Thompson Creek

San Jose, Ca

Trail Feasibility Study

Final

11 July 2002

prepared for

The City of San Jose

by

CATALYST

Thompson Creek Trail Feasibility Study

Contents

prepared by
Catalyst
577 Second Street, Suite 203
San Francisco, California 94107

for
The City of San Jose

Executive Summary

The purpose of this investigation is to analyze the feasibility of constructing a Class I bicycle and pedestrian trail along the Thompson Creek riparian corridor. The study criterion examines land availability, habitat and geologic considerations and street and highway crossings. The report uses these criteria as well as relevant trail aesthetic and design guidelines to identify a trail alignment with enough available public land to enable the development of a public trail.

Thompson Creek drains from its headwaters in the southeastern San Felipe foothills, flows along the base of the eastern foothills and eventually merges with Silver Creek at Lake Cunningham in San Jose. Lower Silver Creek is a tributary to Coyote Creek and eventually joins the San Francisco Bay.

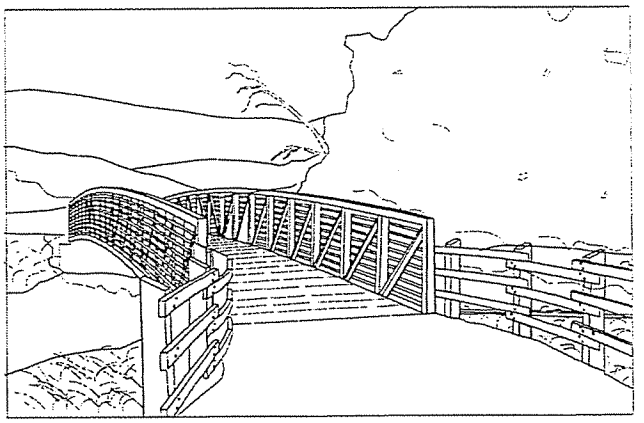
The proposed alignment for the Thompson Creek Trail begins at Lake Cunningham Park, follows the levees north along the creek to Aborn Road. At this point, land availability and geotechnical considerations preclude a creek side trail and the route follows a street side alignment to Yerba Buena Road. As the setting becomes more rural, the creek meanders amidst the open space and low-density housing developments. If land availability, geotechnical and biotic concerns can be met, a class I trail can again be placed along the creek. This creek side alignment continues to Larkspur Canyon Drive. From this point to Heartland Way, a country lane trail currently exists along the creek corridor. The report recommends upgrades to this existing trail, such as grade protection barriers, trail widening where possible and drainage improvements.

The proposed trail alignment will afford significant recreational, business, transportation and environmental benefits to residents and employment centers throughout the area. The trail creates new intermodal transportation opportunities for pedestrians and bicyclists to connect to bus lines and proposed transportation corridors. By providing convenient, safe and attractive opportunities for people to use alternative transportation methods, the trail has the potential to significantly benefit air quality. One of the primary objectives of the Thompson Creek trail project is to enhance riparian values along the creek corridor concurrently with the development of the trail. The trail project offers people an opportunity to reconnect with the natural environment and participate in volunteer efforts to restore riparian systems along the creek corridor. The geotechnical analysis and the biotics assessment, however, identify constraints that will require further study during the Master Plan phase.

Funding is available through a variety of local, state and federal sources. The total cost of constructing the trail will be approximately twelve million dollars. This includes the cost of replacing bridges to meet Class I standards and building a retaining wall along a trail section that is prone to landslides. If biotic, land acquisition and geotechnical constraints can be successfully mitigated, the trail will provide significant benefits to the users in this urban section of San Jose.

Chapter 1

Purpose and Benefits



Introduction

This chapter provides an overview of the Thompson Creek Trail Corridor and discusses the planning process, study goals, methods for determining feasibility and the potential significance and benefits of the trail to the community. The study area begins at Lake Cunningham Park in San Jose and extends to San Felipe Road and Heartland Way (Fig. 1: Regional Map).

The proposed alignment for the Thompson Creek Trail begins at Lake Cunningham Park, follows the levees along the creek to Aborn Road. At this point land availability precludes a creek side trail and the route follows a street side alignment to Yerba Buena Road. As the setting becomes more rural, the creek meanders amidst open space and low-density housing developments. The proposed trail is again placed along the creek. This creek side alignment continues to Larkspur Canyon Drive. The trail then continues along a Class II trail alignment to Heartland Way (Fig. 2 Location Map).

Mission Statement

The City of San Jose will determine the feasibility of constructing a continuous trail along Thompson Creek that is safe to use, integrates with the natural environment and provides a public benefit to schools, businesses and the surrounding community.

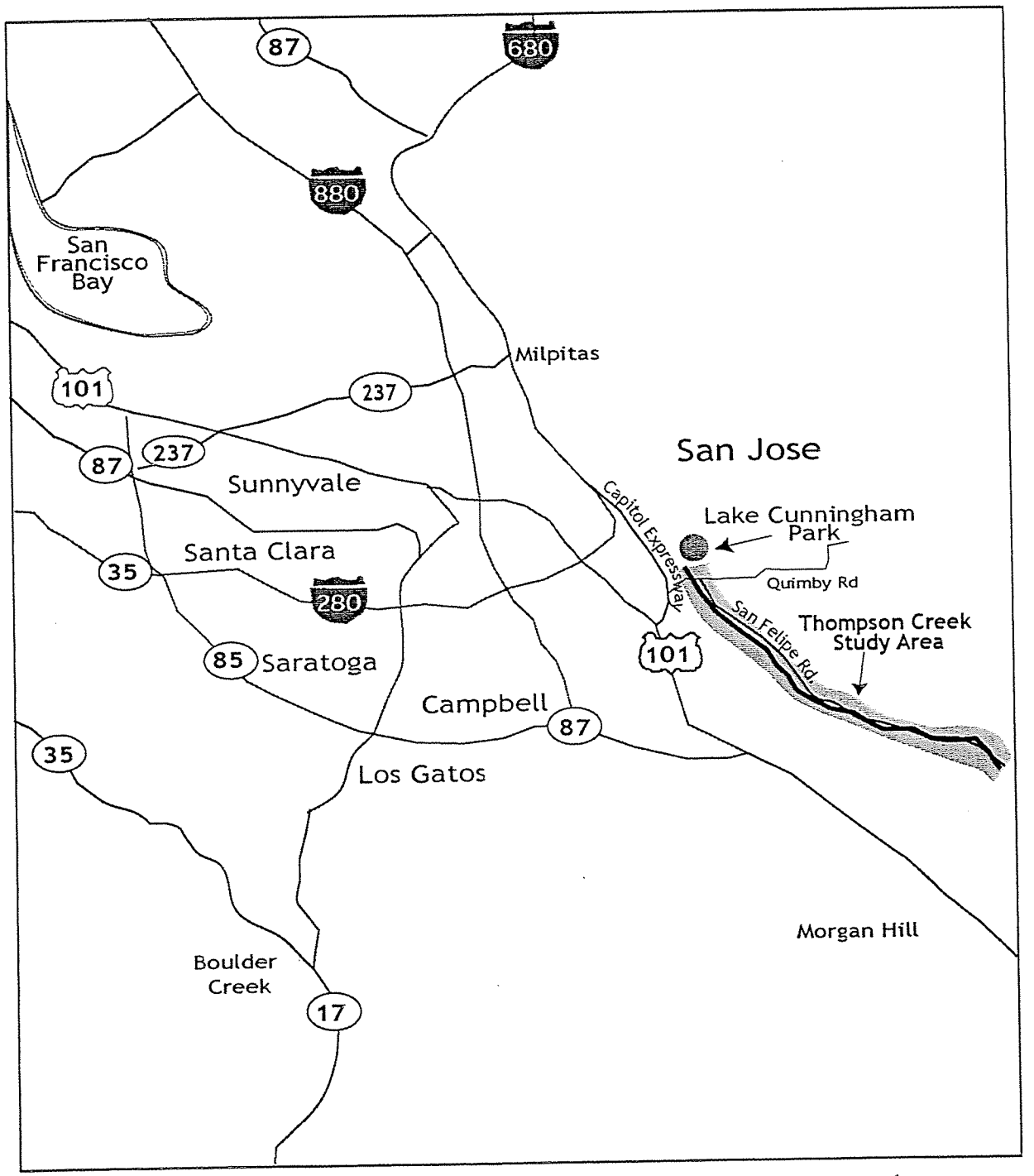


Fig. 1. Area Map

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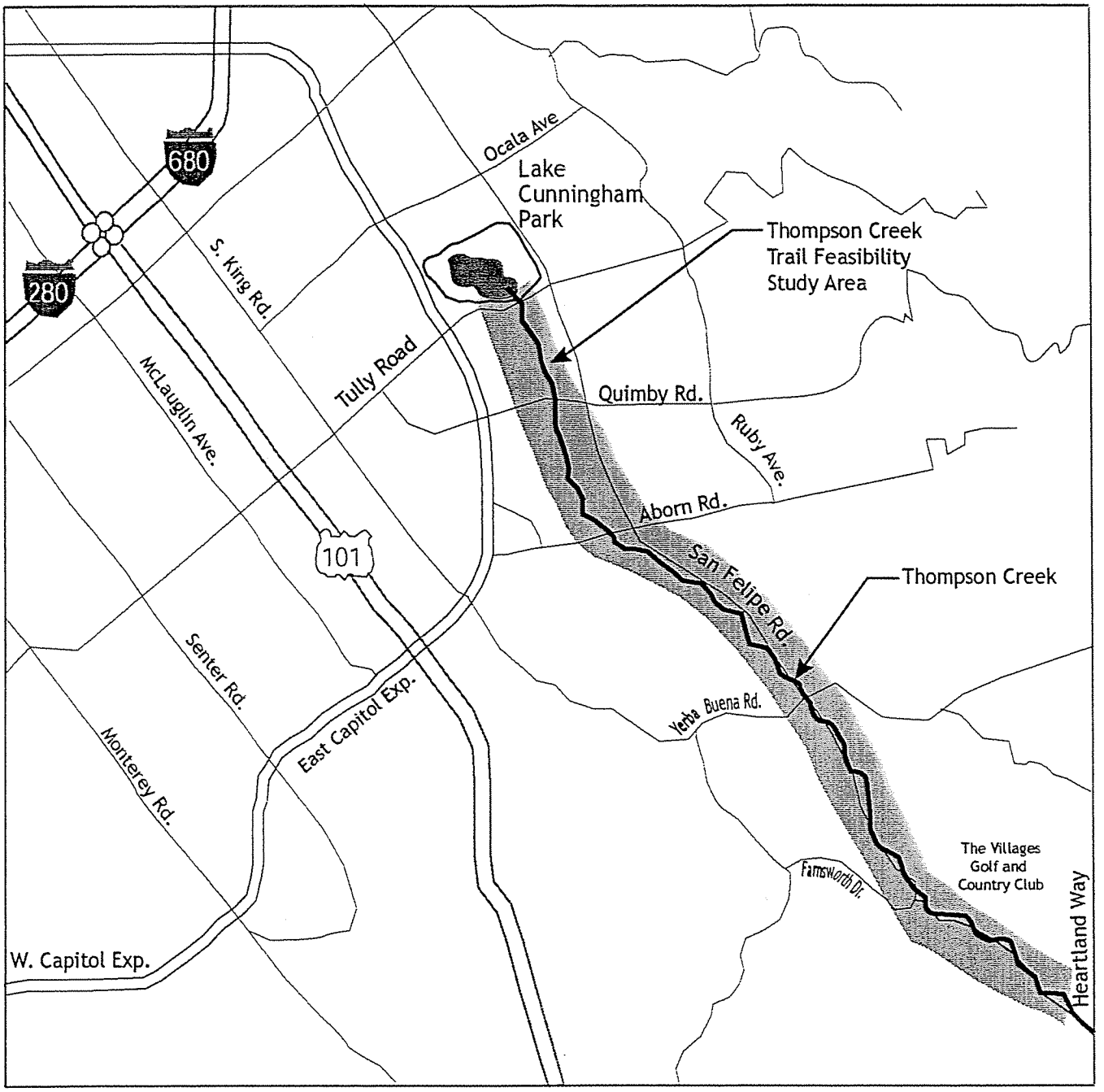


Fig. 2. Location Map

Regional Setting

Thompson Creek drains from its headwaters in the southeastern San Felipe foothills, flows along the base of the eastern foothills and eventually merges with Lower Silver Creek at Lake Cunningham in San Jose. Lower Silver Creek is a tributary to Coyote Creek and eventually joins the San Francisco Bay.

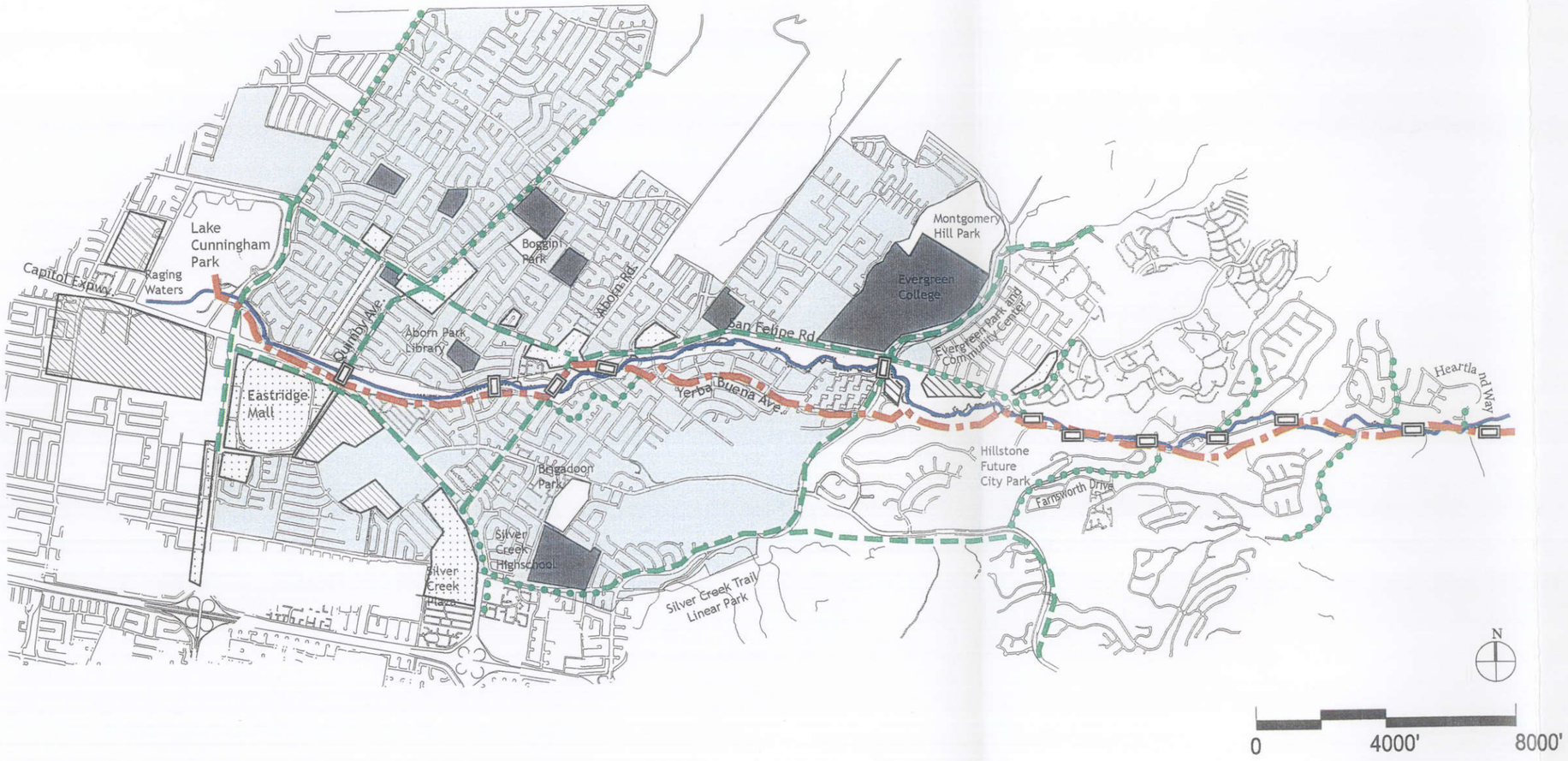
According to the Riparian Corridor Policy Study (City of San Jose, 1999), seven miles of potential riparian corridor trail exist in the Thompson Creek study area. Six of the seven miles of trail remain undeveloped and the existing trail segments along San Felipe are substandard. The Thompson Creek Trail Feasibility study area begins at Lake Cunningham Park and extends to San Felipe Road and Heartland Way.

