/19/04	16:13	El Camino Real & El Camino Real 2695	0'	In Int.	Broadside	Bicycle	South	Making Right Turn	East	Proceeding Straight	Auto RIW Violation	1	0
1827498	12/31/04	16:46	Scott Blvd & El Camino Real	90'	North	Rear-End	Bicycle	: West	Traveling Wrong Way	South	Stopped in Road	Other Hazardous Movement	0	0
1847223	1/21/05	13:16	Saint Lawrence Dr & Flora Vista Ave	40'	East	Head-On	Bicycle	East	Traveling Wrong Way	West	Proceeding Straight	Wrong Side of Road	1	0
1859306	1/28/05	08:05	Benton St & Kiely Blvd	600'	West	Head-On	Bicycle	East	Making Right Turn	West	Proceeding Straight	Wrong Side of Road	1	0
1892485	2/20/05	17:04	Hope Dr & 1620 Hope Dr	0'	In Int.	Broadside	Bicycle	North	Entering Traffic	West	Proceeding Straight	Auto RIW Violation	1	0
1937872	3/9/05	14:30	Anna Dr & Block Dr	0'	In Int.	Broadside	Bicycle	West	Making Left Turn	East	Proceeding Straight	Auto RIW Violation	1	0
1937912	3/15/05	17:05	El Camino Real & Kiely Blvd	120'	East	Broadside	Bicycle	East	Making Right Turn	East	Proceeding Straight	Improper Turning	0	0
1953736	3/17/05	14:41	Scott Blvd & Clifford St	42'	South	Broadside	Bicycle	North	Proceeding Straight	East	Proceeding Straight	Wrong Side of Road	1	0
1976054	4/10/05	12:17	Nobili Ave & Flora Vista Ave	0'	In Int.	Broadside	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Auto R/W Violation	1	0
2011025	4/17/05	15:14	Homestead Rd & San Tomas Expy	0'	In Int.	Broadside	Bicycle	East	Making Left Turn	Not Stat	Proceeding Straight	Unknown	0	0
2005823	4/25/05	17:37	Bowers Ave & El Camino Real	70'	North	Broadside	Bicycle	West	Entering Traffic	South	Traveling Wrong Way	Auto RIW Violation	1	0
2005787	5/3/05	22:47	Lincoln St & Clay St	0'	In Int.	Other	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Auto RIW Violation	1	0
2048479	5/16/05	18:50	Benton St & Lafayette St	45'	West	Broadside	Bicycle	North	Traveling Wrong Way	East	Proceeding Straight	Driving Under Influence	1	0

Report#	Date	Time	Location	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Coil. 1	Dir. of Travel 2	Movement Prec. Coil. 2	PCF	Inj.	Kil.
2048471	5/22/05	15:03	Lafayette St & Agnew Rd	0'	In Int.	Sideswipe	Bicycle	East	Other	North	Proceeding Straight	Wrong Side of Road	1	0
2090020	5/31/05	14:35	El Camino Real & Kiely Blvd	0'	In Int.	Head-On	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Other Hazardous Movement	1	0
2115764	6/20/05	13:30	Kiely Blvd & Kaiser Dr	400'	North	Head-On	Bicycle	North	Entering Traffic	South	Traveling Wrong Way	Auto RIW Violation	1	0
2115812	6/30/05	07:55	Kiely Blvd & Benton St	192'	South	Broadside	Bicycle	West	Making Left Turn	South	Proceeding Straight	Auto R/W Violation	1	0
2145618	7/4/05	22:41	Pruneridge Ave & Woodhams Rd	0'	In Int.	Broadside	Bicycle	South	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
2145661	7/14/05	10:27	Central Expy & Oakmead Village Dr	0'	In Int.	Sideswipe	Bicycle	South	Merging	West	Proceeding Straight	Auto RIW Violation	1	0
2145666	7/20/05	09:00	Monroe St & Los Padres Blvd	75'	East	Broadside	Bicycle	West	Proceeding Straight	Not Stat	Proceeding Straight	Auto RIW Violation	1	0
2180973	7/27/05	16:03	El Camino Real & Los Padres Blvd	250'	West	Sideswipe	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Auto R/W Violation	1	0
2205647	8/5/05	23:25	Kiely Blvd & Pruneridge Ave	0'	In Int.	Broadside	Bicycle	North	Proceeding Straight	West	Proceeding Straight	Traffic Signals and Signs	0	0
2205621	8/10/05	21:03	Via Dondera & Calabazas Blvd	250'	South	Vehicle - Pedestrian	Bicycle	South	Proceeding Straight	West	Entering Traffic	Auto R/W Violation	1	0
2205618	8/16/05	08:42	Bowers Ave & Warburton Ave	0'	In Int.	Broadside	Bicycle	North	Traveling Wrong Way	North	Making Right Turn	Wrong Side of Road	1	0
2205610	8/17/05	13:15	Saratoga Ave & Keystone Ave	300'	North	Sideswipe	Bicycle	North	Entering Traffic	South	Traveling Wrong Way	Wrong Side of Road	1	0
2205624	8/18/05	15:30	Stevens Creek Blvd & Harold Ave	15'	East	Broadside	Bicycle	East	Proceeding Straight	South	Making Right Turn	Wrong Side of Road	1	0
2236677	8/31/05	15:12	Great America Pkwy & Our Ladys Way	0'	In Int.	Broadside	Bicycle	East	Making Right Turn	South	Proceeding Straight	Auto R/W Violation	1	0
2236575	9/3/05	21:19	Scott Blvd & Homestead Rd	0'	In Int.	Broadside	Bicycle	East	Making Right Turn	East	Proceeding Straight	Other Hazardous Movement	1	0
2284268	9/6/05	08:10	Alviso St & Harrison St	0'	In Int.	Broadside	Bicycle	East	Proceeding Straight	North	Proceeding Straight	Auto RIW Violation	1	0

Report#	Date	Time	Location	Dist.	Dir.	Type of	Motor Veh.	Dir. of	Movement	Dir. of	Movement	PCF	Inj. Kil.	
						Collision	Involved With	Travel 1	Prec. Coil. 1	Travel 2	Prec. Coil. 2			
2236649	9/8/05	07:41	Monterey Ct & Cabrillo Ave	0'	In In!.	Broadside	Bicycle	' North	Making Left Turn	East	Proceeding Straight	Auto RfW Violation	1	0
2236591	9/9/05	15:57	Saratoga Ave & Scott Blvd	0'	In In!.	Broadside	Bicycle	South	Proceeding Straight	North	Traveling Wrong Way	Traffic Signals and Signs	1	0
2283725	10/8/05	17:07	Main St & Sahara Way	128'	West	Broadside	Bicycle	North	Other	West	Proceeding Straight	Other Than Driver or Ped	1	0
2280348	10/14/05	15:08	Benton St & Lafayette St	4'	West	Broadside	Bicycle	North	Proceeding Straight	East	Making Right Turn	Wrong Side of Road	0	0
2379216	11/29/05	20:30	Bowe Ave & El Camino Real	0'	In In!.	Broadside	Bicycle	-North	Crossed Into Opposing	North	Making U Turn	Traffic Signals and Signs	1	0
2379297	11/30/05	06:18	Stevens Creek Bl & S Henry	0'	In In!.	Other	Bicycle	North	Entering Traffic	East	Proceeding Straight	Auto RfW Violation	1	0
2492848	1/17/06	11 :42	Stevens Creek Blvd & Kiely Blvd	200'	West	Broadside	Bicycle	East	Proceeding Straight	South	Entering Traffic	Wrong Side of Road	1	0
2458455	1/19/06	14:43	Calabazas Blvd & El Camino Real	200'	South	Broadside	Bicycle	Not State	Proceeding Straight	North	Making Right Turn	Wrong Side of Road	1	0
2458420	1/29/06	17:02	Stevens Creek Blvd & Rodonovan Dr	0'	In In!.	Head-On	Bicycle	South	Making Right Turn	East	Traveling Wrong Way	Wrong Side of Road	1	0
2492906	2/9/06	02:31	Lafayette St & Market St	25'	South	Rear-End	Bicycle	South	Proceeding Straight	South	Stopped in Road	Following Too Closely	1	0
2515931	2/20/06	11 :31	Washington St & Linden Dr	163'	South	Other	Bicycle	North	Parked	North	Proceeding Straight	Other Hazardous Movement	1	0
2540630	3/3/06	05:56	Monroe St & Brown Ave (E)	5'	North	Broadside	Bicycle	East	Proceeding Straight	North	Proceeding Straight	Driving Under Influence	1	0
2578725	3/16/06	15:05	Monroe St & Benton St	0'	In In!.	Broadside	Bicycle	North	Proceeding Straight	East	Making Right Turn	Auto R/W Violation	1	0
2540627	3/16/06	23:26	El Camino Real & Morse Ln	0'	In In!.	Broadside	Bicycle	East	Proceeding Straight	North	Making Left Turn	Wrong Side of Road	1	0
2578721	3/17/06	17:27	El Camino Real & Kiely Blvd	200'	West	Broadside	Bicycle	East	Proceeding Straight	East	Making Right Turn	Following Too Closely	1	0
2578782	4/5/06	17:26	Cabrillo Ave & Scott Blvd	3'	East	Broadside	Bicycle	South	Traveling Wrong Way	West	Making Right Turn	Wrong Side of Road	1	0

