This chapter describes criteria used to evaluate the feasibility for connecting the Stevens Creek Trail along city streets and through open space lands along the stream corridor. Land availability, habitat sensitivity, roadway and creek crossings were evaluated within the creek corridor. In areas where a streamside trail was not feasible, on-street alignments were evaluated to link together the existing segments of the regional trail. Roadway width, traffic volume and speed, roadway intersections and pedestrian and bicycle collision history were evaluated for on-street routes to determine opportunities and constraints to closing the gap in the Stevens Creek Trail. The trail feasibility was assessed by applying design guidelines and standards. Results of these site analyses were then used to develop a range of potential trail alignments described in Chapters 3 and 4.

Land availability explored property ownership and land use and compared this information to the land needed to construct a trail. The amount of land necessary to develop a trail was based upon various trail design guidelines and the operations and maintenance requirements of the Santa Clara Valley Water District (SCVWD). The guidelines used to determine adequate trail width included the Caltrans Highway Design Manual: Chapter 1000 Bicycle Transportation Design (California Department of Transportation, 2012) and the Santa Clara Countywide Trails Master Plan - Design and Management Guidelines (County of Santa Clara, 1995).

The habitat sensitivity of the creek corridor was evaluated through field surveys and a review of federal and state-listed species that have the potential to occur in the area. Previous habitat enhancement efforts undertaken along the Stevens Creek were also evaluated for implications to trail development. The type and quality of the habitats along the creek corridor are summarized in this chapter.

The five existing roadway bridges that span Stevens Creek (State Route 85, Fremont Avenue, Homestead Road, Interstate 280 and Stevens Creek Boulevard) were individually evaluated for the potential to create in-channel underpasses that would maintain the trail within the corridor. The single pedestrian/bicycle bridge spanning Stevens Creek at West Valley Elementary School Creek was evaluated for use in the potential trail alignments. In-channel underpasses allow the trail to be grade-separated from automobile traffic. The vehicular bridge structures were assessed for the ability to accommodate a trail underpass suitable for year-round pedestrian and bicycle passage excluding those periods of winter flood events. The potential to construct pedestrian/bicycle overcrossings were explored at Interstate 280 and State Route 85. Conceptual engineering solutions for retrofitting the bridges to support underpasses and developing overcrossings are described in Chapter 3.

The guidelines used to determine adequate roadway width for bicycle and pedestrian facilities included Santa Clara Valley Transportation Authority Bicycle Technical Guidelines (VTA, 2012), California Department of Transportation Highway Design Manual: Chapter 1000 Bicycle Transportation Design (California Department of Transportation, 2012), American Association of State Highway and Transportation Officials Guide for the Development of Bicycle Facilities (AASHTO, 2012) and American Association of State Highway and Transportation Officials Guide for the Planning, Design, and Operation of Pedestrian Facilities (AASHTO, 2004). This feasibility study reviewed a wide range of on-street routes and identifies the types of bicycle and pedestrian facilities that are feasible on each street.

## LAND AVAILABILITY

Land availability addresses the amount of public and quasi-public land available for trail development. Stevens Creek has been modified by the upstream dam and in-channel water management structures, roadway crossings, utility infrastructure and adjacent urban development. All of these features of urbanization reduce the amount of land along the creek corridor and constrain trail development. The first step in assessing trail feasibility was to determine land availability throughout the study area.

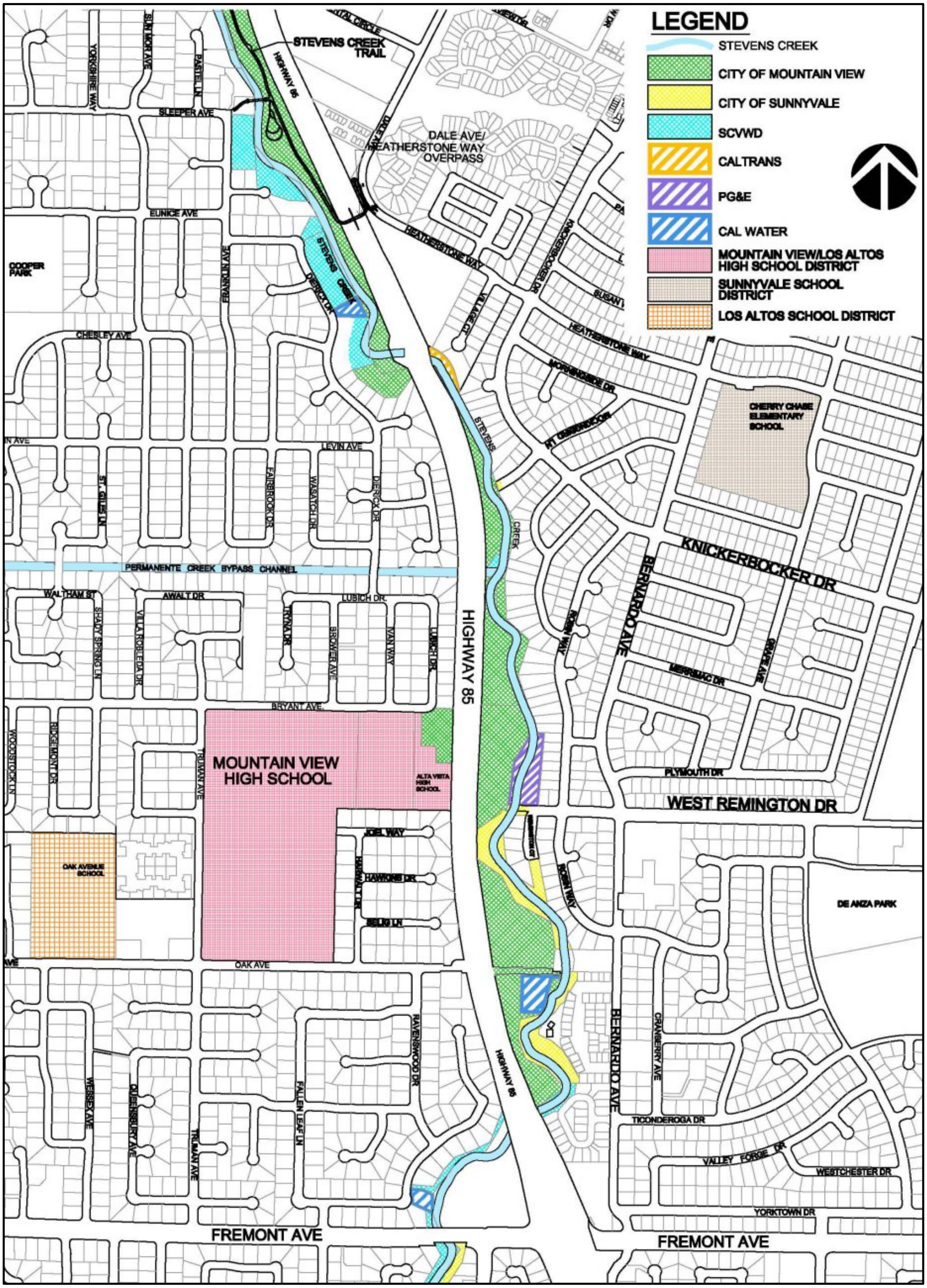
## OWNERSHIP

The intent of this study was to evaluate the feasibility of developing the Stevens Creek Trail on existing public lands or on lands that are subject to discretionary development approvals. Public land does not extend the full length of the study area. The majority of public land is located in the north of the study area between Dale Avenue to just south of Fremont Avenue. Public land along the creek corridor is primarily owned by the City of Mountain View, City of Sunnyvale and the Santa Clara Valley Water District. Other public or quasi-public agencies control additional parcels of land along the corridor. These agencies include California Department of Transportation (Caltrans), Santa Clara County Roads & Airports Department (County Roads), City of Los Altos, Mountain View/Los Altos High School District, Sunnyvale School District, Los Altos School District and Cupertino Union School District. Some private companies providing public services or quasi-public agencies control additional parcels of land along the corridor and include California Water Service Company (Cal Water), Pacific Gas & Electric Company (PG&E) and Union Pacific Railroad (UPRR). In general, the potential trail alignments are proposed within or spanning these lands *(See Map 2 – Dale/Heatherstone to Fremont Avenue Ownership Map, Map 3 – Fremont Avenue to Homestead Road Ownership Map and Map 4 – Homestead Road to Stevens Creek Boulevard Ownership Map).*