The trail connects residential areas with major shopping centers, regional and local parks, a community college and employment centers located along Capitol Expressway and San Felipe Road. The trail also links residential neighborhoods and recreation areas with existing and proposed public transportation corridors. These connections provide alternative transportation routes for residents and employees that want to bicycle or walk to work and alternative transportation (Figure 3. Land Uses and the Bicycle Trail Network) (Figure 4. Tansportation Diagram - Public Transit).

Alignment with Regional Plans

The *Greenprint for Parks and Community Facilities and Programs* (City of San Jose, 2000) identifies the need for a Citywide trail network that facilitates intermodal transportation and connects with regional trail systems within the City's sphere of influence. The *Greenprint* strategy outlines the need to develop trails in the Thompson Creek and other trail corridors in Council District 8. These trail systems will provide alternative transportation and recreational alternatives to the 23,000 new residents expected to reside in this district by the year 2020.

In 1995 San Jose's Parks, Recreation and Community Services Department prepared a *Park Acreage Deficiencies Report* that identified the residential neighborhoods along the study area as the most park deficient neighborhoods in Council District 8. The report went on to recommend that a comprehensive study be performed to determine the potential for acquisition and development of portions of the Thompson Creek Corridor for recreational uses.



Thompson Creek Trail Feasibility

Legend

- Proposed Thompson Creek Trail
- Proposed System of Class II Bike Lanes
- Existing Bikeways
- Medium Density Residential
- Low Density Residential
- General Commercial
- Public / Quasi-public
- Schools
- Public Park / Openspace
- Bridge
- Thompson Creek

Figure 3
Land Uses and the Bicycle Trail Network

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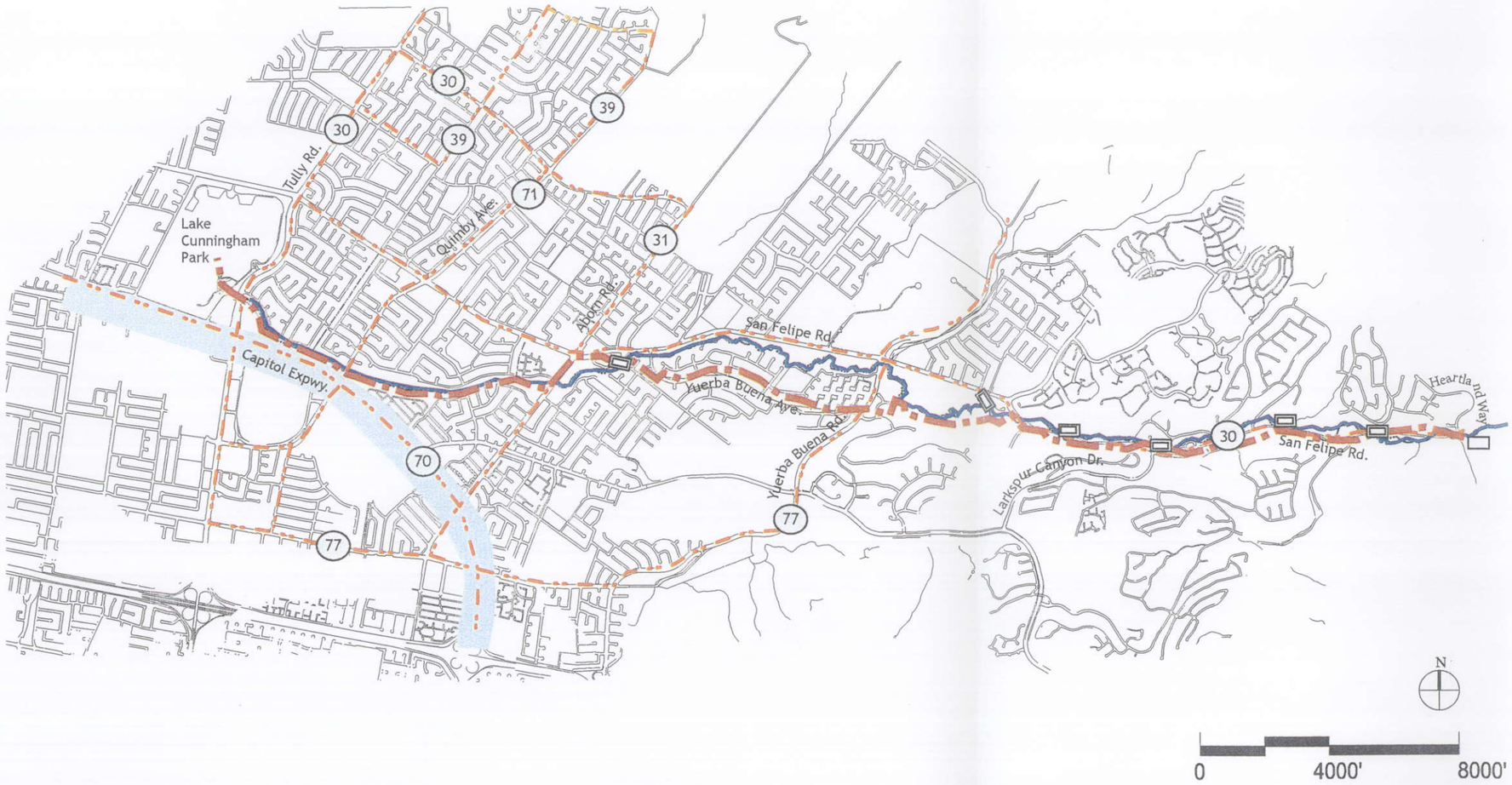

Legend

- Transit-Oriented Development Corridor
- Bus Route
- Thompson Creek
- Proposed Trail Alignment
- Bridge

Local Bus Routes

30 31 39
70 71 77

Figure 4. Transportation Diagram- Public Transit

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Study Goals

The San Jose 2020 General Plan outlines a set of goals for trails. The Plan states that trails should provide a network that links neighborhood and recreation areas with the City and with alternative means of both commuting and reaching schools, regional parks and other natural areas. Trails should also provide a safe transportation alternative that benefits businesses, schools and neighborhoods. General Plan goals state that these benefits should proceed in tandem with the enhancement of habitat for wildlife and open space for trail users.

The Thompson Creek Trail will:

- Provide a proposed contiguous trail corridor on public land and within close proximity to the creek from Lake Cunningham Park located at Tully Road and Capitol Expressway, south to the City limit, near San Felipe Road and Heartland Way;
- Provide public staging areas onto the creek trail at appropriate points (Preliminary proposals outlined in Chapter 8);
- Consider alternative alignments for the trail when it is not feasible to align the trail adjacent to the creek;
- Preserve habitat and aesthetic values;
- Respect the property rights of adjacent landowners;
- Respect the identity and character of the regional setting;
- Be consistent with regional, state and local guidelines;
- Restore native riparian vegetation along the creek corridor concurrently with the development of the trail;
- Connect residential neighborhoods and recreation areas with existing and proposed public transportation corridors.

Methodology

This section describes the methodology used to evaluate the feasibility of developing a Class I Alternative Transportation/Recreational Trail for pedestrian and bicycle use along Thompson Creek. Physical site features were mapped in the field and analyzed to identify opportunities and constraints for trail development. Review of state and local Trail Design Guidelines helped to determine the appropriate trail types for each section of the creek. Analysis included constraints to trail development such as land availability, geotechnical and biological concerns and corridor crossings. The preferred alignment was derived in consultation with local stakeholders such as the City of San Jose, Santa Clara Valley Water District, The City's Fire and Police Departments, the Valley Transportation Authority and other agencies with jurisdiction over Thompson Creek. Agency representatives provided important guidance concerning design standards, safety, maintenance, access, and land availability issues.

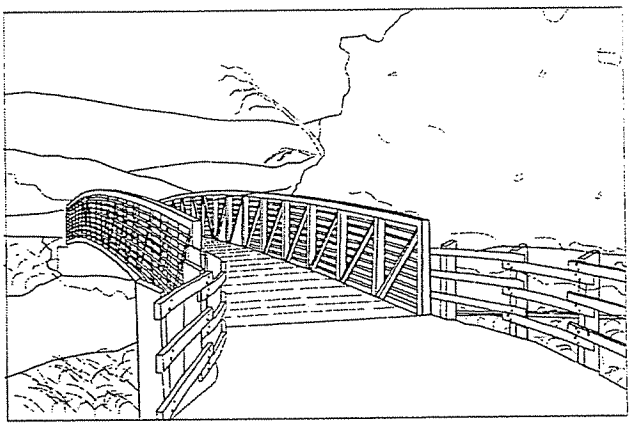
Biotic Resources Assessment

The biotic resources of the proposed Thompson Creek Trail were assessed through reconnaissance-level field observations in December 2001 and January 2002. These field observations augmented previous surveys conducted of the project area in February 2001. A plant ecologist and a wildlife biologist traveled the proposed trail route and creek corridor. During the December 2001 field survey, the plant communities on the site were identified, based on the classification system developed in Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland, 1986), (and amended to reflect site conditions).

To assess the potential occurrence of special status biotic resources, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2001) and California Department of Fish & Game's (CDFG) RareFind database (CDFG, 2001) for the San Jose U.S.G.S. quadrangle. A previous biotic report conducted for the project site was also reviewed (Jana Sokale, Environmental Planning, Bioassessment of Thompson Creek Trail Project, September 1999).

Chapter 2

Significance and Benefits



roduction

e Thompson Creek Trail extends 7.5 miles through open space pockets set amidst residential neighborhoods l employment centers located along Capitol Expressway and San Felipe Road, south of Capitol Expressway l along Silver Creek Valley Road. The trail will enable residents living south of Yerba Buena Road to more ily access alternative transportation routes to the Coyote Creek Redevelopment Zone located along Coyote eek near Highway 101. The trail connects residential areas with major shopping centers, regional and local ks and a community college. The trail also links residential neighborhoods and recreation areas with existing routes and the proposed Capitol Expressway transit oriented development corridor. These connections ilitate the use of alternative transportation routes by residents and employees that want to bicycle or walk work and bus and light rail systems (See Fig. 3 - Chapter 1).

creational Benefits

e proposed Thompson Creek Trail provides a safe, easy to use, grade separated pedestrian and bicycle access both parks and open space areas, other trails and scenic corridors. Residential neighborhoods will benefit m improved pedestrian and bicycle access to parks and open spaces and new opportunities to walk and cycle to work and school along the creek corridor. Walking and riding bicycles through natural areas along riparian corridor allows people a momentary diversion from urban living. The proximity to schools and ployment centers will enable the public to experience nature and view wildlife during break times and after ool.

ansportation Benefits

e Thompson Creek Trail would expand transportation alternatives available to San Jose residents and ployees. The trail creates convenient and safe new opportunities for pedestrians and bicyclists to connect with six local Santa Clara Valley Transportation Authority (VTA) bus lines and the planned Capitol Expressway nsit Oriented Development Corridor. All VTA buses are equipped with bicycle racks. Proposed bridges d spur trails connect neighborhoods and employment centers with the trail corridor (Fig. 3 and 4 - Chapter

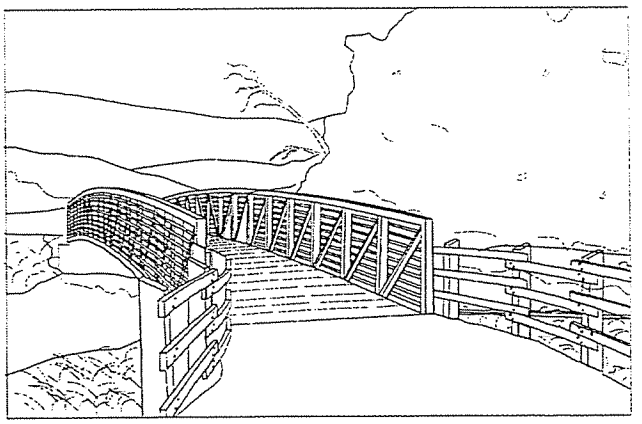
vironmental Benefits

king the development of a trail system along Thompson Creek with habitat enhancement offers the potential enhance the current environmental conditions along Thompson Creek. Community outreach efforts can e the trail project to encourage residents, employees and agency officials to organize volunteer efforts to build rtions of the trail and plant native vegetation along the trail corridor.

il construction projects may incorporate habitat enhancement measures including revegetation plans that ecify locally adapted native species and a maintenance and monitoring plan. Use of these measures would prove riparian habitat along the creek corridor concomitantly with the development of the trail.
e *City's Riparian Restoration Action Plan* discusses the need for community outreach as an integral part of planning process. Trail users and other community members that appreciate the riparian environment ll have an additional incentive to participate in volunteer restoration efforts and to preserve and maintain se corridors over time.

Chapter 3

Feasibility Criteria



Introduction

This chapter describes the criteria used to determine the feasibility of developing a Class I alternative transportation and recreational trail along the Thompson Creek Riparian Corridor.

The investigation examines land availability, habitat and geologic considerations and street and highway crossings. The report uses these criteria as well as relevant trail aesthetic and design guidelines to identify a trail alignment with enough available public land to enable the development of a public trail.

Review of criteria for trail developments included: *CalTrans Highway Design Manual* (CalTrans, 1997), *Bicycle Technical Guidelines* (VTA, 1999), *Santa Clara County Trails Master Plan* (Santa Clara County, 1999), *Riparian Corridor Policy* (City of San Jose, 1999) , *Coyote Watershed Aesthetic Guidelines* (Santa Clara Valley Water District, 2000), and the maintenance requirements of the Santa Clara Valley Water District.

Various criteria were used to evaluate the practicality of using land located between the existing top of bank (TOB) and public property. The Santa Clara Valley Water District's operations and maintenance requirements clearly articulate the amount of land required to develop a trail. *The California Department of Transportation - Highway Design Manual* (CalTrans, 1997) and the *1995 Santa Clara Countywide Trails Master Plan - Design and Management Guidelines* (Santa Clara County, 1995) include standards for trail design. Relevant design criterion will be described later in this chapter.

Habitat Sensitivity

The following is a brief listing of the resources prevalent along Thompson Creek as described in the the reconnaissance-level biotic assessment (Appendix A, Initial Biological Assessment, 2002). The potential impacts of the proposed development of trail facilities along Thompson Creek on sensitive resources are discussed in depth in Chapter 6 - Environmental Effects. Mitigation measures that may be required reduce significant impacts to a level of less-than-significant are recommended, as applicable.