Report#	Date	Time	Location	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Coil. 1	Dir. of Travel 2	Movement Prec. Coil. 2	PCF	Inj.	Kil.
2627883	4/30/06	20:18	Cabrillo Ave & Bowers Ave	0'	In Int.	Broadside	Bicycle	West	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	1	0
2627848	5/8/06	17:43	Oi Guilio Ave & Avila Ave	3'	West	Broadside	Bicycle	South	Proceeding Straight	East	Proceeding Straight	Auto R/W Violation	1	0
2709520	5/26/06	12:16	Monroe St & Francis Ave	0'	In Int.	Sideswipe	Bicycle	South	Making Right Turn	South	Proceeding Straight	Improper Turning	1	0
2709553	5/31/06	11:10	Stevens Creek Blvd & Cronin Dr	210'	West	Sideswipe	Bicycle	West	Parked	Not Stat	Proceeding Straight	Other Hazardous Movement	1	0
2725078	6/1/06	08:56	Monroe St & Nobili Ave	0'	In Int.	Broadside	Bicycle	North	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	1	0
2739221	7/5/06	13:38	El Camino Real & San Tomas Expy	226'	East	Head-On	Bicycle	West	Proceeding Straight	North	Entering Traffic	Wrong Side of Road	1	0
2774966	7/25/06	17:48	El Camino Real & Bowe Ave	0'	In Int.	Broadside	Bicycle	East	Proceeding Straight	North	Making Left Turn	Traffic Signals and Signs	0	0
2775214	8/1/06	18:30	Main St & Sahara Way	166'	East	Head-On	Bicycle	West	Making Right Turn	South	Stopped in Road	Other	1	0
2775262	8/3/06	08:00	Martin Ave & Lafayette St	590'	East	Broadside	Bicycle	East	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	1	0
2775257	8/7/06	15:03	Lincoln St & Market St	0'	In Int.	Broadside	Bicycle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
2786357	8/31/06	07:35	El Camino Real & Lawrence Expy	0'	In Int.	Broadside	Bicycle	West	Proceeding Straight	East	Making Left Turn	Traffic Signals and Signs	1	0
2786365	9/3/06	10:01	Lafayette St & Shulman Ave	20'	South	Sideswipe	Bicycle	North	Making Left Turn	North	Proceeding Straight	Improper Turning	1	0
2816181	9/20/06	18:27	Agnew Rd & Lafayette St	500'	East	Broadside	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Wrong Side of Road	0	0
2872675	10/3/06	07:46	Monroe St & Benton St	0'	In Int.	Broadside	Bicycle	South	Entering Traffic	West	Making Right Turn	Wrong Side of Road	1	0
2851808	10/4/06	16:13	Flora Vista Ave & Granada Ave	338'	South	Other	Bicycle	North	Parked	North	Proceeding Straight	Other Hazardous Movement	2	0
2851836	10/13/06	06:24	Lafayette St & Memorex Dr	9'	South	Sideswipe	Bicycle	North	Proceeding Straight	East	Making Right Turn	Wrong Side of Road	1	0

Report#	Date	Time	Location	Dist.	Dir.	Type of Collision	MotorVeh. Involved With	Dir. of Travel 1	Movement Prec. Coli. 1	Dir. of Travel 2	Movement Prec. Coli. 2	PCF	Inj.	Kilo
2872670	10/17/06	20:21	Homestead Rd & Lawrence Expy	233'	East	Broadside	Bicycle	North	Making Left Turn	West	Proceeding Straight	Auto RIW Violation	1	0
2906714	11/3/06	14:45	Francis Ave & Monroe St	50'	South	Rear-End	Bicycle	South	Proceeding Straight	South	Proceeding Straight	Unknown	1	0
2883630	11/4/06	18:16	Winchester Blvd & Fernwood Ave	300'	North	Hit Object	Bicycle	North	Stopped in Road	South	Proceeding Straight	Wrong Side of Road	0	0
2927315	11/29/06	15:48	El Camino Real & Alpine Ave	6'	West	Broadside	Bicycle	South	Entering Traffic East	East	Proceeding Straight	Auto RIW Violation	1	0
2963767	12/14/06	19:05	Newhall St & Saratoga Ave	0'	In Int.	Not Stated	Bicycle	East	Proceeding Straight	North	Other	Traffic Signals and Signs	0	0
2963790	12/18/06	12:21	Pomeroy Ave & Homestead Rd	40'	South	Sideswipe	Bicycle	South	Making U Turn	South	Proceeding Straight	Improper Turning	0	0
3023222	1/13/07	15:22	San Tomas Expy & Cabrillo Ave	0'	In Int.	Other	Bicycle	West	Proceeding Straight	North	Making Right Turn	Auto R/W Violation	1	0
3053117	2/6/07	07:40	Santa Clara St & Lafayette St	0'	In Int.	Broadside	Bicycle	Not State	Making Left Turn	North	Proceeding Straight	Auto R/W Violation	1	0
3053058	2/10/07	18:01	El Camino Real & Nobili Ave	0'	In Int.	Not Stated	Bicycle	East	Making Left Turn	North	Proceeding Straight	Ped RIW Violation	1	0
3053188	2/16/07	15:31	Warburton Ave & Fillmore St	130'	West	Sideswipe	Bicycle	West	Proceeding Straight	East	Proceeding Straight	Wrong Side of Road	0	0
3098608	2/20/07	12:17	Kenneth St & Space Park Dr	250'	North	Hit Object	Bicycle	North	Parked	North	Proceeding Straight	Other Hazardous Movement	1	0
3098336	3/5/07	17:39	Lafayette St & Reeve St	0'	In Int.	Broadside	Bicycle	West	Making Left Turn	South	Proceeding Straight	Auto RIW Violation	0	0
3098383	3/19/07	12:15	Monroe St & Scott Blvd	150'	East	Rear-End	Bicycle	West	Proceeding Straight	West	Not Stated	Improper Turning	0	0
3143472	3/29/07	09:43	Scott Blvd & El Camino Real	36'	South	Head-On	Bicycle	North	Traveling Wrong Way	Not Stat	Making Right Turn	Wrong Side of Road	1	0
3148007	4/3/07	18:15	Deborah Dr & Monroe St	10'	North	Broadside	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Wrong Side of Road	1	0
3149323	4/12/07	07:45	Warburton Ave & Civic Center Dr	120'	West	Hit Object	Bicycle	Not State	Making Right Turn	North	Proceeding Straight	Wrong Side of Road	0	0

Report#	Date	Time	Location	Dist. Dir.	Type of Collision	MotorVeh. Involved With	Dir. of Travel 1	Movement Prec. Coli. 1	Dir. of Travel 2	Movement Prec. Coli. 2	PCF	Inj.	Kil.
3154367	4/23/07	18:25	Peacock Ct & Halford Ave	75' East	Broadside	Bicycle	East	Other Unsafe Turning	West	Proceeding Straight	Auto RIW Violation	1	0
3203727	5/10/07	13:39	Newhall St & Washington St	193' West	Rear-End	Bicycle	East	Proceeding Straight	East	Proceeding Straight	Unsafe Speed	1	0
3220212	5/29/07	09:54	Civic Center Dr & Lincoln St	86' East	Sideswipe	Bicycle	West	Parked	West	Proceeding Straight	Other Hazardous Movement	1	0
3220378	6/8/07	17:29	Scott Blvd & Benton St	0' In Int.	Head-On	Bicycle	West	Traveling Wrong Way	North	Stopped in Road	Wrong Side of Road	1	0
3237129	6/18/07	11:25	Kiely Blvd & Butte St	120' North	Broadside	Bicycle	North	Proceeding Straight	East	Proceeding Straight	Wrong Side of Road	0	0
3161289	6/20/07	16:35	Coleman Ave & Carl St	610' North	Broadside	Bicycle	South	Traveling Wrong Way	West	Stopped in Road	Other Improper Driving	1	0
3251706	6/29/07	11:10	El Camino Real & Halford Ave	75' West	Other	Bicycle	West	Proceeding Straight	North	Entering Traffic	Wrong Side of Road	0	0
3275336	7/7/07	22:37	Calabazas Blvd & El Camino Real	0' In In1.	Sideswipe	Bicycle	Not State	Making Right Turn	North	Proceeding Straight	Auto RIW Violation	1	0
3305107	7/25/07	18:16	Lafayette St & Martin Ave	370' North	Sideswipe	Bicycle	South	Making Right Turn	South	Proceeding Straight	Improper Turning	1	0
3360708	8/1/07	18:50	Saratoga Ave & Pruneridge Ave	10' North	Other	Bicycle	North	Making Right Turn	North	Proceeding Straight	Improper Turning	1	0
3311474	8/8/07	15:34	Scott Blvd & Harrison St	0' In Int.	Sideswipe	Bicycle	West	Making Right Turn	West	Proceeding Straight	Auto RIW Violation	1	0
3311477	8/15/07	07:10	Stevens Creek Blvd & Cabot Ave	300' West	Head-On	Bicycle	East	Making Left Turn	West	Proceeding Straight	Improper Turning	0	0
3360720	8/15/07	16:37	Benton St & Las Palmas Dr	0' In Int.	Other	Bicycle	East	Proceeding Straight	South	Making Right Turn	Auto RIW Violation	1	0
3369007	8/26/07	17:30	El Camino Real & Kiely Blvd	0' In In1.	Sideswipe	Bicycle	East	Changing Lanes	East	Making Left Turn	Unsafe Lane Change	1	0
3352983	8/30/07	18:24	El Camino Real & Lawrence Expy	0' In In1.	Other	Bicycle	South	Proceeding Straight	East	Making Right Turn	Wrong Side of Road	0	0
3344224	9/4/07	20:34	Homestead Rd & Pomeroy Ave	0' In Int.	Broadside	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Auto RIW Violation	1	0

Report#	Date	Time	Location	Dist.	Dir.	Type of Collision	Motor Veh. Involved With	Dir. of Travel 1	Movement Prec. Coil. 1	Dir. of Travel 2	Movement Prec. Coli. 2	PCF	Inj.	Kil.
3385313	9/11/07	15:22	El Camino Real & Calabazas Blvd	27'	East	Head-On	Bicycle	West	Proceeding Straight	North	Making Right Turn	Wrong Side of Road	1	0
3385301	9/15/07	08:15	Lafayette St & Martin Ave	0'	In Int.	Broadside	Bicycle	North	Proceeding Straight	East	Proceeding Straight	Traffic Signals and Signs	1	0
3406179	9/29/07	17:34	Great America Pkwy & Verba Buena Way	0'	In Int.	Broadside	Bicycle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
3406610	10/1/07	18:48	Central Expyw & Scott blvd	3'	West	Other	Bicycle	West	Making Right Turn	West	Proceeding Straight	Improper Turning	1	0
3446257	11/5/07	16:17	Saratoga Ave & Pruneridge Ave	5'	East	Broadside	Bicycle	East	Proceeding Straight	South	Proceeding Straight	Wrong Side Of Road	1	0
3508820	11/13/07	15:38	Monroe St & Calabazas Blvd	0'	In Int.	Broadside	Bicycle	South	Making Left Turn	East	Proceeding Straight	Auto R/W Violation	1	0
3508808	11/15/07	17:03	Hafford Ave & Tamarack Ln	8'	North	Sideswipe	Bicycle	South	Stopped in Road	North	Proceeding Straight	Wrong Side Of Road	0	0
3540259	12/14/07	15:11	Francis Ave & Machado Av	34'	South	Broadside	Bicycle	North	Making Left Turn	South	Proceeding Straight	Pedestrian Violation	1	0



APPENDIX C

PAST EXPENDITURES

Past Expenditures

The expenditures on bicycle facilities installed since the 2002 Bicycle Plan Update are summarized below (as of September 2009).