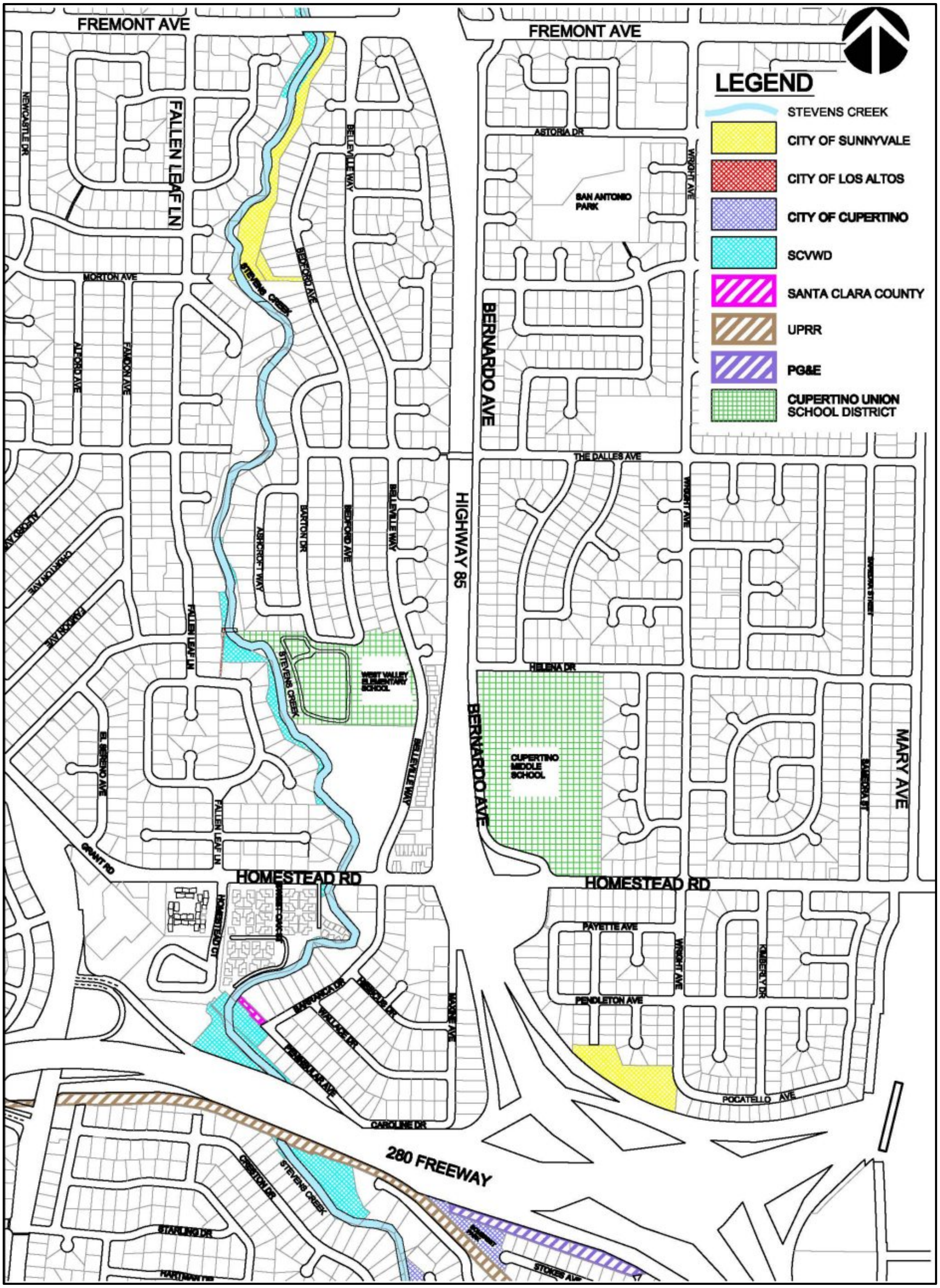
## TRAIL DESIGN GUIDELINES

Trail design guidelines were reviewed to determine if sufficient land existed to accommodate construction of the trail. Guidelines established by Caltrans and the Santa Clara Valley Water District (SCVWD) were used to determine the land availability requirements along the creek. Caltrans defines three types of trail facilities, each with specific trail dimensions. Class I Bike Paths are located off-street and Class II Bike Lanes and Class III Bike Routes are located within the roadway right-of-way. A Class I Bicycle Pathway serves the exclusive use of pedestrians and bicyclists and is defined as a right-of-way completely separated from motor vehicle street and highway traffic (Caltrans, Highway Design Manual: Chapter 1000, 2012). The minimum trail width for a Class I Bicycle Pathway is 8 feet (10 feet preferred) with minimum 2-foot shoulders on each side of the trail.

*Inadequate top-of-bank behind the soundwall along State Route 85 at a channel meander.*




*Map 2 – Dale/Heatherstone to Fremont Avenue Ownership Map.*




*Map 3 – Fremont Avenue to Homestead Road Ownership Map.*

Trail Design Guidelines are included as an appendix to the *1995 Santa Clara Countywide Trails Master Plan*. These guidelines suggest "trail tread widths should be determined by the amount and intensity of trail use and field conditions such as topography, vegetation and sensitivity of environmental resources" (County of Santa Clara, 1995, Chapter 5, p. 70). Countywide Trails Master Plan Guideline G-2 – Shared-use Trail – Paved Tread Double Track has application for evaluating the feasibility of developing a trail in the Stevens Creek corridor *(See Figure 10).* This guideline recommends that a trail serving multiple uses meet an optimum width of 12 feet and provide a hard paved surface to accommodate multi-use. In situations where uses are limited, tread width is narrowed. Although these guidelines establish very specific tread width and surfacing types, they do not set a standard. They each represent one perspective for evaluating the feasibility of trail development. Ultimately, any trail must be designed to accommodate the intended trail use and intensity.

Santa Clara County's Trail Easement Dedication Policies and Practices usually require a 25-foot wide easement to accommodate trail development in the urban service areas (County of Santa Clara, 1992). The 25-foot wide easement is intended to include the trail tread, shoulders, privacy setback and habitat enhancements or landscaping. This easement width would be necessary when designing for this type of a multi-use path.

In addition to Caltrans and the Santa Clara County recommendations, SCVWD maintains guidelines for maintenance access through the creek corridors. These guidelines recommend a minimum 20 to 22 foot clearance for maintenance vehicle movement along the creek channels. These guidelines are important because in many areas both trail users and maintenance vehicles would likely travel the same pathway.

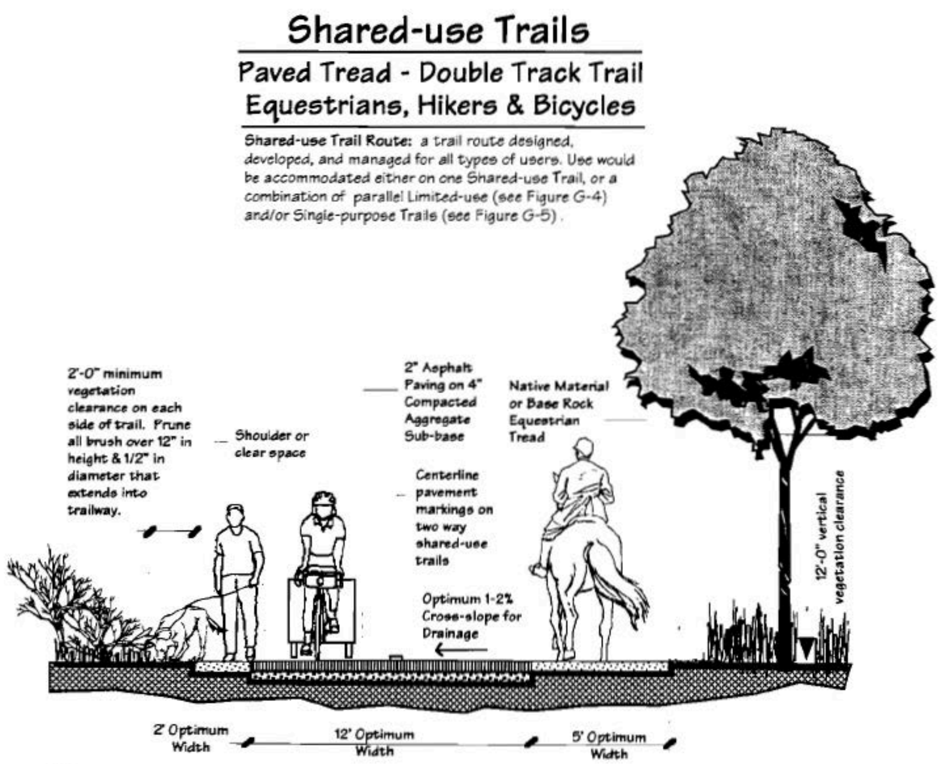
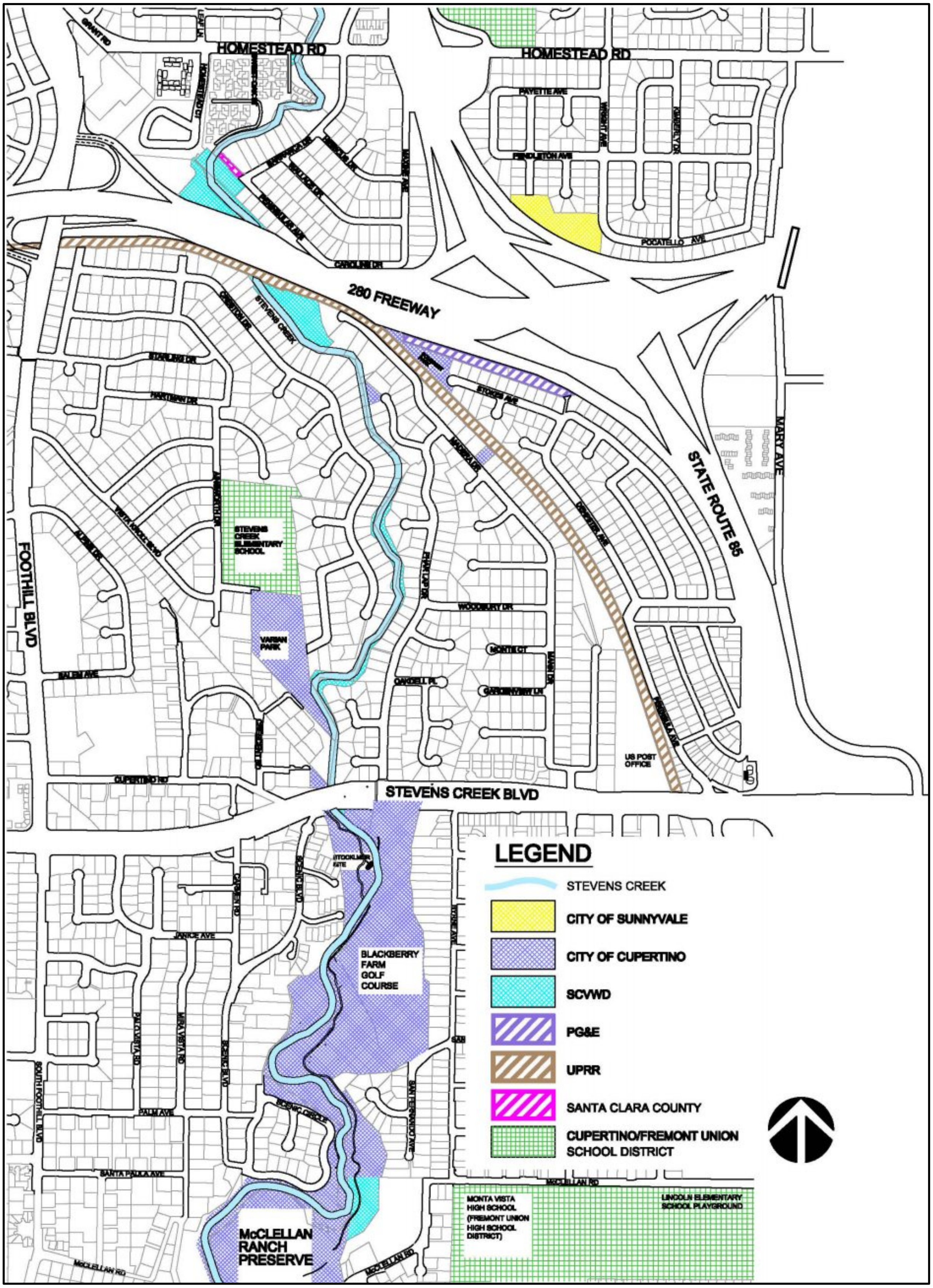