Existing Biotic Resources

The trail corridor supports at least eight plant communities, based on the site surveys. These include:

1. Riparian woodland
2. Willow riparian woodland
3. Oak-sycamore riparian woodland (Fig. 5. Oak – Sycamore Riparian Forest)
4. Eucalyptus groves
5. Diablan sage scrub
6. Non-native grassland
7. Seasonal wetlands
8. Freshwater marsh

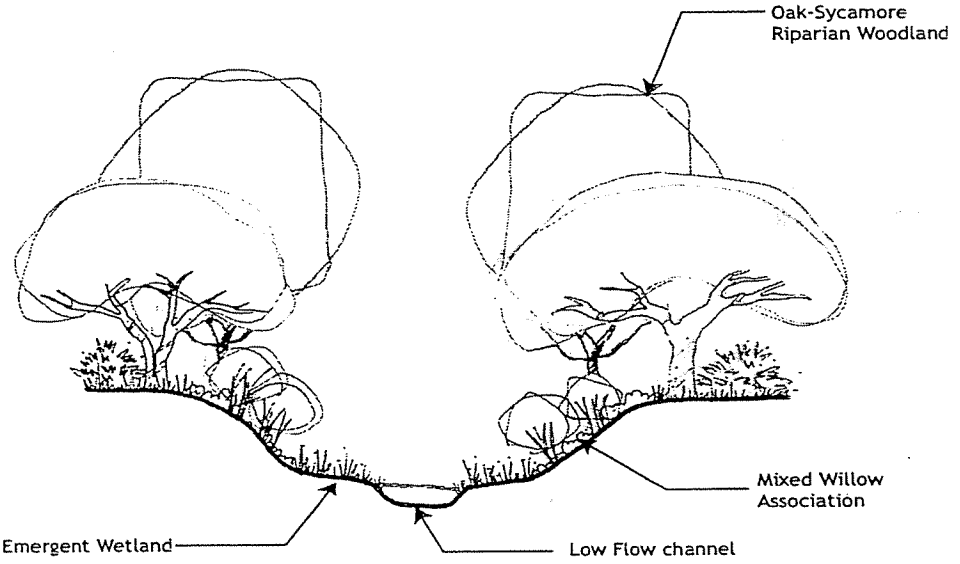


Fig. 5. Oak – Sycamore Riparian Forest

Availability of Public Land

Property Ownership

The objective of this study is to assess the feasibility of developing Thompson Creek Trail on existing public lands. Utilizing the City's GIS and Assessor parcel maps and information provided by the City Planning Department and the Santa Clara Valley Water District (SCVWD), publicly and privately owned lands were identified. At times constraints such as sensitive habitat, geotechnical issues and narrow roadway crossings dictated the use of an on-street alignment to connect the creek corridor segments of the trail. The criterion for evaluating on-street routes is explained later in this chapter. Most of the lands under consideration in this study between Lake Cunningham and Larkspur Canyon Drive are publicly held either by the Santa Clara Valley Water District or the City of San Jose. The portion of the trail alignment between Larkspur Canyon Drive and Heartland Way does not have sufficient publicly held land to develop a Class I trail. An existing trail system runs along San Felipe Road through this section. Improvements to this existing trail system will be explored in this report

Land owned by the Santa Clara Valley Water District

The Santa Valley Water District (SCVWD) is a special district empowered to protect the public health, safety and welfare by protecting water quality and by providing flood control facilities and flood way maintenance services. The SCVWD also regulates erosion control and vegetation planting activities within watercourses throughout the County.

SCVWD owns large segments of the public lands along Thompson Creek. The District's Community Services Department works with the cities inside its jurisdiction and grants Joint Use Agreements that permit the municipalities to use District land for park and recreation purposes. A SCVWD permit is required for construction activities within 50 feet of the top of bank.

State and Local Trail Design Guidelines

Trail design guidelines were reviewed to determine if enough public land exists to accommodate construction of a trail. The guidelines established by the California Department of Transportation (CalTrans) and the 1995 *Santa Clara County Trails Master Plan*: Trail Design Guidelines were applied to establish a measurable land availability requirement. CalTrans defines three types of trail facilities each with specific trail dimensions.

1. Class I Bikeways (Bike Path):

Class I paths are completely separated from the vehicular traffic. The right-of–way is designated exclusively for bicycles and pedestrians. Vehicular crossings are minimized. Recommended dimensions are as follows:

- Shared pedestrian/bicycle paths – a minimum of 12 feet wide with 2 foot shoulders on both sides of the path.
- Separation between Bike Path and Highways – Bike paths that are closer than five feet from the edge of the roadway shoulder shall include a physical barrier to prevent bicyclists from encroaching onto the highway.
- Suitable barriers could include a chain link fence or dense shrubs. Low barriers, (e.g. dikes or raised traffic bars) are not recommended.
- Bike paths immediately adjacent to streets and highways are not recommended.

2. Class II Bikeways (Bike Lane):

Class II Bikeways offer a striped lane for one-way bike travel on a street or highway. In those areas where a creek trail alignment is not feasible, bicycle lanes on city streets would provide a connecting route between Class I creek side alignments. Recommended dimensions are as follows:

- Urban Bike lanes minimums – Five feet wide striped lane adjacent to motor vehicles. In areas with significant on street parking or high turnover an additional one foot is recommended.
- Non-Urban Bike lane minimums – Four foot wide striped lane adjacent to motor Vehicles.
- Restrict right of way and design for exclusive flow of bicycles.
- Prohibit travel by motor vehicles or pedestrians.

3. Class III Bikeway (Bike Route):

Class III Bikeways offer a shared use with pedestrian or motor vehicle traffic on city streets. These routes provide continuity to the bikeway system by connecting discontinuous segments of the bikeway. They do not provide for a designated trail alignment.

CalTrans Bikeway Design Criteria

The definition of the Class I Bike ways most closely illustrates the vision for the optimal Thompson Creek Trail alignment. Since Class I bicycle ways provide an exclusive pedestrians and bicycle right of way separate from vehicular traffic, They offer residents and employees a safe and attractive alternative transportation route. Sidewalk facilities combined with Class II Bike Lanes can be used to integrate the trail system in areas where a Class I Bike Path is not feasible (Fig. 6 Recommended Dimensions for Class I Bike Way).

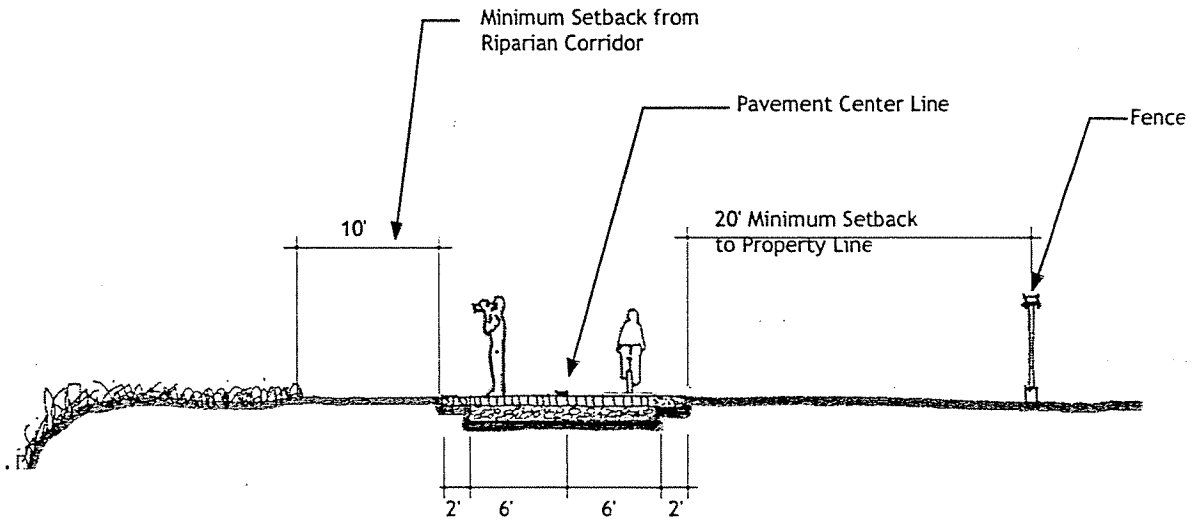


Fig. 6 Recommended Dimensions for Class I Bike Way

Alignment and Continuity

The proposed alignment for the Thompson Creek Trail begins at Lake Cunningham Park, follows the levees along the creek to Aborn Road. At this point, businesses and residential development crowd the riparian corridor and the banks of the creek become steep and deeply incised with little or no room between the top of bank and adjacent private land holdings. Because the trail must be set back from the edge of the creek, land availability and geotechnical considerations preclude a creek side trail and the trail alignment begins to follow a street side alignment to Yerba Buena Road and then to Wynfair Ridge Way. As the setting becomes more rural, the creek meanders amidst the open space and low-density housing developments. The proposed trail is again placed along the creek. This creek side alignment continues to Larkspur Canyon Road.

Five trail heads and access points are located at 1/2 to 3/4 mile intervals between Lake Cunningham and Aborn Road. The staging area for the rural scenic trail portion of the proposed alignment is at Wynfair Ridge Way with an additional access point located near Larkspur Canyon Road. These staging areas are depicted on the Trail Alignment Diagram (Fig. 7. Proposed Trail Alignment, Existing and Planned Bicycle and Scenic Routes).

Class II Bikeway and Sidewalk Facilities

A single trail alignment along the eastern side of San Felipe Road from Larkspur Canyon Drive to Heartland Way is also proposed. An existing pedestrian path with seven pedestrian bridges could be widened and upgraded to improve the current trail resources in this area. These street-side alignments are more constrained by traffic safety issues than geotechnical issues. In some cases, it may be beneficial to improve the separation between trail users and roadway traffic. For example, in some areas the edge of the trail abuts the roadway pavement with no grade separation. In these areas, consideration should be given to options such as raising the trail surface elevation by at least 10 inches, planting shrubs and establishing a vertical curb at the edge of the street traffic lane.

Thompson Creek Trail Feasibility

Legend

Proposed Trail Alignment

- Proposed Class I Trail Alignment
- Proposed Class II Trail Alignment
- Proposed Class II Bicycle Lanes

Existing Bike Lanes

- Existing Class I Bike Paths
- Existing Class II Bicycle Lanes
- Future Class II Bicycle lanes
- Rural Scenic Corridor
- Expressway that provides for bicycles
- Thompson Creek

Figure 7
Proposed Trail Alignment, Existing and Planned Bicycle and Scenic Routes

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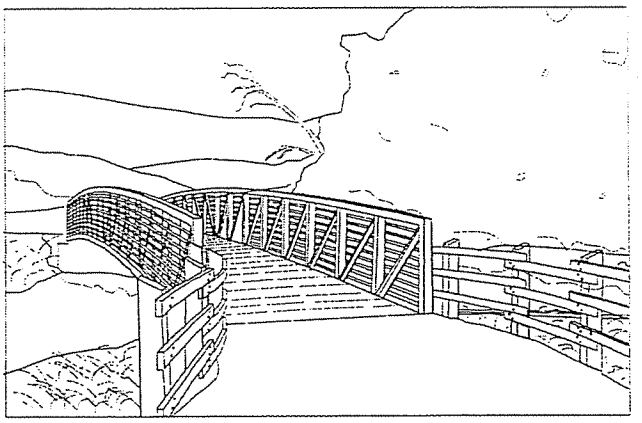
Chapter 4

Access and Connectivity



Relationship to Schools

The Thompson Creek Trail will provide children with access to eight schools located within a mile of the trail alignment. Laurelwood, Silver Oak, Holly Oaks and Cadwallader Elementary schools are located within a quarter mile of the riparian corridor and Cedar Grove Elementary School and Ley Va Intermediate School are located within one half mile of the creek. The trail will allow students of all ages to safely walk and bicycle from home to school. Evergreen Valley College is located within a quarter mile of the trail. The trail alignment proposes the development of a spur trail to the College. The spur trail will facilitate use of the main alignment by college students, employees and faculty members.

Trail connections also offer students and teachers an opportunity to expand educational activities to the outdoors. The ecological environment not only provides a forum for learning biology, it also facilitates activities related to the physical sciences, math, and history. Lessons in water quality, flood volumes and flow rates help children understand how they affect and are affected by the world around them.

Relationship to Neighborhoods

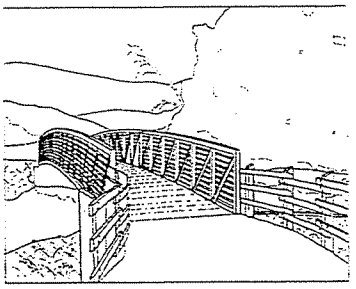
The Thompson Creek Trail is identified in the 1995 Santa Clara Countywide Trails Master Plan as a connector trail that links communities with a network of local and regional trails and other recreational facilities located throughout the County. The trail links regional parks such as, Lake Cunningham and Montgomery Hill Park. Thompson Creek Trail is part of a plan that will ultimately connect to the Silver Creek Linear Park Chain. This trail system merges with the Coyote Creek Corridor and at its southern end to the 400 mile Bay Area Ridge Trail. The trail will provide access to hundreds of acres of open space found within the surrounding parks and preserves.

Locally, the trail will provide children and families with pedestrian and bicycle access to ten city parks located within one mile of the creek corridor. The trail system encompasses Lake Cunningham Park, Evergreen Park and Community Center, Aborn Park and Montgomery Hill Park. Spur trails incorporate Boggini, Meadowfair, Brigadoon, Silver Creek Linear and Fowler Creek parks. New parks include San Felipe Park and Hillstone City Park located near the proposed rural scenic trail. The Pleasant Hills Golf Course and The Villages Retirement Community are both within walking distance of the trail alignment. Major attractions such as Oakridge Shopping Center, Reid/Hillview Airport and Evergreen Library will all become more accessible to pedestrians and bicyclists.

Relationship to Business

The employment centers located south of Capitol Expressway benefit from increased alternative transportation opportunities. Residents living south of Yerba Buena Road will be able to take advantage of improved alternative transportation access to the large businesses located along Silver Creek Valley Road and the Coyote Creek Redevelopment Zone located along Coyote Creek near Highway 101. The trail creates new alternative transportation opportunities for pedestrians and bicyclists that want to utilize the six local Santa Clara Valley Transportation Authority (VTA) bus lines and the Transit Oriented Development Corridor located along Capitol Expressway.

Bridges



Bridge access to neighborhoods along the Thompson Creek corridor is currently available and will benefit the new trail alignment. Along San Felipe between Quimby Road and Heartland Way, numerous small old bridges provide access to neighborhoods. Newer bridges at Scenic Meadows and Meadowlands Lane cross the creek and connect the trail to the new subdivisions.

Visibility and Ease of Use

The proposed plan would provide kiosks at two locations, Lake Cunningham and Aborn Parks. Trails maps, appropriate signage, and the proximity of the trail to local communities and employment centers will make the alignment a convenient place to exercise, commute or simply take a stroll in the evening.

Trail amenities, such as trash cans and benches will be placed as directed by the Coyote Creek Aesthetic Guidelines (Fig. 8. Layout for a typical pause point)

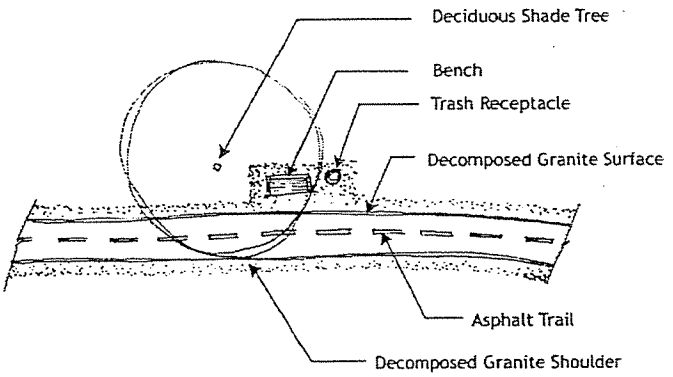


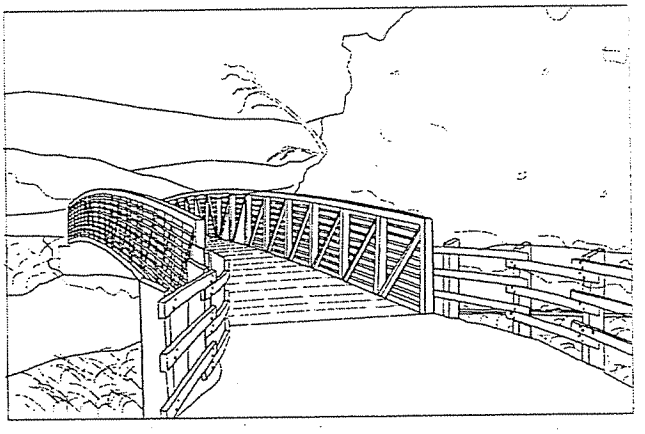
Fig. 8. Layout for a typical pause point

Association with the Environmental Setting

One of the primary objectives of the Thompson Creek trail project is to enhance riparian values along the creek corridor concurrently with the development of the trail. The trail project provides people with an opportunity to reconnect with the natural environment and restore riparian systems along creek corridors. Proposed revegetation projects will specify the use of locally adapted native species and thereby increase the habitat available for wildlife. Restoring the beauty of the natural environment will benefit users by creating an inviting place to recreate and commute on foot and by bicycle. The addition of indigenous flora would enhance the integrity of the creek corridor and replenish the greenbelt once provided by the riparian habitat.

