

# City of Sunnyvale 2006 Bicycle Plan



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## Appendix A: Toolkit of Bikeway Improvements

The 2000 Bicycle Capital Improvement (CIP) study defined a toolkit of bicycle facility improvement types and identified the most likely type for each roadway segment in the City. Sunnyvale's 2006 Bicycle Transportation Plan updates this toolkit by adding:

- A "parking pockets" variation of minor widening
- A "Speed Management" option  
(for low volume residential collector streets where parking removal or substandard-width striped bicycle-and-parking lanes were previously recommended)
- A "Bicycle Boulevard" enhancement of speed management

Table A.1 lists the options in the updated toolkit:

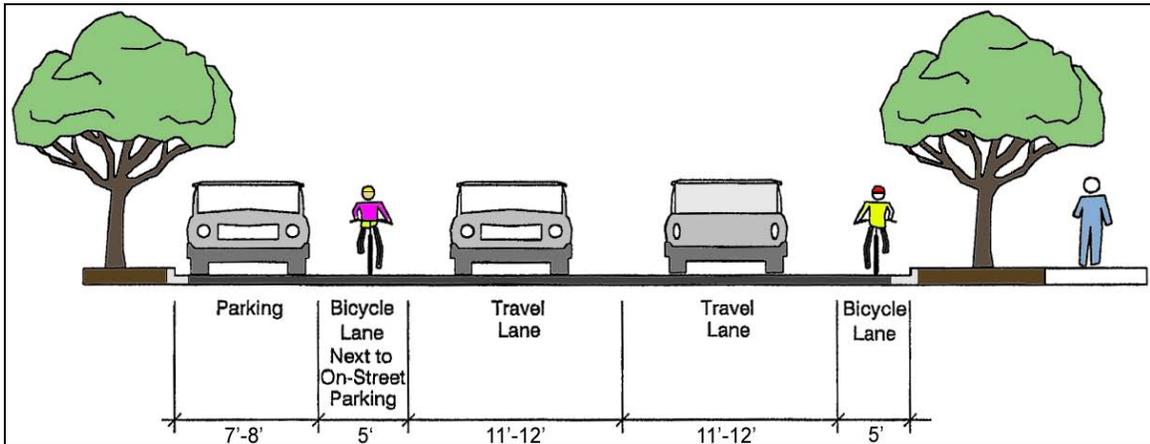
**Table A.1: Toolkit of roadway improvement options**

Tools for adding bike lanes			Bike Plan Figure
1	<b>Re-striping</b> (without parking reduction or widening)		
	a) Without travel lane removal		5.1
	b) Removal of a travel lane, and possible addition of a center turn lane where none existed	Considered where vehicles per lane per peak hour is sufficiently low. Adding a center-turn lane creates opportunities for median refuges that improve pedestrian crossing safety.	5.2
2	<b>Parking modifications</b>		5.3
	a) Parking removal, both sides	Choice depends on land use (residential or commercial), occupancy, turnover, and time-of-day patterns, and the availability of off-street or side-street parking	
	b) Parking removal, one side		
c) Time-restricted parking			
3	<b>Widening</b>		5.6
	a) Parking pockets	Where a landscape strip is present, creating indentations for parking to avoid widening entire blocks	
	b) Minor widening	Not requiring utility relocation or property acquisition	
	c) Major widening	Requiring utility relocation or property acquisition	
<b>Tools for streets without bike lanes</b>			
4	<b>Shared Lane Marking</b>	Considered where bike lanes are desirable but lane removal, parking modifications and widening are impractical	5.4
5	<b>Speed management</b>		5.5
	For low-volume residential streets where cyclists can be passed using the full street width		
	a) Without traffic control changes		
	b) "Bicycle Boulevard" treatment	Speed management combined with traffic control changes to reduce the number of locations at which a bicyclist must stop.	



### A.1 Bicycle accommodation dimensions

Bicycle lanes along an uncurbed roadway edge may be as narrow as 4'. Along curb and gutter, the minimum is 5' to provide pedal clearance from the curb, with an additional requirement of at least 3' of asphalt outside the gutter. Where parallel parking is present, the combined bike lane and parking area must be at least 12', and 13' is desirable for safe "door zone" clearance especially where there is substantial parking turnover.

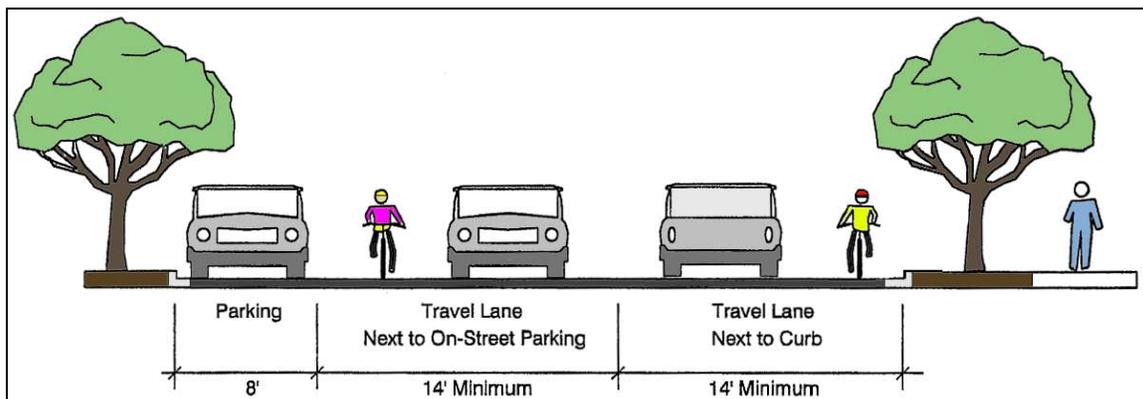


**Figure A.1: Typical Bicycle Lane Section – With and Without Parking**

Sunnyvale's design minimums for lane widths are:

- 11' for travel lanes on arterials
- 10' for travel lanes on other streets
- 11' for center turn lanes (measured outside-to-outside), or 10' inside-to-inside

On streets without bike lanes, outside lanes at least 14' wide make it possible for motor vehicles to overtake bicycles without encroaching into the adjacent lane.



**Figure A.2: Typical Bicycle Route Section (Wide Outside Lanes)**

The following sections describe each toolkit option. As noted in Table A.1, Bicycle Plan Figures 5.1 through 5.7 show the streets for which each option is applicable.



## A.2 Restriping

### Restriping without travel lane removal

On some street segments, bike lanes can be added by narrowing lanes (subject to the City's minimum-width standards) without removing lanes. The City's goal is to extend bike lanes to the limit line or crosswalk, but where there is inadequate width to do so because of turn lanes or islands the bike lane can be dropped on the approach.

### Travel lane removal

On streets with significant excess vehicle capacity, it may be possible to add bike lanes by removing one travel lane in each direction. Because a travel lane is roughly twice the width of a bike lane, removing two travel lanes can also enable the addition of a center turn lane or parking.

One specific type of travel lane removal, the "4 to 3 conversion", changes a street from four travel lanes (two in each direction) and no center turn lane, to two travel lanes (one in each direction) and a center turn lane, as shown in Figure A.3. In addition to being more comfortable for bicycling, the converted street is considerably safer for pedestrians to cross because the single travel lanes eliminate the "multiple-threat" collision mode in which a motorist in the near lane stops but hides a far-lane motorist who does not see the pedestrian. Pedestrian crossing safety can be further increased by adding median islands where needed, for example where a trail or a minor-street bike route crosses the busier street. Conversions to one travel lane per direction also increase safety by reducing excess speed, because they allow prudent drivers to set the pace.

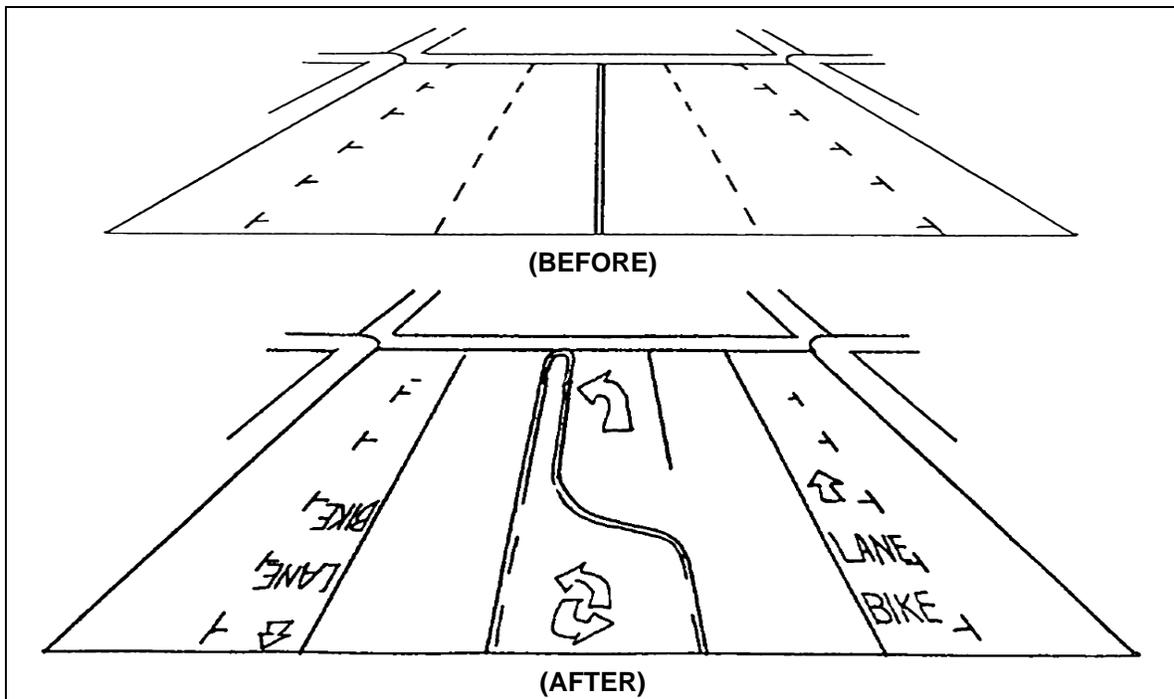
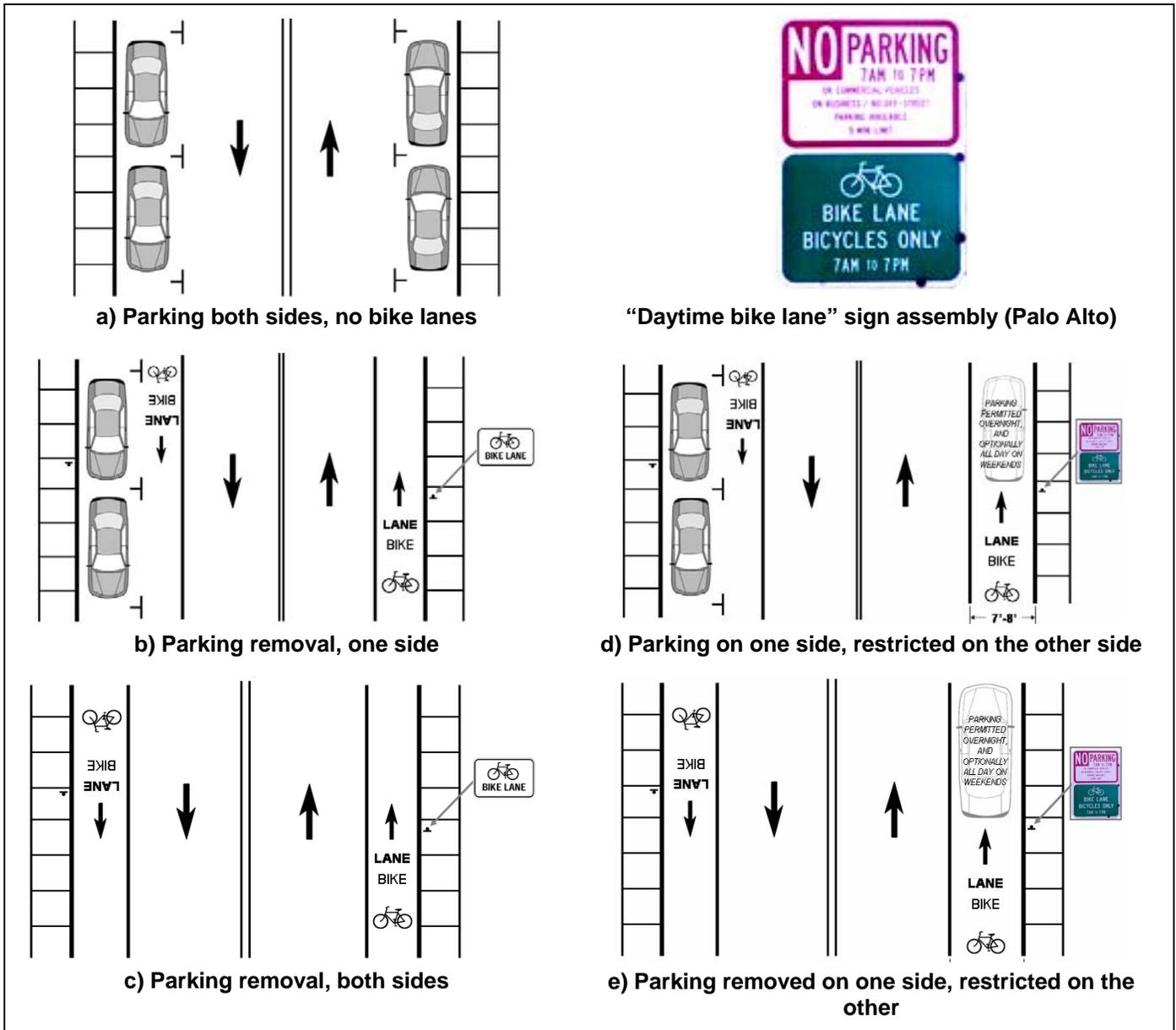


Figure A.3: Adding bike lanes with a "4 to 3 conversion"



### A.3 Parking modifications

Figure A.4 shows several options for adding bicycle lanes by removing or restricting parking on one or both sides of a street.