*Figure 10 – Countywide Trails Master Plan Guideline G-2 – Shared-use Trail – Paved Tread Double Track (County of Santa Clara, 1995, Chapter 5, p. 70).*




*Map 4 – Homestead Road to Stevens Creek Boulevard Ownership Map.*

### TOP-OF-BANK WIDTH

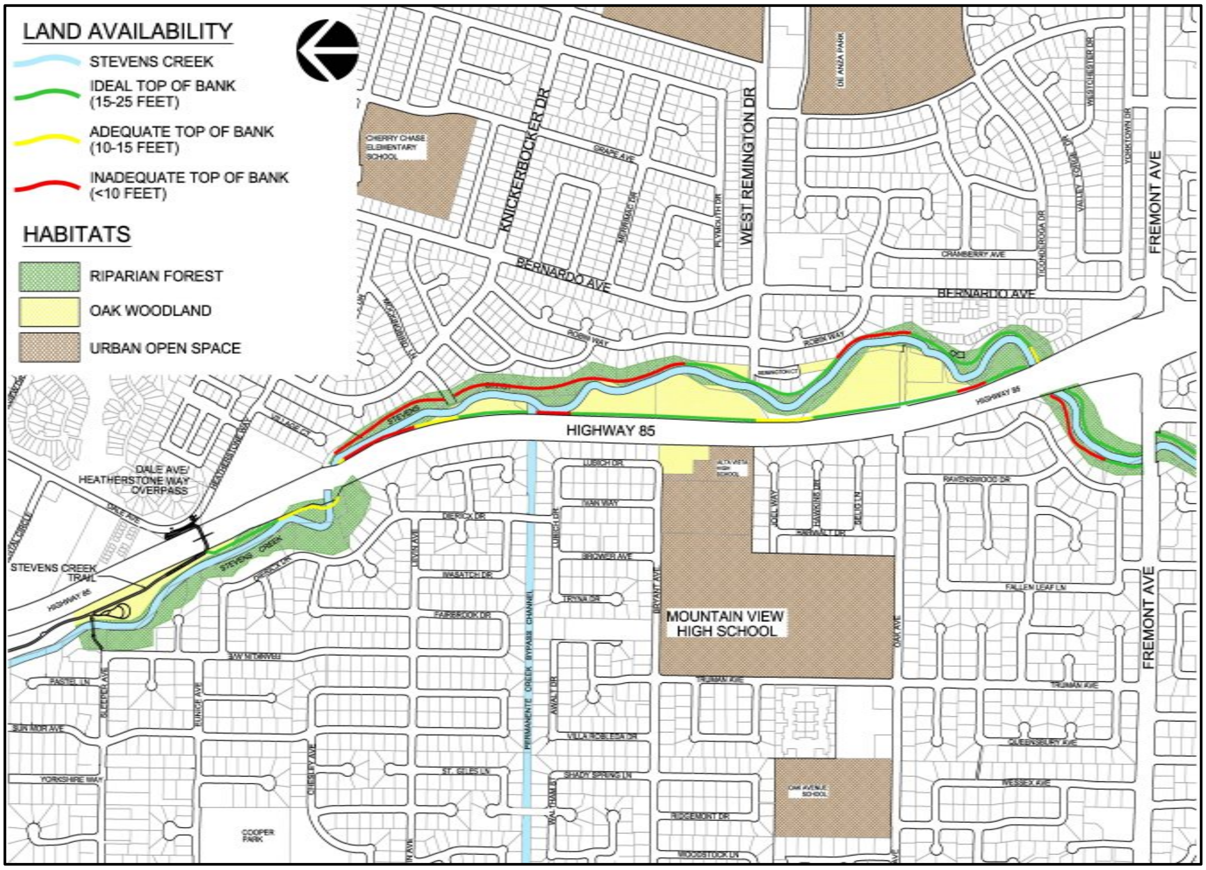
Top-of-Bank (TOB) distances were categorized into three conditions. They included Ideal TOB, Adequate TOB and Inadequate TOB for trail development *(See Figure 11 – Top-of-Bank Land Availability Criteria)*. Ideal TOB is characterized by 15 to 25 feet of land available for trail development. This condition is most often found within the city-owned open space parcels adjacent to State Route 85 and at school or park sites adjacent to Stevens Creek. Many of these areas are multi-acre parcels that also provide opportunities as mitigation sites or for habitat enhancement. Adequate TOB conditions include areas that have between 10 to 15 feet of land available for trail development. These areas meet Caltrans and County minimum tread width requirements, but have little land for setbacks or habitat enhancement.

Inadequate TOB is characterized by less than 10 feet of land. Segments of Adequate TOB and Inadequate TOB are present in areas where State Route 85 encroaches on the channel meanders in Stevens Creek. In these areas, minimal land remains between the highway soundwall and the edge of the creek bank. These constrained areas require engineering solutions to accommodate a trail *(See Map 5 – Dale/Heatherstone to Fremont Avenue Habitat and Land Availability Map)*. Inadequate TOB is also present from approximately Fremont Avenue to Stevens Creek Boulevard where very little land is in public ownership *(See Map 6 – Fremont Avenue to Homestead Road Habitat and Land Availability Map and Map 7 – Homestead Road to Stevens Creek Boulevard Habitat and Land Availability Map)*. The available TOB is indicated on the maps in areas of public ownership only.

| Top-of-Bank (TOB) Land Availability Criteria | | |
|---|---|---|
| **Condition** | **Width of Available Land** | **General Locations** |
| Ideal TOB | 15 to 25 feet or greater | Open space parcels, schools and parks |
| Adequate TOB | 10 to 15 feet | Pinch points between State Route 85 and meanders in Stevens Creek |
| Inadequate TOB | 10 feet or less | Areas of no public ownership |

*Figure 11 – Top-of-Bank Land Availability Criteria.*

*Inadequate Top-of-Bank south of the SCVWD Fremont Drop Structure adjacent to State Route 85.*




*Map 5 – Dale/Heatherstone to Fremont Avenue Habitat and Land Availability Map.*

## HABITAT SENSITIVITY

An assessment of biological resources was conducted to evaluate habitat sensitivity and the presence of rare, threatened and endangered species throughout the study area with particular emphasis on the Stevens Creek corridor. The bioassessment included a review of species known to or having the potential to occur within the study area based on a search of the California Natural Diversity Database and the California Native Plant Society Inventory within the Cupertino (ID#: 37122C1) U.S. Geological Service 7.5-Minute Quadrangle. Field surveys were simultaneously conducted during the land availability assessment of the corridor. The field surveys were conducted to determine the location and extent of habitats.