City of Santa Clara Bicycle Facilities Installed Since 2002

BICYCLE TRAILS	TOTAL COST
River Oaks Bicycle/Pedestrian Bridge (Santa Clara Contribution)	\$600,000
San Tomas Aquino Creek (Reach 1 - SR-237 to Agnew Rd)	\$3,276,359
Agnew Road At-Grade Signal @ San Tomas Aquino Creek (Reach 1)	\$220,750
San Tomas Aquino Creek (Reach 2 - Agnew Rd to Scott Blvd)	\$5,970,271
San Tomas Aquino Creek (Reach 3 - Scott Blvd to Monroe St)	\$7,479,180
Monroe Street At-Grade Signal @ San Tomas Aquino Creek (Reach 3)	\$503,855
Creek Trailhead @ Monroe Street & San Tomas Aquino Creek - Land Purchase	\$1,250,000
Creek Trailhead @ Monroe Street & San Tomas Aquino Creek	\$860,255
San Tomas Aquino Creek (Class I portion of Reach 4 - Creek Trailhead to Cabrillo Ave)	\$544,113
BICYCLE LANES	
Bowers Avenue (US-101 to Chromite Dr)	\$81,286
Great America Parkway (Yerba Buena Way to US-101)	\$69,056
Homestead Road (Lawrence Expwy to Lafayette St - Bicycle Lane & Bicycle Route)	\$213,062
Hope Drive (Lafayette St to Lick Mill Blvd)	\$12,232
Lafayette Street (Calle De Luna to Agnew Rd)	\$24,166
Los Olivos Drive (Homestead Rd to Forbes Ave)	\$8,719
Mission College Boulevard (Marriott to Wyatt Dr)	\$12,556
Old Mountain View - Alviso Road (Sunnyvale City Limit to Great America Pkwy)	\$8,786
Poplar Street (Washington St to Park Ave)	\$6,806
The Alameda (Bellomy St to Mission St)	\$14,812
Winchester Boulevard (Bellomy St to Newhall St)	\$4,249
Scott Boulevard (Garrett Dr to Central Expwy)	\$74,503
BICYCLE ROUTES	
Bowers Avenue (Chromite Dr to Cabrillo Ave)	\$8,116
Flora Vista Avenue (Benton St to Granada Ave)	\$743
Forbes Avenue (Harvard Ave to Los Padres Blvd)	\$33,062
Granada Avenue (Flora Vista Ave to Pomeroy Ave)	\$990
Park Avenue (Bellomy St to Newhall St)	\$11,060
Warburton Avenue (Los Padres Blvd to Monroe St)	\$1,733
TOTAL	\$21,290,719



APPENDIX D

BIKEWAY PLANNING AND DESIGN

Bikeway Planning and Design

The following outlines the rules and guidelines described in the following references:

- **American Association of State Highway and Transportation Officials (AASHTO) 1999 Guide for the Development of Bicycle Facilities;**
- **Caltrans Highway Design Manual (HDM) Chapter 1000;**
- **California Manual of Uniform Traffic Control Devices (CA MUTCD) 2006, Part 9; and,**
- **Santa Clara Valley Transportation Authority Bicycle Technical Guidelines (BTG 2007).**

Many roadways were originally designed for vehicle use only, therefore not adequately addressing bicycle use. Illustrations of this include unsafe drainage grates, inadequate spacing for multi-modal travel, no bicycle detection and no advanced signal timing for bicycles. Critical for improving the safety and reducing congestion of the roadway is the focus to provide adequate spacing for each user group of pedestrians, cyclists, and motorists utilizing sidewalks, bike lanes, and parking and travel lanes, respectively.

Paved shoulders can increase the existing roadway without decreasing lane width from vehicles. Paved shoulders should be at least 4 feet wide and a recommended 5 feet wide when up against a barrier or curb. Along rural roads and County expressways, shoulder width should be increased to 6 feet for speeds of 40 mph or less and 8 feet for speeds of 45 mph or higher.

Lane width can also be considered when implementing a bicycle facility. On roadways with no bike designation, an outside lane width of 12 feet is recommended to allow vehicles and bicycles to share the lane. A lane width of 14 feet is recommended when there is a wide curb lane. Lane widths are from lane stripe to edge stripe and do not include the gutter. Where there are rumble strips or reflector markings or drainage grates, 15 feet for the lane width is recommended. However where a 15 foot lane width continues for a long time, multiple cars are encouraged to use the one lane and therefore is not recommended. When this situation arises, a bike lane or shoulder striping should be installed.

Often bicycles will be riding between parked cars and moving vehicles, so careful consideration should be advised. Cyclists need to worry about moving vehicles to the left and swinging and opening doors on the right. A shared use of 13 feet combined for bike use and parking should be implemented.

Class I: Bike Path

A Class I facility is a paved route not on a street or roadway and expressly reserved for bicycles. Bike paths or shared use paths are usually separated from vehicular traffic and are used by cyclists, pedestrians, animals and roller skaters. These paths are usually

designed for two-way traffic. Where bike paths encroach upon roadways (the edge of pavement and the edge of the bike path is less than 5 feet), a barrier should be placed between the two at 3.5 feet high so as to not allow cyclists to go over them but also allow for sufficient sight distance.

The width of the bicycle path should be at minimum 10 feet wide for two way travel and extended to 12 feet or even 14 feet if there is high bicycle use. The minimum width of a one-directional path is 6 feet wide. However it should be noted that one-way paths are often time used as two-way paths unless there is sufficient signage posted to deter the opposite way. On either side the bike path, there should be 2-foot minimum distance of no greater than a 1:6 slope. A distance of 3 feet is recommended per AASHTO to avoid interference with trees and signs. Where there is a canal, ditch, or slope greater than 1:3, a physical barrier may need to be provided. Typical barriers include dense foliage, fencing, or railing. The vertical clearance for a bike path should be at least 8 feet and 10 feet should be considered in a tunnel. Furthermore, a right-of-way width of 25 feet is typically required to accommodate the entire trail, including trail tread, graded shoulders, signage, landscaping, and offsets.

Design speed is another important consideration. A design speed of 20 mph should be used and where there is a steep slope (greater than 4%) or heavy winds, a design speed of 30 mph is recommended. On unpaved paths, a design speed of 15 mph can be used and where there is steep slope or heavy winds, a design speed of 25 mph is recommended.

Cyclists when making a turn, need to lean to the inside, thus creating a lean angle. This lean angle and the design speed are used to calculate the curve radii for a paved path. **Table 1** below shows the minimum radii for curved paths with a 15° lean angle. **Table 2** below shows the minimum radii for curved paved path with a 20° lean angle and a superelevation rate of 2%.

Table 1 - Minimum Radii for Curved Paved Path with a 15° Lean Angle

Design Speed (mph)	Minimum Radius (ft)
12	36
20	100
25	156
30	225

Table 2 - Minimum Radii for Curved Paved Path with a 20° Lean Angle and a Superelevation Rate of 2%

Design Speed (mph)	Friction Factor	Minimum Radius (ft)
12	0.31	30
20	0.28	90
25	0.25	155
30	0.20	260

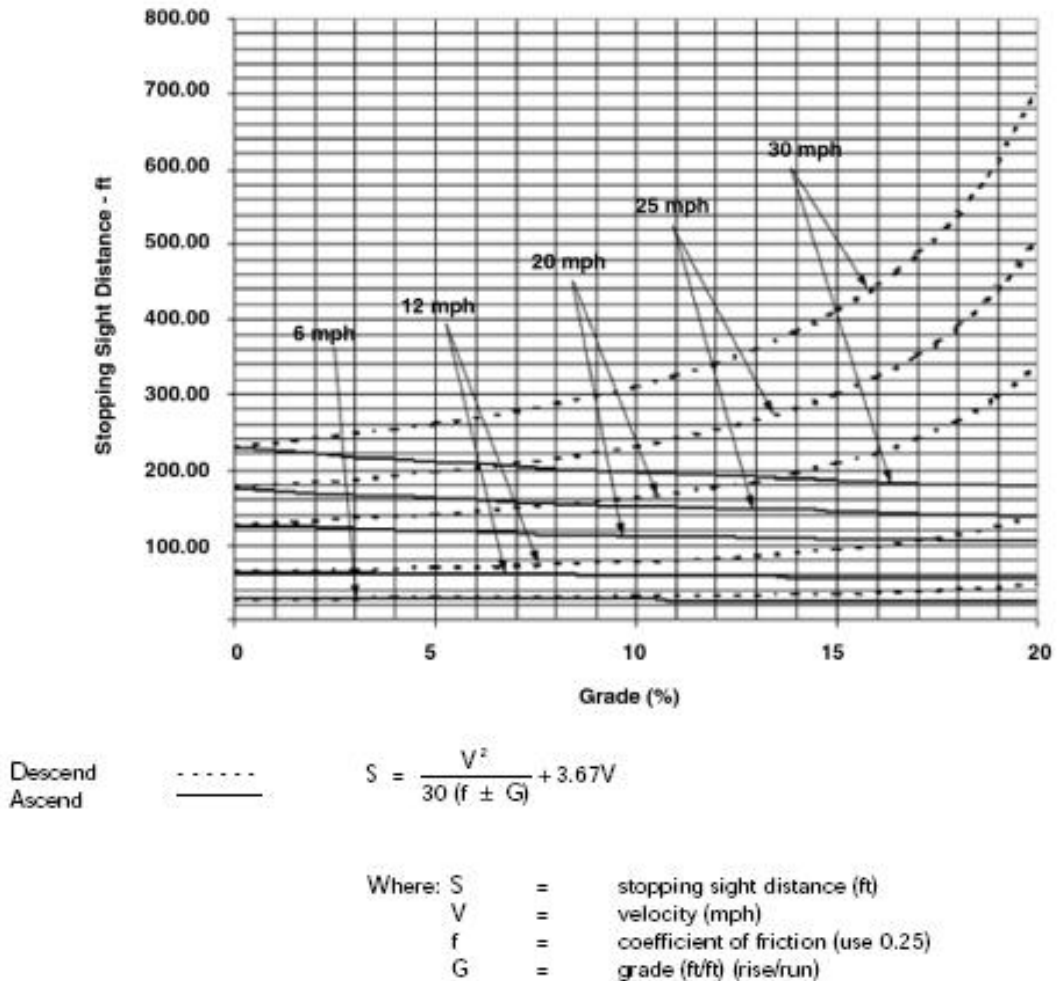
Looking at grades, a 5% grade should not be exceeded for long periods of time. Listed below in **Table 3** are grade restrictions and lengths.

Table 3 - Grade Restrictions and Lengths

Slope	Length (ft)
5-6%	800
7%	400
8%	300
9%	200
10%	100
11%+	50

Figure 1 below illustrates the stopping distance based on grade and speeds.

Figure 1 – Stopping Distance



Source: American Association of State Highway and Transportation Officials, 1999.

The two directions of traffic should be separated by a 4-inch wide yellow centerline. For passing other cyclists a broken line may be used with sufficient distance to pass.