**Figure A.4: Parking modification options for adding bike lanes**

The 2000 Bicycle CIP proposed parking removal (sub-figure c) on streets where parking utilization was below 10% during both average daytime and nighttime periods. One-sided parking (b) was proposed where more than 60% of vehicles were parked on one side during the daytime. Daytime parking restrictions (d, e) were suggested as an option where daytime utilization was below 20% (residential) or 15% (workplace areas). This option is especially useful where there is no good alternative route for school (student) or work (adult) bicycle commuters.



#### A.4 Widening

On street segments where all travel lanes are needed and parking is either necessary or not present, adding bike lanes may require widening. Widening is “minor” if it can be accomplished within the existing right-of-way without utility relocations. “Major” widening requires property acquisition or removal of structures.

“Parking pockets” are a special case of minor widening where a landscape buffer strip is present and where parking demand is low but still high enough that parking removal is deemed infeasible. A parking pocket is a curb indentation into the landscape strip for one or more car lengths, enabling cars to be parked partly or fully behind the curb. This approach could be considered for the east side of Wolfe Road between Maria Avenue and Reed Avenue, a segment that currently has Shared Roadway Bicycle Markings.

Another special case of minor widening is the relocation of a median without modifying outside curb and gutter. Although this type of change is within the existing right of way, it may require relocation of utilities in the median. It may be possible to add bike lanes to parts of Mathilda Avenue between California Avenue and US-101 without modifying the outside curb and gutter, by removing parking from one side and shifting the median.

#### A.5 Shared Roadway Bicycle Marking

Bike lanes are the appropriate accommodation on streets where motor vehicles travel considerably faster than bicycles and traffic volume in the same or opposite direction makes safe passing difficult. On some streets where these conditions apply, constraints on available width or the difficulty of modifying parking may preclude the addition of bike lanes at least in the short term. This situation requires bicyclists to proactively ensure their safety by occupying enough of the available outside lane width to remain clear of parked cars whose doors might open, and of debris near the right edge of the roadway.

The Shared Roadway Bicycle Marking is now an approved traffic control device in California on streets with parallel parking. It is intended to show bicyclists how far from the right edge they should travel to avoid opening car doors, and to inform motorists that bicyclists will use the street and will stay clear of car doors for their safety. The approved marking consists of a bicycle icon and a double chevron as shown in Figures A.5 through A.7. Experimentation conducted in San Francisco found this marking superior to an earlier shape that enclosed the bicycle symbol in a hollow arrow, whose nickname (“sharrow”) has come to be applied to the approved symbol as well. At the federal level this device is called the “Shared Lane Marking”; it has not yet been incorporated in the MUTCD.

Sunnyvale currently uses these markings on Wolfe Road between Maria Avenue and Reed Avenue, where daytime residential parking is relatively light but not deemed feasible to remove, in part because the long blocks on this segment mean that Wolfe Road resident and visitor parking cannot reasonably be shifted onto the relatively distant cross streets. However, the high vehicle speeds and low parking occupancy on that segment causes most cyclists to shift to the right in the long gaps between parked cars, forcing them to negotiate back out into traffic to pass the next parked car. Based on this experience, parking occupancy and speed differential should be considered when evaluating other street segments for Shared Roadway Bicycle Markings.

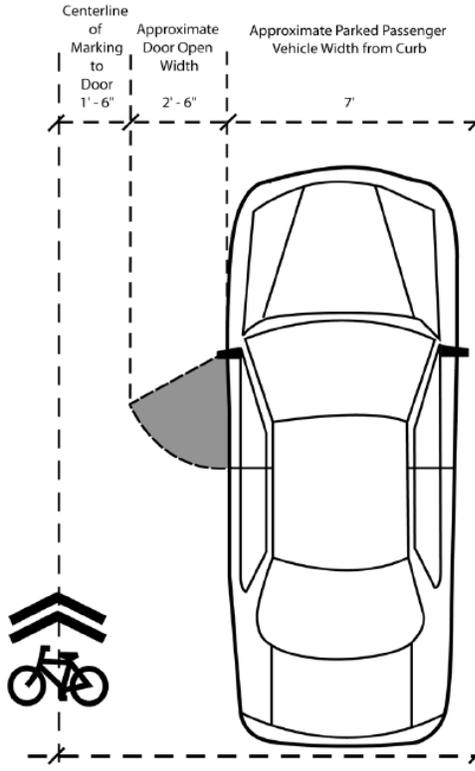




**Figure A.5: Shared Roadway Bicycle Marking**



**Figure A.6: Marking in use**



**Figure A.7: Lateral placement of marking (centered 11' or more from curb face)**

Before the Shared Roadway Bicycle Marking became available, Sunnyvale’s practice for high-conflict narrow-outside-lane situations was to post “Share The Road” warning signs like the one shown in Figure A.8. Such signs were used on Sunnyvale Avenue between Evelyn Avenue and El Camino before that segment underwent a 4-to-3 lane reduction to reach its present layout. The 2003 Manual on Uniform Traffic Control Devices, which California has adopted as its Traffic Manual, has a “Share The Road” plaque (W16-1) for use with the W11-1 bicycle symbol sign as shown in Figure A.9.



**Figure A.8: Sunnyvale “Share The Road” sign (from 2000 Bicycle CIP)**



**Figure A.9: MUTCD “Share The Road” sign assembly**



**Figure A.10: Experimental regulatory sign for narrow-lane situations**



The intended meaning of “Share The Road” is “pass in the adjacent lane, when it is safe to do so”. However, some motorists and bicyclists interpret it to mean “yield the lane so motor vehicles can pass without delay”. This ambiguity limits the usefulness of the “Share The Road” message, even when augmented by graphics. Several jurisdictions around the U.S. are now experimenting with clearer regulatory messages for such situations, notably the “Bicycles May Use Full Lane” wording under consideration for a future MUTCD (Figure A.10). San Francisco uses “Bicycles Allowed Use Of Full Lane” signs in conjunction with Shared Roadway Bicycle Markings.

## A.6 Speed Management

### Overview

Bicycle lanes are inappropriate on streets with low traffic volumes. A bicycle lane’s purpose is to facilitate overtaking of bicyclists by motorists where motor vehicles travel considerably faster than bicycles, and where traffic volume in the same or opposite direction makes overtaking difficult or delay-prone.

On the residential and minor-collector streets that form several of Sunnyvale’s “neighborhood” bike routes, traffic volumes are low enough that passing maneuvers can use the full width of the street, which is supported by the fact that these streets have either a dashed centerline or no centerline. On many such streets, daytime parking demand is sufficiently high that parking removal or daytime restriction may be infeasible.

The appropriate bicycle accommodation on such local streets is to deter speeding so that bicyclists – especially schoolchildren and parents riding with children – are comfortable sharing the street with motor traffic that can pass using the other half of the street. On some parts of neighborhood routes, turns or jogs every few blocks limit speeding, but additional measures may be needed on long straight segments without frequent stop signs. Deterring speeding on residential streets also benefits pedestrians, and reduces the attractiveness of the street for cut-through traffic.

### Sunnyvale’s Neighborhood Traffic Calming Program

Sunnyvale has a neighborhood traffic calming program consisting of two levels. The first level involves education and enforcement including radar speed signs; the second level adds engineering measures that physically limit the maximum speed of vehicles. Figure A.11 shows several examples: a neighborhood traffic circle that limits speeds to 12-15 mph at an intersection, a speed hump that limits speeding in the middle of a long block, and a median “gateway” island to prevent high-speed turns into a block. All of these measures including the circle are “bicycle-friendly”; traffic volumes are low enough that bicyclists can pass by the circle when no car is traversing it in the same direction.

Streets classified as arterials or collectors are not eligible for the traffic calming program. This is partly because vertical speed management devices such as speed humps and speed tables are not appropriate on higher-volume streets, and neighborhood traffic circles are not applicable above approximately 2,500 vehicles per day because of the need for large trucks to turn left in front of the island. “Gateway” islands as shown in Figure A.11(c) are considered to be on the neighborhood street, not the major street.





a) Neighborhood traffic circle, Canary Drive at Loch Lomond Court



b) Speed hump, Canary Drive between Inverness Way and Loch Lomond Court



c) "Gateway" island at start of block, Canary Drive at Inverness Way

**Figure A.11: Neighborhood traffic calming devices in Sunnyvale**

### Bicycle Boulevards

A "bicycle boulevard" is a bicycle route using neighborhood or local streets on which stop signs have been largely shifted onto cross streets, enabling uninterrupted through bicycle travel. Because "turning" many stop signs in this way can attract through motor traffic to the route, it may be necessary to compensate with traffic calming devices or motor vehicle through-movement restrictions. The result is a preferential "throughway" for bicycles that retains full local access by motor vehicle to all parcels along the route.

In some cases the motor vehicle through-movement restriction may take the form of a natural barrier such as a creek or park, across which bicycles but not cars can travel. In



other cases the restriction is artificial, for example street closures or mandatory right-turn islands at collector- or arterial-street signals, with provision for bicycles to make the through movement at these locations.

Palo Alto's Bryant Street, the original Bicycle Boulevard, extends approximately three miles from south Palo Alto through downtown to the Menlo Park city limit. Its vehicular through movement restrictions consist of bicycle-and-pedestrian-only bridges across Adobe Creek and San Francisquito Creeks, two bicycle-permeable street closures, vehicle right turn islands at an arterial signal, and a neighborhood traffic circle. Bryant parallels Alma Street, an arterial roadway, and Middlefield Road, a major collector.

Bicycle boulevard candidates in Sunnyvale include The Dalles Avenue, the Alberta-Inverness route, the Evelyn-to-Tantau route described in the Bicycle Plan, Washington Avenue north of downtown, and possibly Morse Avenue between California Avenue and Ahwanee Avenue. The Sunnyvale / Maude / Borregas Avenue route to Moffett Park that will be created by the completion of the two freeway bicycle bridges will be another bicycle boulevard candidate because the bridges are gaps for motor traffic.



a) Bicycle-admitting street closure at Lowell Avenue



b) Bicycle- and pedestrian-only bridges at Adobe Creek



c) Bicycle-through / motor vehicle right-turn-only at Embarcadero

**Figure A.12: Motor vehicle through-restrictions on Palo Alto's Bryant Bike Boulevard**





## Appendix B: Municipal Code Sections Relevant to Bicycling

### B.1 Title 10: Vehicles and Traffic

The California Vehicle Code (CVC), like most state vehicle codes:

- a) explicitly enumerates regulatory powers granted to local authorities such as cities and counties,
- b) reserves for the state all such powers not so enumerated, and
- c) implicitly permits all activities not explicitly regulated.

Specifically, the CVC permits local authorities to regulate bicycle licensing, operation on sidewalks, and parking, but not to regulate bicycle operation on public streets. Several Municipal Code sections appear to do so; these are indicated with an asterisk in the Sections column of Table B.1 and discussed further in Table B.2.

**Table B.1: Municipal Code – Chapter 10.56 Bicycles**

<b>Sections</b>	<b>Description</b> ( <i>italics indicate paraphrased sections, [bracketed italics] are comments</i> )
10.56.020-10.56.120 (Bicycle licensing)	<i>Bicycles must display a DMV-issued license sticker. The fee is \$3. Licenses are valid up to 3 years. Licenses must be affixed to license plates attached to the seat tube. Bicycles are inspected before being licensed, and are not licensed if not road-worthy. Licenses may be transferred when a bicycle is sold. Mutilating a bicycle's frame or license to prevent identification is unlawful. Licenses are required on rental bicycles. Bicycles believed to be stolen may be impounded for up to five days.</i>
10.56.130. Equipment	<i>Equipment required by California Vehicle Code section 21201 on bicycles operated on public highways is required in Sunnyvale for operation off public highways.</i>
10.56.150. Riders— Seats—Number	<i>Extends California Vehicle Code section 21204, which applies to riding on public highways, to riding anywhere in Sunnyvale.</i>
10.56.140. Riding on sidewalks and overhead pedestrian crossings—Prohibited	(a) Riding bicycles, motor driven cycles, and motor scooters is prohibited on sidewalks and also on overhead pedestrian crossings signed for pedestrian use only. Children under the age of thirteen years must walk their bicycles upon any overhead pedestrian crossing that is signed for pedestrian use only.  (b) Sidewalk cycling is prohibited between ages 13 and 61. Children under 13 and adults over 61 may ride in single file on sidewalks except those adjacent to schools, stores, or other commercial buildings, exercising due care and yielding right of way to pedestrians. However, anyone regardless of age may ride on a sidewalk if riding in the adjacent street would be unsafe.
*10.56.160 Speed	It is unlawful for any person to operate a bicycle on a street or highway at a speed greater than is reasonable or prudent having due regard for the traffic on, and the surface and width of, the street or highway, and in no event at a speed which endangers the safety of persons or property.
10.56.170 Stunt Riding	It is unlawful for any person riding or operating a bicycle to perform or attempt to perform any acrobatic or stunt riding upon any street or highway or other public place. This section is not meant to prohibit stunt riding as part of officially sanctioned events, or places clearly posting stunt riding as appropriate.
*10.56.180. Emerging from alley or driveway	The operator of a bicycle emerging from an alley, driveway or building, upon approaching the sidewalk area extending across any alley or driveway, shall yield the right-of-way to all pedestrians approaching on the sidewalk or sidewalk area, and upon entering the roadway shall yield the right-of-way to all vehicles approaching on the roadway close enough to constitute a hazard