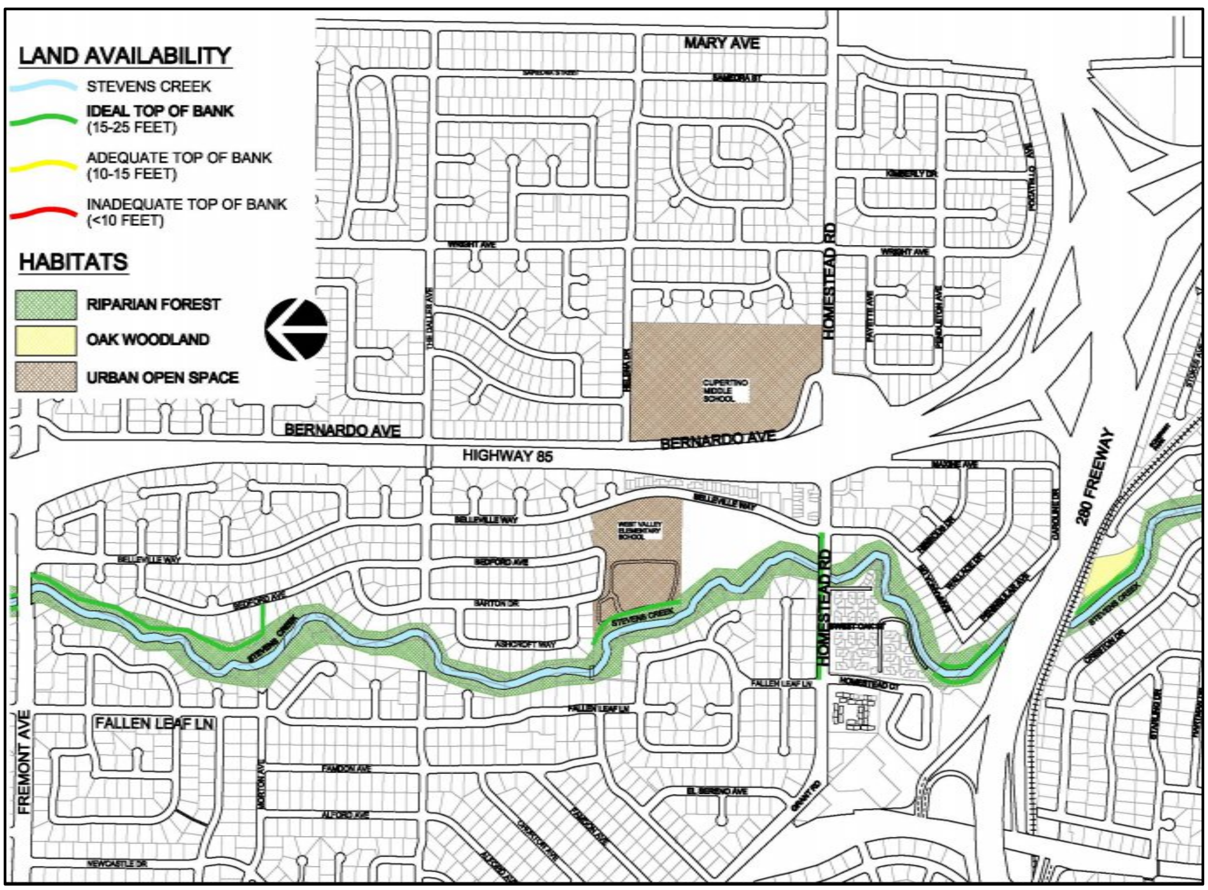
A variety of habitat types were found in the open space lands within the study area. Three general habitat categories are mapped. These included riparian forest, oak woodland and urban open space *(See Map 6 – Dale/Heatherstone to Fremont Avenue Habitat and Land Availability Map, Map 7 – Fremont Avenue to Homestead Road Habitat and Land Availability Map and Map 8 – Homestead Road to Stevens Creek Boulevard Habitat and Land Availability Map).*

### RIPARIAN FOREST

The riparian forest area includes freshwater wetlands, riverine habitat and California sycamore woodland. The California sycamore woodland plant community includes California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), white alder (*Alnus rhombifolia*), red willow (*Salix laevigata*) and arroyo willow (*Salix lasiolepsis*)(Sawyer, 2009). Stevens Creek is managed as a natural channel and receives storm flows, dam releases and urban runoff. The creek bottom is gravel and contains patches of in-stream freshwater wetlands. SCVWD operates the Stevens Creek reservoir. Water is impounded behind the dam for purposes of groundwater recharge. Typically, summer releases from the dam maintain downstream flows to approximately Fremont Avenue. The area between the dam and Interstate 280 is considered a "cold water management area" intended to support the spawning and rearing of the federally threatened Central California Coast steelhead (*Oncorhynchus mykiss*). The California sycamore forest, freshwater wetlands and riverine habitat are considered sensitive by the resource agencies, either because they support rare species or because the habitats are protected by law.

**OAK WOODLAND**

The mapped oak woodland areas include Coast live oak woodland and ruderal grassland. The Coast live oak woodland extends from the edge of the stream bank across the alluvial terraces of the creek corridor. Along Stevens Creek this plant community includes box elders *(Acer negundo)*, black walnut *(Juglans californica)*, California sycamore *(Platanus racemosa)*, Fremont cottonwood *(Populus fremontii)*, Coast live oak *(Quercus agrifolia)*, valley oak *(Quercus lobata)* and arroyo willow *(Salix lasiolepsis)* (Sawyer, 2009). In disturbed areas the woodland is interspersed by ruderal grassland comprised of both native grasses and forbes and many non-native annual grasses. "California's oak woodlands provide habitat for nearly half

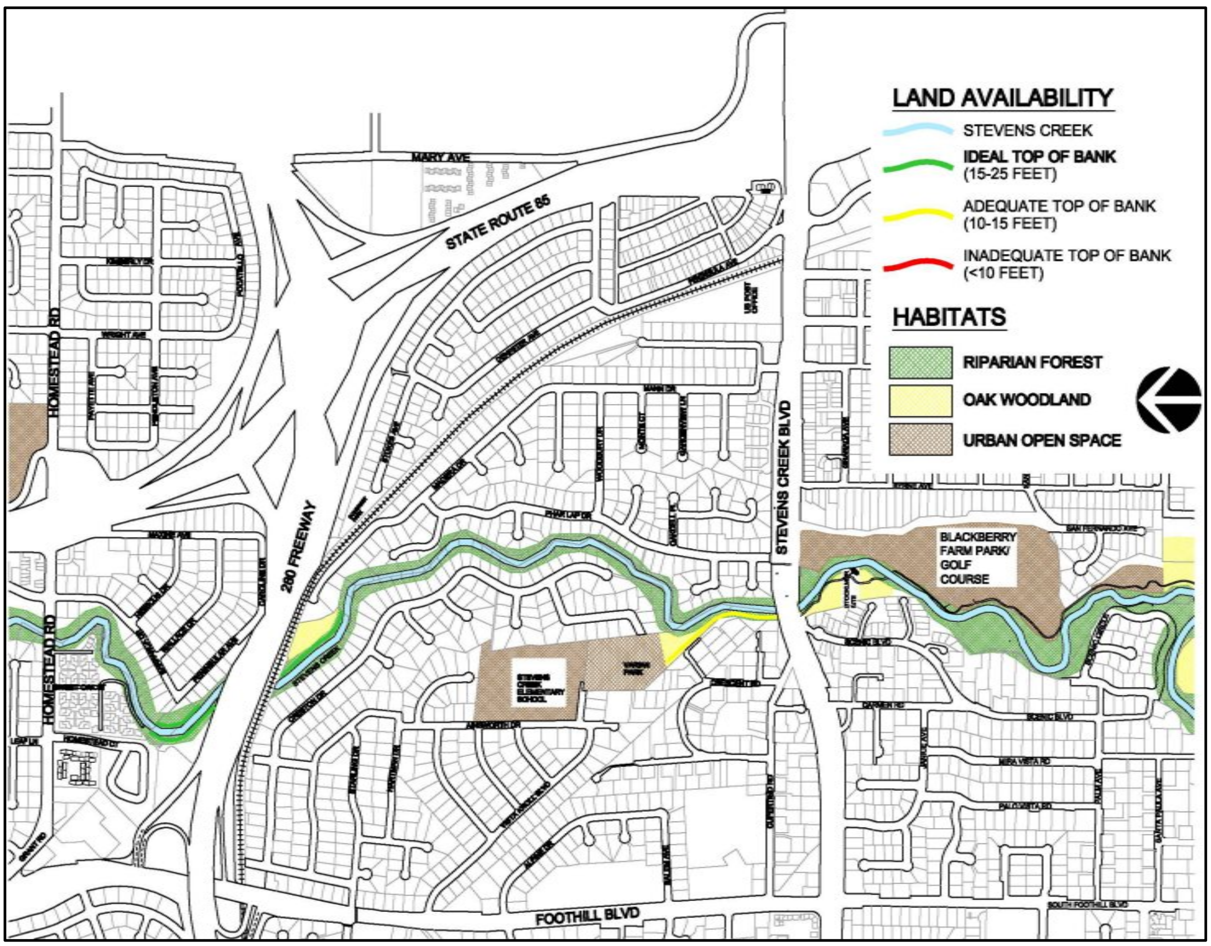



*Map 6 – Fremont Avenue to Homestead Road Habitat and Land Availability Map.*

of the 632 terrestrial vertebrates found in the state but they are under threat from development and climate change. Acorns are a key resource for 40 different wildlife species such as deer, squirrels, turkeys, jays, quail and bear. Standing dead trees are an important habitat resource in oak woodlands for animals including raptors, bats, salamanders, and lizards. Coarse woody tree material lying on the ground, particularly large logs, are very important habitat element because they retain moisture in a relatively dry ecosystem. Oak woodlands near riparian resources like creeks, rivers or lakes support the greatest number of wildlife species (California Wildlife Foundation/California Oaks Project, 2010)."