Class II: Bike Lane

A Class II facility is a lane on a corridor expressly reserved for bicycles, existing on a street or roadway in addition to any lanes for use by motorized vehicles. These bike lanes are implemented to differentiate lanes for bicycles and for vehicles. Bike lanes provide a higher sense of security that vehicles will not interact with bikes. Bike lanes should be one way and flow with the vehicular traffic. Bike lane widths are summarized in **Table 4** and **Table 5** below.

Table 4 – Bike Lane Widths

Scenario	Min. Lane width per Caltrans and AASHTO
No curb and gutter	4 feet
Where parking is permitted*	5 feet
Where parking is permitted, no striping or parking stall*	11 feet w/o curb face 12 feet against curb face
Against curb or guardrail	5 feet

*High volumes or parking turnover = add another 1 to 2 feet

Table 5 – Optimum Bike Lane Widths Based On Speed

Posted Speed (mph)	Without parking (feet)	With parking (feet)
0-30	5	13
35-40	6	14
45 or more	8	16

Source: VTA Bicycle Technical Guidelines, 2007.

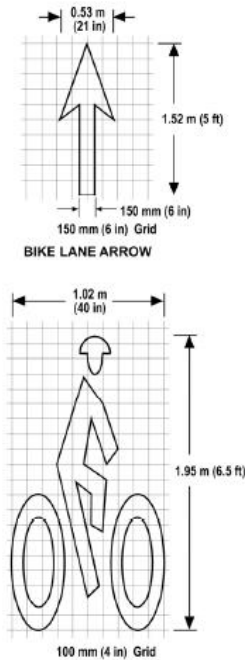
Table 4 presents guidelines for minimum bike lane widths for several different geometric conditions. **Table 5** presents optimum bike lane widths based on posted speed along the roadway. This table, which contains information presented in VTA’s BTG, is intended to supplement minimum design criteria documented in Caltrans’ HDM and guidance provided by AASHTO.

Bike lanes should be delineated from vehicular travel lanes with a 6-inch solid white line. A 4-inch white line can be placed between the bike lane and parking lane.

At intersections, bike lanes should never continue through a crosswalk or even through an intersection. If there is no crosswalk, the bike lane should stop at the near side cross street and then extend past the intersection from the far side cross street.

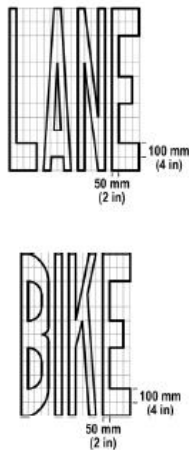
Per Caltrans requirements, where there is a right turn available to the motorist at an intersection, the bike lane line should consist of 4-foot dashes and 8-foot spaces for 100 to 200 feet leading up to the intersection. Where there is a bus stop located on the near side of the cross street, a similar line should be used for the length of the bus stop. Pavement markings used to distinguish bike lanes include an arrow pointing in the direction of the travel, a bicyclist symbol, and a supplementary “Bike Lane” legend as illustrated in **Figures 2 and 3**.

Figure 2 – Directional Arrow and Bike Lane Symbol



Source: California Manual on Uniform Traffic Control Devices, 2006.

Figure 3 – Supplementary “Bike Lane” Legend

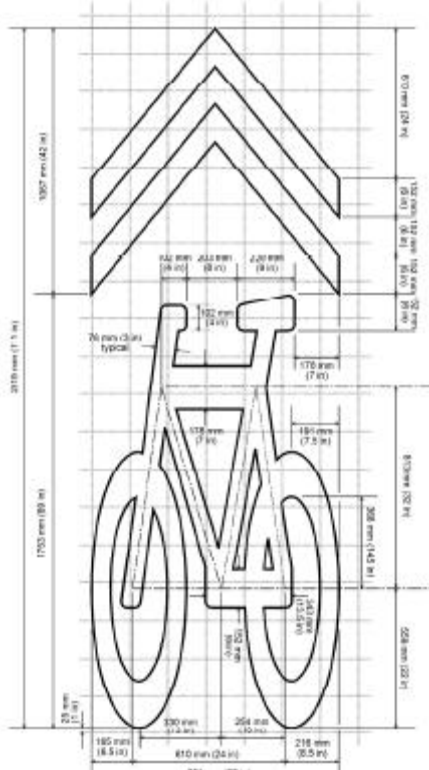


Source: California Manual on Uniform Traffic Control Devices, 2006.

Class III: Bike Route

A Class III facility, which is a bike route, is shared with motorists and identified by signs. Additionally, some bike routes in the City are complimented with sharrow legends, as illustrated in **Figure 4**, to inform bicyclists and motorists of the presence of the shared use lane along the Class III facility.

Figure 4 – Sharrow legend



Source: *California Manual on Uniform Traffic Control Devices, 2006.*

Bike routes are signed with Bike Route signs (Sign D11-1) along the sidewalks, often times posted on street light fixtures or other poles. Bike routes often connect other bicycle facilities to each other. Bike routes are usually characterized by high volume corridors. Often times in the bike route direction traffic control devices are prioritized for the through movement as opposed to the side street movements.

Signing shared roadways should direct cyclists to a logical path to follow. In urban areas signs typically stand approximately every quarter mile, at all turns, and at major intersections.

Bicycle Detectors

Bicycle detection at intersections is an important safety component at signalized intersections. Detectors should give cyclists an extra 5 seconds of green time to cross the intersection. Most vehicle detectors can also pick up bicycles adjacent to vehicles. Example detectors include quadruple and diagonal-type loops. Rectangular and dipole loops can also detect bicycles if the sensitivity is heightened. The sensitivity levels of most detector amplifiers can be adjusted to allow detection of bicycles. This technology

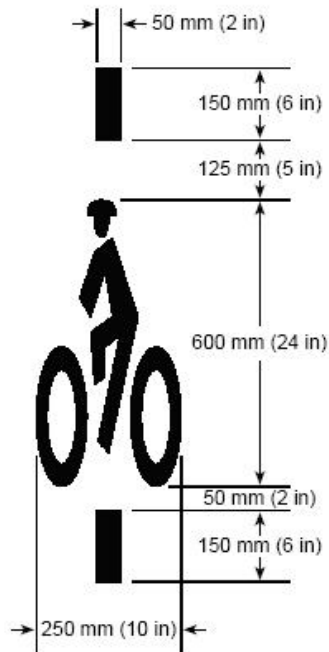
allows for utilization of existing loops. Replacement of older detector amplifiers that do not have this capability is recommended.

Cost for bicycle detection varies depending on the type of technology chosen. For example, installation of in-pavement loops cost approximately \$2,500 per approach, and operates similarly to loops used for vehicular detection. Video detection costs are approximately \$7,500 per approach. This type of detection can also be used for vehicular detection with no additional costs.

Pavement markings should show where the optimum location for bicycles to wait in order to actuate the signal.

An example of a pavement marking is shown below in **Figure 5**.

Figure 5 – Bicycle Detector Pavement Marking



Source: American Association of State Highway and Transportation Officials, 1999.

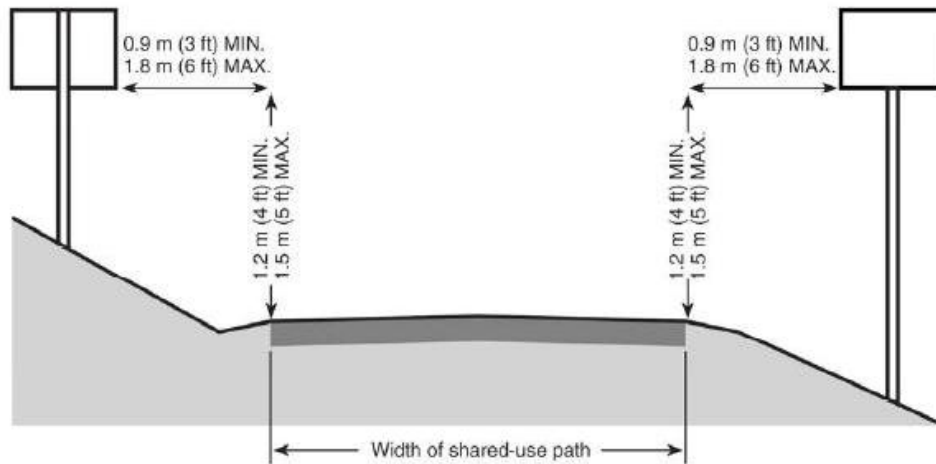
California MUTCD Signage Standards

Section 9B of the CA MUTCD provides the following guidance on the application and placement of signs pertaining to bicycle facilities:

- Bicycle signs shall be standard in shape, legend, and color.
- All signs shall be retro reflectorized for use on bikeways, including shared-use paths and bicycle lane facilities.
- Where signs serve both bicyclists and other road users, vertical mounting height and lateral placement shall be as specified in Part 2 of the CA MUTCD.
- On shared-use paths, lateral sign clearance shall be a minimum of 3 ft. and a maximum of 6 ft. from the near edge of the sign to the near edge of the path.
- Mounting height for ground-mounted signs on shared-use paths shall be a minimum of 4 ft. and a maximum of 5 ft., measured from the bottom edge of the sign to the near edge of the path surface.
- When overhead signs are used on shared-use paths, the clearance from the bottom edge of the sign to the path surface directly under the sign shall be a minimum of 8 ft.

Figure 6 illustrates the proper height and lateral distances for mounting bicycle and pedestrian facility signage.

Figure 6 – Sign Placement on Shared-Use Paths



Source: California Manual on Uniform Traffic Control Devices, 2006.

Pavement Quality

Because surface irregularities are hazardous to bicyclists, all efforts should be taken to ensure a smooth even surface for riders. Therefore, it is recommended that bike lane pavement and sub-base have the same depth and quality as the adjacent roadway.

When determining the pavement quality of bike lanes, special attention must be paid to manhole cover and drainage grates. Typical drainage grates can be slippery, not flush with road surface, common deposit places for debris and water, and capable of trapping bike wheels. All grates, manhole covers, or other surface obstructions should be bike safe or kept out of bike lanes and intersections where bikes can encounter them.



APPENDIX E

CROSS COUNTY BICYCLE CORRIDORS



Cross County Bicycle Corridors in Santa Clara

Central Expressway
Lawrence Expressway
Montague/San Tomas Expressway
Guadalupe River Trail
San Tomas Aquino/Saratoga Creek Trail
Tasman Drive
El Camino Real
Homestead - Monroe - Benton
Agnew - Garrity - Lick Mill - Guadalupe River Trail (west bank) - River Oaks Bridge
Calabazas Creek Trail - Mission College - Montague/San Tomas Expwy - Scott - Monroe
Arques - Scott - Central Expwy - De la Cruz - Coleman
Great America - Bowers - Kiely
San Tomas Aquino/Saratoga Creek Trail - Cabrillo - Calabazas - Pomeroy - Pruneridge
Agate - Bowers - Chromite
Stevens Creek Boulevard
Pruneridge Avenue
Park Avenue
Winchester - Bellomy

Taken from the 2008 Santa Clara Countywide Bicycle Plan



APPENDIX F

BICYCLE DETECTION RANKING

Ranking Criteria for Bicycle Detection Implementation at Signalized Intersections

The use of the ranking criteria described below is recommended for City staff to use when preparing a list of locations to implement bicycle detection.