Chapter 5

Identity and Character



Overall Character

Thompson creek flows north-northwest through the foothills that form the eastern boundary of the Santa Clara Valley. From the upper reaches of the creek near Heartland Way, to the confluence with Yerba Buena Creek near Yerba Buena Road, Thompson Creek flows through sparsely populated hillsides and scenic rural valleys. From Yerba Buena Road south to the confluence at Lake Cunningham, Thompson Creek meanders through the increasingly populated Santa Clara Valley bottomland. The creek is located near the Hayward, Evergreen and the Silver Creek Faults.

The proposed southern trail head for the Thompson Creek Trail would be located at Lake Cunningham Park. Between Lake Cunningham Park and Aborn Road the proposed Class I trail would follow an existing levee system along Thompson Creek. This portion of the trail would pass through residential areas and become increasingly rural as it approaches Aborn Park.

South of Aborn Road, a Class II bikeway along San Felipe Road and Keaton Loop would connect to Yerba Buena Road and end at the proposed trail head near Wynfair Ridge Way. An alternative Class II bikeway would wind fromKetteman Road through residential corridors to Yerba Buena Road and end at Wynfair Ridge Way.

At this point, a proposed Class I trail would follow a creekside alignment linking Wynfair Ridge Way and Larkspur Canyon Road. The quiet and scenic trail would connect northern and southern bicycle and pedestrian access routes with the future Hillstone City Park. This section of the trail would offer residents, empolyees and students easy access to open space and recreational amenities.

From Larkspur Canyon Drive to Heartland Way an existing Class II bikeway could be widened and upgraded to improve the current trail resources in this area. The trail crosses Thompson Creek at seven pedestrian bridges, linking the trail system to residential neighborhoods, park systems and remote open space areas.

Figure 9. Scenic View

Currently Proposed Trail Types

Since the preliminary findings suggest that a continuous creek side trail along the entire length is not possible, alternatives are being proposed. Wherever possible the main trail alignment should meet the guidelines for a Class I, grade separated trail. Other trail types may merit consideration, given the constraints imposed by urban encroachment and other land availability issues. These include the shared use trail and on-street connectors.

Class I Trails

This Class I creek side trail is adjacent to or within the riparian corridor and provides a 12-foot wide asphalt paved trail with 2-foot wide shoulders on both sides of the path. This trial has completely separated right of way for the exclusive use of bicycles and pedestrians with vehicular cross flow minimized. The feasibility study proposes the use of this trail type whenever a creek side alignment is feasible.

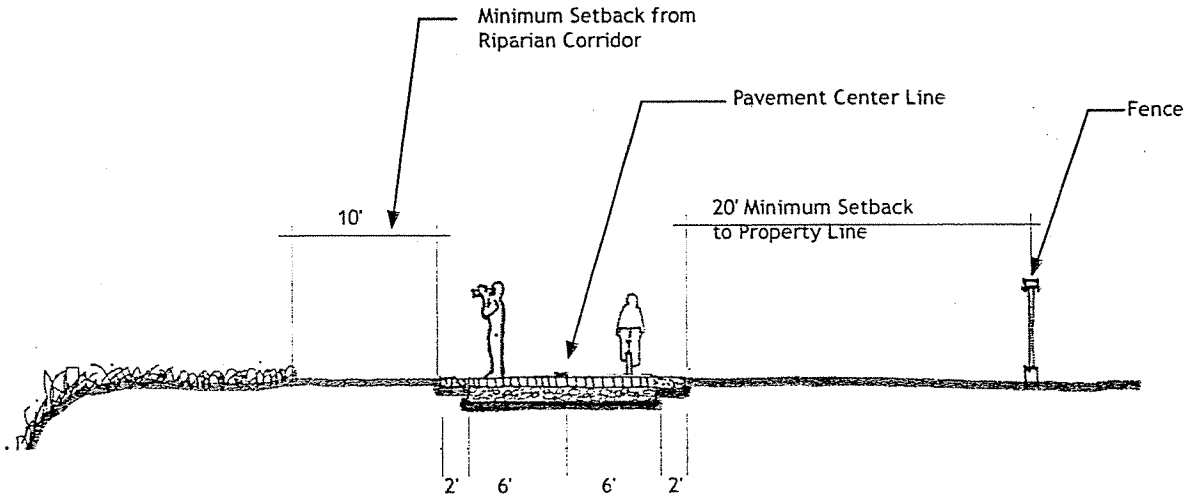


Fig. 10. Proposed Class I Trail

In order to maintain a 'Sense of Place' for the trail user, some minor modifications to the Class I trail (Santa Clara County Trails master Plan Update: Design Guidelines, 1995) are being explored in levee sections that are too narrow. This modification would provide a 10 to 12 foot wide, asphalt or base rock trail. The trail would be designed with a 2% cross slope drainage and contain a two foot wide minimum vegetation clearance on each side of the trail. If funding is limited, the variation could be considered along the six hundred foot stretch of narrow levee near Pettigrew Drive between Quimby Road and Aborn Road. A 36" high split rail or a low wall fence with a railing would separate the trail from the levee embankment and provide safety in constrained areas.

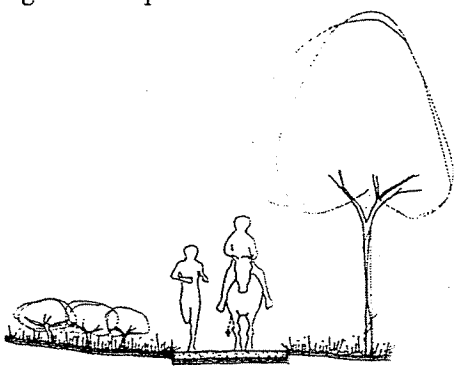


Fig. 11. Modified Class I Trail

On-Street Connectors

Where there is no other possible solution for a trail, Class II and III on-street bicycle systems will be utilized. The intent of this study is to minimize Class III bikeways.

Recommended dimensions are as follows:

- Urban Bike lanes minimums – Five feet wide striped lane adjacent to motor vehicles. In areas with significant on street parking or high turnover an additional one foot is recommended.
- Non-Urban Bike lane minimums – Four foot wide striped lane adjacent to motor vehicles.
- Restrict right of way and design for exclusive flow of bicycles.
- Prohibit travel by motor vehicles or pedestrians.

Class II Bikeways offer a striped lane for one-way bike travel on a street or highway. In the sections between Aborn Park and Wynfair Ridge Way, the trail follows a street side alignment traveling along San Felipe Road, Keaton Loop and Yerba Buena Avenue to Wynfair Ridge Way. The provision for II Bikeways along On-street connectors, in those areas where they do not already exist, would allow pedestrians and bicyclists to safely travel through attractive residential areas and would connect the northern and southern sections of the creek side alignment. Sidwalk facilities currently exist along the connectors between Aborn Park and Wynfair Ridge Way.

A Non-Urban Class II Bike lane is proposed along San Felipe between Larkspur Canyon Drive and Heartland Way. Improvements to the existing trail/sidewalk facilities along this portion of the proposed alignment would include grade separation and drainage system upgrades. In addition, the study proposes a system of Class II bicycle lanes that would connect residential areas, schools, parks and employment centers with the proposed trail and other public transit opportunities (*Figure 7. Proposed Trail Alignment*) (*Fig. 12. On-street connectors*).

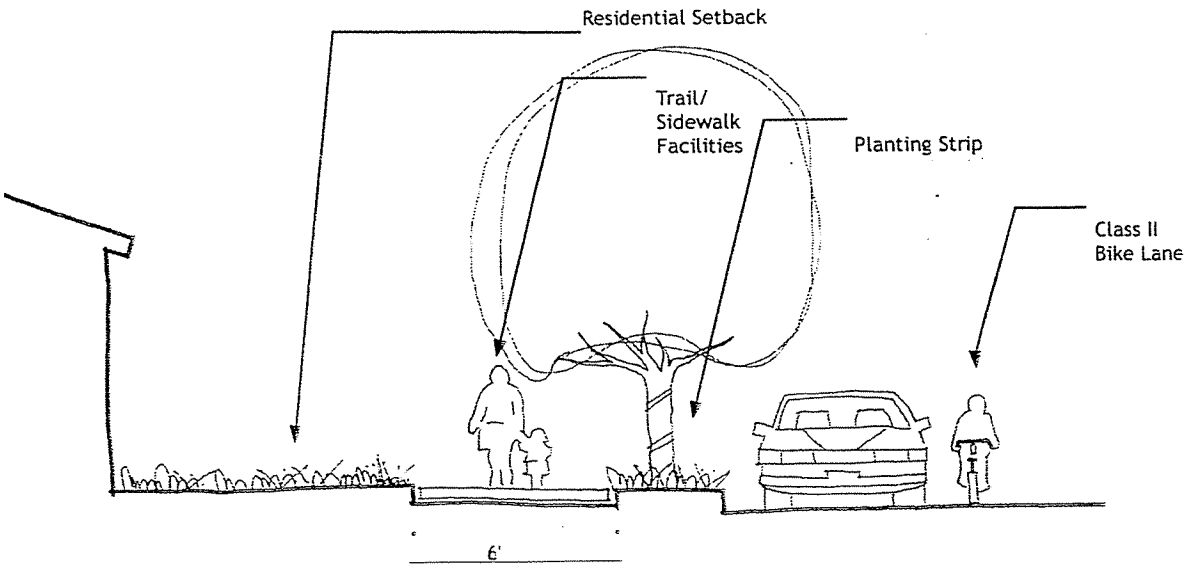
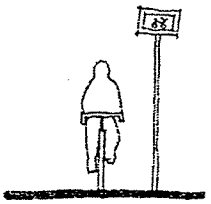


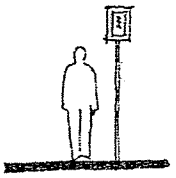
Fig. 12. On-street connectors

Proposed Trail Elements:

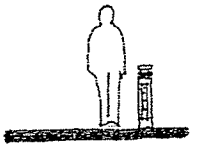
Signs



Bicyle signage



Pedestrian signage

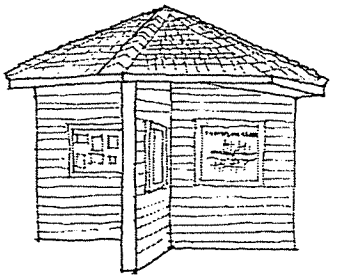


Bollards

Signs placed strategically along the trail will aid in guiding users through the trail system. They should provide orientation and safety and interpretive information without being conspicuous.

The CalTrans Traffic Manual contains the standards for signs to be used on public roadways in California (CalTrans, 1997). This manual outlines a strict set of standards regarding the shape, color , placement and frequency of signs. Additionally, the Bicycle Technical Guidelines (VTA, 1999) sets standards for signs to be used along bikeways and roadways.

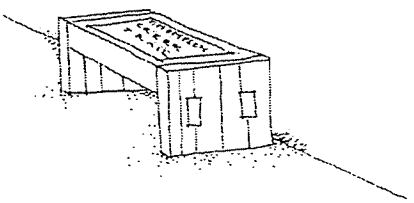
Directional signs will guide users through the trail system. Design of sign placement will emphasize intersections, assisting trail users with road crossings and changes in trail types.



Staging area Kiosk

Maps of the trail will be displayed at the two kiosks located at Cunningham and Aborn Parks. Signs will be placed at intervals and play an important role in further assisting bicyclists and pedestrians to understand trail routes. Bollards will block vehicular traffic into the trail system, contain arrows and other directional information and serve as mile markers for the trail.

Interpretive signage located at trail heads, parks, and the entrances to the various reaches will provide general trail information such as points of interest and information regarding habitat and wildlife.



Interpretive Bench

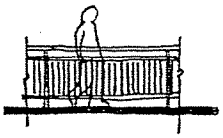
Benches donated by the Santa Clara Valley Water District graphically portray the ecology and morphology of the creek and show the trail system in the context of the overall watershed.

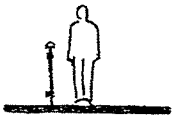
The Master Plan will evaluate state and local design standards for sign placement at the various staging areas and intersections along the trail and make design recommendations based on these criteria for and selection of these amenities.

Fences

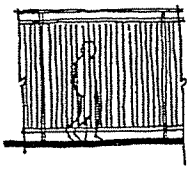
Side View

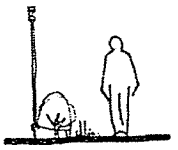
Sectional View



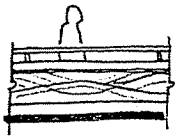


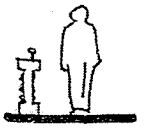
Low decorative metal fence



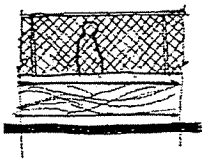


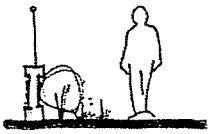
Tall decorative metal fence



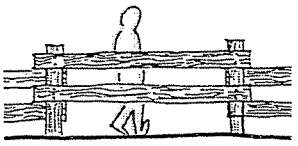


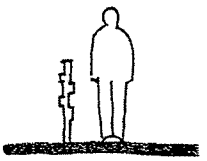
Low wall with railing





Low wall with chain link fence





Split rail fence

Fence design will follow the principles set out in the *Coyote Watershed Aesthetic Guidelines*. The goal for use of fencing will be to maintain safety and control traffic flow using barriers that complement the surrounding environment. Aesthetic considerations will be balanced with practical and contextual concerns.

Acceptable types of fencing include decorative metal picket fences varying in height between three and six feet. Low walls with railings or vinyl coated chain link fencing are also considered appropriate. Heights will vary based on grade changes as well as the volume of traffic on adjacent surface roads.

In areas where user safety is not a factor, use of a stacked split rail fence might protect an environmentally sensitive area in a manner that did not detract from the visual character of the land.

Points of Interest

This photograph of the levee adjacent the Thompson Creek riparian corridor was taken looking south at Quimby Road.

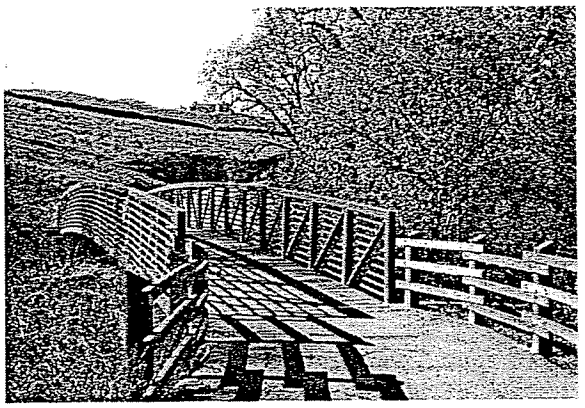
Levee at Quimby Road

The proposed trail would improve existing levees along both sides of Thompson Creek from Quimby to Aborn Road. This bicycle or pedestrian route separates the user from the congestion and noise along Capitol Expressway and takes him or her into a quiet and scenic setting that culminates at Aborn Park.

Looking south from the proposed trail head near Wynfair Ridge Road, this photograph depicts an old homestead set in a rare open space pocket near the creek corridor.

Open Space near Wynfair Ridge Way

Near Yerba Buena Road the proposed trail alignment follows the creek through a scenic open space pocket. This beautiful vista is located within a five minute walk of San Felipe Road. The trail passes through a rural valley that looks out over the creek and the surrounding hillsides.



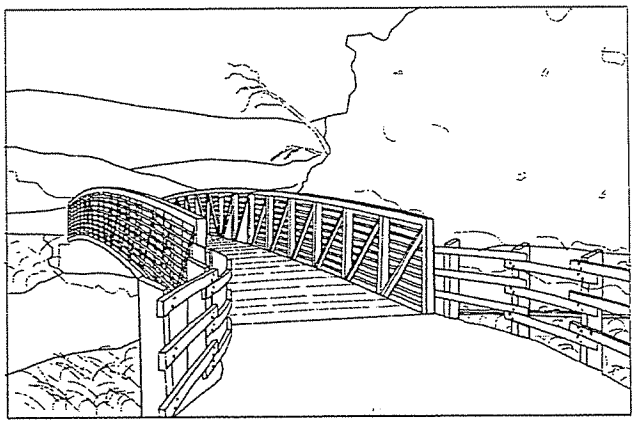
This photograph was taken looking west from San Felipe Road near Larkspur Canyon Drive.