**Table B.1: Municipal Code – Chapter 10.56 Bicycles (continued)**

*10.56.200. Towing, pulling or pushing persons or objects prohibited	It is unlawful for any person operating a bicycle to tow or pull any person or object from the rear thereof, except attachments specifically designed for this purpose, or push or propel any person or object in front of the bicycle.
*10.56.210. Group riding.	It is unlawful for any persons operating bicycles upon a roadway to ride more than two abreast.
10.56.220. Parking	It is unlawful for any person to park, or allow to remain parked, any bicycle (1) upon any public street or roadway other than in such a manner that some portion of the bicycle touches the curb and so as to afford the least obstruction to vehicular traffic; or (2) upon any public sidewalk except in a bicycle rack, or against a building, or by means of a stand to maintain the bicycle in a vertical position, or at a curb, and in such a manner as to afford the least obstruction to pedestrian traffic.
10.56.230. Parking zones.	It is unlawful for any person to park, or allow to remain parked, any bicycle (1) upon any public street or roadway other than in such a manner that some portion of the bicycle touches the curb and so as to afford the least obstruction to vehicular traffic; or (2) upon any public sidewalk except in a bicycle rack, or against a building, or by means of a stand to maintain the bicycle in a vertical position, or at a curb, and in such a manner as to afford the least obstruction to pedestrian traffic.
10.56.240. Obedience to traffic control devices.	It is unlawful for any pedestrian or person operating a bicycle to disobey the directions of any traffic control device on public or private property unless otherwise directed to do so by a public safety officer or unless it is unsafe to do so at the time. A pedestrian walking a bicycle has all the rights and is subject to all of the regulations applicable to pedestrians.
10.56.250. Riding on school grounds and playgrounds.	It is unlawful for any person to ride or operate a bicycle in a reckless or irresponsible manner upon any playground or school ground where children are present.
10.56.260. Bicycle lanes, routes, and bikeways established.	The city council by resolution or motion may establish bicycle lanes and routes along designated streets or portions of streets. The city council by resolution or motion may establish bicycle paths in the interest of providing transportation, recreation and developing open space programs. The city council by resolution or motion may establish bikeways as defined in the Streets and Highways Code as the same exist or may be amended hereafter. Any person operating a bicycle along a bicycle route or Class III bikeway as defined in the Streets and Highways Code shall be subject to all of the rights and duties applicable to the operators of motor vehicles generally along the streets or portions of streets so designated, such designation being intended only to inform the operators of bicycles that such streets or portions of streets afford an expeditious route of travel by bicycle, and to alert the operators of motor vehicles of the likelihood of a higher incidence of bicycle traffic where the roadway is so marked.
10.56.270. Bicycle lanes, routes, paths, and bikeways—Signs and markings.	The city traffic engineer shall designate bicycle lanes, routes, paths and bikeways by the placement of appropriate signs and roadway markings.
*10.56.280. Bicycle lanes—Class II bikeways—Use required and restricted.	When signs and markings are in place giving notice of the existence of any bicycle lane or Class II bikeway as defined in the Streets and Highways Code, it is unlawful for any person: (a) To operate a bicycle along any portion of the roadway of a street so designated other than within the bicycle lane or bikeway on the right side of the roadway, except for the purpose of passing another bicycle or to avoid an obstruction. (b) To operate any vehicle other than a bicycle along and within a bicycle lane or bikeway, except for the purpose of making a legal turning maneuver.



**Table B.1: Municipal Code – Chapter 10.56 Bicycles (continued)**

<p>10.56.285. Bicycle paths—Class I bikeways—Use required and restricted.</p>	<p>When signs and markings are in place giving notice of the existence of any bicycle path or Class I bikeway established by this chapter, it is unlawful for any person:</p> <p>(a) To operate any unauthorized vehicle along any portion of the bicycle path or bikeway;</p> <p>(b) To operate a bicycle on the bicycle path or bikeway other than safely when passing pedestrians or bicyclists. This requirement does not prohibit a bicyclist from choosing to operate on a roadway when a Class 1 bikeway is available.</p> <p>(c) To operate a bicycle other than in a manner consistent with Section 9.62.040(h);</p> <p>(d) To fail to obey all signs and markings regulating use of the bicycle path or bikeway;</p> <p>(e) To operate a bicycle at all times in any manner other than with reasonable regard to the safety of all others, which shall include but not be limited to signaling all turns; passing to the left of any bicycle, authorized vehicle, or pedestrian being overtaken; and passing to the right of any oncoming bicycle, authorized vehicle or pedestrian.</p>
<p>10.56.286. Map showing bicycle facilities.</p>	<p>There shall be maintained on file in the department of public works and available for inspection by the public, a map showing the bicycle lanes, paths, routes, and bikeways, as established from time to time by the city council.</p>
<p>10.56.290. Provisions requiring Caltrans approval—Withdrawal of approval.</p>	<p>Any provision of this chapter which regulates bicycles, or delegates the regulation of bicycles upon the state highways or state freeways in any way for which the approval of Caltrans is required by law, shall cease to be operative six months after receipt by the city council of written notice of withdrawal of approval of Caltrans. Immediately upon the effective date of such revocation, the city clerk shall enter upon the original copy of the ordinance codified in this section a notification of such withdrawal.</p>
<p>10.56.300. Regulation of bicycles on state highways or freeways—Prior approval requirement.</p>	<p>Whenever this chapter delegates authority to a city officer, or authorizes action by the city council to regulate bicycles upon a state highway or a state freeway in any way which by law requires the prior approval of Caltrans, no such officer shall exercise such authority nor shall action by the city council be effective with respect to any state highway without the prior approval in writing of Caltrans when and to the extent required by Division 11 of the Vehicle Code.</p>
<p>10.56.310. Violation—Infraction.</p>	<p>Any person violating a provision of this chapter pertaining to licensing shall be subject to the maximum fine allowed under California Vehicle Code Section 39011. Any person violating any of the provisions set forth in this chapter pertaining to the operation of a bicycle or any provision of a resolution establishing a bicycle path, lane or bikeway authorized by this chapter shall be guilty of an infraction and upon conviction thereof shall be punished as set forth in Chapter 1.04 of this code.</p>



Table B.2 lists those Municipal Code sections that appear to regulate bicycle operation on public streets, a power not granted to local authorities by the California Vehicle Code. Sections 10.56.290 and 10.56.300 render inoperative any Municipal Code section for which Caltrans withdraws approval via written notice to the City Council, but any such conflicting section is unenforceable regardless of such notice.

**Table B.2: Municipal Code sections that conflict with California Vehicle Code**

<b>Sunnyvale Municipal Code</b>	<b>California Vehicle Code (CVC)</b>	<b>Notes</b>
10.56.160 (Speed)	22350 (Basic Speed Law)	
10.56.180 (Emerging from Alley or Driveway, yield to pedestrians on sidewalk and vehicles on roadway)	21804 (Entry Onto Highway) 21952 (Right-of-Way on Sidewalk)	
10.56.200 (Towing, Pushing, Pulling)	21203 (Hitching Rides)	
10.56.210 (Group Riding)	None	The CVC does not prohibit group riding.
10.56.280 (Use of Bike Lanes)	21208 (Permitted Movements from Bicycle Lanes)	The CVC allows bicyclists to leave a bike lane for these other reasons: <ul style="list-style-type: none"> <li>• Traveling as fast as the normal speed of traffic</li> <li>• Avoiding a right turn area</li> <li>• Preparing for a left turn</li> </ul>



B.2 Title 19: Zoning

The current Sunnyvale Zoning Code requires bicycle parking only for multifamily residences. However, the Code ties the provision of bicycle commuter support facilities (showers and/or dressing rooms) to the approvable Floor Area Ratio and required number of vehicle parking spaces of a proposed workplace development.

**Table B.3: Municipal Code – Chapter 19 (Zoning) sections relating to bicycling**

Chapter 19.12: Definitions	
19.12.030. “B”	(5) “ <b>Bicycle parking, secured</b> ” means bicycle parking facilities located in convenient, safe, clean and well-lighted areas, near building entrances, out of pedestrian paths, and within view of windows, security offices or high volumes of pedestrian traffic. Secured bicycle parking shall be protected from the weather and have surfaces that are mud, dust and debris free, and not be adjacent to car parking or traffic lanes without adequate protection. Secured bicycle parking devices shall include the following: lockers; or enclosed, locked limited access areas with rigid metal racks or fixed stationary objects which allow the bicycle frame and both wheels to be locked with a bicycle locking device or the bicyclist supplying a lock and six-foot cable. Secured bicycle parking shall be located in a flat area on the ground level. If located within a building, secured bicycle parking shall be easily accessible on the ground floor or by elevator to other floors. Reasonable and sufficient ingress and egress must be provided so that a bicycle may be easily moved in and out of the locker or locked limited access area.
Chapter 19.32: Building Heights, Lot Coverages, and Floor Area Ratios	
19.32.070. Floor area ratio (FAR).	(a) The total floor area ratio of all buildings on a parcel zoned M-S or M-3 and occupied in whole or in part by the following uses shall not exceed thirty-five percent:.... (b) The following are exceptions to the total floor area ratios set forth in (a):.... (5) <i>Bicycle</i> support facilities. When showers and/or dressing rooms are provided for use by <b>bicycle</b> commuters, the floor area occupied by such facilities may result in an increase in total floor area ratio of up to forty percent if approved through the miscellaneous plan permit process. Request for higher percentage substitutions shall be reviewed by the planning commission using the use permit process.
Chapter 19.46: Off-Street Parking and Loading	
19.46.030. Preferential parking for car pool vehicles; bicycles.	(c) In lieu of up to five percent of required vehicle parking, secured bicycle parking may be allowed in industrial areas as follows: (1) Eight secured bicycle parking spaces for one vehicle space; or (2) One shower and dressing room with clothing lockers for <b>bicycle</b> commuters for two vehicle spaces; or (3) A combination of bicycle parking and showers/locker rooms. Up to five percent reduction of vehicle parking shall be considered through the miscellaneous plan permit process. Additional secured <b>bicycle</b> parking in lieu of vehicle parking shall be reviewed by the planning commission using the use permit process.
19.46.050 Parking Standards	<u>Table 19.46.050: Parking Requirements</u> lists vehicle parking requirements and includes this Note (see 19.12.030 for definition of “secured bicycle parking”) Note 1: Multifamily residential developments of five or more units shall have secured <b>bicycle</b> parking at a ratio of one secured bicycle parking space for every four units, but no fewer than four spaces.
Chapter 19.88 Use Permits	
19.88.020 Authority	Authority for action on a use permit shall be vested as follows: .... (b) Major use permit determined by the planning commission for: .... (2) Floor area ratio which would otherwise meet the maximum of thirty-five percent except that floor area occupied by showers and/or dressing rooms provided for use by <b>bicycle</b> commuters increases the total floor area ratio over forty percent. This FAR bonus over thirty-five percent shall only be allowed for bicycle related facilities;





## **Appendix C: Standard Operating Procedure: Bicycle and Pedestrian Safety Through Work Zones**

The City of Sunnyvale sets forth rules and requirements for private and public construction activities in its Standard Operating Procedures (SOPs). The following two-page SOP and the subsequent figure address bicycle accommodation through work zones.

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### **CITY OF SUNNYVALE STANDARD OPERATING PROCEDURES BICYCLE AND PEDESTRIAN SAFETY THROUGH WORK ZONES**

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#### **Warning sign types and locations:**

- For any lane closures on the right side of the street there will be four required signs.
  1. Road Work Ahead
  2. Right /Bike Lane Closed Ahead (depending on the situation)
  3. A Bike Warning Sign - either W-79, Share the Road, or Watch for Bicyclists. Staff prefers using the Watch for Bicyclists sign.
  4. Lane/Bike Lane Closed (depending on the situation)

#### **Bike lane closures:**

- For any bike lane closures there will be four signs required.
  1. Road Work Ahead
  2. Right /Bike Lane Closed Ahead (depending on the situation)
  3. A Bike Warning Sign - either W-79, Share the Road, or Watch for Bicyclists. Staff prefers using the Watch for Bicyclists sign.
  4. Lane/Bike Lane Closed (depending on the situation)
- Staff will try to provide a 14 foot wide travel lane in situations where bicycles and cars will need to share a lane. If this is not achievable, the Caltrans minimum of 10 feet will be required.

#### **Sidewalk closures:**

- A clear pedestrian path will be provided through any sidewalk construction.
  1. This could be attained by
    - a) creating a pathway on the sidewalk around the construction, or through the parking strip
    - b) creating a coned or barricaded area off of the sidewalk,
    - c) designating a flagger to escort pedestrians safely through the work zones
  2. If there is no clear pathway immediately available, pedestrians will be detoured. Any detour will include detailed signage. The pedestrian will be notified of the detour before they reached the construction sites so that no backtracking would be required. Elaborate pedestrian detours will be avoided if possible because staff has found them to be ineffective.
- Issues concerning provisions for people with disabilities will be handled on a case by case basis.



*City Of Sunnyvale Standard Operating Procedures (SOPs):  
Bicycle And Pedestrian Safety Through Work Zones, continued*

**Sign placement for work zones that will not be closing any travel lanes:**

- Work crews must warn roadway users of the work being conducted on the side of the roadway even when no travel lanes are being closed. In this situation, the warning signs will be placed off of the roadway as much as possible. Bicycle and pedestrian travel will be considered in the placement of the sign. Sign visibility and proximity to the work zone will also be considered.

**Duration of work:**

- Work crews may use their discretion regarding warning signs and traffic control on jobs that will last under 1 hour. Short duration work is defined as work that occupies a location up to one hour. It is appropriate to use colored or marked vehicles with rotating strobe lights, arrow panels or truck mounted signs in place of advance signs and channelizing devices.

**Nighttime visibility:**

- Retro reflective 28" cones will be used to barricade work zones at night.
- Barricades with reflective striping will be used to hold warning signs.
- Arrow boards will be used under some circumstances.
- All work being conducted by the city at night will only be done on an emergency basis.

**Storage of Equipment on-street:**

- No storage of construction equipment or debris is permitted on the street outside of working hours.