**URBAN OPEN SPACE**

The urban open space lands include landscaped parks and schools. These lands offer both native and ornamental trees that provide roosting and nesting habitat. The majority of these areas are turfed lawns that provide minimal habitat value to wildlife.




*Map 7 – Homestead Road to Stevens Creek Boulevard Habitat and Land Availability Map.*

**SPECIAL STATUS SPECIES**

Based upon the field surveys and the review of the databases, 15 special-status animals have been documented within a five-mile radius of the creek corridor. Figure 12 identifies the species that are known to occur or may occur due to potentially suitable habitat for these species. Rare species documented or expected to occur in the area of the Stevens Creek corridor within the study boundaries include San Francisco dusky-footed woodrat, white-tailed kite, Cooper's hawk and other birds of prey, western pond turtle and steelhead trout. Species that have the potential to occur in Rancho San Antonio County Park and the surrounding open space lands include California tiger salamander, California red-legged frog, Western burrowing owl, Vaux's swift and loggerhead shrike. In landscaped park and school sites other raptors may be observed foraging or nesting in mature trees.

Rare plant species may also occur within the study area boundaries. An assessment of plant species by location should be undertaken in conjunction with the development of a trail master plan and environmental review documents.

*California sycamore in winter.*

The most important biological constraints to trail development revolve around these rare species and protected habitats. The identified trail alignments are designed to avoid and minimize impacts to natural resources.

*Fremont cottonwood in winter.*

**INVASIVE PLANT SPECIES**

The Stevens Creek corridor hosts numerous invasive plant species through the study area. Giant reed *(Arundo donax)*, Cape ivy *(Delairea odorata)*, English ivy *(Hedera helix)* and Himalayan blackberry *(Rubus discolor)* are the most abundant non-native plants through the 22-acre open space adjacent to State Route 85. The majority of these plants are found in the riparian forest and are outcompeting native understory species.

| Sensitive Wildlife Species with Potential to Occur in the Study Area | | |
|---|---|---|
| **Common Name** | **Scientific Name** | **Status** |
| Central California Coast Steelhead | *Oncorhynchus mykiss* | *FT* |
| California Tiger Salamander | *Ambystoma californiense* | *FT, ST, SSC* |
| California Red-legged Frog | *Rana draytonii* | *FT, SSC* |
| Western Pond Turtle | *Actinemys marmorata* | *SSC* |
| Northern Harrier | *Circus cyaneus* | *SSC* |
| White-tailed Kite | *Elanus leucurus* | *FP* |
| Sharp-shinned Hawk | *Accipiter striatus* | *WL* |
| Cooper's Hawk | *Accipiter cooperii* | *WL* |
| Western Burrowing Owl | *Athene cunicularia* | *SSC* |
| Vaux's Swift | *Chaetura vauxi* | *SSC* |
| Loggerhead Shrike | *Lanius ludovicianus* | *SSC* |
| Yellow Warbler | *Dendroica petechial* | *SSC* |
| Pallid Bat | *Antrozous pallidus* | *SSC* |
| Townsend's Big-eared Bat | *Corynorhinus Townsendii* | *SCT, SSC* |
| San Francisco Dusky-footed Woodrat | *Neotoma fuscipes annectens* | *SSC* |

*Figure 12 – Wildlife species with the potential to occur within the study area (FT=Federally listed as Threatened, ST=State-listed as Threatened, SCT=State Candidate for listing as Threatened, SSC=California Species of Special Concern, FP=California Fully Protected, WL=California Watch List).*

*Steelhead spawning in Stevens Creek – March 2013 (Photo courtesy of NOAA National Marine Fisheries Service).*

### EVALUATION OF GRADE SEPARATIONS AT BRIDGES ALONG STEVENS CREEK

Five roadway bridges span Stevens Creek within the study area. Each of these bridges was individually investigated to determine the feasibility of providing a grade-separated trail underpass beneath the bridge that maintained an uninterrupted trail alignment adjacent to the stream corridor. The one pedestrian/bicycle bridge on Stevens Creek within the study area was evaluated for use in the trail alignments. Investigation of the bridges included fieldwork and measurements, evaluation of topographic information, review of as-built drawings and an assessment of 100-year water surface elevations to determine if the bridge structures could potentially be modified to accommodate trail underpasses.

Only the State Route 85 bridge can be modified to provide trail access via an underpass beneath the highway. The remaining bridges require different types of crossing solutions such as a separate tunnel or pedestrian overcrossing or the use of an at-grade street crossing to accommodate the trail alignments. A summary of the bridges and the potential engineering solutions that may support a grade-separated trail is provided in Figure 13.

*The concrete arch bridge that spans Stevens Creek at Fremont Avenue cannot be modified to accommodate a trail underpass.*

| Summary of Grade-Separated Crossing Feasibility at Existing Roadway Bridges | | | |
|---|---|---|---|
| **Bridge Location** | **Underpass Feasibility** | **Proposed Crossing Solution** | **Comments** |
| State Route 85 | Yes | In-channel Underpass | In-channel underpass appears feasible on southeast bank. Private ownership along the northwest bank precludes underpass on northwest bank. |
| Fremont Avenue | Maybe | Underpass may be Possible with New Bridge | In-channel underpass requires easement along east bank and replacement of Fremont Avenue bridge. Private ownership along the west bank precludes underpass on west bank. |
| Homestead Road | No | At-grade Crossing | Area lacks public land for trail underpass ramps and would require replacement of Homestead Road bridge. |
| Interstate 280 | No | Pedestrian Overcrossing | Two locations show promise for providing a grade-separated pedestrian overcrossing. Locations take advantage of city and Caltrans owned properties. |
| Stevens Creek Boulevard | No | Parallel Tunnel | A tunnel parallel to the creek channel may be possible, but needs further investigation. Recent land acquisition by Cupertino may enhance feasibility. |

*Figure 13 – Summary of grade-separated crossing feasibility at existing roadway bridges along Stevens Creek.*

## OTHER GRADE SEPARATION INVESTIGATIONS

The potential to provide grade-separated crossings of several roadways to extend the trail south was also undertaken as a part of this feasibility study. Other crossing investigations outside of the creek corridor were undertaken at Fremont Avenue, Homestead Road, State Route 85 and Interstate 280. Investigation at these locations included fieldwork and measurements, evaluation of topographic information and review of as-built drawings to determine if structures could potentially be developed to accommodate grade-separations of these roadways. A summary of the crossing feasibility and the potential engineering solutions at each location are provided in Figure 14.

*An overpass spanning Fremont Avenue may be feasible paralleling State Route 85 northbound on-ramp to city-owned right-of-way along Bernardo Avenue.*

| Summary of Grade-Separated Crossings Feasibility at Other Structures | | |
|---|---|---|
| **Roadway and Location** | **Proposed Crossing Solution** | **Comments** |
| State Route 85 at Mountain View High School | Pedestrian Overcrossing – Feasible | The pedestrian overcrossing from the 22-acre open space to city-owned land adjacent to Mountain View High School was previously evaluated by the City of Mountain View and is carried forward into this study. |
| Fremont Avenue at Bernardo | Pedestrian Overcrossing – Likely Feasible | A pedestrian overcrossing within Caltrans right-of-way parallel to northbound State Route 85 on-ramp from Fremont Ave. to city-owned roadway right-of way on Bernardo may be feasible to maintain a grade-separated trail above Fremont Ave. |
| State Route 85 at Bernardo and Homestead Road | Pedestrian/Bicycle Bridge parallel to Homestead Road Bridge – Likely Feasible | A pedestrian/bicycle bridge could span State Route 85 parallel to the existing Homestead Road bridge to provide a separated crossing of State Route 85 for the trail. |
| State Route 85 at Bernardo and Homestead Road | Widening of Homestead Road Bridge – Likely Feasible | It may be possible to widen the existing Homestead Road bridge to provide trail access over State Route 85. |
| Interstate 280 from SCVWD lands to Groveland Drive | Pedestrian Overcrossing – Not Feasible | Difficult grades and two PG&E transmission towers near the potential landing site. |
| Interstate 280 from SCVWD lands to Madera Drive | Pedestrian Overcrossing – Not Feasible | Difficult topography and challenging grades. PG&E transmission towers. Long angled span results in poor geometrics unlikely to receive Caltrans support. |
| Interstate 280 from SCVWD lands through tunnels to Madera Drive | Use of Existing Tunnels – Not Feasible | Difficult topography and challenging grades. Long, remote stretch of corridor. Frequently flooding. Caltrans not supportive. |
| Interstate 280 from Peninsular to Somerset Park | Pedestrian Overcrossing – Potentially Feasible | Coordination with SR85/I280 Interchange Improvements to fully assess future feasibility. |
| Interstate 280 from Caroline to Madera | Pedestrian Overcrossing – Potentially Feasible | Coordination with SR85/I280 Interchange Improvements to fully assess future feasibility. |
| UPRR at Rancho San Antonio County Park | Pedestrian/Bicycle Bridge | A pedestrian/bicycle bridge is feasible above UPRR line serving Lehigh Quarry. The bridge would require an easement from UPRR for the access ramp and bridge. |

*Figure 14 – Summary of grade-separated crossing feasibility at other structures in the study area.*

## DESIGN CRITERIA FOR ON-STREET BICYCLE AND PEDESTRIAN FACILITIES

In areas where the trail could not be aligned along the creek corridor due to lack of land availability, sensitive habitats, constrained roadway crossings or other factors, on-street alignments were evaluated to link together segments of the trail that extend through the open space lands. The criteria used for evaluating on-street routes are described below.