Footbridge at Larkspur Canyon Drive

The trail meets with the San Felipe spur trail at an existing bridge. The trail offers users sweeping views of neighboring hillsides, quiet opportunities to sit and reflect and a place to commune with nature on the way to the bus or in the evening after work or school. Numerous existing bridges along the proposed trail link the trail to neighborhoods, schools and employment centers.

Chapter 6

Environmental Effects



Biotics Assessment

Willow Riparian Woodland

The willow riparian woodland vegetation type is most prevalent in the downstream portions of the study area. There are patches of willow-dominated vegetation between Quimby and Aborn Road, as well as downstream of Tully Road (in Lake Cunningham Park). The dominant plant species within this woodland is willow (*Salix spp.*). In the Lake Cunningham area, non-native trees are also present, including blue gum eucalyptus (Eucalyptus) globulus) and weeping willow (*Salix babylonica*). Walnuts (Juglans sp.) occur between Quimby and Aborn Road, presumably remnants of a previous orchard in the area. A small remnant orchard occurs between the creek and the District's maintenance road. Currently these trees intermix with patches of willow and Fremont cottonwood (Populus fremontii). The woodland also supports lesser amounts of coast live oak (*Quercus agrifolia*) and blue elderberry (*Sambucus mexicana*). The willow-riparian woodland supports some trees that may meet the City's definition of an ordinance tree, although a focused tree survey was not conducted at this preliminary project level.

Understory plant species include poison oak (*Toxicodendron diversilobum*), young trees of blue elderberry and coast live oak, as well as California blackberry (*Rubus ursinus*), California rose (*Rosa californica*), snowberry (*Symphoricarpos rivularis*), and coyote brush (*Baccharis pilularis*). Invasive, non-native plants are also prevalent within the willow-riparian woodland, including Himalayan blackberry (*Rubus procerus*), periwinkle (*Vinca major*), Cape Ivy (*Delaireia odorata*), French broom (*Genista monspessulanus*) and English ivy (*Hedera helix*). The creek also supports scattered occurrences of giant reed (*Arundo donax*), another invasive, non-native plant species.

The limit of the riparian corridor, as defined in the City's Riparian Corridor Policy, is the outside edge of the riparian habitat (or top of bank, whichever is greater). This edge is depicted on Figures 1 and 2 (Biological Assessment, Appendix A). In some areas, remnant orchard trees are located immediately adjacent to the riparian trees and have overlapping tree canopies. Where this occurs, the remnant orchard trees were considered part of the riparian corridor.

Valley Oak-Sycamore Riparian Woodland

The valley oak-sycamore riparian woodland is a dominant component of the vegetation along Thompson Creek. Mature trees of valley oak (*Quercus lobata*), coast live oak, and western sycamore (*Platanus racemosa*) dominate the forest. Associated tree species include willow (*Salix sp.*), Blue elderberry and buckeye (*Aesculus californica*). Walnut trees also occur within the woodland, presumably remnants from previous orchards. Near Everdale Avenue, Fremont cottonwoods (*Populus fremontii*) were observed intermixed with the oak woodland. In some areas, the woodland contains large non-native blue gum eucalyptus trees; these trees occur as single occurrences or as small groves amid and otherwise native canopy. These occurrences are depicted on Figure 1 and 2 (Biological Assessment, Appendix A). Similarly, the woodland supports scattered individuals of non-native Monterey pine (*Pinus radiata*).

The understory within the valley oak – sycamore woodland is diverse with both native and non-native plant species. Common plants include California blackberry, California rose, toyon (*Heteromeles arbutifolia*), holly-leaved cherry (*Prunus ilicifolia*), coyote brush, melic grass (*Melica sp.*) and snowberry (*Symphoricarpos alba*). Young trees of blue elderberry and coast live oak were also observed in the understory. Invasive, non-native plant species also occur in the woodland, including Himalayan berry, giant reed, Cape ivy and English ivy. Planted trees also occur in the area, such as myoporum (*Myoporum sp.*) and pepper tree (*Schinus sp.*). In the upstream portion of Thompson Creek, coast redwood trees were observed (i.e., in the Villages area near Larkspur Canyon Drive).

The riparian corridor narrows in the upstream portion of the project area. Upstream of the Villages and along San Felipe Road, the corridor is constrained by the close proximity of the roadway and adjacent land uses. There are gaps in the vegetated corridor and in many areas, the understory vegetation is sparse. An existing trail travels along the creek; several bridges cross Thompson Creek as well as some small side tributaries that join Thompson Creek in this area.

Several large-sized valley and coast live oaks occur in the project area. Large-sized trees that are considered of particular botanical interest due to their size and diverse structure are depicted on Figure 2 (Biological Assessment, Appendix A). Many of the trees within the woodland would meet the City's criteria of an ordinance-tree, based on their size (i.e., circumference greater than 56 inches). Portions of the riparian corridor have also been significantly affected by the close proximity of adjacent land uses. Some land uses, including residential areas, horse corrals and commercial development, are situated immediately adjacent and/or within the riparian corridor. In some area, riparian vegetation is absent and bank erosion is evident.

The riparian habitat is one of the highest value habitats for wildlife species diversity and abundance in California. Factors that contribute to the high wildlife value include the presence of surface water, the variety of niches provided by the high structural complexity of the habitat, and the abundance of plant growth. Riparian habitat adjacent to the project site may be used by a diversity of wildlife species for food, water, escape cover, nesting, migration and dispersal corridors, and thermal cover. The oaks provide valuable forage for several wildlife species, and the natural cavities in the oaks and sycamore provide nesting and roosting habitat for certain

wildlife. The value of riparian areas to wildlife is underscored by the limited amount of remaining habitat that has not been disturbed or substantially altered by flood control projects, agriculture, or urbanization. Common wildlife species that are expected to inhabit the riparian habitat include Pacific treefrog (*Hyla regilla*), bullfrog (*Rana catesbeiana*), western aquatic garter snake (*Thamnophis couchii*), Wilson's warbler (*Wilsonia pusilla*), Bewick's wren (*Thryomanes bewickii*), green heron (*Butorides striatus*), several species of swallows, scrub jay (*Aphelocoma coerulescens*), red-shouldered hawk (*Buteo lineatus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and California myotis (*Myotis californicus*).

Special status wildlife species that may inhabit the riparian habitat include steelhead (*Oncorhynchus mykiss*) (use as movement corridor to upstream spawning areas), California red-legged frog (*Rana aurora draytonii*), southwestern pond turtle (*Clemmys marmorata pallida*), Cooper's hawk (*Accipiter cooperii*), yellow warbler (*Dendroica petechia brewsteri*), yellow-breasted chat (*Icteria virens*), pallid bat (*Antrozous pallidus pacificus*), Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). In addition, several species of raptors were observed nesting in the oak-sycamore riparian woodland during surveys in 1998 and 1999 (Sokale 1999). Focused surveys would be necessary to determine presence of absence of these species on the site.

Non-Native Tree Groves (primarily eucalyptus)

The project area supports some groves of blue gum eucalyptus that occur both within and outside the Thompson Creek corridor. Some large eucalyptus trees also occur along San Felipe Road, as depicted on Figure 2; these trees were probably planted as landscape trees. The other tree groves are scattered along the length of the creek, as depicted on Figures 1 and 2 (Biological Assessment, Appendix A). The groves are comprised of large-sized trees; the trees would likely meet the City's criteria of an ordinance-tree, based on their size (i.e., circumference greater than 56 inches). Within the Thompson Creek project area, the understory within the eucalyptus tree groves is similar to the adjacent oak-sycamore woodland; this is probably due to the groves relatively small size relative to the riparian woodland. Poison oak is the dominant understory plant species observed growing amid the eucalyptus trees.

Eucalyptus is not native to California, and does not support a very diverse wildlife assemblage. Common wildlife species that utilize eucalyptus groves include alligator lizard (*Gerrhonotus multicarinatus*), Anna's hummingbird (*Calypte anna*) and woodrat. The large eucalyptus groves along Thompson Creek also provide potential roosting and nesting habitat for raptors such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk, and great horned owl (*Bubo virginianus*).

Diablan Sage Scrub

The diablan sage scrub vegetation types occurs in small pockets in the project area. It was observed primarily on south-facing slopes and adjacent to recently developed residential areas in the upstream portions of the project area, as depicted on Figure 2. This scrub is dominated by California sage (*Artemisia californica*). Associated

species include coyote brush, black sage (*Salvia mellifera*), California beeplant (*Schrophularia californica*) and coffeeberry (*Rhamnus californica*).

The berries of shrubs and the seeds of herbaceous plants in the sage scrub habitat provide important forage for wildlife. Wildlife may perch on the outer perimeter of mixed scrub to take advantage of hunting opportunities in adjacent openings, and take cover in the denser shrub patches as needed. Common wildlife species found in sage scrub include western fence lizard (*Sceloporus occidentalis*), California towhee (*Pipilo crissalis*), white-crowned sparrow (*Zonotrichia leucophrys*), and coyote (*Canis latrans*).

Special status wildlife that may inhabit the sage scrub include nesting loggerhead shrike (*Lanius ludovicianus*).

Non-Native Grassland

The grassland encompasses the flat areas and hillsides that abut Thompson Creek. The grassland is limited to the upstream portions of the project area, such as upstream of Yerba Buena Road, as depicted on Figure 2 (Biological Assessment, Appendix A). The dominant plant species are non-native and include wild oat (*Avena sp.*), Italian ryegrass (*Lolium multiflorum*), velvet grass (*Holcus lanatus*), Bermuda grass (*Cynodon dactylon*), storkbill (*Erodium sp.*), cheeseweed (*Malva sp.*), yellow star thistle (*Centaurea soltitialis*), prickly ox-tongue (*Picris echioides*) and field mustard (*Brassica rapa*). Blue wild rye (*Elymus glaucus*), a native grass, was observed in dense patches in the grassland upstream of Yerba Buena Road; no other native grasses were observed during the 2001 and 2002 field surveys, however, many herbaceous species were no readily identifiable at the time of the surveys (i.e., winter months). There are also several planted trees within the grassland, presumably related to the adjacent residential developments. Trees of sycamore, coast live oak and valley oak were observed along the edge of the existing residential development.

Grasslands provide an important foraging resource for a wide variety of wildlife species. The grasses and forbs produce an abundance of seeds and attract numerous insects, providing food for granivorous and insectivorous wildlife. Sparrows, rabbits and rodents are commonly found in this habitat. Consequently, grasslands are valuable foraging sites for raptors such as hawks and owls, and other predators including coyote, fox, skunk and snakes. Aerial foraging species that occur over grasslands include bats and swallows. Common wildlife species expected to occur in this habitat are California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), and American robin (*Turdus migratorius*).

Special status wildlife that may inhabit the grasslands adjacent to Thompson Creek include western burrowing owl (*Athene cunicularia hypugea*).

Seasonal Wetlands

The project site supports an intermittent drainage channel that traverses through the non-native grassland south of Yerba Buena Road. During the December 2001 field visit, the channel was wet and plant species typical of seasonally wet conditions were observed. Plants of umbrella sedge (*Cyperus eragrostis*), cattail (*Typha sp.*) and rush (*Juncus sp.*) were observed growing in the drainage channel. This narrow wetland fringe may meet the criteria of wetlands as per the definition established by the U.S. Army Corps of Engineers, under the Clean

Water Act. A detailed delineation of wetlands, conducted as U.S. Army Corps of Engineers criteria, would be necessary to determine the extent of jurisdictional wetlands in the project area.

Wildlife utilization of the drainage swale is expected to be similar to the surrounding grasslands during much of the year. When the channel has water (during winter months), wildlife typical of the nearby riparian woodland may utilize this area. Special status wildlife species that may occur in the drainage swale include California red-legged frog.

Freshwater Marsh

The freshwater marsh vegetation type is the dominant plant community between Tully Road and Quimby Road, as depicted on Figure 1 (Biological Assessment, Appendix A). The freshwater marsh inhabits the portion of Thompson Creek that has been widened for flood control purposes. The marsh vegetation is characterized by a dense growth of cattail (*Typha sp.*). There are a few scattered willow trees amid the cattails. Due to the modified condition of the channel, the side slopes are sparsely vegetated, primarily with non-native grasses and forbs. No other areas of freshwater marsh vegetation have been documented in the study area.

The presence of wetland plants such as cattails increases the wildlife value of the marsh by providing cover, breeding sites and a food base of a diversified aquatic invertebrate fauna, which forms a link in many food webs. Common wildlife species that utilize freshwater marsh habitat on the central California coast include Pacific tree frog (*Hyla regilla*), western toad (Bufo boreas), western aquatic garter snake (*Thamnophis couchii*), mallard (*Anas platyrhynchos*), ruddy duck (*Oxyura jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), black phoebe (*Sayornis nigricans*), cliff swallow (*Hirundo pyrrhonota*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and several species of bats. Special status wildlife species that may utilize this freshwater marsh include California red-legged frog.

Sensitive Biotic Resources

Sensitive Habitats

Sensitive habitats are defined by local, State, or Federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity.

The riparian forest along Thompson Creek is considered sensitive due to its importance to wildlife species and is recognized as such by both state resource agencies and the City of San Jose. The City of San Jose's Riparian Corridor Policy identifies minimum setbacks between development and riparian corridors. The policy recommends a minimum setback of 10 feet for multi-use trails, although trails can enter the corridor if necessary to maintain continuity. The Riparian Corridor Policy specifies a minimum setback of 100 feet for

active recreation facilities (e.g., sport fields, buildings, other structures, impervious surfaces, active play areas, tot lots). If night lighting is proposed, a setback of at least 200 feet and screening in specified so that the light source is not visible from the riparian corridor (*City of San Jose Riparian Policy Study*, March 1999).

Ordinance Trees

Ordinance-sized trees are considered sensitive resources. The City of San Jose's Tree Removal Controls (San Jose City Code, sections 13.31.010 to 13.32.100) serve to protect all trees having a trunk measuring 56 inches or more in circumference (i.e., 18 inches in diameter) at the height of 24 inches above the natural grade of slope. A tree meeting this measurement is considered an "ordinance tree". The City's tree ordinance applies to both native and non-native species. A tree removal permit is required from the City of San Jose for removal of ordinance-sized trees. The City of San Jose requires, prior to issuance of any approval or permit for construction of any improvement of the project site, that all trees on the project site be inventories and categorized according to size, species and location.

For the Thompson Creek Trail project area, ordinance-sized trees occur within the project area, however a specific tree survey has not been conducted at this feasibility stage.

Heritage Trees

Any tree found by the City Council to have special significance can be designated as a heritage tree, regardless of tree species or size. City-designated heritage trees are considered sensitive resources. It is unlawful to vandalize, mutilate, remove or destroy heritage trees. There are no City-designated heritage trees in the project study area, as per the City's heritage tree list (City of San Jose, 2001).

Special Status Plant Species

Plant species of concern include those listed by either the Federal or State resource agencies as well as those identified as rare by CNPS (CNDDB, 2001). Based on a search of the CNPS and CNDDB inventories, potential species in the project area are listed on Table 1. Based on the visual observations of the habitats in the project site, the potential for most plant species of concern is considered low. This evaluation is based on the lack of suitable habitat for sensitive plant species (e.g., serpentine grassland, coastal prairie, chaparral, and vernal pools). No special status plant species were observed on the project area during the December 2001 and January 2002 reconnaissance surveys, however these surveys was conducted during the non-blooming season for most plant species. The grassland north of Yerba Buena Road may provide suitable habitat for two special status species: Contra Costa goldfields (*Lasthenia conjugens*) and Showy Indian clover (*Trifolium amoenum*), as depicted on Table 1. Focused surveys, conducted during the blooming season of these two species, within this grassland area would be necessary to ascertain presence or absence of such species

Special Status Wildlife Species

Special status wildlife species include those listed by either the Federal or State resource agencies as well as those identified as State species of special concern. In addition, all raptor nests are protected by Fish and Game Code, and all nesting migratory birds are protected by the Federal Migratory Bird Act. Special status wildlife species were evaluated for their potential presence in the project area, and those expected to occur are described below.