**Outside contractor compliance:**

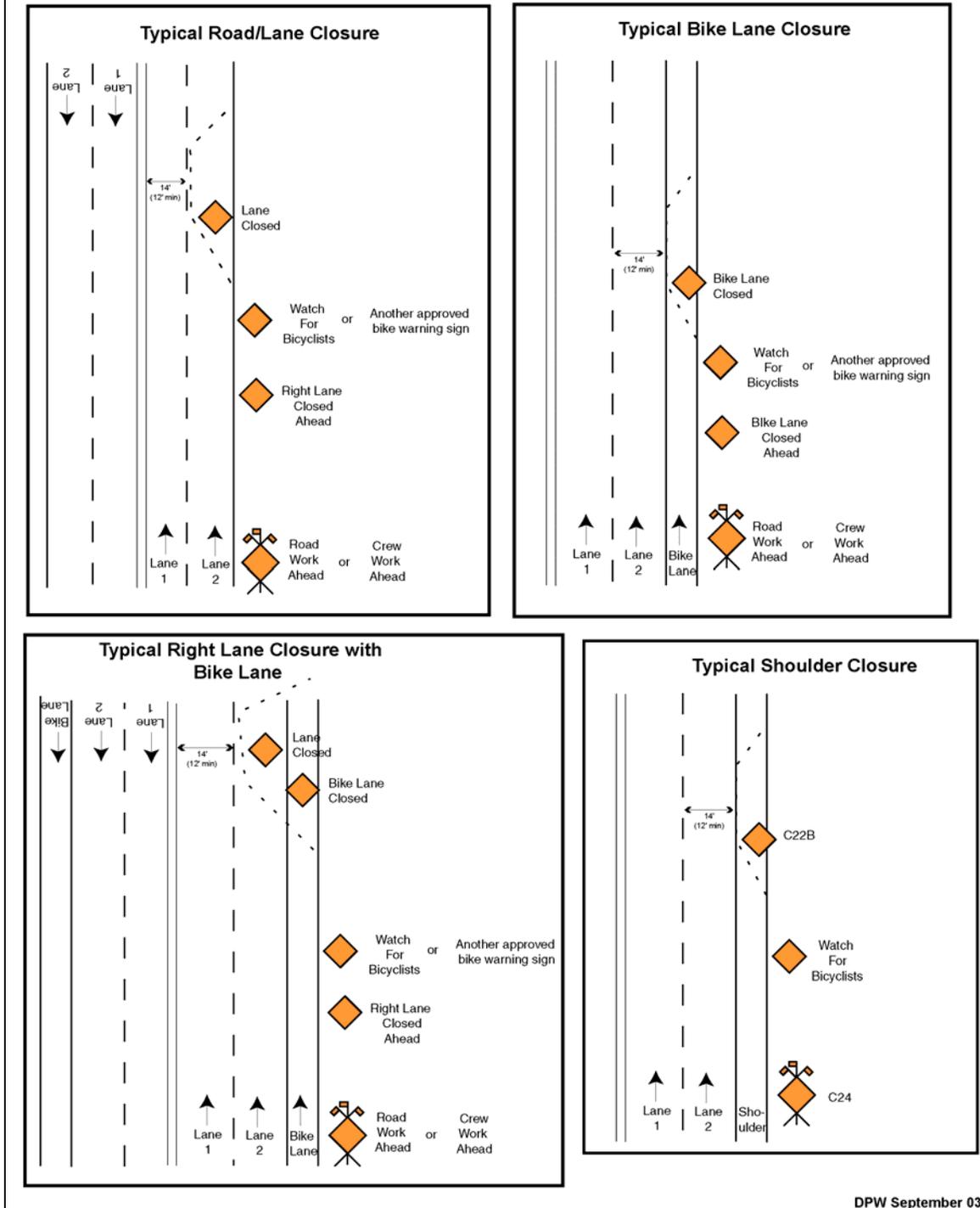
- Provide all encroachment permittees with a copy of the city's SOP.
  1. Make contractors aware ahead of time that they will be required to secure their own signs.
  2. Staff will continue to make announcements to sign vendors that the City will be requiring these signs.

**Complaint procedures:**

- For complaints related to work done by city crews, all complaints will be routed through the "field services" answer point.
- For complaints related to work done for capital projects or by contractors with encroachment permits, all complaints will be routed to the Project Administration division.



**City of Sunnyvale  
SOP for  
Right Lane and Bike Lane Closures**



**Figure C.1: Standard Operating Procedure for Right Lane and Bike Lane Closures**





## Appendix D: MTC 2004 SafetyTAP Study Excerpt: Bicycle-Related Collisions



**CITY OF SUNNYVALE**

**Metropolitan Transportation Commission  
Pedestrian and Bicycle SafetyTAP Report  
Appendices**

**March 2004**



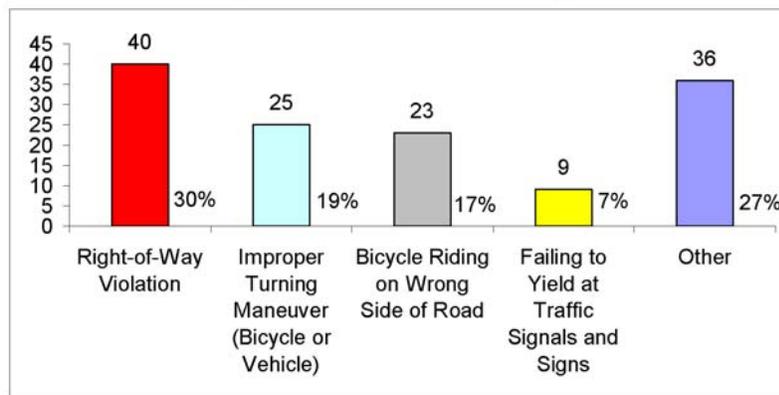
## Bicycle Collisions

Between June 30, 1999 and June 30, 2002, there was a total of 133 bicycle collisions reported in Sunnyvale, California.

### Collisions

Figure 1, below, presents the top Primary Collision Factors (PCFs) for bicycle-related collisions in Sunnyvale during the study period.

**Figure 1**  
**Primary Collision Factors for Bicyclists**



### *Right-of-Way Violations*

The largest category of collisions in Sunnyvale for cyclists involves a right-of-way violation. The party at fault in the majority of these collisions is the motorist at 80 percent of the collisions, while the cyclist is at fault 20 percent of the time. All collisions where the cyclist was found to be at fault involve males, and seven of eight involve males under 16. Interestingly, these collisions all involve female drivers.

Males between the ages of 30 and 45 represent the majority of drivers at fault in collisions involving a right-of-way violation. Overall, men represent 83 percent of drivers at fault in these crashes.

The two main vehicle code violations for right-of-way collisions are:

- 1) Drivers failing to yield to on-coming cyclists when executing a left turn at an intersection.
- 2) Drivers or cyclists failing to yield to on-coming traffic when exiting an alley or driveway. All collisions where the cyclist is at fault fall into this category.



**MTC Pedestrian and Bicycle Safety TAP Report  
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For collisions in the first category, around half were at signalized intersections and half at uncontrolled intersections. A majority occurred during daylight hours under clear conditions, and all were on major roads. Collisions in the second category occurred more often on minor roads, and all of the collisions involving cyclists in this category (i.e. males under 16) occurred on minor roads.

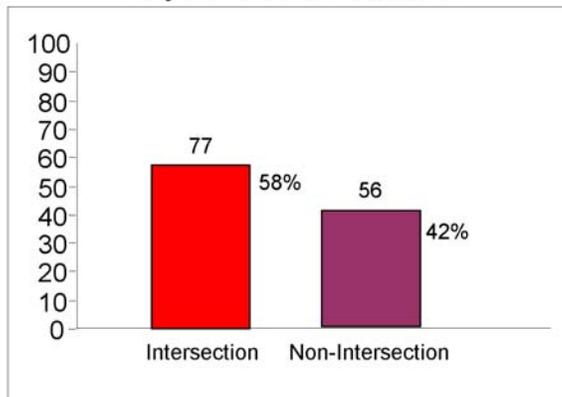
*Improper Turning*

For collisions where the Primary Collision Factor is improper turning, motorists were found to be at fault in 85 percent of the collisions. In collisions where the motorist was at fault, a majority were the result of the motorist executing a right turn traveling in the same direction as the cyclist. Most likely, these are collisions where the cyclist was traveling to the right of the motorist when the motorist made the right turn.

*Intersection and Non-Intersection Collisions*

More than half of all reported bicycle collisions (including non-injury collisions) occurred at or near intersections, while 42 percent occurred away from intersections. Nationally, bicycle fatalities occur more often at non-intersection locations (66 percent).<sup>1</sup> Figure 2, below, presents the number and percentages of crashes involving bicyclists that occur at and away from intersections.

**Figure 2  
Bicycle Collision Locations**



Of the collisions that occurred at intersections, 64 percent of the locations were controlled intersections and 36 percent were uncontrolled. At controlled locations, drivers are more often at fault (65 percent of the time), while at uncontrolled locations, cyclists are at fault as often as drivers.

<sup>1</sup> *Traffic Safety Facts 2001: Pedalcyclists*, National Highway Traffic Safety Administration, [www-nrd.nhtsa.dot.gov/pdf/nrd-30/ncsa/tsf2001/2001pedal.pdf](http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/ncsa/tsf2001/2001pedal.pdf), 7/12/03



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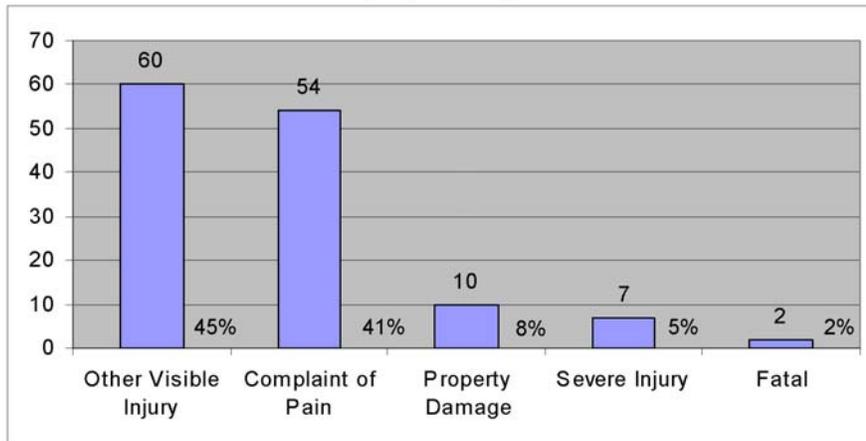
When cyclists are at fault at controlled locations, the two primary causes are red-light running and wrong-way riding. When drivers are found to be at fault at these locations, the largest number are executing a left turn, followed by those executing a right turn. A similar pattern emerges at uncontrolled intersections. Drivers at fault at these locations are usually executing a left turn.<sup>2</sup> When the cyclist is at fault, wrong-way riding is the main cause for collisions, followed by improper turning.

At non-intersection locations where the cyclist is at fault, wrong-way riding – a large proportion of which is by adult males – is the primary cause, followed by “dart-out” collisions on minor roads where a cyclist is exiting a driveway or alley. These collisions have a higher number of minors (all male) involved in them as they encompass the “dart-out” collisions noted in the Primary Collision Factor section. The main causes for collisions when drivers are at fault include improper turning (usually executing a right turn) and entering traffic from an alley or driveway.

*Extent of Injury*

Figure 3 displays the extent of injury for bicycle collisions during the study period.

**Figure 3  
Extent of Injury for Bicycle Collisions**



Of the most injurious collisions, those involving a visible or severe injury, drivers are most often at fault. Improper turning by motorists is the primary cause of these collisions. Male

<sup>2</sup> Although under “improper turning,” the main cause of driver-at-fault collisions is making a right turn, a collision where the driver or cyclist is executing a left turn may be classified as a right-of-way violation or improper turning.



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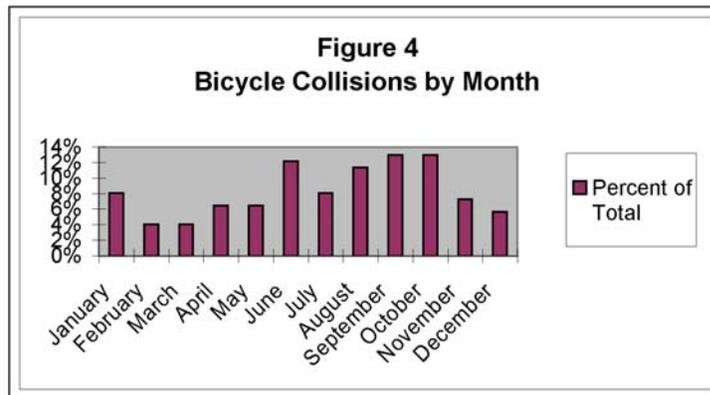
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cyclists under 18 and between the ages of 19 and 25 are the primary group represented in the injurious crashes.

Conditions

*Seasonality*

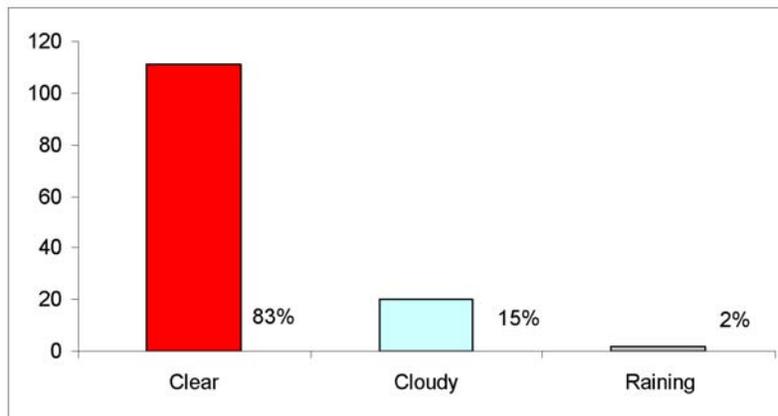
Figure 4, below, presents the percentages of bicycle collisions that occurred each month of the year. The summer and early fall months June through October appear to have the highest percentages of all collisions. This is the period when the weather is most conducive to bicycling; therefore, the spike in collisions is likely a result of higher bicycle ridership during these months. In fact, almost 60 percent of all bicycle collisions occur during this time. Additionally, 10 of the 13 collisions where the party at fault is a male cyclist under 18 occur during these months. The same trend is not found among collisions where the party at fault is a driver of either sex under 18.