This study draws upon four guidelines as the primary sources of criteria for assessing the feasibility of developing bicycle and pedestrian facilities on roadways to close the gap in the Stevens Creek Trail. Guidelines addressing on-street bicycle and pedestrian facilities were reviewed to determine if sufficient roadway right-of-way existed to accommodate potential trail connections. These local, state and federal guidelines establish minimum through optimal criteria for developing bicycle and pedestrian facilities within the roadway right-of-way. These four guidelines apply to various elements of the on-street facilities investigated during this study. The guidelines include:

- 2012 California Department of Transportation Highway Design Manual: Chapter 1000 Bicycle Transportation Design *(See Figure 15).*

- 2012 Santa Clara Valley Transportation Authority Bicycle Technical Guidelines

- 2012 American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities

- 2004 American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Pedestrian Facilities

*Homestead Road was one of many streets assessed for closing the gap in the Stevens Creek Trail.*

## CALTRANS HIGHWAY DESIGN MANUAL – BIKEWAY DESIGNATIONS

The Caltrans Highway Design Manual is the primary manual for bikeway design in California. Caltrans defines three types of bikeway facilities each with specific dimensions and geometries: Bike Path, Bike Lane and Bike Route.

**Bike Paths (Class I Bikeway)** are located off-street and serves the exclusive use of pedestrians and bicyclists. A Bike Path is defined as an exclusive right-of-way with cross flows by vehicles minimized (Caltrans, Highway Design Manual: Chapter 1000, 2012). The minimum width for a Class I Bikeway is 8 feet, 10-feet preferred, with minimum 2-foot shoulders on each side of the trail. Generally, bike paths should be used to serve corridors not served by streets and highways or where wide right-of-way exists, permitting such facilities to be constructed away from the influence of parallel streets. Bike paths should offer opportunities not provided by the road system. They can either provide a recreational opportunity, or in some instances, can serve as direct high-speed commute routes if cross flow by motor vehicles and pedestrian conflicts can be minimized.

**Bike Lanes (Class II Bikeway)** are established along streets in corridors where there is significant bicycle demand, and where there are distinct needs that can be served. The purpose should be to improve conditions for bicyclists in the corridors. Bike lanes are intended to delineate the right-of-way assigned to bicyclists and motorists and to provide for more predictable movements by each. A more important reason for constructing bike lanes is to better accommodate bicyclists through corridors where insufficient room exists for side-by-side sharing of existing streets by motorists and bicyclists. This can be accomplished by reducing the number of lanes, reducing lane width, or prohibiting or reconfiguring parking on given streets in order to delineate bike lanes. In addition, other things can be done on bike lane streets to improve the situation for bicyclists that might not be possible on all streets (e.g., improvements to the surface, augmented sweeping programs, special signal facilities, etc.). Generally, pavement markings alone will not measurably enhance bicycling.

**Bike Routes (Class III Bikeway)** are intended to provide continuity to the bikeway system. Bike routes are established along through routes not served by Class I or Class II bikeways, or to connect discontinuous segments of bikeway (normally bike lanes). Class III facilities are shared with motor vehicles on the street and established by placing bike route signs along roadways. Class III facilities can be enhanced by adding shared roadway markings along the route. As with bike lanes, designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. This means that responsible agencies have taken actions to assure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of bicyclists. Normally, bike routes are shared with motor vehicles.

***It is emphasized that the designation of bikeways as Class I, II and III should not be construed as a hierarchy of bikeways; that one is better than the other. Each class of bikeway has its appropriate application.***

*Figure 15 – Caltrans Bikeway Designations.*

### SANTA CLARA VALLEY TRANSPORTATION AUTHORITY BICYCLE TECHNICAL GUIDELINES

"The VTA Bicycle Technical Guidelines (BTG) present standards and guidance for planning, designing, operating, retrofitting and maintaining roadways and bikeways. They are intended to improve the quality of bicycle accommodation and to ensure countywide consistency in the design and construction of not only bicycle projects but all roadways (VTA, 2012, p. 1-1)." These guidelines apply and adapt federal and state guidance on bicycle facility design to local conditions. The VTA Bicycle Technical Guidelines offered guidance for bike paths, bike lanes and signed bike routes. The recommendations for bike lanes and signed bike routes were applied in the evaluation of the roadways.

**Bike Lanes -** The Bicycle Technical Guidelines indicate urban arterials and collectors carrying 2000 or more vehicles per day per lane (vpdpl) (e.g. 4000 vpd for a two-lane roadway) should have bike lanes. Optimally, the width of bike lanes should increase as motor vehicle travel speed increases and when roadway grades are greater than 5% *(See Figure 16 - Bicycle Lane Widths Relative to Traffic Volume and Speed).* In areas of steep grades (5% or greater), where pavement widening potential is limited, additional lane width should be provided in the uphill direction to accommodate cyclists pedaling at slower speeds. See Figure 16 for guidance for three ranges of posted speeds and bike lanes widths (VTA 2012, pp. 7-2 – 7-3).

**Signed Bike Routes -** Residential roadways can make excellent bike routes particularly speeds of less than 25 mph. The street design should balance cyclists' needs for wider lanes with the trend for narrower cross-sections to discourage speeding. For traffic volumes less than 2,000 vpd, a roadway width of 30 feet maximum will reinforce slow speeds while bicyclists can comfortably share the full lane due to the low traffic volumes. Curb radii should be 15 feet maximum to discourage fast right turns (VTA 2012, p. 8-1).

### AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES

"This guide provides information on how to accommodate bicycle travel and operations in most riding environments. It is intended to present sound guidelines that result in facilities that meet the needs of bicyclists and other highway users. Sufficient flexibility is permitted to encourage designs that are sensitive to local context and incorporate the needs of bicyclists, pedestrians, and motorists. However, in some sections of this guide, if they are designed and/or retrofitted for suggested minimum dimensions are provided. These are recommended only where further deviation from desirable values could increase crash frequency or severity (AASHTO, 2012, p. 1-2)."

### AASHTO GUIDE FOR THE PLANNING, DESIGN AND OPERATION OF PEDESTRIAN FACILITIES

The purpose of this guide is to provide guidance on the planning, design, and operation of pedestrian facilities along streets and highways. Specifically, the guide focuses on identifying effective measures for accommodating pedestrians on public rights-of-way. Appropriate methods for accommodating pedestrians, which vary among roadway and facility types, are described in this guide. AASHTO also recognizes the profound effect that land use planning and site design have on pedestrian mobility and addresses these topics in this guide (AASHTO, 2004).

### Bicycle Lane Widths Relative to Traffic Volume and Speed

**With Posted Speeds Less Than or Equal to 30 mph**
The optimum width for a bike lane on an arterial/collector with no on-street parking with speeds of 30 mph or less is five feet. The optimal minimum width to the longitudinal joint with the gutter pan is four feet; (Caltrans HDM states that a minimum width of 3 feet shall be provided.) If there is on-street parallel parking, an additional eight feet should be provided.

**With Posted Speeds between 35 and 40 mph**
The optimal width for a bike lane on an arterial/collector with no on-street parking with posted speeds of 35 mph to 40 mph, is six feet. The optimal minimum width to the longitudinal joint with the gutter pan is five feet. If there is on-street parallel parking, an additional eight feet should be provided.

**With Posted Speeds of 45 mph or more**
The optimum width for a bike lane on an arterial/collector with no on-street parking with posted speeds of 45 mph or more is eight feet. The optimal minimum width to the longitudinal joint with the gutter pan is seven feet. If there is on-street parallel parking, an additional eight feet should be provided.

*Figure 16 – Bicycle Lane Widths on Arterials/Collectors at a Range of Posted Speeds (VTA 2012, pp. 7-2 – 7-3).*

## SUMMARY OF REFERENCED DESIGN GUIDELINES

A number of relevant documents have provided criteria for assessing trail feasibility and guidelines for developing trail design concepts. These documents include:

2012 American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities

2007 BNSF Railway / Union Pacific Railroad Guidelines for Railroad Grade Separation Projects

2012 California Department of Transportation Highway Design Manual: Chapter 1000 Bicycle Transportation Design

1995 Santa Clara Countywide Trails Master Plan

1999 Santa Clara County Interjurisdictional Trail Design, Use and Management Guidelines

2005 Santa Clara County Parks and Recreation Department Trail Maintenance Manual

2012 Santa Clara Valley Transportation Authority Bicycle Technical Guidelines: A Guide for Local Agencies in the Planning, Design and Maintenance of Bicycle Facilities and Bicycle-Friendly Roadways

2006 Santa Clara Valley Water District, Water Resources Protection Manual: Guidelines & Standards for Land Use Near Streams

| Roadway Segments (North to South) | Car/Bike Injury | Car/Bike No Injury | Car/Bike Fatality | Car/Ped Injury | Car/Ped No Injury | Car/Ped Fatality | Other |
|---|---|---|---|---|---|---|---|
| **Knickerbocker Drive** Heatherstone to Mary | 2 | 0 | 0 | 1 | 0 | 0 | 2 |
| **Mary Avenue** Knickerbocker to Homestead | 6 | 2 | 0 | 2 | 2 | 0 | 0 |
| **Belleville Way** Fremont to Homestead | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| **Bernardo Road** Fremont to Homestead | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Homestead Road** Mary to Belleville | 4 | 0 | 0 | 0 | 1 | 0 | 0 |
| **Fremont Avenue** Mary to Belleville | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Fremont Avenue** Los Altos City Limit near State Route 85 to Grant Road | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Grant Road** Fremont to Foothill Expressway | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Foothill Boulevard** Cristo Rey Drive to Stevens Creek Boulevard | 6 | 0 | 0 | 1 | 0 | 2 | 0 |
| **Homestead Road** Homestead Court to Mary | 5 | 2 | 0 | 0 | 0 | 0 | 0 |
| **Mary Avenue** Homestead to Stevens Creek Blvd. | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| **Stevens Creek Boulevard** Cupertino western City Limit to Mary Avenue | 5 | 4 | 1 | 3 | 1 | 0 | 0 |

*Figure 17 – Summary of 2008-2013 Bicycle and Pedestrian Collisions on Studied Roadways.*

### UNIQUE TRAFFIC CONDITIONS

The study also identified areas with unique traffic considerations. Unique traffic considerations included truck routes, uncontrolled freeway interchanges, schools that create short-term traffic congestion during student drop-off and pickup and areas of steep grades defined as greater than 5%.