Several special status wildlife species occur in the general vicinity of this project, but are considered unlikely to occur along the Thompson Creek corridor. California tiger salamander (*Ambystoma californiense*) are unlikely to occur because adjacent uplands which this species needs for summer habitat are largely developed and because the creek lacks ponded areas which this species needs for breeding. Foothill yellow-legged frog (*Rana boylii*) is presumed to be extinct in this portion of the Santa Clara valley (Harvey and Assoc. 1999). Least Bell's vireo (*Viero bellii pusillus*) and willow flycatcher (*Empidonax traillii*) are both thought to be extirpated as breeding species in the Santa Clara valley.

Steelhead is a State Species of Special Concern and Federally listed as threatened (South-Central California Coast Evolutionary Significant Unit). Steelhead are anadromous fish that migrate from the ocean up freshwater creeks and rivers to spawn. The young steelhead typically remain in the freshwater for two years before migrating to the ocean or bay. They typically spend 2-3 years in marine waters before returning to their natal stream to spawn (National Marine Fisheries Service 1997). Steelhead often spawn more than once before they die, and spawning usually occurs between December and June. Eggs are laid in gravels of streams, and take 1.5 to 4 months to hatch. The hatchlings are called alevins and remain in the gravels until their yolk sac is absorbed, at which time they emerge from the gravels as "fry" and begin actively feeding. After 1-4 years, the steelhead migrate to the ocean as "smolts." Steelhead may occur in Thompson Creek, if there are no barriers to its movement upstream from Coyote Creek.

The California red-legged frog is a State Species of Special Concern and Federally listed as threatened. This species is found in quiet pools along streams, in marshes, and ponds. Red-legged frogs are closely tied to aquatic environments and favor intermittent streams, including some areas with water at least 2.5 ft. deep, a largely intact emergent or shoreline vegetation, and a lack of introduced bullfrogs and non-native fishes. This species' breeding season spans January to April (Stebbins 1985). Females deposit large egg masses on submerged vegetation at or near the surface. Embryonic stages require a salinity of < 4.5 parts per thousand (Jennings and Hayes 1994). They are generally found on streams having a small drainage area and low gradient (Hayes and Jennings 1988). Recent studies have shown that although only a small percentage of red-legged frogs from a pond population disperse, they are capable of moving distances of up to 2 miles (Bulger 1999). The red-legged frog occurs west of the Sierra Nevada-Cascade crest and in the Coast Ranges along the entire length of the state. Much of its habitat has undergone significant alterations in recent years, leading to extirpation of many populations. Other factors contributing to its decline include its former exploitation as food, water pollution, and predation and competition by the introduced bullfrog and green sunfish (Moyle 1973, Hayes and Jennings 1988).

There are records of California red-legged frogs from ponds and wetlands less than 2 miles from Thompson Creek (Harvey and Assoc. 1997), and they may occur along the riparian and freshwater marsh habitats within the project area.

The southwestern pond turtle is a Federal and State Species of Special Concern. This aquatic turtle inhabits ponds, lakes, streams, marshes, and other permanent waters located in woodland, grassland, and open forests below 6,000 ft (Stebbins 1985). Pond turtles can often be seen basking in the sun on partially submerged logs, rocks, mats of floating vegetation or mud banks. During cold weather, they hibernate in bottom mud. The

diet of these turtles consists of aquatic vegetation, insects, fish, worms, and carrion. Females dig soil nests in or near stream banks (Nussbaum et al. 1983). Eggs are deposited between April and August. One factor in the decline of this species is the introduction of non-native fish that prey on hatchlings and juveniles.

A pond turtle was observed during the 1998-99 surveys (Sokale 1999), and they are expected to utilize portions of the Thompson Creek corridor.

The Cooper's hawk is a State species of special concern. Like the sharp-shinned hawk, this species is a rare breeder in the Santa Cruz Mountains, though somewhat more numerous than the former. Cooper's hawks prefer forested habitats in mountainous regions, but also use riparian woodlands. Cooper's hawks feed primarily on small birds, but also take small mammals, reptiles, and amphibians. Foraging occurs in both dense cover and open habitats. Nests are constructed in a variety of trees, but stands of live oaks may be preferred. Cooper's hawks build stick nests in similar situations as the sharp-shinned hawk and the nest site is vigorously defended by the adults. The local breeding season probably spans March/April through July (Suddjian 1990). Cooper's hawks are uncommon migrants and winter visitors. Migrant and wintering individuals occur in a variety of habitats, including oak woodland, conifer and mixed broadleaf forests, grasslands, residential areas and riparian woodland. Habitat destruction and falconry practices have been attributed to this species' decline in California (Remsen 1978).
Cooper's hawk may nest in the denser oak/sycamore riparian habitats along Thompson Creek, and are probably winter residents.

Burrowing owls are a California species of special concern and are protected under the Migratory Bird Treaty Act. They inhabit annual or perennial grasslands or areas with less than 30 percent canopy coverage as a resting site during migration, as feeding habitat, and as a breeding ground. The nesting season for burrowing owls occurs between February 1 and August 31 and peaks around April 15-July 15 (California Burrowing Owl Consortium 1993). Burrowing owls nest in single pairs, or more often, in small colonies and make their nests in burrows created by fossorial mammals, artificial burrows (i.e. pipes), or crevices in piles of rubble (CDFG 1995). They forage nocturnally and crepuscularly for insects and small rodents. During the daylight hours burrowing owls may perch conspicuously either at the entrance to their burrow or on a nearby post or shrub (Zeiner et al. 1990). Burrowing owls have declined in recent decades throughout California. The primary cause of decline is attributed to habitat loss due to development (CDFG 1995).

Burrowing owls are known to occur at Lake Cunningham Park at the north end of the project area, and at Evergreen College near Yerba Buena and San Felipe Roads (CDFG 2001). There is a portion of the pathway that is proposed to traverse a grassland just south of Yerba Buena Road (west of Evergreen College) where suitable burrows for this owl were observed.

The loggerhead shrike is a Federal and State species of special concern. Common residents of lowlands and foothills, this species prefers open habitats with scattered shrubs, trees, fences, or other lookout posts. Loggerhead shrikes occur only rarely in heavily urbanized areas. They hunt insects, snakes, small birds, and rodents that they often impale on thorns or barbed wire to hold it while they eat. Eggs are laid from March to May, with

a clutch size of 4-7 eggs, in shrubs and trees with dense vegetation for concealment. The breeding season spans April to late July.

Suitable breeding habitat for the loggerhead shrike exists in the dense shrubs of the sage habitat adjacent to upper portions of Thompson Creek.

Yellow warblers are a California Species of Special Concern. They are common during spring and fall migration in central California, and uncommon to locally fairly common during the breeding season (Suddjian 1990, Roberson and Tenney 1993). Yellow warblers are obligate riparian breeding birds; they are most numerous where substantial areas of riparian habitat remain along major creeks and rivers. A variety of riparian trees are used during foraging, but habitats with willows and cottonwoods or willows and sycamores, with dense undergrowth, seem to be favored (Robison and Tenney 1993). Outside the breeding season, this species may occur in a variety of habitats, but is still most numerous in riparian habitats. The yellow warbler's diet consists of spiders and insects, which it gleans from understory vegetation and the canopies of deciduous trees. Nests are constructed low in trees, typically from 2-12 feet above the ground (Harrison 1978). Numbers of yellow warblers are greatly reduced over much of their California breeding range, largely due to loss of riparian habitat and nest parasitism by the brown-headed cowbird (Remsen 1978).

Yellow warblers may nest in the denser willow riparian areas along Thompson Creek.

The yellow-breasted chat is a state Species of Special Concern. It was once a fairly common summer resident in riparian woodland throughout California. In central California, yellow-breasted chats appear to prefer dense riparian habitats dominated by willows, sycamores, and cottonwoods, with a well-developed understory, and are considered a riparian obligate species (Roberson and Tenney 1993). They inhabit the area from April to early August (Roberson and Tenney 1993). Yellow-breasted chats forage at various heights in dense riparian foliage, gleaning insects from leaves and bark, and feeding on small fruits. They build their nest in dense vegetation, typically from 1-8 feet above the ground (Harrison 1978, Ehrlich et al. 1988). This species' numbers have declined dramatically in many parts of California, primarily due to loss and alteration of riparian habitat and possibly due to nest parasitism by brown-headed cowbirds (Remsen 1978).

Yellow-breasted chat may nest in the denser riparian areas along Thompson Creek.

The Townsend's western big-eared bat is a state and federal species of special concern. Big-eared bats occur in a variety of plant communities throughout California, including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands and high elevation forests (Williams 1986). In coastal California, the big-eared bat is primarily associated with riparian forests, where it gleans insects from leaf surfaces. Roosting sites for Townsend's big-eared bat include limestone caves, lava tubes, mine tunnels, buildings, bridges, and other human-made structures within 100m of riparian habitat (Williams 1986, Pierson 1988). Townsend's big-eared bats are extremely sensitive to human disturbances at roost sites. Townsend's big-eared bats may roost under bridges within the Thompson Creek corridor.

The pallid bat is a state species of special concern. Pallid bats are found in a variety of habitats. This species moves about locally on a seasonal basis, but is not considered to be migratory (Jameson and Peeters 1988). During the day pallid bats roost in buildings, crevices, caves, mines, and hollow trees (CDFG 1986). Maternity roosts are colonial, while males and feeding bats roost singly. This species is very sensitive to disturbances at roost sites (E. Pierson, pers. comm.). During the night, pallid bats glean moths from leaves and forage on the ground for invertebrates, especially Jerusalem crickets. The pallid bat may roost in tree crevices or under bridges along the Thompson Creek corridor.

San Francisco dusky-footed woodrat is a State species of special concern. These small mammals build large stick nests at the bases of trees and shrubs. They prefer forested habitat with a moderate canopy and brushy understory, and are often found on the upper banks of riparian forests. This woodrat feeds on a variety of woody plants, fungi, flowers and seeds (Jameson and Peeters 1988).

Dusky-footed woodrat nests may occur in the denser oak/sycamore riparian portions of the Thompson Creek corridor.

Impact and Mitigation Discussion

Impact Criteria

The thresholds of significance presented the California Environmental Quality Act (CEQA) Guidelines were used to evaluate project impacts and to determine if the proposed development of a trail poses significant impacts to biological resources. In addition to these criteria, removal of ordinance-sized trees was deemed a significant impact, in accordance to the City of San Jose's tree ordinance.

For this analysis, significant impacts are those that substantially affect either:

- A species (or its habitat) listed or proposed for listing by State or Federal governments as rare or endangered (i.e., California red-legged frog, steelhead);
- Breeding/nesting habitat for a State species of special concern (i.e., burrowing owl);
- A plant considered rare (i.e., List 1B) by CNPS (i.e., Contra Costa goldfields (Lasthenia conjugens) and Showy Indian clover (Trifolium amoenum);
- A habitat regulated by State or Federal law (i.e., riparian forest, wetlands),
- Nesting birds regulated under the Federal Migratory Bird Treaty Act (i.e., nesting raptors), or
- A habitat or resource recognized as sensitive by the City of San Jose (i.e., riparian habitat and ordinance-size trees).

Potential Impacts and Mitigation Measures

Impacts to the Riparian Woodland

Within the Thompson Creek Trail project area, the Trail Plan specifies the construction of a multi-use trail along the west side of the creek between Tully Road and Aborn Road. Upstream of Aborn Road, the trail will follow City streets (Aborn Road and San Felipe Road) to Yerba Buena Avenue. At Yerba Buena Ave, the trail will cross back to west bank and traverse grassland. The trail will continue through the grassland until the junction with San Felipe Road. Upstream of this point the trail will utilize the existing trail that parallels San Felipe Road. One new bridge is proposed over the creek in the Keaton Loop area.

In most instances, the trail will be placed within the 100-foot riparian setback area; however, based on a review of the preliminary design, minimal amounts of riparian woodland will be directly affected, as the majority of trail work will occur outside the dripline of the existing riparian woodland or along existing District maintenance roads. More detailed design plans will need to be reviewed to more accurately quantify the amount of riparian woodland potentially affected by the trail project.

The preliminary trail plan specifies the construction of one new bridge over Thompson Creek. Construction of this bridge may result in the removal of riparian habitat, depending upon the exact location and bridge design. Direct impacts to the riparian corridor may occur by the removal riparian vegetation, including possible ordinance-sized trees. Construction activities relating to trail and bridge construction may also result in

temporary impacts to area wildlife from construction noise. This impact is significant during the breeding season, particularly in areas adjacent to known or potential raptor nest sites (potential raptor nest sites are depicted on Figures 1 and 2). No security lighting is proposed along the trail.

Impacts to Non-Native Grassland

Implementation of the Thompson Creek Trail Plan and construction of the trail upstream of Yerba Buena Road will require removal of non-native grassland. The removal of the non-native grassland is not considered significant impact to botanical resources. This is due to the disturbed nature of the communities and the prevalence of non-native plant species. However, the grassland may provide suitable habitat for two special status plant species: Contra Costa goldfields (*Lasthenia conjugens*) and Showy Indian clover (*Trifolium amoenum*). Impacts to these species would be a significant.

The removal of the open grassland is also considered significant from a wildlife perspective, due to the potential use of the grassland by burrowing owl (a State Species of Concern). Although the burrowing owl has not been recorded from the project area, protocol-level surveys have not been conducted to ascertain presence or absence of the species (breeding and/or foraging habitat). If active burrowing owl nests occur in the project area, any construction activities adjacent to the nest sites could result in the direct loss of nests, including eggs and young, or the abandonment of an active nest by the adults. The loss of active burrowing owl nests would adversely affect this species. Areas deemed potential burrowing owl habitat are depicted on Figures 1 and 2 (Biological Assessment, Appendix A).

Impacts to Potential Wetlands

The trail construction is not expected to alter the existing intermittent drainage channel that traverses the grassland upstream of Yerba Buena Road. The trail is proposed to be constructed above this drainage; therefore, no fill or other construction activity will occur such that no consultation or permitting under the Federal Clean Water Act is expected.

Recommendations to Avoid and/or Minimize Impacts to Biological Resources

The actions described above may result in significant impacts to the biotic resources within the project area. Successful implementation of Mitigation Measures 1 through 8, below, will reduce these impacts to a less-than-significant level.

Mitigation Measure 1:

Consistent with the City of San Jose's Riparian Corridor Policy, the trails along the riparian corridor shall be set back from the existing riparian dripline by a minimum of 10 feet (except for the existing bridges and the one new bridge crossings), or where the trail follows existing District maintenance roads.

Although the location of the multi-use trails are consistent with the City's Riparian Corridor Policy, indirect impacts to the woodland habitat may occur by off-trail use by bicycles and humans. To minimize off-trail uses within the riparian woodland, the City shall install a low split-rail type fence between the riparian woodland and the trails where the trail is located adjacent to the riparian woodland. The fence would minimize off-trail

bicycle use and protect the riparian area from indirect impacts from park users (i.e., trampling, deposition of debris, etc..). Following trail construction activities, the City shall revegetate disturbed areas with native trees, shrubs or ground covers that are compatible with the adjacent riparian woodland (i.e., utilize native species as specified in the Riparian Corridor Policy Study).

Upon development of a more detailed trail plan, the City shall conduct a tree survey within all areas where vegetation will be removed, trees are to be limbed or heavy construction may occur within the dripline of trees. The survey shall document the species and diameter of each tree. The project shall incorporate tree protection measures to avoid adverse impacts to trees that are to be retained during all stages of site construction work. Measures to avoid impacts to trees that are to be retained shall be depicted onto the project plans, including temporary protective fencing during construction, hand-cutting of tree roots and methods for limbing native riparian trees. Fencing shall be erected along the dripline of the trees adjacent to construction work. All construction activities, including storage of construction materials, parking of vehicles and deposition of trash, should be prohibited from the fenced areas. The integrity of the fencing should be checked periodically and repaired if damage is noted. The condition of the fencing should be documented at periodic intervals during the construction process. If damage to the trees occurs, a remediation program should be developed by a certified arborist and implemented; the measures shall be inspected by the City and a certified arborist.