There has been a significant push to better accommodate pedestrians, bicyclists, and motorists (motorcyclists and vehicles) on roadways and promote sharing of streets among the various abovementioned modes of travel. Presence detection at most signalized intersections commonly accommodates only motorists (by various vehicular detection methods) and pedestrians by providing pedestrian push buttons.

Bicycle detection at signalized intersections has been a growing necessity. Assembly Bill 1581 (AB 1581), which was passed and signed on October 8, 2007, states that traffic actuated signals shall “to the extent feasible and in conformance with professional traffic engineering practice, be installed and maintained so as to detect lawful bicycle or motorcycle traffic on the roadway.”

Four major criteria are considered to assess the prioritization of locations to implement bicycle detection. These include the following criteria:

- Bicycle volume
- Safety
- Citizen requests
- Cost

The ranking system utilizes a 0 to 3 point scale, with 3 points reserved for higher prioritization efforts. The following discussions summarize the point system for the abovementioned criteria.

Bicycle Volume

The purpose of this criterion is to give preference to potential locations that experience higher bicycle traffic. Priority should be given to locations that experience greater bicycle volumes as the benefits of detection would be more widespread. Intersections with at least 20 bicyclists for a given cycling peak-hour will be given a high rating (3 points). Intersections with 10-20 bicyclists for a given cycling peak-hour will be given a medium rating (2 points). Intersections with 1-10 bicyclists for a given cycling peak-hour will be given a low rating (1 point). Lastly, intersections with zero bicyclists for a given peak-hour will be given 0 points.

Bicycle detection would ideally be on all facilities that are Class II bicycle facilities. For all intersections that are along a Class II bicycle facility but do not currently provide bicycle detection, that location was given 3 points regardless of the bicycle volume. The lack of bicycle detection may be deterring bicyclists from using this intersection, thus falsifying the true demand at that particular location. Also, signalized

intersections in the immediate vicinity of a school or park, or ones that are along a designated *Safe Routes to School* route, are given 3 points as well.

Safety

The purpose of this criterion is to give preference to potential locations that would provide for safer conditions for bicyclists with detection. The most effective measure of bicyclist safety is accident frequency. Intersections with high bicycle accident rates will benefit from bicycle detection and receive high ratings.

The City of Santa Clara provided six years of bicycle accident data (2002-2007). Intersections with more than 10 bicycle related accidents will be given a high rating (3 points). Intersections with 5-10 bicycle related accidents will be given a medium rating (2 points). Intersections with 1-5 bicycle related accidents will be given a low rating (1 point). Lastly, intersections with zero bicycle related accidents will be given 0 points.

Citizen Requests

The purpose of this criterion is to give preference to potential locations that have been identified by citizens who likely bike through it regularly. Similar to the bicycle volume criteria, this is a way to quantify the demand for bicycle detection. The Bicycle Advisory Committee (BAC) members may submit locations for detection to City staff as well. This assumes that the City keeps records of citizen complaints and BAC suggestions and has at least twelve months worth of feedback. Intersections with at least 3 citizen requests within the last twelve months will be given a high rating (3 points). Intersections with 2 citizen requests will be given a medium rating (2 points). Intersections with 1 citizen request will be given a low rating (1 point). Lastly, intersections with zero citizen requests will be given 0 points.

Cost

The purpose of this criterion is to give preference to potential locations where implementation of bicycle detection would be financially beneficial for the City. For example, at locations where video detection is to be installed for vehicular detection, the implementation of video detection for bicyclists would result in a nominal cost increase. The video detection system would just need to be calibrated to define a detection zone at the bike lane approach, which would not result in a need for additional material costs. Instances such as this would be ideal to implement bicycle detection and, therefore, will be given a high ranking (3 points). Also, as a means to improve detection while utilizing existing in-pavement detector loops, installation of bicycle sensitive detector amplifiers should be considered at locations that do not currently have capable technology. Conversely, for signals that already have detector amplifiers capable of adjusting sensitivity, adjustments can be made without additional equipment. Because this can be relatively cheap, it would also be given a high ranking.

For instances where bicycle detection is installed as a part of a separate intersection and/or roadway improvement project, it is given a medium ranking (2 points). This is because it can be cost effective to construct bicycle detection when construction workers are already intending to perform other work in

the field. For example, construction of in-pavement loops will be cheaper when it can be done concurrent with a roadway repaving project, as there would be no need to sawcut the pavement to install the loops.

For instances where bicycle detection is installed, but is not constructed as a part of another project, the project is given a low ranking (1 point). This is because it can be relatively costly to construct non-video bicycle detection (in-pavement loops) without having to perform any other work at the intersection.

Instances where video detection is installed solely for bike detection can be a costly improvement for the City. This scenario would provide the option of using the video detection system for vehicular detection as a backup method when the primary method fails (i.e. loops failure). However, due to the up-front costs associated with this detection option, it is given 0 points.



APPENDIX G

PRIORITY RANKING

Table 1 lists the Class II or Class III facilities proposed in the 2009 Bicycle Plan. Table 2 includes all of the facilities proposed in the 2002 Bicycle Plan as well as the 2009 Bicycle Plan and the proposed improvement for each update.

Table 1 - 2009 Proposed Improvements

Rank	Corridor	Recommended Facility	Score	Rider Stress	Collision History	ADT Volumes	Gap Closure	Cost/Funding	Connectivity	Complexity
1	Bowers Avenue (Cabrillo Ave - El Camino Real)	Class III	2.64	1.3	2.0	2.0	3.0	3.0	5.0	3.0
2	Benton Street	Class II & III	2.32	1.3	3.0	1.0	3.0	1.0	5.2	3.0
3	North Winchester Boulevard (Bellomy St - Homestead Ave)	Class III	2.29	1.3	2.0	3.0	3.0	3.0	3.0	2.0
4	Lafayette Street & Bassett Street	Class II	2.22	1.3	3.0	2.0	3.0	2.0	3.3	2.3
5	Monroe Street (Lawrence Expwy - Scott Blvd)	Class II & III	2.17	1.0	3.0	2.0	3.0	3.0	1.8	3.0
6	Market Street (Monroe St - the Alameda)	Class III	2.15	1.0	0.0	1.0	3.0	3.0	4.0	3.0
7	Saratoga Avenue (N/O San Tomas Expwy)	Class II & III	2.12	1.3	2.0	2.0	3.0	2.0	3.1	2.7
8	Lick Mill Boulevard	Class II & III	2.03	1.3	0.0	1.0	2.0	2.5	4.4	2.3
9	Pruneridge Avenue	Class II	1.99	1.3	2.0	2.0	3.0	1.0	3.5	2.7
10	Scott Boulevard (Central Expwy - Monroe St)	Class II	1.77	1.7	3.0	2.0	3.0	1.0	1.1	2.0
11	Woodhams Road (Stevens Creek Blvd - Homestead Ave)	Class III	1.68	1.3	0.0	1.0	1.0	3.0	1.8	2.7
12	Bohannon Avenue / Cypress Avenue (Los Padres Blvd- Stevens Creek Blvd)	Class III	1.68	1.3	0.0	0.0	2.0	3.0	1.3	3.0
13	Chromite Drive (Monroe St- Bowers Ave)	Class III	1.59	1.3	0.0	1.0	1.0	3.0	1.0	3.0

Ranking Criteria	Weight
Rider Stress	0.3
Collision History	0.1
ADT Volumes	0.05
Gap Closure	0.1
Cost/Funding	0.2
Connectivity	0.15
Complexity	0.1

Table 2 - 2002 vs. 2009 Recommended Facilities

Corridor	From	To	2002 Recommended Facility	2009 Recommended Facility
Agate Dr	French St	Bowers Ave	Class III	Future Proposed Route
Agnew Rd	Mission College Blvd	Montague Expwy	Class II	Existing
Alviso St/Palm Dr	Harrison St	Santa Clara St	Class III	Future Proposed Route
Bassett St	Agnew Rd	Laurelwood Rd	None	Class II
Benton St	Lawrence Expwy	El Camino Real	Class II	Class II & III
Bohannon Dr	Los Padres Blvd	Cypress Dr	None	Class III
Bowers Ave	US-101	El Camino Real	Class II	Existing & Class III
Chromite Dr	Monroe St	Bowers Ave	Class II	Class III
Cypress Dr	Bohannon Dr	Stevens Creek Blvd	None	Class III
De La Cruz Blvd	De La Cruz Tri-Level	Central Expwy	Class II	Future Proposed Route
De La Cruz Blvd	Trimble Rd	Montague Expwy	Class III	Future Proposed Route
El Camino Real	City Limits (west)	The Alameda	None	Future Proposed Route
Garrity Way	Agnew Rd	Lick Mill Blvd	None	Future Proposed Route
Great America Pkwy	Yerba Buena Way	US-101	Class II	Existing
Harrison St	Los Padres Blvd	Alviso St	Class III	Future Proposed Route
Homestead Rd	Lawrence Expwy	Lafayette St	Class II	Existing & Class II
Hope Dr	Lafayette St	Lick Mill Blvd	Class II	Existing
Kiely Blvd	El Camino Real	Stevens Creek Blvd	Class II	Future Proposed Route
Lafayette St	SR-237	Agnew Rd	Special Study Corridor	Existing & Class II
Lafayette St	Laurelwood Rd	Warburton Ave	Special Study Corridor	Class II & Future Proposed Route
Lick Mill Blvd	Montague Expwy	Tasman Dr	Class II	Class II & III
Market St	Monroe St	The Alameda	None	Class III
Martin Ave	Walsh Ave	De La Cruz Blvd	Class III	Future Proposed Route
Mission College Blvd	Mission College Blvd	Wyatt Dr	Class II	Existing & Class II
Mission College Blvd Loop	Mission College Blvd	Mission College Blvd	Class III	Future Proposed Route
Monroe St	Lawrence Expwy	Scott Blvd	Class II	Class II & Class III
Newhall St	Saratoga Ave	Park Ave	Class II	Future Proposed Route
North Winchester Blvd	N/O Pruneridge Ave	Homestead Rd	Class II & III	Existing & Class III
Patrick Henry Dr	Great America Pkwy	Old Mountain View Alviso Rd	Class III	Future Proposed Route
Pruneridge Ave	Lawrence Expwy	Winchester Blvd	Class II	Class II
San Tomas Aquino Trail	SR-237	Cabrillo Ave	Class I	Existing & Class I
Saratoga Ave	N/O San Tomas Expwy	Market St	Class II	Class II & Future Proposed Route
Saratoga Creek Trail	Kiely Blvd	Homestead Rd	None	Class I
Scott Blvd	Garrett Dr	Monroe St	Class II	Existing & Class II
Southern Pacific Railroad	Lawrence Expwy	Benton St	Special Study Corridor	None ¹
Stevens Creek Blvd	Cronin Dr	Santana Row	Class II	Future Proposed Route
Tasman Dr	Calabazas Creek	Lafayette St	Class II	Future Proposed Route
Thomas Rd/Laurelwood Rd	Montague Expwy	Lafayette St	Class III	Future Proposed Route
Walsh Ave	Bowers Ave	Lafayette St	Class III	Future Proposed Route
Warburton Ave	Lawrence Expwy	Lafayette St	Class III	Existing & Future Proposed Route
Washington St	Homestead Rd	I-880	Class III	Future Proposed Route
White Dr	Homestead Rd	El Camino Real	Class III	Future Proposed Route
Woodhams Rd	Stevens Creek Blvd	Homestead Rd	Class III	Class III