### BICYCLE AND PEDESTRIAN COLLISIONS

This study also reviewed bicycle and pedestrian collision data for the past five years (2008-2013) to identify areas that could benefit from bicycle and pedestrian facility enhancements. A summary of the collision data is provided in Figure 17. The data includes mid-block and intersection collisions.

### ON-STREET FEASIBILITY SUMMARY

An assessment of on-street alignments was conducted to evaluate the feasibility of linking isolated segments of the trail via city streets. These on-street routes also provide connections to the creek corridor. This feasibility study reviewed a wide range of on-street alternatives and identifies the types of bicycle and pedestrian facilities that are feasible on each street *(See Figures 18, 19, 20 and 21).*

The ability to provide a continuous and reasonably direct route between the existing segments of the trail was an important consideration. The number of directional movements and turns required to navigate the on-street alignment were considered to make the route simple to follow. Ease in returning to the creek corridor from city streets was viewed as an important criteria for encouraging the public to find and use the on-street facilities. The varying level of bicycle riding ability of those individuals attracted to trail facilities should be considered in the selection of a preferred alignment. Streets that accommodate beginner bicyclists are more consistent with the fully separated pathway experience offered by the Stevens Creek Trail.

Finally, convenience and safety were evaluated at all intersections. Roads with rights of way that minimized the need to stop are preferred over those routes that were frequently interrupted by stop signs. Major intersections were evaluated for signal lights or the probability of installing new lights that might be required to accommodate the additional pedestrian and bicycle use are identified on the potential trail alignment maps in Chapter 3.

### FEASIBILITY REPORT DEFINITIONS

This report uses the following terms to describe existing and proposed bicycle and pedestrian facilities. These terms are used in Figures 18, 19, 20 and 21 which summarize the feasibility of studied roadways to support pedestrian and bicycle facilities for linking the Stevens Creek Trail.

**Pedestrian/Bike Path** is a trail or path separated from auto traffic. These facilities are proposed in open space lands and parallel to roadways. A pedestrian/bike path is considered to be 10-feet wide with 2-foot shoulders on each side of the facility. Pedestrian/Bike Paths are intended to serve a wide-range of trail users with varying skill levels.

**Bike Lanes** are indicated on arterial and collector streets carrying average daily traffic of more than 4,000 vehicles per day. Bike lanes provide a striped lane in either direction on the roadway and are intended for one-way bike travel. Bike lanes are assumed to be 6-feet wide unless otherwise noted in this report.

**Signed Bike Routes** are indicated on streets having low traffic volume as measured by average daily traffic of less than 2,000 vehicles per day and speeds less than 25 mph. Bike route signs and optional pavement markings are used to designate a street as a signed bike route. Bike routes are placed on streets with and without parallel parking.

**Neighborhood Greenway** is a signed bike route that includes neighborhood enhancements to manage vehicle speed and volume and prioritize bicycle traffic. Neighborhood greenways are identified on streets where the addition of roadway markings, corner curb bulb-outs with landscaping and other amenities are feasible within the roadway right-of-way.

**Sidewalks** are designated walking spaces along roadways. Sidewalks may be directly adjacent to the roadway curb or may include a planting strip that provides buffer to the roadway and an opportunity for street trees and landscaping.

### ENGINEERED STRUCTURES

Engineered trail improvements include underpasses, overcrossings, tunnels, pedestrian bridges and at-grade street crossings. Several structures have been proposed throughout the trail alignments. In most cases, these engineered improvements retrofit existing roadway bridges and provide an opportunity for human-scale transportation.

**Underpasses** extend along the creek banks and cross beneath the roadways. The underpasses follow existing Santa Clara Valley Water District (SCVWD) maintenance access roads where feasible. The underpasses retrofit existing roadway bridges to provide grade-separated trail crossings. The in-channel underpasses are typically designed to handle bicyclists, pedestrians and light duty maintenance vehicles.

**Overcrossings** span major roadways and exclusively serve bicyclists and pedestrians. The overcrossings are proposed when no opportunity exists to retrofit the existing roadway and where grade-separations are preferred for extending the grade-separated the Stevens Creek Trail. The overcrossings provide grade-separated trail crossings and are feasible at some highway and local streets locations.


*Pedestrian overcrossing at State Route 85 in Mountain View.*

**A Tunnel** is under consideration in one location to provide grade-separated crossings beneath Stevens Creek Boulevard. The tunnel is proposed when no opportunity exists to retrofit the existing roadway bridge spanning Stevens Creek.

**Pedestrian/Bicycle Bridges** are proposed to provide connections across the creek corridor to extend the trail and over UPRR line to access Rancho San Antonio County Park from Stevens Creek Boulevard. Pedestrian/bicycle bridges are intended to be of equal width to the trail and to completely span the creek without need for in-channel support. This type of a structure is referred to as a clear span bridge. These bridges can also be designed to accommodate vehicle loading should an area of a trail require regular vehicle access.

**At-Grade Street Crossings** are proposed at junctions where the trail meets a roadway and at the intersections along the routes. Several at-grade street crossings are proposed for modification. The at-grade street crossings are proposed at controlled intersections or require modifications to those intersections that do not meet these criteria.

| Evaluated Roadway | Existing Facilities | | | | Roadway Width (Curb to Curb) | Posted Speed Limit (85th Percentile) | Traffic Volume (ADT) | Unique Traffic Conditions | On-Street Bicycle/Pedestrian Facilities Feasibility by Roadway Segment |
|---|---|---|---|---|---|---|---|---|---|
| | Bike Route | Bike Lanes | Side-walks | Parking | | | | | |
| **Heatherstone Way** **(Dale to Bernardo)** | None | None | Both Directions | Both Directions | 40 feet | 25 mph | Low volume residential | Cherry Chase Elementary School | Neighborhood Greenway Proposed as a Bike Boulevard in the 2008 Mountain View Bicycle Transportation Plan |
| **Knickerbocker Drive** **(Heatherstone to Mango)** | None | Yes | Both Directions | Both Directions | 50 feet | 25 mph (30 mph) | 1,661 | None | Existing Bike Lanes |
| **Mockingbird Lane** **(Stevens Creek to Knickerbocker)** | None | None | Both Directions | Both Directions | 39 feet | 25 mph | Very low volume residential | None | Neighborhood Greenway |
| **Remington Drive** **(Bernardo to Mary)** | None | Yes | Both Directions | Both Directions | 62 feet | 35 mph | Low volume residential | None | Existing Bike Lanes |
| **Bernardo Avenue** **(Heatherstone to Remington)** | None | Yes | Both Directions | Both Directions | 50 feet | 30 mph | 10,084 | Cherry Chase Elementary School | Existing Bike Lanes |
| **Bernardo Avenue** **(Remington to Fremont)** | None | None | Both Directions | Both Directions | 40 feet | 30 mph | 10,084 | None | Bicycle Lanes Requires removal of one side of on-street parking south of Remington |
| **Mary Avenue** **(Heatherstone to Fremont)** | None | None | Both Directions | Both Directions | 64 feet | 35 mph (40 mph) | 14,662 | None | Bike Lanes Approved with the Mary Avenue Street Space Allocation Project by eliminating one lane of auto travel in each direction and creating a single left hand turn lane |
| **Diericx Drive** **(Franklin to Lubich)** | None | None | Incomplete Sidewalks | Both Directions | 40 feet | 25 mph | Low volume residential | Mountain View High School | Neighborhood Greenway |
| **Franklin Avenue** **(Sleeper to Levin)** | None | None | Incomplete Sidewalks | Both Directions | 38 feet | 25 mph | Low volume residential | Mountain View High School | Neighborhood Greenway |
| **Bryant Avenue** **(Grant to Truman)** | None | Yes | Incomplete Sidewalks | Limited | 40-50 feet | 30 mph | Low volume residential | Mountain View High School | Existing Bicycle Lanes |
| **Truman Avenue** **(Bryant to Fremont)** | None | None | Incomplete Sidewalks | Both Directions | 44 feet | 30 mph | 4,500 | Mountain View High School | Bicycle Lanes Requires removal of one side of on-street parking south of Oak Bike Lanes from Oak to Fremont proposed in 2012 Los Altos Bicycle Transportation Plan |
| **Fremont Avenue** **(State Route 85 N/B Off-ramp to Fallen Leaf)** | None | Yes | None | None | 62 feet | 30 mph (38 mph) | 16,300 | Busy collector | Pedestrian/Bike Path on north side Retain 4’ Bike Lane on south side |
| **Fremont Avenue** **(Fallen Leaf to Grant Road)** | None | Bike Lanes | None | None | 100 feet | 30 mph (38 mph) | 16,300 | Commute traffic backs up at Belleville forcing residents living north of Fremont to turn west and U-turn to cross Fremont Avenue | Existing Bike Lanes OR Pedestrian/Bike Path proposed along north side as identified in 2008 Los Altos Stevens Creek Trail Feasibility Study and 2012 Los Altos Bicycle Transportation Plan |