Mitigation Measure 2:

Based on the preliminary trail design, construction of the one new bridge in the Keaton Loop area will result in the removal of approximately 600 square feet of riparian woodland, including possible ordinance-sized trees. As compensation for these impacts, the City shall implement a riparian revegetation plan that specifies a 3:1 riparian replacement ratio. Based on the preliminary trail plan design, approximately 12,000 square feet (0.28 acre) of riparian revegetation shall be installed within the project site. If the impact area is reduced during the final design phase of the project, a smaller revegetation area would be acceptable, so long as a 3:1 acreage replacement ratio is implemented. Suitable revegetation areas occur adjacent to the existing riparian woodland; the exact location of the riparian revegetation shall be specified on the construction plan. Pursuant to guidelines established in the City's Riparian Corridor Policy Study and requirements of CDFG, the City shall obtain a 1601 Streambed Alteration Agreement (SAA) with CDFG. As part of the City's application of the SAA, the City shall submit a riparian revegetation plan to CDFG. The plan shall specify the location of all plantings, the use of locally native riparian plant species and specify a 5-year maintenance and monitoring program. The plan shall specify success criteria and remedial measures should the success criteria not be achieved.

Mitigation Measure 3:

The City shall consult with the U.S. Fish and Wildlife Service regarding the need for preconstruction surveys for California red-legged frog in areas where the new bridge is proposed. If red-legged frogs are found in the work area, work shall be postponed until the frog leaves the area of its own accord.

Mitigation Measure 4:

The project shall incorporate erosion control measures to preclude erosion or sediments from entering the riparian corridor during and after construction. Specific measures shall be identified in the project plans and

specifications and should include the following features: measures for dust control, erosion control seeding following construction, use of straw bales to prevent sediments from entering the creek, and other measures as appropriate. Following construction, the effectiveness of the erosion control measures shall be monitored during the first year's rainy season and remedial measures implemented if erosion is noted.

Mitigation Measure 5:

The City shall hire a qualified biologist to determine if bats are roosting in the trees that will be removed. If bats are roosting in these trees, the qualified biologist shall prepare a plan and consult with California Department of Fish and Game (CDFG) regarding use of exclusionary devices to allow bats to exit the tree cavities, but not return.

Mitigation Measure 6:

Site grading and other heavy equipment work within the 100-foot riparian setback area shall occur outside the breeding period of riparian bird species and special status aquatic species. Construction shall occur after August 1 and before March 15th to protect nesting birds. CDFG regulates activities within their jurisdiction between April 1 and October 15. If this is not feasible, the City shall hire a qualified biologist to survey those areas to determine if any sensitive species of nesting birds, and if the construction would impact nesting success. If sensitive nesting bird species are found, the biologist shall suggest a suitable buffer area around the nest site to avoid impacts from construction noise and dust, until the young have fledged.

Mitigation Measure 7:

A qualified wildlife biologist, under contract to the City, shall conduct pre-construction surveys for nesting raptors to determine if they occur within the project corridor. The surveys shall be conducted by a qualified biologist no earlier than 30 days prior to commencement of grading or construction. If raptors are nesting on the site, the wildlife biologist shall recommend a suitable buffer area between the nest site and construction activity (e.g., 300 feet) and the City shall postpone construction within buffer area until all young have fledged. The wildlife biologist shall document that the young have fledged prior to construction work.

In order to determine whether or not burrowing owls breed on or near the project area, a qualified biologist, under contract to the City, shall conduct a protocol-level burrowing owl survey. The survey shall be conducted according to the survey guidelines described in the Burrowing Owl Survey Protocol and Mitigation Guidelines (Burrowing Owl Consortium, 1993). These surveys are required to be conducted between April 15 and July 15.

Mitigation Measure 8a:

If burrowing owls are found on the project site, the project shall be reconfigured to avoid impacting the species. This shall be accomplished by establishing a buffer area around the occupied habitat. The buffer areas shall be established by a qualified biologist in consultation with CDFG. If impacts cannot be avoided, the City shall establish and preserve a minimum of 6.5 acres of off-site habitat for each pair of owls or each unpaired owl impacted by the project. At least two enhanced or artificial burrows shall be provided for each burrow impacted. The land identified to offset impacts to burrowing owls shall be protected in perpetuity by either a

conservation easement or fee title acquisition. The burrowing owl habitat mitigation land shall be adjacent to occupied burrowing owl foraging habitat in the San Jose area. The final mitigation requirements will depend upon the number of pairs of birds or single birds that are found in the surveys and the City's consultation with CDFG. Site construction in occupied burrowing owls habitats shall not occur until this habitat mitigation plan and mitigation agreement is finalized between the City and CDFG.

Mitigation Measure 8b:

As it is unlawful to take, possess or destroy burrowing owls, their nests or their eggs, any impacts to the species during the breeding season (February 1-August 31) shall be avoided. Additionally, impacts to the species during the winter residency period (December 1- through January 31) shall be avoided. To avoid impacts to the species, pre-construction surveys shall be conducted to avoid impacting individual owls and/or their nest sites. No earlier than 30 days prior to commencement of grading or construction on or adjacent to the grassland, a qualified wildlife biologist, under contract to the City, shall conduct protocol-level pre-construction surveys for burrowing owls. The surveys shall be conducted by a qualified biologist according to current CDFG survey protocol. The results of the pre-construction surveys shall be submitted to the California Department of Fish and Game for review and approval prior to site construction.

Mitigation Measure 8c:

If active nests are found within the project area, the City shall postpone all construction within 250 feet of occupied burrows. Under the direction of a qualified wildlife biologist (under contract to the City), the outside edge of the 250 –foot wide protective buffer shall be demarcated by the placement of plastic construction fencing. Prior to commencement of construction activities, the City shall arrange for a qualified wildlife biologist to inform workers of the presence of burrowing owls, their protected status, work boundaries and measures to be implemented to avoid loss of these species during construction activities. Construction workers shall be informed that no construction activities are to occur within the buffer area until owls depart from the site and as directed by the consulting wildlife biologist.

Mitigation Measures 8d:

If pre-construction surveys are conducted during the non-breeding season and owls are observed on the site, the City shall consult with CDFG on owl eviction only after the habitat mitigation plan and mitigation agreement, addressed in Mitigation Measure 8a, above, have been finalized.

Safety

The Chief of Police for the City of San Jose has outlined a set of safety and beautification conditions intended to increase trail usage and thereby minimize crime. The following is a brief summary of safety and design features as outlined in a memorandum from Officer Dave Schaeffer, a Public Safety Officer with the City of San Jose Police Department's Crime Prevention Unit (Appendix C, 2002):

- Avoid construction of isolated difficult to observe parking areas;
- Include interpretive displays, attractive landscape features and other points of interest that will invite appropriate use of the trail;
- Locate numbered, clearly marked, hands-free emergency call boxes at regular intervals (1/3rd mile) along the trail;
- Install vandal proof, sodium lighting under highway bridges that cross over trails. In areas where ambient light is good use high pressure sodium lights and low pressure sodium lighting in areas where ambient light is insufficient ;
- Provide a clear demarcation barrier between vehicles and pedestrian/bicycle traffic;
- Consider surveillance requirements when designing vegetation for lower bridge underpass areas;
- Maintain visibility along portions of the trail that provide long distance views from secluded segments near main roads or bridges;
- Design shallow slope angles near low visibility pedestrian/bicylce underpass areas:
- Provide vehicle access and surveillance areas near remote pedestrian bridges;
- Design pedestrian bridges at grade level where possible. Bridge support structures should not invite vandalism or impede surveillance;
- Design a 15 foot minimum, maintainable buffer zone near riparian or landscaped areas that offer the potential for concealment of a human being;
- Post signage indicating trail hours, rules and regulations;
- Design striping and access points according to standards set forth in CalTrans and Valley Transportation Authority technical guidelines;
- Design signage according to standards set forth in CalTrans and Valley Transportation Authority usage guidelines;
- Provide color coded or otherwise simplified mileage markers and trail names to help trail using children identify their location in emergencies;
- Separate the trail alignment from the roadway where possible to provide a traffic buffer for children;
- Provide police and emergency vehicle trail access in remote locations;
- Paint bollards in colors that contrast with trail background;
- Paint concrete benches using graffiti proof paint and place them in areas where surveillance is maximized.
- Locate restrooms in convenient and easily accessible areas;
- Position drinking fountains in recessed areas off the trail to prevent accidents;
- Install durable, regularly spaced, graffiti proof trash bins;
- Maintain lighting, landscaping and trash removal to create pride of ownership;
- Post a phone number for reporting trail maintenance concerns.

Geotechnical Feasibility

The following is a summary of the findings of the geotechnical feasibility evaluation of constructing a pedestrian/ bicycle trail adjacent to Thompson Creek. The report evaluated the geotechnical constraints along the Thompson Creek and the proposed trail alignment (Appendix B, *Summary Report of Geotechnical Findings*).

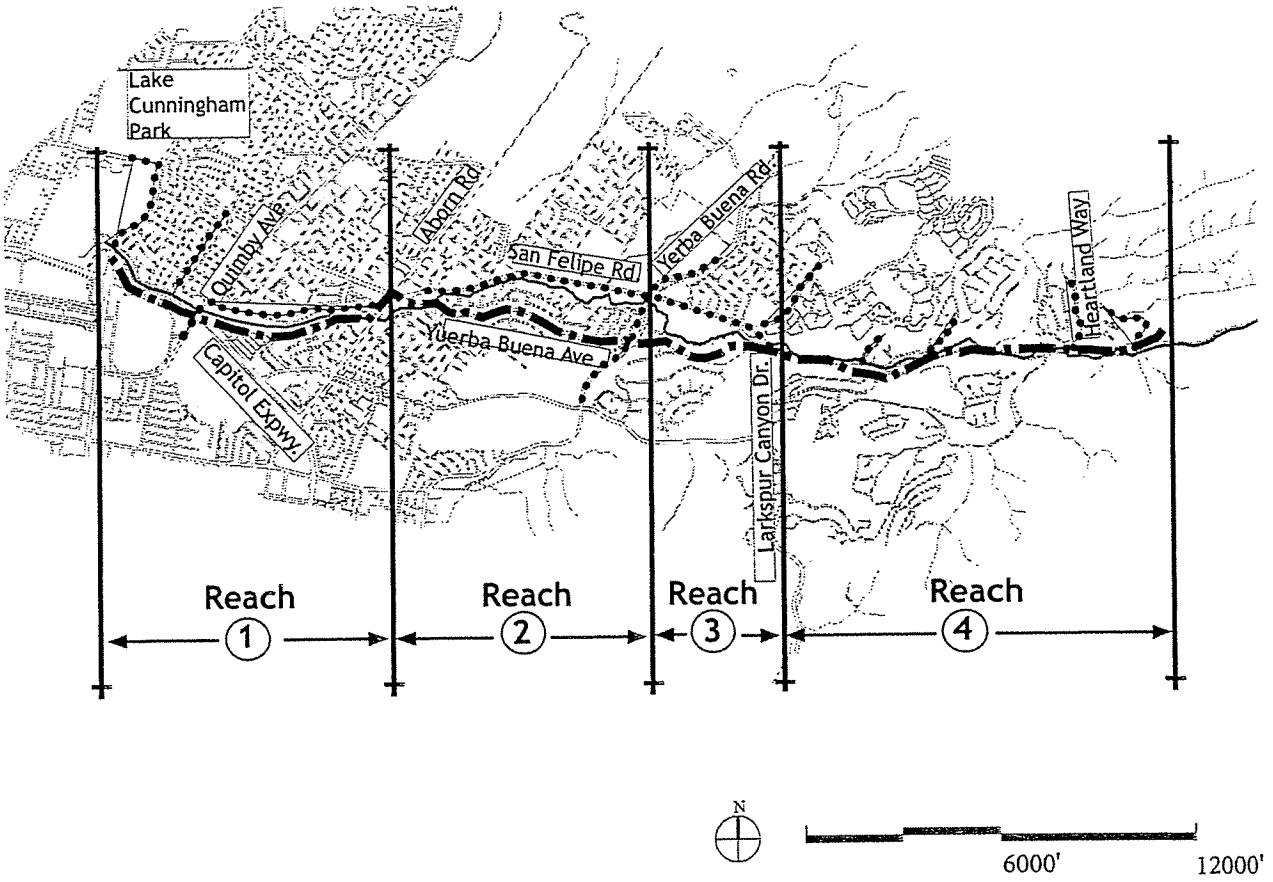
The creek is divided into the following "Reaches" or Trail segments to facilitate the development process:

Reach 1 - Lake Cunningham Park to Aborn Road

Reach 2 - Aborn Road to Wynfair Ridge Way

Reach 3 - Wynfair Ridge Way to Larkspur Canyon Drive

Reach 4 - The Villages to Heartland Way



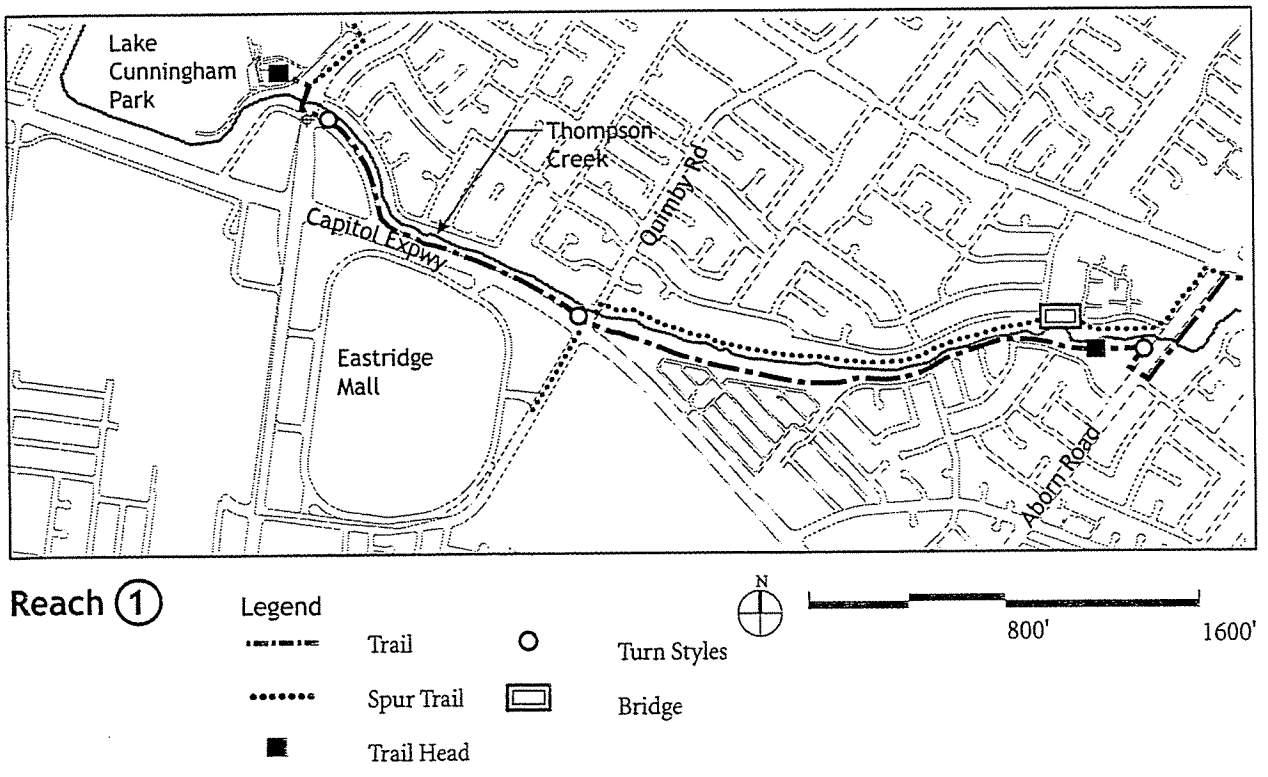
Reach 1 - Lake Cunningham Park to Aborn Road

Lake Cunningham Park to Quimby Road

Construction of the proposed trail along this segment is feasible along the western levee. This section includes bridges at Tully and Quimby roads. These bridges are too small for the construction of trail undercrossings. Consequently, trail crossings over Tully and Quimby will have to be accomplished at road grade. Currently, the existing levee roadway dips down at the downstream side of the Quimby Road bridge. There was much evidence that winter streamflow inundates this portion of the road. Consequently, in order to prevent the proposed trail from being inundated during high flows, and to also provide a gentler ramp up to Quimby Road, placement of engineered fill will be required along the levee for approximately 1,000 feet.