¹The Southern Pacific Railroad Trail is removed from the plan due to other more feasible near-by options

Rider Stress

Three considerations were evaluated to analyze rider stress. These considerations took into account the need to reduce rider stress as well as the proposed project’s ability to create comfortable passage throughout the city. The three considerations were:

- Existing separation distance between traveling automobiles and bicycles
- Speed limit for automobiles sharing the roadway
- Parking configuration and turnover along the roadway

The overall rating for this criterion was based on the average score for all three considerations. The descriptions for how the considerations that make up the Rider Stress Criteria are presented below.

Existing Separation Distance Between Traveling Automobiles and Bicycles

The goal of this consideration was to give preference to roadway segments where current rider stress is high due to the lack of separation distance between bicycles and automobiles. Improved bicycle facilities will decrease rider stress on the segment. Separation distance is dependent on the type of parking configuration present on the existing roadway segment. The following definitions were used to identify separation distance from the roadway:

Rank	Existing Bicycle Space Plus Travel Lane Width, No Existing On-Street Parking (Lane Stripe to Curb Face)	Existing Bicycle Space Plus Travel Lane Width, Existing On-Street Parking (Lane Stripe to Curb Face)
Poor Separation Distance	Less than 14 feet	Less than 22 feet
Moderate Separation Distance	14-16 feet	22-24 feet
Adequate Separation Distance	More than 17 feet	More than 25 feet

Segments having poor separation distance were given a high rating (3 points). A medium rating (2 points) was given to segments where moderate separation distance exists. A low rating (1 point) was given to segments where there is adequate existing separation distance.

Speed Limit for Automobiles Sharing the Roadway

The purpose of this consideration was to give preference to roadway segments where current rider stress is high due to the high-speed automotive travel on the roadway. Improved bicycle facilities on these roadways will decrease rider stress on the segment. A low rating (1 point) was given to segments where the speed limit is 25, 30, or 35 MPH. Roadways where the speed limit is 40 MPH were given a medium rating (2 point). Segments with speed limit is 45 MPH or greater received a high rating (3 points).

Parking Configuration and Turnover Along the Roadway

The goal of this consideration was to measure the safety and comfort level associated with each segment’s existing parking configuration and parking turnover. Rider friendly parking configurations and turnover received low ratings. The parking turnover was determined by examining the zoning present along each roadway segment. Typically, low parking turnover exists in residential districts and high parking turnover exists in business districts. Proposed segments that do not allow on-street parking or parallel parking along segments that have low parking turnover received no rating (0 points). Parallel parking along segments that have high turnover

received a low score (1 point). Diagonal or perpendicular parking that has low parking turnover received a medium rating (2 point). Segments with diagonal or perpendicular parking with high turnover received a high rating (3 points).

Collision History

The purpose of this criterion was to identify current roadway facilities with high bicycle accident frequency. The more frequent the accident occurrence, the greater the need for improved bicycle facilities. Roadway segments with high bicycle accident rates will benefit from bicycle facility improvements and received high ratings.

The City of Santa Clara provided six years of bicycle accident data (2002-2007). Roadway segments with 12 or more bicycle related accidents were given a high rating (3 points). Roadway segments with 6 to 11 bicycle related accidents were given a medium rating (2 points) and a low rating (1 point) was given to roadway segments with 1 to 5 bicycle related accidents. Roadway segments with zero bicycle related accidents received 0 points.

Average Daily Traffic Volumes

This consideration gave preference to roadway segments where current bicycle travel is discouraged due to high volumes of vehicle traffic. Average daily traffic volumes (ADT) were reviewed to determine which roadways have high daily vehicle volumes. Roadway segments with an ADT of 25,000 vehicles or greater were given a high rating (3 points). A medium rating (2 points) was given to segments with ADT ranging from 10,000 to 25,000 vehicles. Roadways with an ADT between 2,000 and 10,000 vehicles were given a low rating (1 point). All other segments were given 0 points for this consideration.

Gap Closure

Priority was given to proposed bicycle facilities that would provide a link between two existing bicycle facilities. A proposed bicycle project received a high rating (3.0) if one of the following conditions were met:

- Connects to existing bikeways at both ends
- Bridges a gap in an existing bikeway
- Serves as a collector of other bikeways or residential streets
- Creates a cross-city bikeway
- Connects to an existing bikeway at one end and the Santa Clara City Limit at the other end

A proposed bicycle project received a medium rating (2.0) if one of the following conditions were met:

- Provides an access link for another bikeway
- Connects to a county-wide bicycle route or Cross County Corridor designated by VTA

A proposed bicycle project received a low rating (1.0) if one of the following conditions were met:



- Connects to an existing bikeway on one end and a proposed bikeway on the other end
- Connects to a proposed bikeway on one end and the Santa Clara City Limit at the other end
- Connects to proposed bikeways on both ends

A proposed bicycle project received 0 points if it did not qualify for a high, medium, or low rating.

Cost/Funding

The bicycle improvement projects were evaluated based on the preliminary cost estimates and on the project's ability to compete for outside funding. Project competitiveness was accounted for by making estimates of local contributions toward improvements. For example, the Benton Street from Lawrence Expressway to San Tomas Expressway improvements have an estimated cost of \$355,500, but the project is expected to compete well for federal and/or state funding, so only the expected local match will be considered a cost to the City. In this example, the local match is expected to be 20 percent of the total cost, so \$71,100 would represent the cost (cost to the city) of the project. High priority will be given to the improvements that are most cost efficient under this criterion (i.e., lowest cost per mile).

Total project costs and expected City contributions were developed for all project corridors. City contributions per mile were normalized over a 3-point scale. Proposed projects received a high rating if their City contribution costs were expected to be low on a per mile basis.

Connectivity

Priority for development of proposed bicycle improvements was based on the number of local and regional activity centers on or near the proposed facility. Activity centers included regional and local parks, shopping centers, schools, large employment centers, and multi-modal connections.

A bike facility was considered to be serving an activity center if it is located within a quarter mile ride of the center. The total number of activity centers served by each project (measured in activity centers per mile of the proposed project) was summed. The numbers for all projects were normalized over a 3-point scale. A rating of 3.0 was the highest rating, indicating that the facility serves more than the average number of activity centers. 0 points indicated that the facility does not serve any activity centers.

Complexity

The complexity criteria were evaluated using the following considerations:

- Right-of-way (ROW) availability
- The number of agencies involved in development of the segment
- Expected community reactions

The overall complexity score was based on the average of the three considerations listed above.

ROW Availability

Availability of right-of-way can be a key issue in the feasibility, timing and cost of a project. As such, it was assessed as a condition of the complexity criteria. The ratings for this consideration were as follows:

- High rating (3 points) – ROW suitable and available
- Medium rating (2 points) – ROW suitable and could easily be acquired
- Low rating (1 point) – ROW suitable but acquisition may be difficult
- 0 points – ROW not suitable or available

Agency Involvement

Interaction between agencies is often difficult and hard to facilitate. Therefore, the number of agencies involved with each roadway segment was evaluated as a consideration for the complexity criteria. The ratings for this consideration were as follows:

- High rating (3 points) – Only involved agency is the City of Santa Clara
- Medium rating (2 points) – Two involved agencies
- Low rating (1 point) – Three involved agencies
- 0 points – More than three involved agencies

Expected Community Reaction

This consideration attempted to quantify the expected community reaction for each proposed bicycle segment. The expected community reaction was based on the proposed bicycle improvement project and the proposed roadway modifications required by the improvement. For example, some bicycle improvements require simple re-striping of the existing roadway and do not affect through vehicular traffic or roadway parking capacities. These improvements are expected to have a high degree of community support. Other bicycle improvements that require removal of travel lanes and/or parking facilities are expected to have a lower degree of community support. The ranking system for this consideration was as follows:

- High rating (3 points) – no parking or vehicular travel lanes will be affected
- Medium rating (2 points) – small number of parking spaces affected or parking in very low demand areas affected; minor geometry or travel lane removal required (e.g. low demand right-turn lanes at intersections)
- Low rating (1 point) – significant parking removal; travel lane removal

Ranking Procedure

Each criterion was assigned a weighting factor based on the importance of the criteria. The “score” each bicycle improvement segment’s criteria received was multiplied by its respective weighting factor. This allowed more desirable criteria, like Rider Stress and Cost/Funding, to influence the segment’s ranking more so than less desirable criteria.