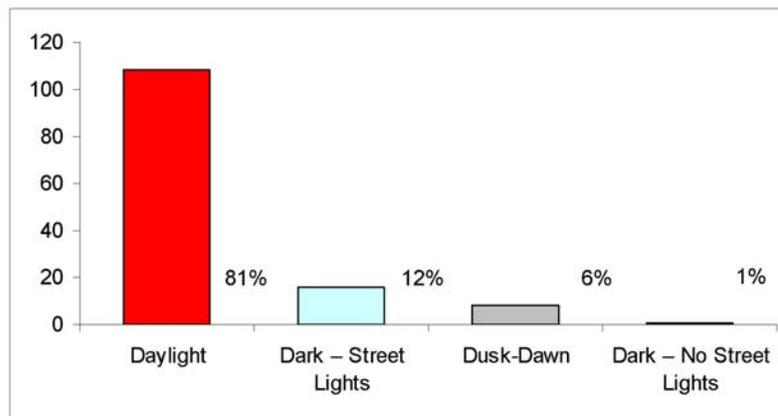
*Weather and Lighting*

As can be seen in Figures 5 and 6, a clear majority of bicycle collisions occur in clear weather and in daylight hours. According to the National Insurance Institute for Highway Safety, between one-quarter and one-third of all bicycle fatalities nationally occur during non-daylight hours. Although the collisions described below are not limited to fatal crashes, they appear to be consistent with national trends.

**Figure 5**  
**Weather Conditions During Bicycle Collisions**



**Figure 6**  
**Lighting Conditions During Bicycle Collisions**



**MTC Pedestrian and Bicycle Safety TAP Report  
Analysis of Bicycle and Pedestrian Collision Data  
City-Wide General Analysis**

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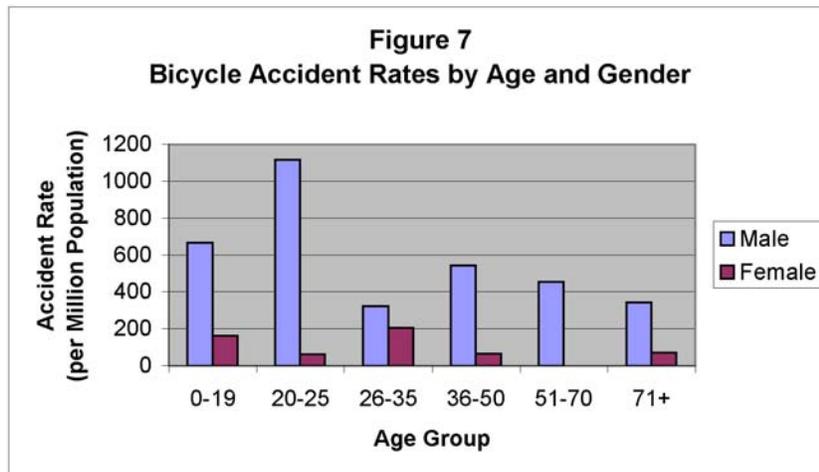
Around 20 percent of all collisions occur during non-daylight hours. Drivers and cyclists are equally at fault in collisions that occur at night or during the dusk-dawn hours. A large majority (72 percent) occur at intersections, with a 50-50 split between controlled and uncontrolled locations. The cause for these collisions follows a pattern similar to the pattern for intersection crashes overall. Almost half of the cyclists involved in these collisions are between the ages of 17 and 25, whether they are at fault or not. Half of the crashes that occur in non-daylight hours result in severe or visible injury.

Demographics

Male bicyclists in Sunnyvale under the age of 20 had the highest percentage of bicycle collisions during the study period. Across all age groups, male cyclists are involved with 84 percent of all bicycle collisions. Table 1 indicates that both males and females have collision rates almost twice the national average

In collisions where female cyclists are at fault, wrong-way riding is the prevalent cause. Of the total 22 collisions that involve female cyclists, drivers are at fault in 68 percent. When male cyclists are involved in bicycle collisions, they are at fault more often than female cyclists (42 percent of the time).

	<b>Males</b>	<b>Females</b>
Sunnyvale, California	505	93
National Rate	221	44



**MTC Pedestrian and Bicycle Safety TAP Report  
Analysis of Bicycle and Pedestrian Collision Data  
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*DUI*

In all but one of the collisions involving alcohol, the cyclist was found to be at fault. While these collisions account for a small number (six) of the overall collisions, they result in severe injury more often. They mostly occur during daylight hours, a majority between three and five o'clock.

*High Incidence Locations*

The high-incidence locations for cyclists include the following intersections:

Top 5 Locations for Bicycle Collisions (mix of mid-block and intersection)

1. Mary Avenue at El Camino Real (5)
2. El Camino Real between Cezanne Drive and Fair Oaks Avenue (3)
3. Mathilda at El Camino Real (2)
4. Olive at Mathilda (2)
5. Olive at Mary (2)



**MTC Pedestrian and Bicycle Safety TAP Report  
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Partnerships

*School District*

Sunnyvale has five school districts: the Sunnyvale School District, Santa Clara School District, Fremont High School District, Cupertino School District, and the private school sector. The City works with each of the districts at different need levels.

*Police Department*

Public Works has a good working relationship with the police department. They do not have regularly scheduled meetings, but frequent contact is made on a case-by-case basis.

*Department of Public Safety*

Public Safety and Transportation and Traffic share high collision location information. The two divisions are collaborating on development and operation of a shared database for collision information.

*Community Groups*

The City has a staff liaison to the BPAC, which meets once a month. The BPAC sends one representative to the regional Bicycle Advisory Committee. The BPAC was formed in 1992. Apart from the BPAC, there are no advocacy or community organizations that staff interacts with on a formal regular basis.

Programs in Other Cities

Other cities participating in the Safety TAP have policies that may be appropriate for the City of Sunnyvale.

*Santa Rosa*

**Bicycle Map:** Santa Rosa currently has a bicycle map available online that advertises to cyclists the most appropriate routes for cycling within the City. Sunnyvale residents may access the recently published VTA map online, but a map specific to Sunnyvale may also be useful.

**Take a Free Ride Program:** This program offers a list of incentives for employees to utilize alternative modes to commute to work. Funds for this program are provided for using a Transportation Fund for Clean Air (TFCA) grant.

**Interlink program:** This program provides transportation services and support for children with disabilities. The programs also sponsors “Barrier Awareness Day” in October.



**MTC Pedestrian and Bicycle Safety TAP Report  
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*Napa*

Share the Road Signs: The City of Napa Traffic Engineering Department has policies for installing “Share the Road” signs along Class III facilities with high collision histories, high bike and auto volumes, and right of way constraints.

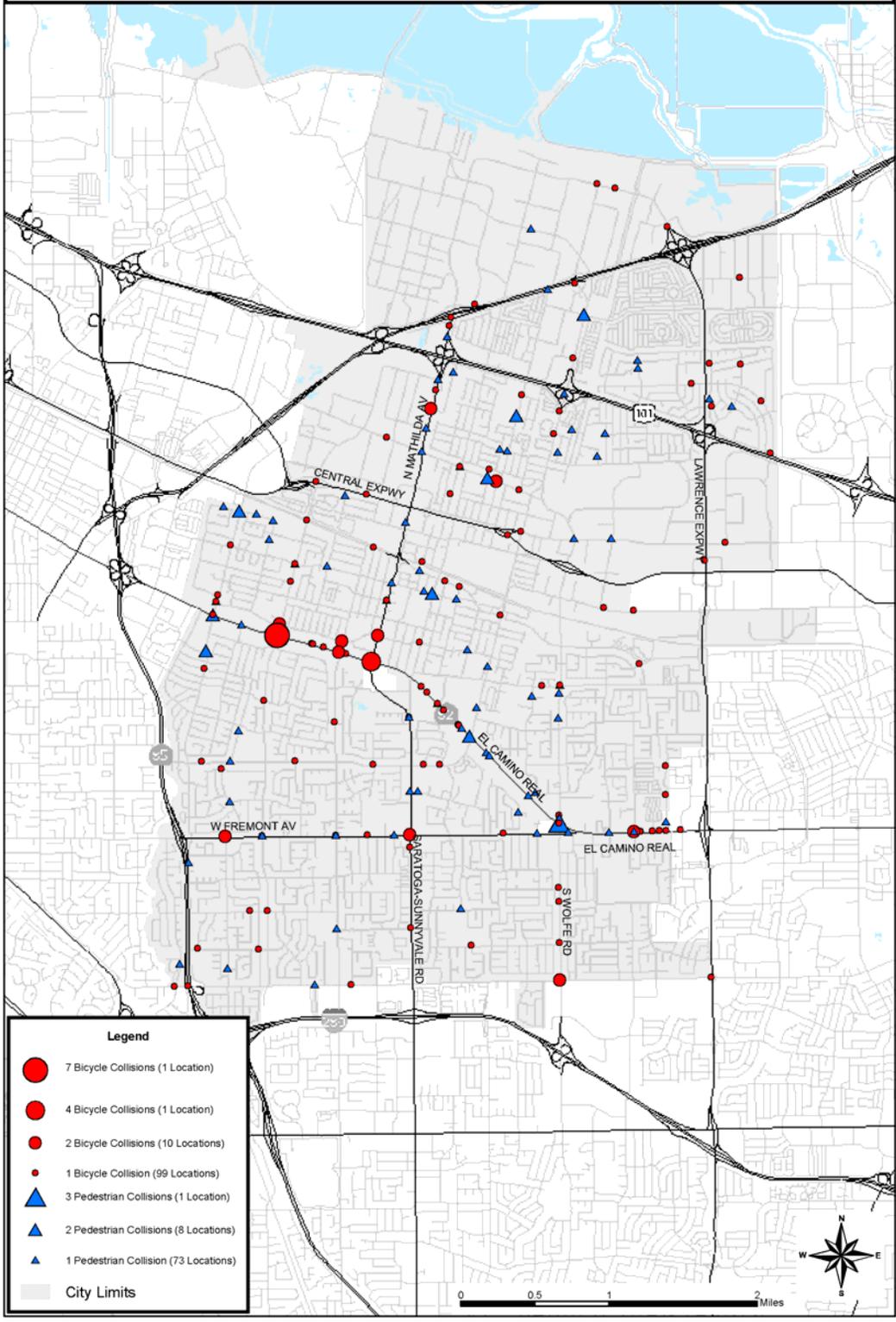
Junior Traffic Patrol: The Napa Junior Traffic Patrol originated in 1955 as a cooperative effort between the Napa Police Department and area schools. Each year, students selected for the program receive training from the Police department and accept responsibility for controlling pedestrian and vehicle traffic at and around their school.

*Fremont*

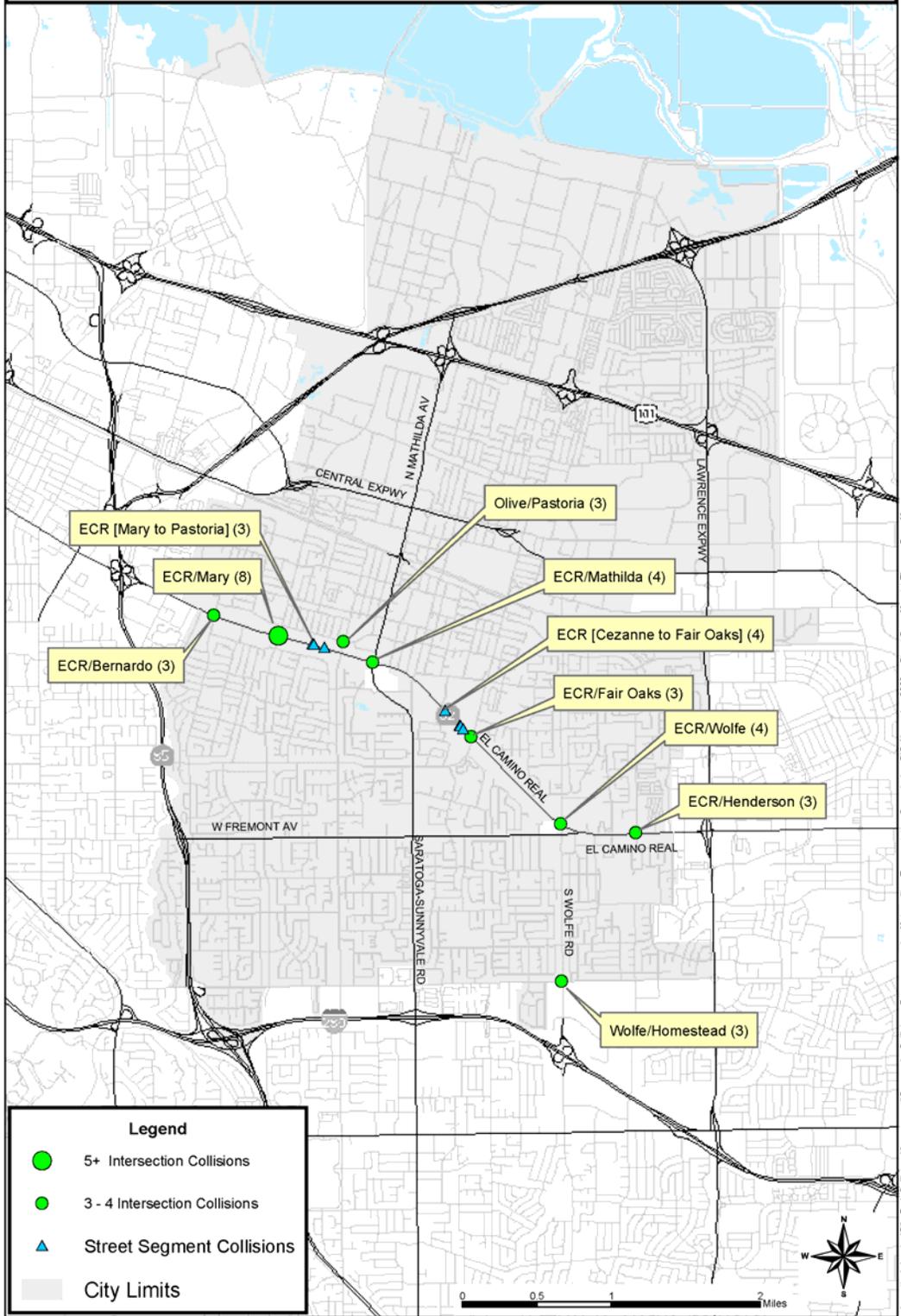
Junior Safety Patrol: The Junior Safety Patrol is the result of a partnership between the Fremont Police Department, the Fremont Unified School District, and the California State Automobile Association. With a volunteer staff member or parent at each school, fifth and sixth grade students are trained to ensure safety of pedestrians at crossings near the school.