*Figure 18 – Dale/Heatherstone to Fremont Avenue feasibility of studied roadways to support pedestrian and bicycle facilities for linking the Stevens Creek Trail.*

| Evaluated Roadway | Existing Facilities | | | | Roadway Width (Curb to Curb) | Posted Speed Limit (85th Percentile) | Traffic Volume (ADT) | Unique Traffic Conditions | On-Street Bicycle/Pedestrian Facilities Feasibility by Roadway Segment |
|---|---|---|---|---|---|---|---|---|---|
| | Bike Route | Bike Lanes | Sidewalks | Parking | | | | | |
| **Bernardo Avenue (Fremont to Homestead)** | None | None | East Side | East Side | 35-40 feet including right-of-way along soundwall | 30 mph | 2,532 | Cupertino Middle School and South Peninsula Hebrew Day School | Pedestrian/Bike Path along Soundwall - Requires either a 1-way street or loss of parking OR Neighborhood Greenway |
| **Belleville Way (Fremont to Homestead)** | None | None | Both Directions | Both Directions | 40 feet | 25 mph | 1,343 | West Valley Elementary School | Bicycle Lanes Requires removal of one side of on-street parking |
| **Bedford Avenue (Belleville to Ecola) Ecola Lane (Bedford to Barton)** | None | None | Both Directions | Both Directions | 40 feet | 25 mph | Low volume residential | West Valley Elementary School | Neighborhood Greenway |
| **Fallen Leaf Lane (Fremont to Louise)** | None | None | None | Both Directions | 60 feet | 25 mph | 1,350 | None | Pedestrian/Bike Path along east side Requires use of entire city-owned right-of-way OR Neighborhood Greenway using existing pavement only OR Signed Bike Route using existing pavement only as identified in 2002 Los Altos General Plan and 2012 Los Altos Bicycle Transportation Plan |
| **Louise Lane (Fallen Leaf to Homestead)** | None | None | None | Both Directions | 36 feet | 25 mph | Low volume residential | None | Neighborhood Greenway using existing pavement only OR Signed Bike Route using existing pavement only |
| **Newcastle Drive (Fremont to Grant)** | None | None | Two short segments only | Yes | 40 feet | 25 mph | Low volume residential | None | Bike Route proposed in 2012 Los Altos Bicycle Transportation Plan |
| **Mary Avenue (Fremont to Homestead)** | None | Yes | Yes | Yes | 64 feet | 35 mph | 8,564 | Homestead High School | Existing Bike Lanes |
| **Homestead Road (Belleville to Grant)** | None | Yes | South side only | None | 56 feet 80 feet includes ROW to north with | 35 mph (41 mph) | 16,390 | Busy collector | Existing Bike Lanes and Existing Pedestrian/Bike Path along north side |

*Figure 19 – Fremont Avenue to Homestead Road feasibility of studied roadways to support pedestrian and bicycle facilities for linking the Stevens Creek Trail.*

| Evaluated Roadway | Existing Facilities | | | | Roadway Width (Curb to Curb) | Posted Speed Limit (85th Percentile) | Traffic Volume (ADT) | Unique Traffic Conditions | On-Street Bicycle/Pedestrian Facilities Feasibility by Roadway Segment |
|---|---|---|---|---|---|---|---|---|---|
| | Bike Route | Bike Lanes | Sidewalks | Parking | | | | | |
| **Grant Road** (Fremont to Foothill Expressway) | None | Yes | Incomplete Sidewalk on East Side | None | 90 feet varies | 25 mph (37 mph) | 10,700 | Grant Road traffic heavy at commute hours, and during at school drop-off and pick-up | Existing Bike Lanes<br>Pedestrian/Bike Path proposed along east side in 2008 Los Altos Stevens Creek Trail Feasibility Study |
| **Grant Road** (Foothill Expressway to Homestead) | Yes | None | Incomplete Sidewalk on North Side | None | 42 feet | 25 mph | unknown | Grant Road traffic heavy at commute hours | Existing Bike Route<br>Bike Lanes proposed in 2012 Los Altos Bicycle Transportation Plan<br>OR<br>Pedestrian/Bike Path proposed along north side in 2008 Los Altos Stevens Creek Trail Feasibility Study |
| **Foothill Expressway** (Grant Road to Foothill Boulevard) | None | None | None | None | 80-100 feet | 45 mph | 20,402 | Must cross Hwy 280 Interchange, Foothill Expressway serves as a Truck Route | Pedestrian/Bike Path with an optimal 8-foot "Delineate but not Designate" shoulder on the Expressway – May not be sufficient room to create optimal shoulder conditions |
| **Foothill Boulevard** (Cristo Rey to Stevens Creek Blvd.) | None | Yes | Both Directions | None | 80-100 feet | 40 mph (44 mph south and 45 mph north) | 16,001 | Must cross Hwy 280 Interchange at Foothill, Foothill Blvd. serve as Truck Routes, Steep downgrade to creek corridor | Existing Bike Lanes |
| **Mary Avenue** (Don Burnett Bicycle-Pedestrian Bridge to Stevens Creek Blvd.) | None | Yes | East Side | Both Directions | 70 feet | 35 mph (34 mph) | 3,850 | None | Existing Bicycle Lanes |
| **Stevens Creek Boulevard** (Mary Avenue to Stevens Creek Trail) | None | Yes | Both Directions | Both Directions | 50-100 feet | 35 mph (40 mph) | 34,980 | Must cross Hwy 85 interchange at SC Blvd., which also serves as Truck Route | Existing Bicycle Lanes |

*Figure 20 – Homestead Road to Stevens Creek Boulevard feasibility of studied arterial roadways to support pedestrian and bicycle facilities for linking the Stevens Creek Trail.*

| Evaluated Roadway | Existing Facilities | | | | Roadway Width (Curb to Curb) | Posted Speed Limit (85th Percentile) | Traffic Volume (ADT) | Unique Traffic Conditions | On-Street Bicycle/Pedestrian Facilities Feasibility by Roadway Segment |
|---|---|---|---|---|---|---|---|---|---|
| | Bike Route | Bike Lanes | Sidewalks | Parking | | | | | |
| **Barranca Drive (Homestead to Peninsular)** | None | None | None | Both Directions | 40 feet | 25 mph | Very low volume residential | None | 5-foot Bike Lanes<br>Requires removal of one side of on-street parking<br>OR<br>Neighborhood Greenway |
| **Peninsular Avenue (Barranca to Caroline)** | None | None | None | Both Directions | 34 feet | 25 mph | Very low volume residential | None | 4-foot Bike Lanes<br>Requires removal of one side of on-street parking<br>OR<br>Neighborhood Greenway |
| **Caroline Drive (Peninsular to Maxine)** | None | None | None | Both Directions | 42 feet | 25 mph | Very low volume residential | None | Bike Lanes<br>Requires removal of one side of on-street parking<br>OR<br>Neighborhood Greenway |
| **Maxine Avenue (Caroline to Homestead)** | None | None | East Side only | Both Directions | 40 feet | 25 mph | Very low volume residential | None | 5-foot Bike Lanes<br>Requires removal of one side of on-street parking<br>OR<br>Neighborhood Greenway |
| **Stokes Avenue (Somerset Park to Demptster)** | None | None | Both Directions | Both Directions | 40 feet | 25 mph | Very low volume residential | None | 5-foot Bike Lanes<br>Requires removal of one side of on-street parking<br>OR<br>Neighborhood Greenway |
| **Dempster Avenue (Stokes to Peninsula)** | None | None | Both Directions | Both Directions | 40 feet | 25 mph | Very low volume residential | None | 5-foot Bike Lanes<br>Requires removal of one side of on-street parking<br>OR<br>Neighborhood Greenway |
| **Peninsula Avenue (Dempster to Stevens Creek Blvd.)** | None | None | East Side only | Both Directions | 38 feet | 25 mph | Very low volume residential | None | 5-foot Bike Lanes<br>Requires removal of one side of on-street parking<br>OR<br>Neighborhood Greenway |
| **Phar Lap (Madera to Stevens Creek Blvd.)** | None | None | Both Directions to Creekside | Both Directions | 40 feet | 25 mph | Very low volume residential | None | Neighborhood Greenway |
| **Madera Drive (UPRR to Dos Palos Ct.)** | None | None | None | None | 35 feet | 25 mph | Very low volume residential | None | Neighborhood Greenway |
| **Mann Drive (Dos Palos Court to Stevens Creek Blvd.)** | None | None | None | Both Directions | 40 feet | 25 mph | Very low volume residential | None | Neighborhood Greenway |

*Figure 21 – Homestead Road to Stevens Creek Boulevard feasibility of studied residential streets to support pedestrian and bicycle facilities for linking the Stevens Creek Trail.*