The ranking criteria were weighted as follows:

- 0.30 for Rider Stress
- 0.10 for Collision History
- 0.05 for Average Daily Vehicle Volumes
- 0.10 for Gap Closure
- 0.20 for Cost/Funding
- 0.15 for Connectivity
- 0.10 for Complexity



APPENDIX H

COST ESTIMATES FOR PROPOSED FACILITIES

Bassett (Agnew to Laurelwood)
Striping per Linear Foot Costs

Bassett, Agnew to Laurelwood = 6,900

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
1	9.33	0.0972	0	0.0000	\$0.49	\$0.00	\$0.49	\$0.24	3200	0	1	\$778
22	64.00	0.6667	4	0.0408	\$3.33	\$0.20	\$3.54	\$1.77	6900	1	0	\$24,408
22	64.00	0.6667	4	0.0408	\$3.33	\$0.20	\$3.54	\$1.77	3000	0	1	\$5,306
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	6900	1	0	\$11,500
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	6900	2	0	\$34,500
												\$76,492

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	24	\$7,800
Bike Detection	EA	\$1,000	3	\$3,000
				\$10,800

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Type II Arrow (L or R & S)	45	0	0	1	45	\$113
Type IV Arrow (L or R)	15	1	15	1	15	\$113
Type VII Arrow (L or R & S)	27	0	0	0	0	\$0
RR Crossing Symbol	70	2	140	2	140	\$1,050
Bike Lane Symbol (MUTCD)	5	24	120	0	0	\$600
25	17.5	1	17.5	1	17.5	\$131
Ahead	31	1	31	1	31	\$233
Stop	22	4	88	4	88	\$660
						\$2,899

Summary of Costs

Striping Costs	\$76,492
Legends	\$2,899
Misc.	\$10,800
Sub Total	\$90,191

SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC.	
IS APPROX 35%	\$31,567
ADD MOBILIZATION AT 5%	\$4,510
ADD CONTINGENCY OF 20%	\$18,038
	\$144,305

Benton (Lawrence to San Tomas)
Striping per Linear Foot Costs

Benton, Lawrence to San Tomas = 12,700 LF (2,650 already TWLTL)

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2"	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	12700	0	2	\$7,470
22	64.00	0.6667	4	0.0408	\$3.33	\$0.20	\$3.54	\$1.77	12700	0	1	\$22,463
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	12700	2	0	\$42,333
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	6350	0	1	\$5,292
32	80.00	0.8333	10	0.1020	\$4.17	\$0.51	\$4.68	\$2.34	12700	1	0	\$59,396
33	80.00	0.8333	10	0.1020	\$4.17	\$0.51	\$4.68	\$2.34	2650		1	\$6,197
38	64.00	0.6667	4	0.0408	\$3.33	\$0.20	\$3.54	\$1.77	300	0	1	\$531
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	12700	2	0	\$63,500
												\$207,181

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	26	\$8,450
Bike Detection	EA	\$1,000	6	\$6,000
				\$14,450

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Type IV Arrow (L or R)	15	26	390	8	120	\$2,250
Bike Lane Symbol (MUTCD)	5	26	130	0	0	\$650
Slow	23	4	92	4	92	\$690
School	35	4	140	4	140	\$1,050
Xing	21	8	168	8	168	\$1,260
Ped	18	4	72	4	72	\$540
						\$6,440

Summary of Costs

Striping Costs	\$207,181
Legends	\$6,440
Misc.	\$14,450
Sub Total	\$228,071

Caltrans Striping

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$79,825
ADD MOBILIZATION AT 5%	\$11,404
ADD CONTINGENCY OF 20%	\$45,614
	\$364,913

Benton (Monroe to El Camino)
Striping per Linear Foot Costs

Benton, Monroe to El Camino = 3,200

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2"	Project Length	No. Stripes to add	No. Stripes to remove	Cost
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	3200	2	0	\$10,667
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	3200	2	0	\$16,000
												\$26,667

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$
Sign and Post	EA	\$325	28	\$9,100
Bike Detection	EA	\$1,000	4	\$4,000
				\$13,100

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Bike Lane Symbol (MUTCD)	5	28	140	0	0	\$700
Xing	21	6	126	6	126	\$945
Ped	18	6	108	6	108	\$810
						\$2,455

Summary of Costs

Striping Costs	\$26,667
Legends	\$2,455
Misc.	\$13,100
Sub Total	\$42,222

SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC. IS APPROX 35%		\$14,778
ADD MOBILIZATION AT 5%		\$2,111
ADD CONTINGENCY OF 20%		\$8,444
		\$67,555

Benton (San Tomas to Monroe)													
Striping per Linear Foot Costs													
Benton, San Tomas to Monroe = 9,000													
Input cost per square foot of thermo plastic												\$5.00	
Input cost per each marker												\$5.00	
Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF				\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
												\$0	
Miscellaneous Design Element Costs													
Item	Unit	Cost	No.										
Sign and Post	EA	\$325	48									\$15,600	
												\$15,600	
Pavement Markings Costs													
Cost of Thermo per Sq. Foot												\$5.00	
Remove = .5 cost													
Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity							Cost	
												\$0	
Summary of Costs													
Striping Costs												\$0	
Legends												\$0	
Misc.												\$15,600	
Sub Total												\$15,600	
SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC. IS APPROX 35%													
												\$5,460	
ADD MOBILIZATION AT 5%												\$780	
ADD CONTINGENCY OF 20%												\$3,120	
												\$24,960	
Optional Costs													
Cost of Thermo per Sq. Foot												\$5.00	
Remove = .5 cost													
Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity							Cost	
Sharrow Symbol (optional)		7.5		48		360		0		0		\$1,800	
												\$1,800	

Bohannon (Los Padres to Cypress)

Striping per Linear Foot Costs

Bohannon, Los Padres to Cypress = 1,060

Input cost per square foot of thermo plastic \$5.00
Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2 Length	Project No. Stripes to add	No. Stripes to remove	Cost
											\$0

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	4	\$1,300
				\$1,300

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Cost of Thermo per Sq. Foot	\$5.00					
Remove = .5 cost						
						\$0

Summary of Costs

Striping Costs	\$0
Legends	\$0
Misc.	\$1,300
Sub Total	\$1,300

SOFT COSTS FOR ENGINEERING,
ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$455
ADD MOBILIZATION AT 5%	\$65
ADD CONTINGENCY OF 35%	\$455
	\$2,275

Optional Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Cost of Thermo per Sq. Foot	\$5.00					
Remove = .5 cost						
Sharrow Symbol	7.5	4	30	0	0	\$150
						\$150

Bowers (Cabrillo to El Camino)
Striping per Linear Foot Costs

Bowers, Cabrillo to El Camino = 3200

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	3200	2	2	\$5,646
												\$5,646

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	28	\$9,100
				\$9,100

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Type VII Arrow (L or R & S)	27	2	54	2	54	\$405
						\$405

Summary of Costs

Striping Costs	\$5,646
Legends	\$405
Misc.	\$9,100
Sub Total	\$15,151

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$5,303
ADD MOBILIZATION AT 5%	\$758
ADD CONTINGENCY OF 20%	\$3,030
	\$24,242

Optional Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Sharrow Symbol	7.5	28	210	0	0	\$1,050
						\$1,050

Chromite (Monroe to Bowers)
Striping per Linear Foot Costs

Chromite, Monroe to Bowers = 1840

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	1840	0	2	\$3,067

\$3,067

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	14	\$4,550
				\$4,550

Pavement Markings Costs

Cost of Thermo per Sq. Foot	Sq. Foot	Add	SF add	remove	SF remove	Cost
Remove = .5 cost	Thermo <td>No. <td>Quantity <td>no. <td>Quantity <td></td> </td></td></td></td>	No. <td>Quantity <td>no. <td>Quantity <td></td> </td></td></td>	Quantity <td>no. <td>Quantity <td></td> </td></td>	no. <td>Quantity <td></td> </td>	Quantity <td></td>	
Legend						\$0

Summary of Costs

Striping Costs	\$3,067
Legends	\$0
Misc.	\$4,550
Sub Total	\$7,617

**SOFT COSTS FOR ENGINEERING,
ADMINISTRATION, SURVEY, ETC.**

IS APPROX 35%	\$2,666
ADD MOBILIZATION AT 5%	\$381
ADD CONTINGENCY OF 20%	\$1,523
	\$12,187

Optional Costs

Cost of Thermo per Sq. Foot	Sq. Foot	Add	SF add	remove	SF remove	Cost
Remove = .5 cost	Thermo	No.	Quantity	no.	Quantity	
Legend						
Sharrow Symbol	7.5	14	105	0	0	\$525
						\$525

Cypress (Bohannon to Stevens Creek)
Striping per Linear Foot Costs

Cypress, Bohannon to Stevens Creek = 3,050

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
												\$0

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	22	\$7,150
				\$7,150

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Cost of Thermo per Sq. Foot						\$5.00
Remove = .5 cost						
						\$0

Summary of Costs

Striping Costs	\$0
Legends	\$0
Misc.	\$7,150
Sub Total	\$7,150

**SOFT COSTS FOR ENGINEERING,
ADMINISTRATION, SURVEY, ETC.**

IS APPROX 35%	\$2,503
ADD MOBILIZATION AT 5%	\$358
ADD CONTINGENCY OF 35%	\$2,503
	\$12,513

Optional Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Cost of Thermo per Sq. Foot						\$5.00
Remove = .5 cost						
Sharrow Symbol	7.5	22	165	0	0	\$825
						\$825

Lafayette (Laurelwood to Central)
Striping per Linear Foot Costs

Lafayette, Laurelwood to Central = 2,100

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	1050	0	1	\$309
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	550	1	0	\$323
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	2100	2	0	\$18,500
												\$19,132

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	11	\$3,575
Bike Detection	EA	\$1,000	2	\$2,000
				\$5,575

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Type VII Arrow (L or R & S)	27	1	27	1	27	\$203
Bike Lane Symbol (MUTCD)	5	11	55	0	0	\$275
						\$478

Summary of Costs

Striping Costs	\$19,132
Legends	\$478
Misc.	\$5,575
Sub Total	\$25,185

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$8,815
ADD MOBILIZATION AT 5%	\$1,259
ADD CONTINGENCY OF 20%	\$5,037
	\$40,296

Lafayette (Yerba Buena to Calle de Luna)
Striping per Linear Foot Costs

Lafayette, Yerba Buena to Calle de Luna = 3,650		3,700											
Input cost per square foot of thermo plastic		\$5.00											
Input cost per each marker		\$5.00											
Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost	
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	3700	2	0	\$18,500	
												\$18,500	

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	13	\$4,225
Bike Detection	EA	\$1,000	1	\$1,000
				\$5,225

Pavement Markings Costs

Cost of Thermo per Sq. Foot		\$5.00					
Remove = .5 cost							
Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost	
Bike Lane Symbol (MUTCD)	5	13	65	0	0	\$325	
						\$325	

Summary of Costs

Striping Costs	\$18,500
Legends	\$325
Misc.	\$5,225
Sub Total	\$24,050
SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC.	
IS APPROX 35%	\$8,418
ADD MOBILIZATION AT 5%	\$1,203
ADD CONTINGENCY OF 20%	\$4,810
	\$38,480

Lick Mill (Hope to Montague)
Striping per Linear Foot Costs

Lick Mill, Hope to Montague = 4,250

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	4250	2	0	\$4,999
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	4250	0	2	\$2,500
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	5650	1	1	\$14,125

\$21,624

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	11	\$3,575
				\$3,575

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Cost of Thermo per Sq. Foot						\$5.00
Remove = .5 cost						
Type III Arrow (L or R)	42	9	378	2	84	\$2,100
Type IV Arrow (L or R)	15	0	0	7	105	\$263
Bike Lane Symbol (MUTCD)	5	11	55	0	0	\$275
Slow	23	8	184	8	184	\$1,380
School	35	8	280	8	280	\$2,100
Xing	21	10	210	10	210	\$1,575
Ped	18	2	36	2	36	\$270
						\$7,963