## City of Sunnyvale Map 0 - All Bicycle and Pedestrian-Involved Collisions



# City of Sunnyvale Map 1 - High Frequency Locations

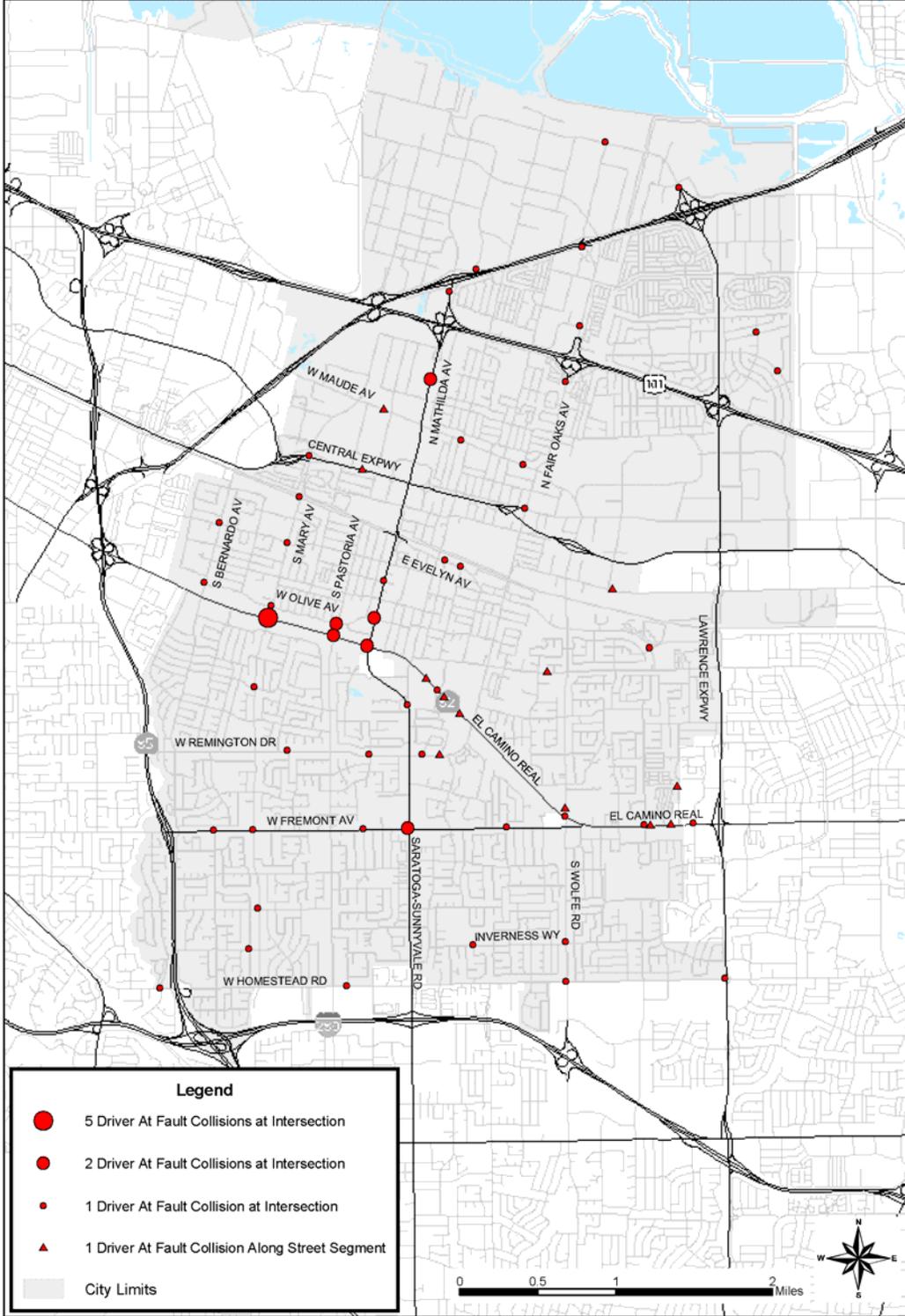


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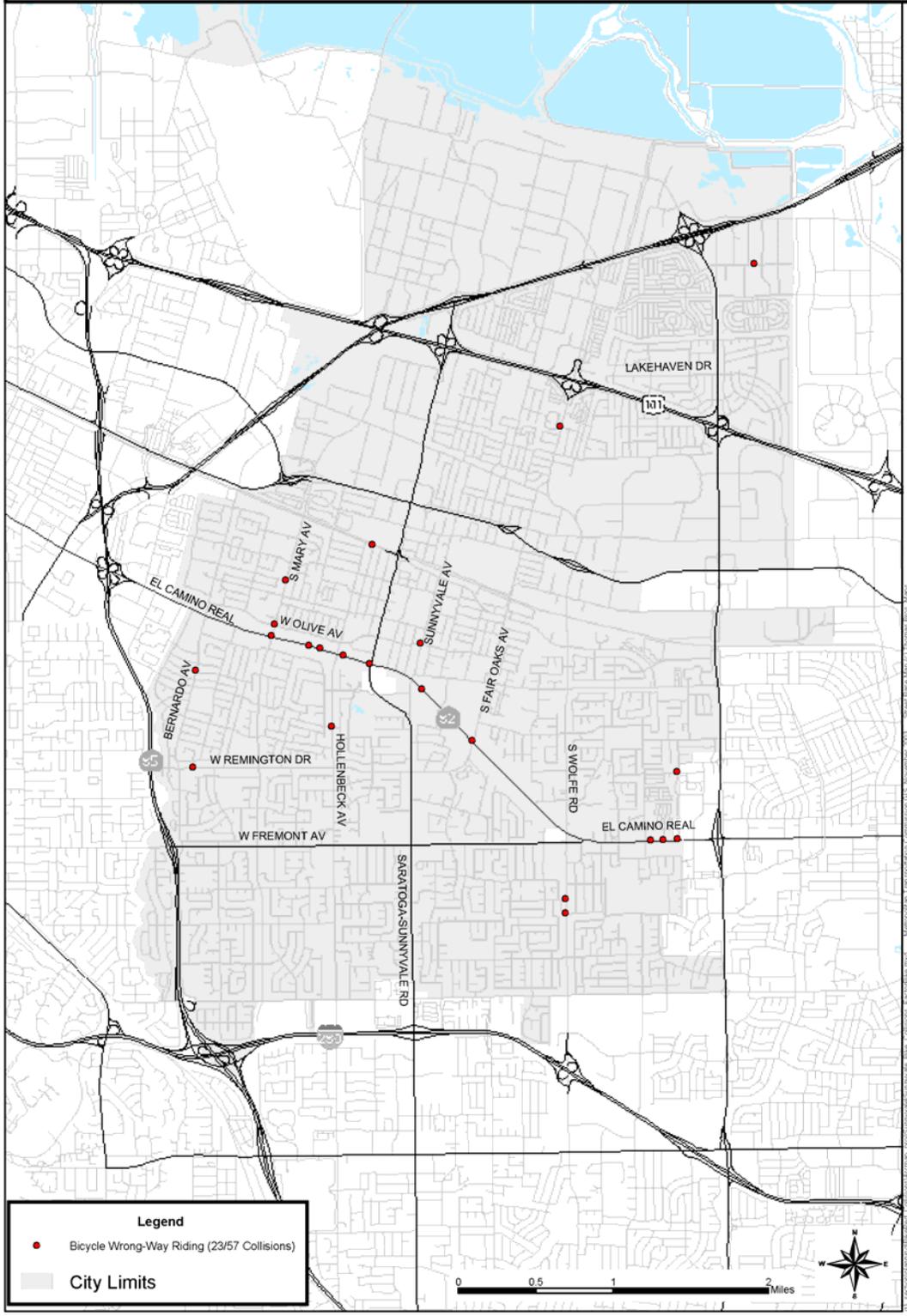
### City of Sunnyvale Map 3 - Locations of Bicycle Collisions with Driver At Fault



MapSource: MapInfo Software Corporation © 2005, November 2005. StreetView Map © 2005, November 2005.



**City of Sunnyvale**  
**Map 6 - Top Primary Collision Factor for Bicyclist At Fault Collisions**



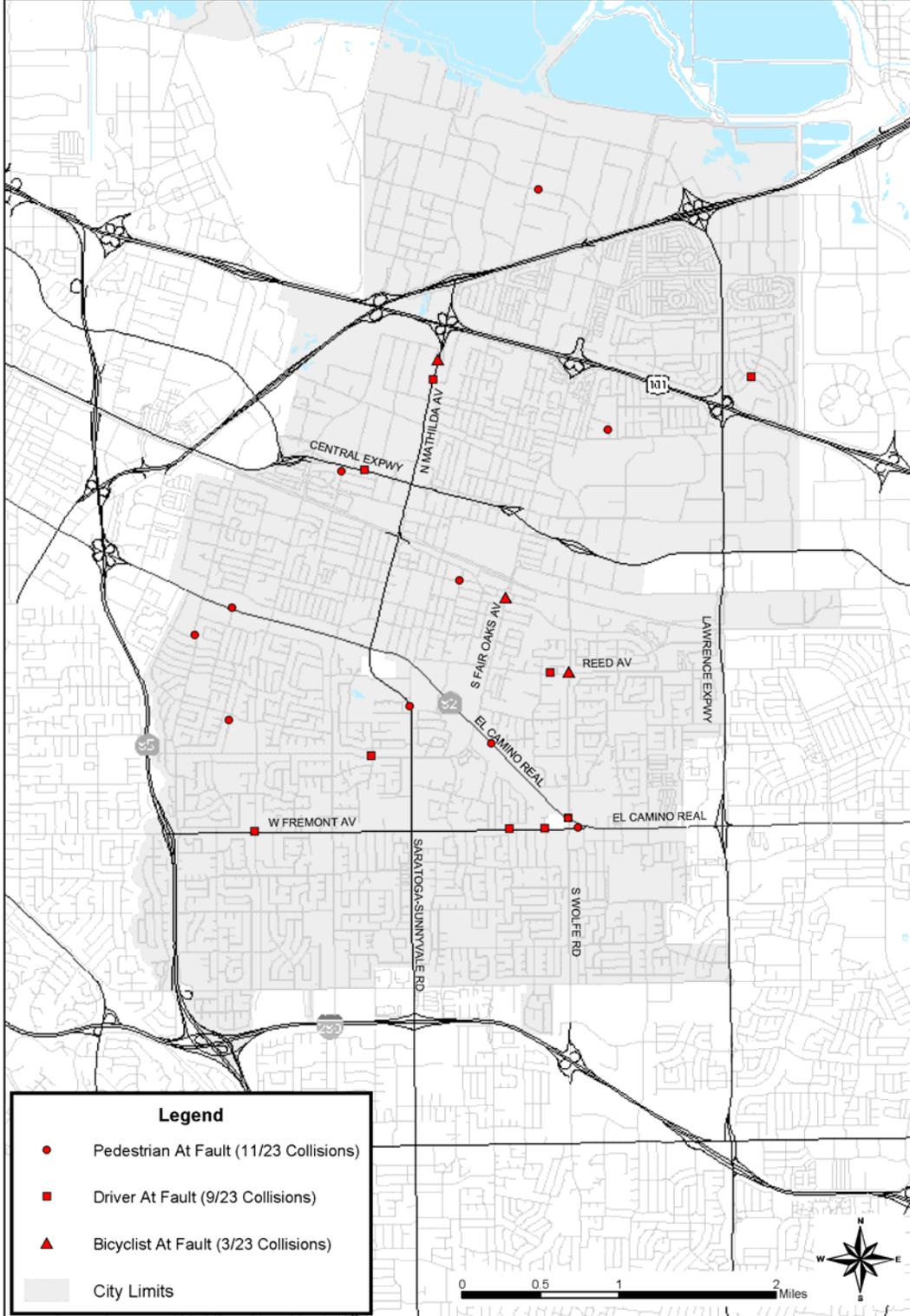
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 Map6 - Top Primary Collision Factor for Bicyclist At Fault Collisions  
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 City of Sunnyvale







## City of Sunnyvale Map 12 - Severe Injury and Fatal Collisions

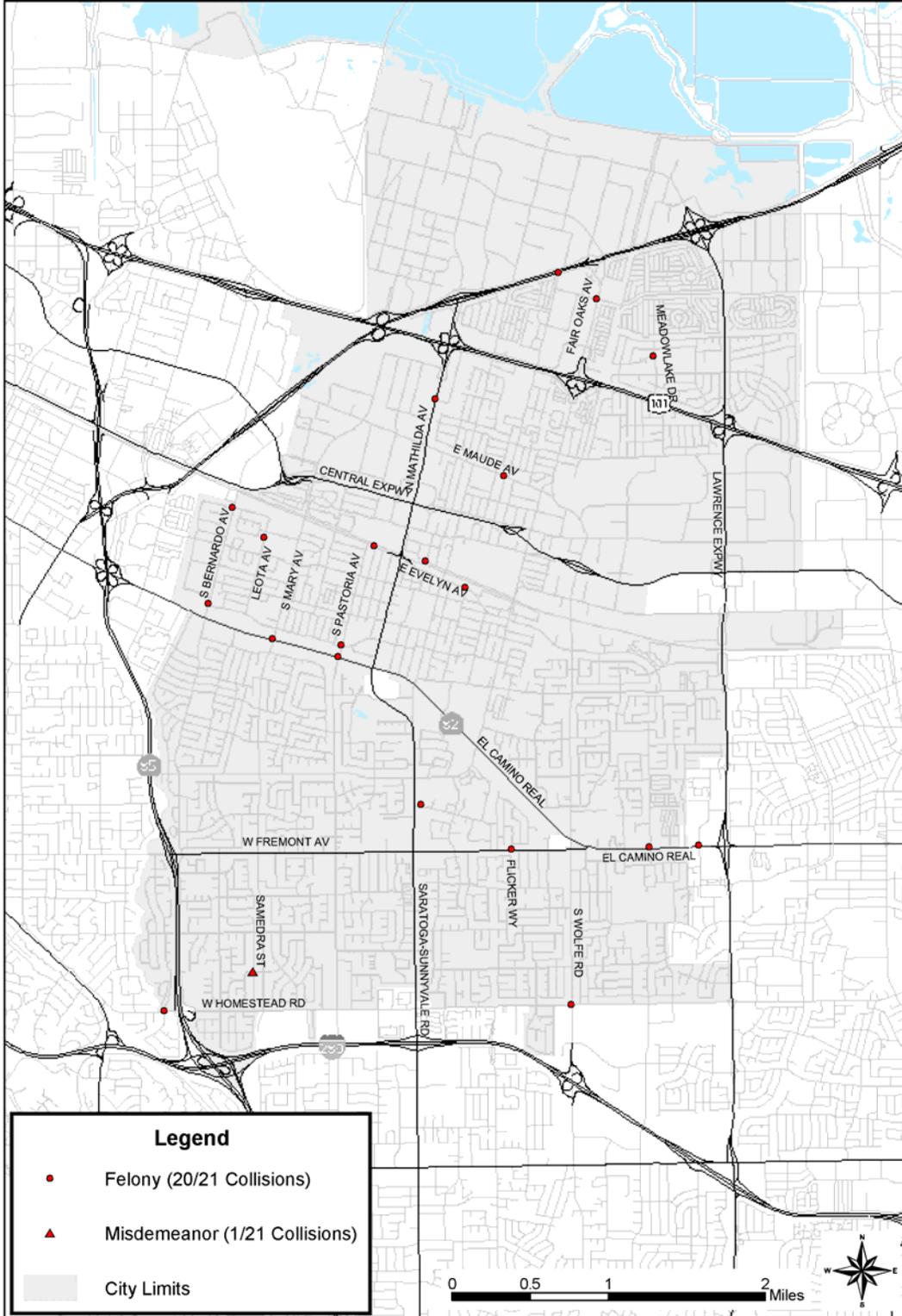


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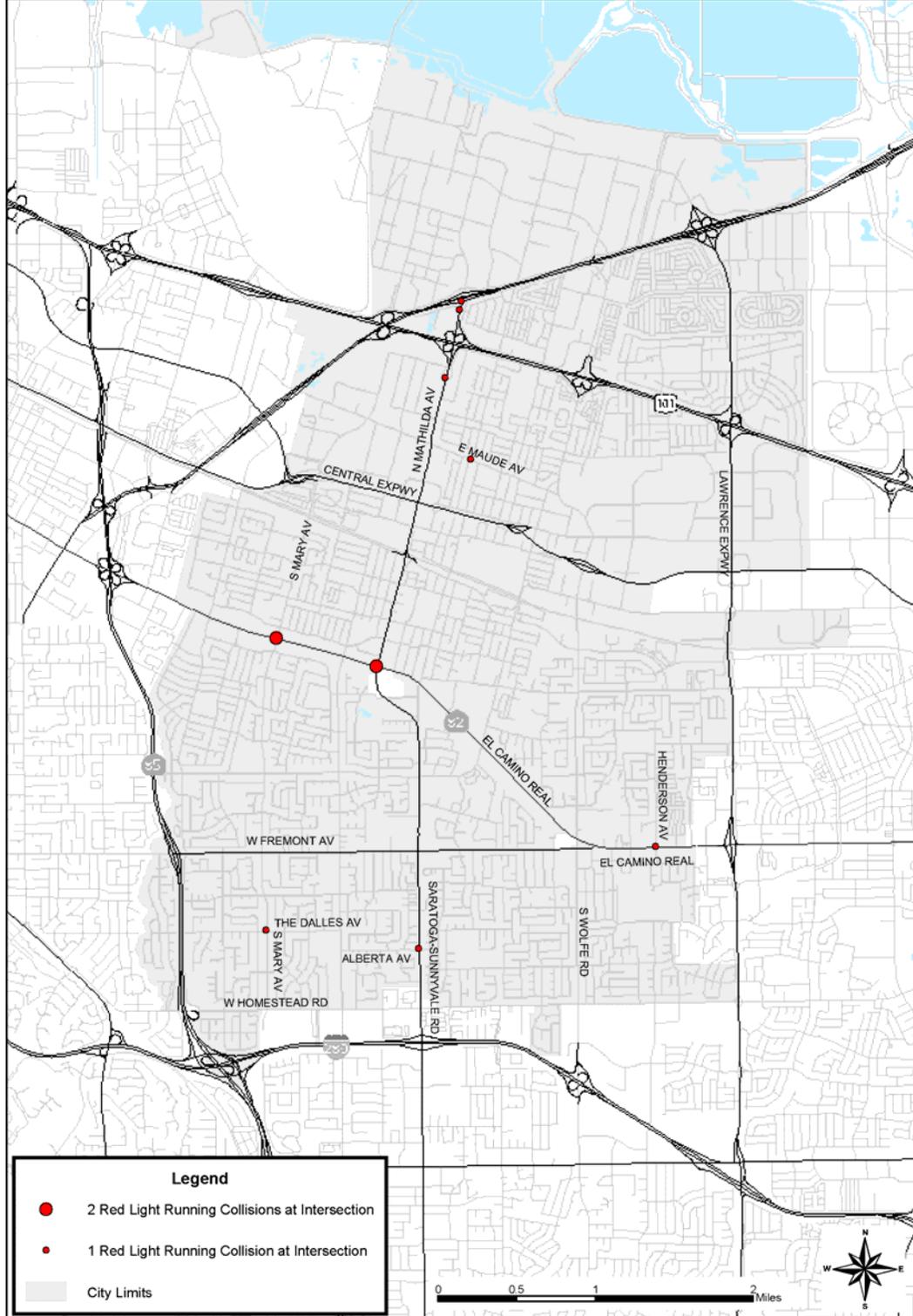
# City of Sunnyvale Map 14 - Hit and Run Collisions



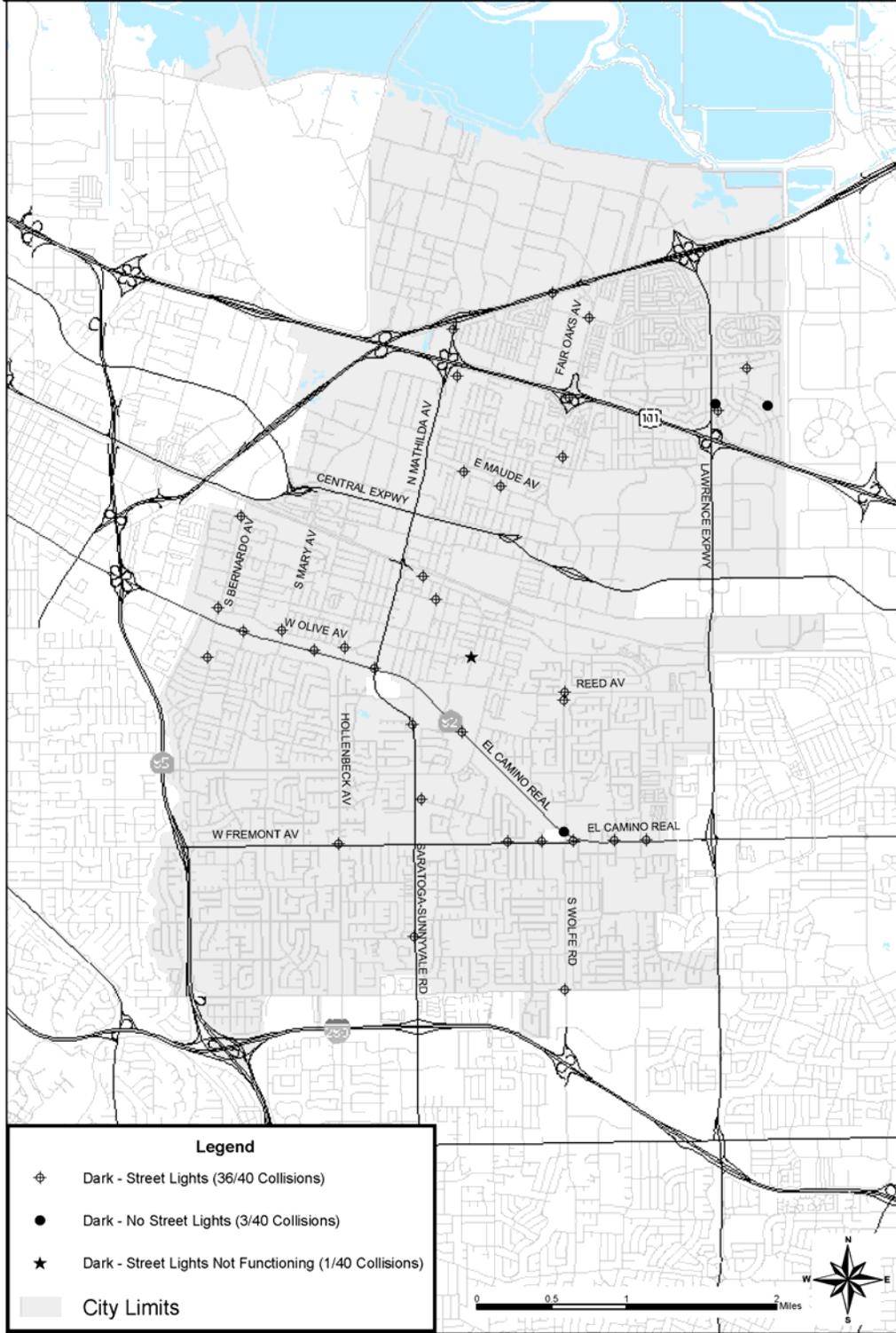
City of Sunnyvale, California, 95086, 2006. Map data from Transportation Commission GIS, November 2003. Street data from Geo-Information Systems, Inc.



## City of Sunnyvale Map 15 - Red Light Running Collisions



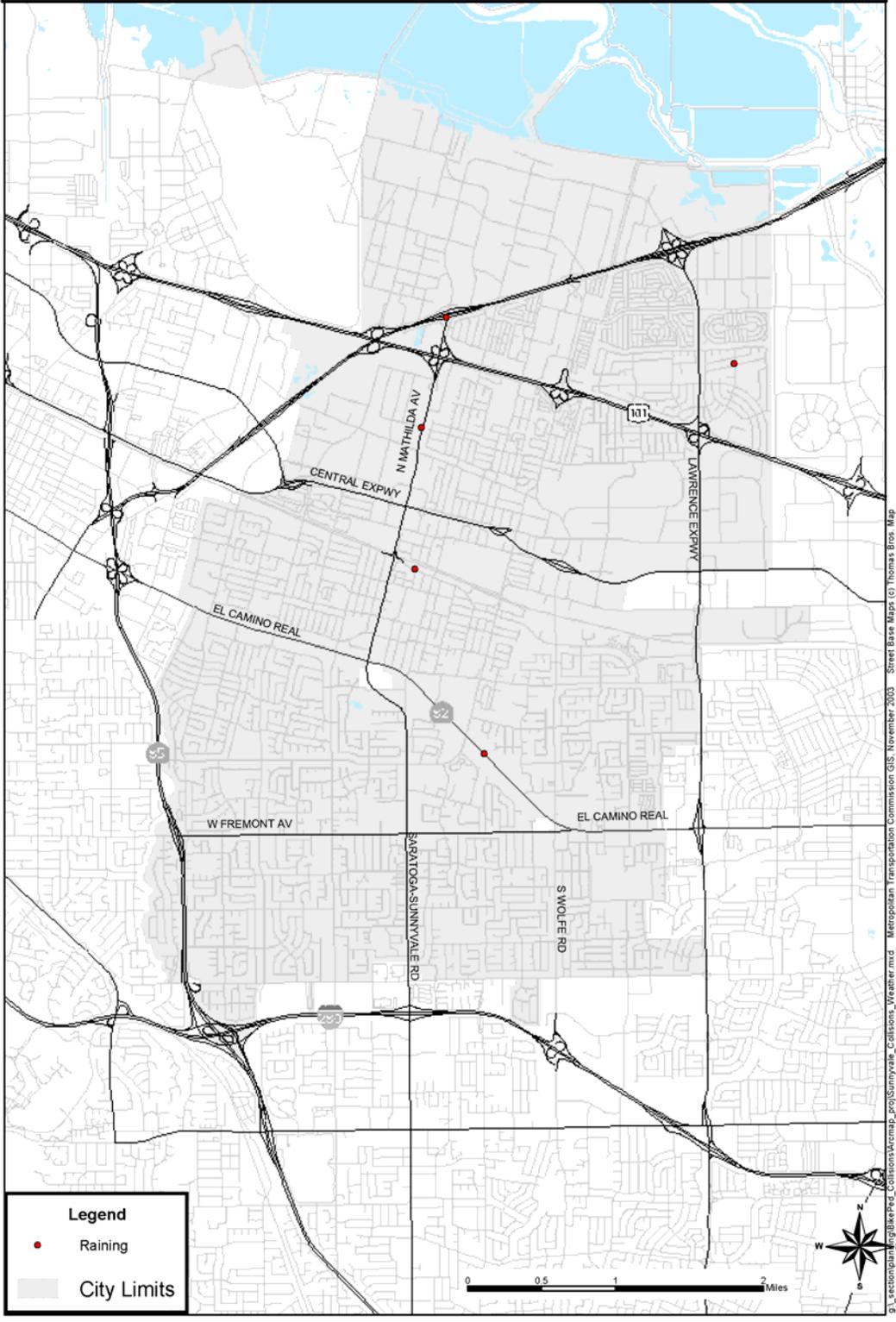
## City of Sunnyvale Map 16 - Dark Lighting Conditions