Summary of Costs

Striping Costs	\$21,624
Legends	\$7,963
Misc.	\$3,575
Sub Total	\$33,161
SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC.	
IS APPROX 35%	\$11,607
ADD MOBILIZATION AT 5%	\$1,658
ADD CONTINGENCY OF 20%	\$6,632
	\$53,058

Lick Mill (Tasman to Hope)
Striping per Linear Foot Costs

Lick Mill, Tasman to Hope = 3,700

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
												\$0

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	8	\$2,600
Bike Detection	EA	\$1,000	2	\$2,000
				\$4,600

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Cost of Thermo per Sq. Foot						\$5.00
Remove = .5 cost						
Bike Lane Symbol (MUTCD)	5	8	40	0	0	\$200
						\$200

Summary of Costs

Striping Costs	\$0
Legends	\$200
Misc.	\$4,600
Sub Total	\$4,800
Caltrans Striping	
SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC.	
IS APPROX 35%	\$1,680
ADD MOBILIZATION AT 5%	\$240
ADD CONTINGENCY OF 20%	\$960
	\$7,680

Market (Monroe to the Alameda)
Striping per Linear Foot Costs

Market, Monroe to the Alameda = 2,450

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2 Length	Project No. Stripes to add	No. Stripes to remove	Cost
											\$0

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	22	\$7,150
				\$7,150

Pavement Markings Costs

 Cost of Thermo per Sq. Foot \$5.00
 Remove = .5 cost

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
						\$0

Summary of Costs

Striping Costs	\$0
Legends	\$0
Misc.	\$7,150
Sub Total	\$7,150

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$2,503
ADD MOBILIZATION AT 5%	\$358
ADD CONTINGENCY OF 35%	\$2,503
	\$12,513

Optional Costs

 Cost of Thermo per Sq. Foot \$5.00
 Remove = .5 cost

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Sharrow Symbol	7.5	22	165	0	0	\$825
						\$825

Monroe (Lawrence to San Tomas Aquino Creek)
Striping per Linear Foot Costs

Monroe, Lawrence to San Tomas Aquino Creek = 9,500

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	9500	2	2	\$16,762
												\$16,762

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	58	\$18,850
				\$18,850

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Cost of Thermo per Sq. Foot	\$5.00					
Remove = .5 cost						
Slow	23	16	368	16	368	\$2,760
School	35	16	560	16	560	\$4,200
Xing	21	20	420	20	420	\$3,150
Ped	18	4	72	4	72	\$540
						\$10,650

Summary of Costs

Striping Costs	\$16,762
Legends	\$10,650
Misc.	\$18,850
Sub Total	\$46,262
SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC. IS APPROX 35%	
	\$16,192
ADD MOBILIZATION AT 5%	\$2,313
ADD CONTINGENCY OF 20%	\$9,252
	\$74,020

Optional Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Cost of Thermo per Sq. Foot	\$5.00					
Remove = .5 cost						
Sharrow Symbol	7.5	58	435	0	0	\$2,175
						\$2,175

Monroe (San Tomas Aquino Creek to Scott)
Striping per Linear Foot Costs

Monroe, San Tomas Aquino Creek to Scott = 2100

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2 LF	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	2100	2	2	\$3,705
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	2100	2	0	\$7,000
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	2100	2	0	\$10,500
												\$21,205

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	20	\$6,500
Bike Detection	EA	\$1,000	5	\$5,000
				\$11,500

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Bike Lane Symbol (MUTCD)	5	20	100	0	0	\$500
						\$500

Summary of Costs

Striping Costs	\$21,205
Legends	\$500
Misc.	\$11,500
Sub Total	\$33,205

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$11,622
ADD MOBILIZATION AT 5%	\$1,660
ADD CONTINGENCY OF 20%	\$6,641
	\$53,129

Pruneridge (Pomeroy to San Tomas)
Striping per Linear Foot Costs

Pruneridge, Pomeroy to San Tomas = 6,600 LF

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	6600	0	2	\$3,882
22	64.00	0.6667	4	0.0408	\$3.33	\$0.20	\$3.54	\$1.77	6600	0	1	\$11,673
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	6600	2	0	\$22,000
32	80.00	0.8333	10	0.1020	\$4.17	\$0.51	\$4.68	\$2.34	6600	1	0	\$30,867
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	6600	2	0	\$33,000
												\$101,423

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	34	\$11,050
Bike Detection	EA	\$1,000	6	\$6,000
				\$17,050

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Bike Lane Symbol (MUTCD)	5	34	170	0	0	\$850
Slow	23	2	46	2	46	\$345
School	35	2	70	2	70	\$525
Xing	21	4	84	4	84	\$630
Ped	18	2	36	2	36	\$270
						\$2,620

Summary of Costs

Striping Costs	\$101,423
Legends	\$2,620
Misc.	\$17,050
Sub Total	\$121,093
SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC.	
IS APPROX 35%	\$42,382
ADD MOBILIZATION AT 5%	\$6,055
ADD CONTINGENCY OF 20%	\$24,219
	\$193,748

Pruneridge (San Tomas to Winchester)
Striping per Linear Foot Costs

Pruneridge, San Tomas to Winchester = 5,100 LF

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	4200	0	2	\$2,470
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	5100	2	0	\$17,000
32	80.00	0.8333	10	0.1020	\$4.17	\$0.51	\$4.68	\$2.34	5100	1	0	\$23,852
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	5100	2	0	\$25,500
												\$68,822

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	28	\$9,100
Bike Detection	EA	\$1,000	6	\$6,000
				\$15,100

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Bike Lane Symbol (MUTCD)	5	28	140	0	0	\$700
Slow	23		0		0	\$0
School	35		0		0	\$0
Xing	21	2	42	2	42	\$315
Ped	18	2	36	2	36	\$270
						\$1,285

Summary of Costs

Striping Costs	\$68,822
Legends	\$1,285
Misc.	\$15,100
Sub Total	\$85,207

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$29,823
ADD MOBILIZATION AT 5%	\$4,260
ADD CONTINGENCY OF 20%	\$17,041
	\$136,332

Saratoga (San Tomas to Los Padres)
Striping per Linear Foot Costs

Saratoga, San Tomas to Los Padres = 3,700

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	2700	2	0	\$9,000
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	3700	2	0	\$18,500
												\$27,500

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	18	\$5,850
Bike Detection	EA	\$1,000	4	\$4,000
				\$9,850

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Bike Lane Symbol (MUTCD)	5	16	80	0	0	\$400
						\$400

Summary of Costs

Striping Costs	\$27,500
Legends	\$400
Misc.	\$9,850
Sub Total	\$37,750

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$13,213
ADD MOBILIZATION AT 5%	\$1,888
ADD CONTINGENCY OF 20%	\$7,550
	\$60,400

Scott (North of Central to Monroe)
Striping per Linear Foot Costs

Scott, north of Central to Monroe = 4,800

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
9	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	2700	0	4	\$3,176
10	9.33	0.0972	2	0.0204	\$0.49	\$0.10	\$0.59	\$0.29	4800	4	0	\$11,293
10	0.00	0.0000	14	0.1429	\$0.00	\$0.71	\$0.71	\$0.36	2100	0	4	\$3,000
27B	32.00	0.3333	0	0.0000	\$1.67	\$0.00	\$1.67	\$0.83	4800	2	0	\$16,000
39	48.00	0.5000	0	0.0000	\$2.50	\$0.00	\$2.50	\$1.25	4800	2	0	\$24,000

\$57,469

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	20	\$6,500
Bike Detection	EA	\$1,000	7	\$7,000
				\$13,500

Pavement Markings Costs

 Cost of Thermo per Sq. Foot \$5.00
 Remove = .5 cost

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Type IV Arrow (L or R)	15	2	30	2	30	\$225
Bike Lane Symbol (MUTCD)	5	20	100	0	0	\$500
Ahead	31	1	31	1	31	\$233
Signal	32	2	64	2	64	\$480
Clear	27	6	162	6	162	\$1,215
Keep	24	6	144	6	144	\$1,080

\$3,733

Summary of Costs

Striping Costs	\$57,469
Legends	\$3,733
Misc.	\$13,500
Sub Total	\$74,701

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$26,145
ADD MOBILIZATION AT 5%	\$3,735
ADD CONTINGENCY OF 20%	\$14,940
	\$119,522

Winchester (Homestead to Bellomy)
Striping per Linear Foot Costs

 Winchester, Homestead to Bellomy = 2100 Currently has an edge stripe. Not included in estimate.

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2 Length	Project Length	No. Stripes to add	No. Stripes to remove	Cost
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\$0

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	10	\$3,250
				\$3,250

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
25	17.5	0	0	0	0	\$0
Xing	21	0	0	0	0	\$0
Ped	18	0	0	0	0	\$0
						\$0

Summary of Costs

Striping Costs	\$0
Legends	\$0
Misc.	\$3,250
Sub Total	\$3,250
SOFT COSTS FOR ENGINEERING, ADMINISTRATION, SURVEY, ETC. IS APPROX 35%	
	\$1,138
ADD MOBILIZATION AT 5%	\$163
ADD CONTINGENCY OF 20%	\$650
	\$5,200

Optional Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Sharrow Symbol	7.5	10	75	0	0	\$375
						\$375

Woodhams (Homestead to Stevens Creek)
Striping per Linear Foot Costs

Woodhams, Homestead to Stevens Creek = 5800

 Input cost per square foot of thermo plastic \$5.00
 Input cost per each marker \$5.00

Caltrans Striping Detail No.	SF Thermo per 96 LF	SF Thermo per LF	No. of Markers per 96 LF	No. of Markers per LF	\$ Thermo	\$ Marker	\$ per LF	Removal "=1/2	Project Length	No. Stripes to add	No. Stripes to remove	Cost
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\$0

Miscellaneous Design Element Costs

Item	Unit	Cost	No.	\$\$
Sign and Post	EA	\$325	40	\$13,000
				\$13,000

Pavement Markings Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Stop	22	2	44	2	44	\$330
						\$330

Summary of Costs

Striping Costs	\$0
Legends	\$330
Misc.	\$13,000
Sub Total	\$13,330

 SOFT COSTS FOR ENGINEERING,
 ADMINISTRATION, SURVEY, ETC.

IS APPROX 35%	\$4,666
ADD MOBILIZATION AT 5%	\$667
ADD CONTINGENCY OF 20%	\$2,666
	\$21,328

Optional Costs

Legend	Sq. Foot Thermo	Add No.	SF add Quantity	remove no.	SF remove Quantity	Cost
Sharrow Symbol	7.5	40	300	0	0	\$1,500
						\$1,500