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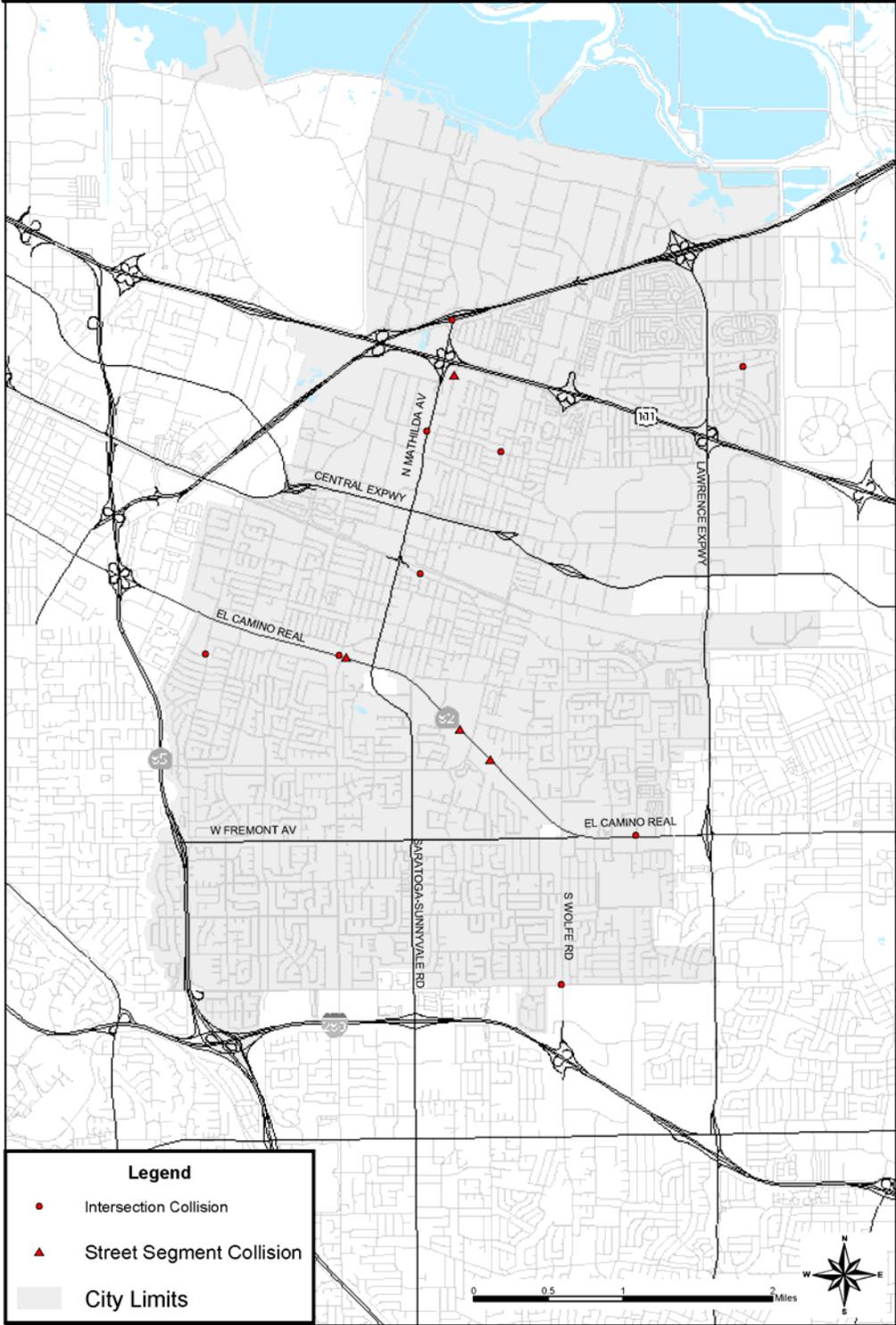
# City of Sunnyvale Map 17 - Wet Weather Conditions



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# City of Sunnyvale Map 18 - Wet Road Conditions



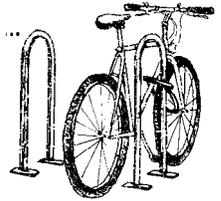
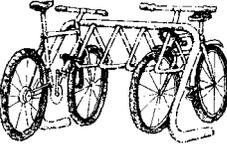
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## Appendix E: Sample Visual Guide to Bicycle Racks

# Sample Visual Guide to Bicycle Racks

Acceptable Types: Use at new sites, and to replace unacceptable types

Name	Shape	Description
<p><b>“Wave” *</b> also known as “<i>Ribbon</i>”</p>		<p><b>SUPPORT:</b> Supports bike’s frame acceptably, but does not prevent front-wheel “flop-over”.</p> <p><b>SECURITY:</b> Enables U-locking of frame and wheel.</p> <p><b>CAPACITY:</b> 1 bike per upright in 2-sided sites. 1 bike per 2 uprights in 1-sided sites unless very wide spacing is specified.</p>
<p><b>Single Inverted-U</b> 2 units shown</p>		<p><b>SUPPORT:</b> Supports bike’s frame acceptably, but does not prevent front-wheel “flop-over”. Ideal rack for downtown sidewalk edge by car parking (orient plane of “U” parallel to curb in such sites).</p> <p><b>SECURITY:</b> Enables U-locking of frame and wheel.</p> <p><b>CAPACITY:</b> 2 bikes per “U” with ease, 4 if cyclists know how.</p>
<p><b>Multiple Inverted-U</b></p>		<p><b>SUPPORT:</b> Supports bike’s frame acceptably, prevents front-wheel “flop-over” once bike is locked.</p> <p><b>SECURITY:</b> Enables U-locking of frame and wheel.</p> <p><b>CAPACITY:</b> 2 bikes per “U” in 2-sided sites, 1 to 1.5 bikes per “U” in 1-sided sites due to difficulty of backing in every 2<sup>nd</sup> bike. Avoid narrow spacing – 36” U-to-U recommended; 30” minimum.</p>
<p><b>“Hanging Triangle” *</b> Example: Cora “Expo” series</p>		<p><b>SUPPORT:</b> Bikes lean against triangles suspended from top bar. Additional 2 bikes can lean against ends. Front wheels cannot flop over once bike is locked.</p> <p><b>SECURITY:</b> U-lock through rack triangle, bike frame, and wheel.</p> <p><b>CAPACITY:</b> 1 bike per triangle in 2-sided sites. 1 per 2 triangles in 1-sided sites. Add 2 bikes (for ends) in both cases.</p>
<p><b>Creative Pipe Lightning Bolt™</b> 2-bike 1-sided perpendicular model shown</p>		<p><b>SUPPORT:</b> 3-point (down tube against post, plus 2 points on wheel well). Enables use of both hands to lock bike and remove cargo without risk of bike toppling. Front baskets clear posts.</p> <p><b>SECURITY:</b> Loop on post enables U-locking of frame and front or back wheel. Posts slant back to accommodate all frame sizes.</p> <p><b>CAPACITY:</b> 1 bike per post.</p> <p><b>OTHER:</b> Available in 1-sided, 2-sided, and 1-sided-diagonal models, all using same post-and-wheel-well module. Stanford University’s standard rack.</p>

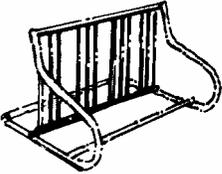
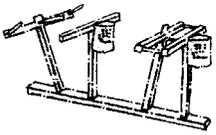
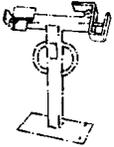
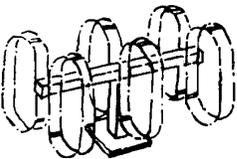
\* = Nicknames

Figure E.1: Acceptable Bicycle Rack Types



# Sample Visual Guide to Bicycle Racks

Unacceptable Types: Replace at all sites unless noted below

Name	Shape	Description / Recommendation
<p><b>“Arc” *</b> <i>Single position shown</i></p>		<p>SUPPORT: One wheel, poorly. Bike can easily be pushed over by vandals. Suitable only as a display stand inside a bike shop.</p> <p>LOCKING: Cannot lock frame.</p> <p>CAPACITY: 1 bike per wheel holder.</p>
<p><b>“Comb” *</b> <i>also known as “Dishrack” *, “Ladder” *, “Wheelbender” *</i> <i>One of many variations shown</i></p>		<p>SUPPORT: Supports only wheel except at ends. Bikes are easily pushed over, “pretzeling” the wheel, hence “wheelbender”.</p> <p>SECURITY: Must lift bike over rack to lock frame, or else may lock only the wheel (rest of bike can be stolen), except at ends.</p> <p>CAPACITY: 1 bike per foot in 2-sided sites, 1 per 2 feet if 1-sided. Users often lock sideways against the “comb”, blocking others.</p> <p>RECOMMENDATION: Retain at schools especially if in fenced and locked compound or in direct view of office staff.</p>
<p><b>PW Athletics “Loop-Rack”</b></p>		<p>SUPPORT: Supports bike acceptably by one wheel.</p> <p>SECURITY: Enables U-locking of frame <i>but only if “stirrup” faces frame</i>. 1-sided often set up backwards, defeating this. Rod easily cut. Wheel holders removable if nuts not immobilized.</p> <p>CAPACITY: 1 bike per wheel holder</p> <p>RECOMMENDATION: Retain at schools especially if in fenced and locked compound or in direct view of office staff.</p>
<p><b>“Rack III”</b> <i>2-bike unit shown</i></p>		<p>SUPPORT: Supports bike frame and captures wheels between T-bars (1 fixed, 1 movable), but many “mountain bikes” do not fit.</p> <p>SECURITY: Captures frame and both wheels. Protects padlock, but most cyclists now use U-locks. Large U-locks fit around both T-bars, but few know this. Hence, not secure for typical user.</p> <p>CAPACITY: 1 bike per pair of T-bars</p>
<p><b>“Rally Rack”</b> <i>2-bike unit shown</i></p>		<p>SUPPORT: Bracket is intended to support the bike’s down tube, but many mountain bikes are too large to fit. Scratches paint.</p> <p>SECURITY: Cannot U-lock bike frame.</p> <p>CAPACITY: 1 bike per down-tube bracket (usually seen in pairs)</p>
<p><b>“Park-Rite”</b> <i>2-sided shown; 1-sided available</i></p>		<p>SUPPORT: Supports only the end of one wheel.</p> <p>SECURITY: Cannot U-lock bike frame. Steel rod easily cut by hacksaw or bolt cutters.</p> <p>CAPACITY: 1 bike per wheel holder.</p>

\* = Nicknames

Figure E.2: Unacceptable Bicycle Rack Types



## Appendix F: Reference information used in developing this Plan

**Table F.1: City of Sunnyvale documents reviewed**

Document	Date (recent first)
Municipal Code Title 10: Vehicles and Traffic, Chapter 10.56 Bicycles	As of October 2005
Municipal Code Title 19: Zoning	
Bicycle Map Suitability Ratings Update – Summary Table of data <i>Updates traffic volumes, speed limits, and other information collected by the Bicycle Opportunities Study</i>	September 2005
Tasman / Fair Oaks Area Pedestrian and Bicycle Circulation Plan	August 2004
Moffett Park Specific Plan	June 2004
Sunnyvale Bicycle Plan (Bicycle Transportation Account update)	2003
Downtown Specific Plan	2003
Standard Operating Procedures: Bicycle And Pedestrian Safety Through Work Zones	September 2003
Long Range Bicycle Capital Improvement Program Study	December 2000
Futures Sites	November 2000
Bicycle Opportunities Study	October 1998
General Plan Land Use and Transportation Element (LUTE)	November 1997
Sunnyvale Bicycle Plan	1993
Sunnyvale Bicycle Plan	April 1984

**Table F.2: Other documents reviewed**

Agency (alphabetical)	Document	Date
ABAG Bay Trail Project	Bay Trail Gap Analysis Report	September 2005
	"Bay Trail Gap at Moffett Field Closer to Completion" – Article in SVBC newsletter	February-March 2006 issue
Metropolitan Transportation Commission (MTC)	Pedestrian and Bicycle Safety Technical Assistance Program (TAP) Report Appendices	March 2004
	Regional Bicycle Plan	2001
Moffett Park Business and Transportation Association (MPBTA)	Memo: "2005 Commute Mode Survey As It Pertains to Bicycle Transportation" Bicycle-related survey comments received	April 12, 2006
Mountain View, City of	Stevens Creek Trail Reach 4 drawings, notes	Various
	Bicycle Map	2003
Santa Clara, City of	Bicycle Map	2004
South Bay Salt Ponds Restoration Project	Final Phase 1 Actions Report and maps	February 2006
VTA	Countywide Bicycle Plan	2000



**Table F.3: Agencies and firms contacted**

<b>Agency or firm (alphabetical)</b>	<b>Information</b>
Ariba Inc.	Bike lockers and bicycle commuter support
Association of Bay Area Governments (ABAG)	Bay Trail plans including Moffett Field segments
Caltrain	Bike-on-train usage, bicycle locker utilization
Lockheed Missiles and Space Company	Lockheed-Martin LRT station and bike lockers
Moffett Park Business and Transportation Association (MPBTA)	2005 Commute Mode Survey results and comments pertaining to bicycle transportation
Mountain View, City of	Stevens Creek Trail, other projects near Sunnyvale
Santa Clara, City of	Bikeway network plans near Sunnyvale
School districts: Sunnyvale, Santa Clara Unified, and Cupertino Union	Enrollment areas, enrollment, bicycling estimates
Schools (Elementary, Middle, High)	Bicycling estimates, pickup/drop-off and bus streets.
Valley Transportation Authority (VTA)	Bike-on-transit, bus and LRT service information