Quimby Road to Aborn Road

Construction of the proposed trail along this section is feasible along the existing levee from Quimby Road until it intersects with Pettigrew Drive. From that point to the Everdale pedestrian bridge (approximately 600 feet), the levee may have to be doubled in width to achieve a standard Class 1 Trail (12 foot wide paved trail with two, 2-foot wide soft shoulders). Construction of the proposed trail along the levee adjacent to Scotsdale is considered feasible, as is the section along Aborn Court up to the Aborn Road Bridge. Both of the pedestrian bridges at Everdale and Scotsdale may need to be widened, the footings replaced, and erosion control measures implemented. The existing bridges could be repaired to address erosion and not be fully replaced if a reduced trail width is acceptable. The Aborn Road Bridge is too small for the construction of a trail undercrossing. Thus, the proposed trail will have to cross Aborn Road at streetlights. This crossing is illustrated in the detailed discussion of each reach in Chapter six.

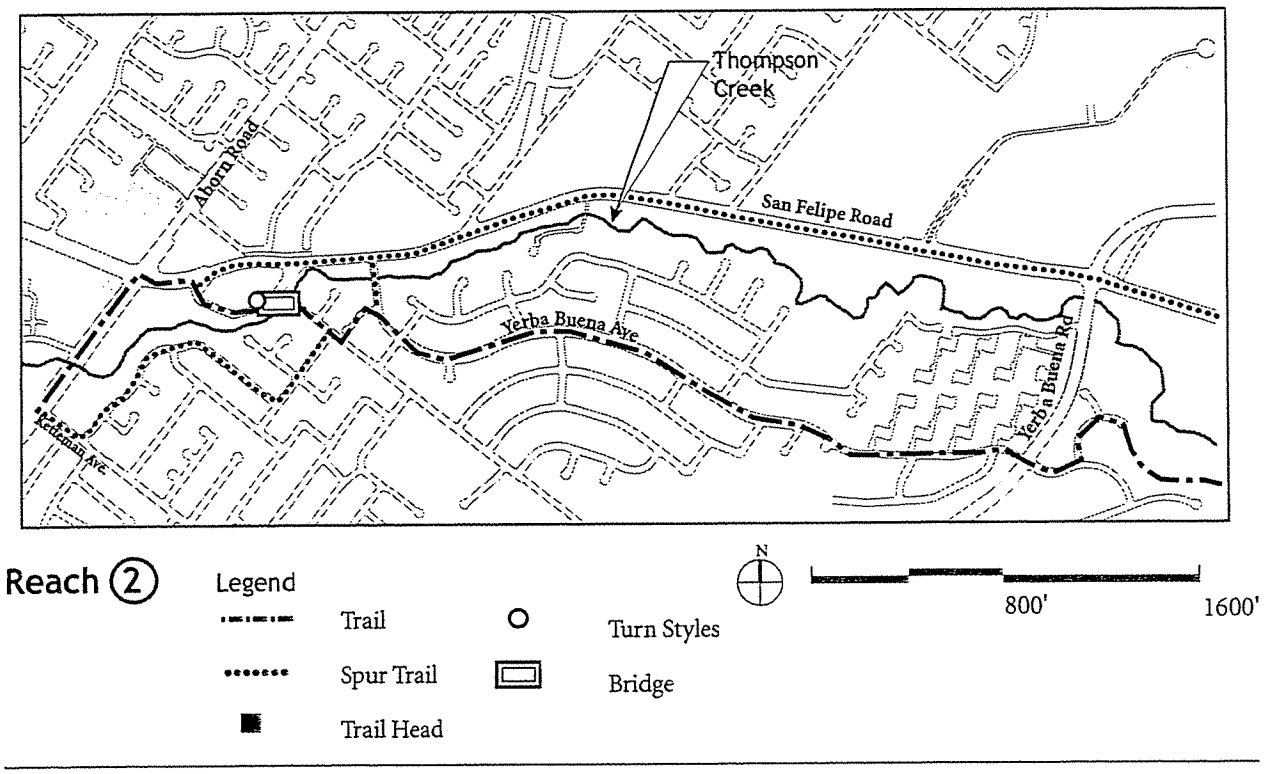


Reach 2 - Aborn Road to Wynfair Ridge Way

From Aborn Road south to Wynfair Ridge Way, Thompson Creek flows within the narrow steep-sided ravine described above and meanders tightly throughout this section. In this section the combination of steep and deeply incised creek banks and adjacent private land holdings preclude the potential of constructing a Class I trail. Geologic evidence throughout this section of Thompson Creek indicates active channel scour, erosional gullying, and slope instability. The required setback distance should be site-specific, and be at least equal to the depth of the ravine (top of ravine to bottom of active channel). On average, the minimum setback distance would be between 15 and 20 feet, which would prevent the trail from contributing to slope failure along the creek. Consequently, the proposed trail must be constructed outside of the creek.

For 1550 feet between Aborn Road and Keaton Loop, businesses and residential development crowd the top of the ravine. Several existing structures are located within an average of approximately 10 feet from the edge. Through this tightly meandering sections are dramatic examples of channel scour and slope failure. A potential trail alignment through this section is highly constrained by adverse geotechnical factors. The consensus of project consultants is that a top of creek bank alignment in this area is too highly constrained to warrant further investigation.

Complicating the feasibility of a trail along this section is the cultural development in the valley. Commonly, this development extends right up to the edge of the Thompson Creek ravine. At many locations, roadways and fences have been constructed right along the edge of the ravine, and some buildings are less than 20 feet from the ravine edge. In particular, San Felipe Road is a 4-lane thoroughfare that in many places lies immediately adjacent to the Thompson Creek ravine.

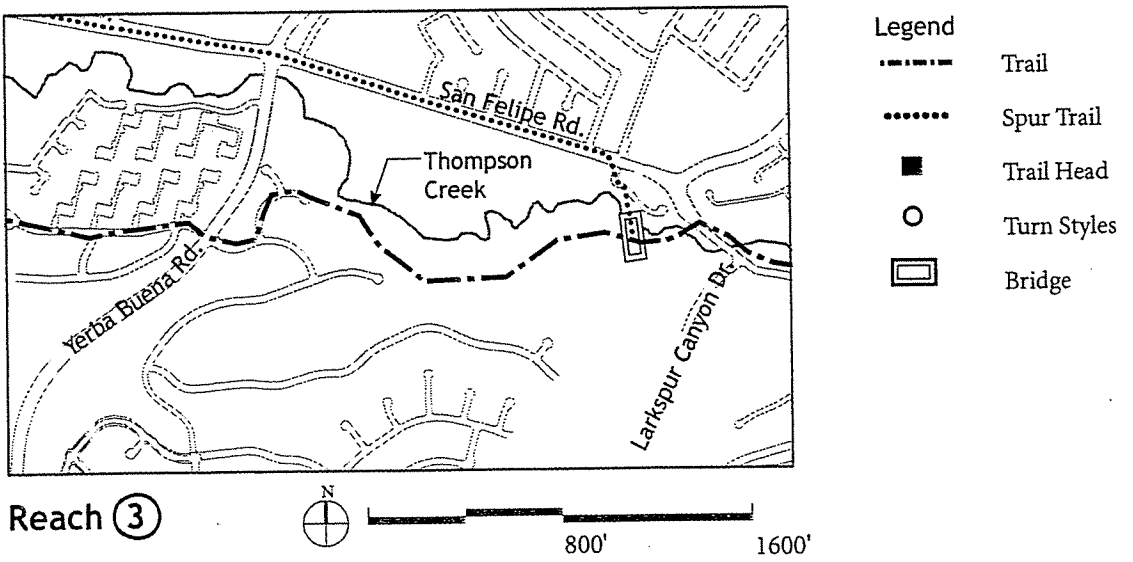


Reach 3 - Wynfair Ridge Way to Larkspur Canyon Drive

Wynfair Ridge Way to Larkspur Canyon Drive

An alternative trail alignment located west of Thompson Creek between Yerba Buena Road and Larkspur Canyon Drive has been evaluated in a preliminary manner. A seven acre lot is owned by the City of San Jose (Assessor's map book number 680-38-015). This acreage extends from Wynfair Ridge Way to Hillstone Drive. The trail alignment along this segment would initiate from the southern terminus of Wynfair Ridge Way and extend across an open grassland area of rolling hillside topography. Beyond this segment the property is owned by Greenbriar Hillstone Limited (APN 680032-029). Greenbriar Hillstone has donated an easement to the City of San Jose for the future Hillstone City Park. The City could acquire an easement near the creek as there is room for a trail alignment between the access road to the estate and the creek (See Reach 3 - Chapter 8).

The preliminary field reconnaissance suggests that a viable alignment (in terms of meeting maximum trail gradients) could be obtained through this foothill area. The alignment would be located well west of the Thompson Creek channel in order to avoid erosional instability issues. This trail alignment would not, however, be able to avoid crossing several small and large landslides of various ages. Because establishment of this trail segment would require some degree of hillside grading, with the potential to have adverse stability impacts on the underlying landslides, a more detailed scope of geotechnical investigation would be required during the Master Plan phase to conclusively determine trail feasibility.



The scope of necessary geotechnical investigation to determine trail segment feasibility would include detailed landslide mapping followed by a program of subsurface investigation (exploratory drilling) addressing portions of the trail alignment with moderate to high levels of risk for slope instability. A detailed survey of this hillside area would be required prior to initiation of geotechnical investigation. If it could be confirmed that trail construction would not have adverse impacts to slope stability, then issues associated with trail construction (primarily to upslope private property) would be satisfactorily addressed. Even after a detailed alignment investigation, the City would probably need to accept the need for maintenance of trail segments due to future landsliding. A better understanding of the degree of slope instability risk presented along the trail alignment would result from completion of a site-specific geologic and geotechnical investigation.

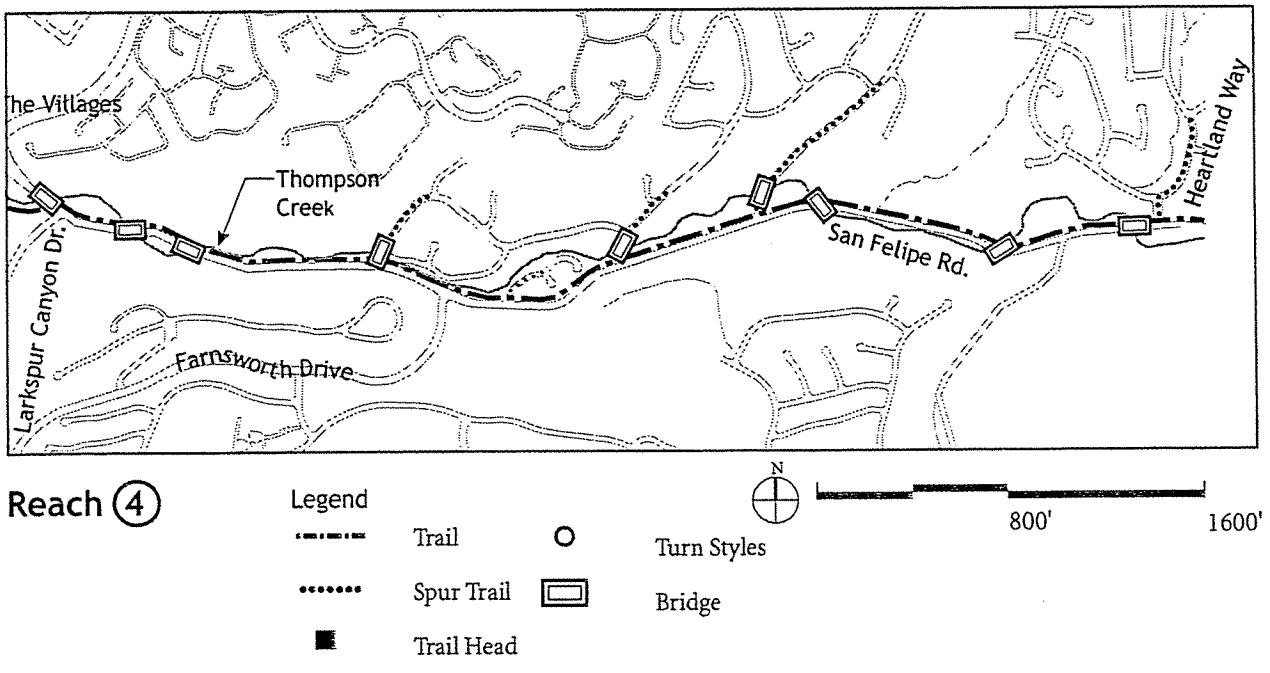
Reach 4 - The Villages to Heartland Way

From Larkspur Canyon Drive to Heartland Way the setting becomes increasingly rural. Thompson Creek flows between San Felipe Road, old ranch style homes and low density housing developments. The riparian corridor weaves from one side of the road to the next.

Several trail types currently exist along this section of San Felipe Road. A Class II Bikeway follows the road enabling pedestrians to use the sidewalk and bicyclists to use existing bicycle lanes. The study recommends grade protection barriers along these sections to provide a safety barrier between trail users and vehicular traffic. Existing bridges connect the trail to the surrounding residential neighborhoods.

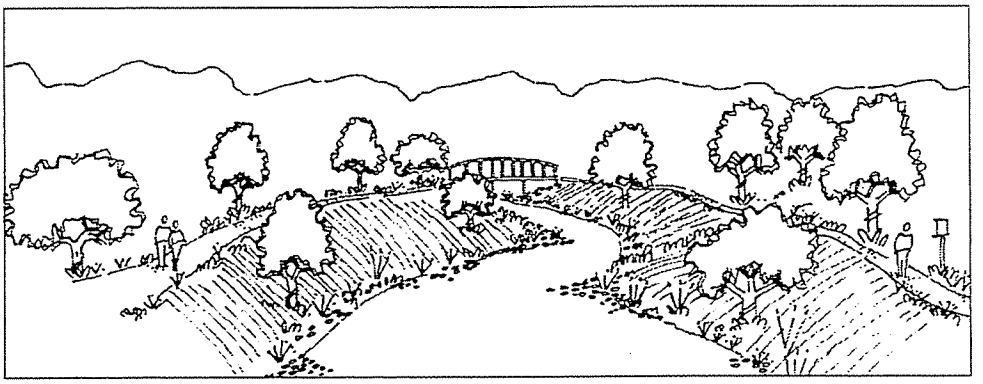
Bridges Between Aborn Road and Heartland Way

From Aborn Road to Yerba Buena Road there are three bridges. Major bridges are located at Cadwallader Avenue, Yerba Buena Avenue, Thompson Creek Court, and Yerba Buena Road. In between these major bridges are a number of small old bridges and/or low-flow creek crossings, that provide access to private properties. Of the major bridges, only the bridge at Yerba Buena Road is large enough to accommodate a trail under crossing. The construction cost of this under crossing is estimated to be $375,000. We understand that this under crossing is not a recommended trail improvement at this time. There are also a number of small bridges from Yerba Buena Road to Heartland Way . Most of the bridges are box culverts that allow San Felipe Road to cross over Thompson Creek. Immediately adjacent to these box culverts are 6-foot wide steel pedestrian bridges that link an existing bicycle path adjacent to San Felipe Road. Additionally, there are a number of small old bridges that provide access to private properties. Furthermore, there are newer bridges at Scenic Meadow and Meadowlands Lane that provide access to new subdivisions. All of the bridges between Yerba Buena Road and Heartland Way are too small to accommodate a trail under crossing.



Chapter 8

Proposed Trail Alignment



General

This chapter illustrates the proposed plan and cross sectional views for each of the reaches along the Thompson Creek Trail alignment. The section illustrates the proposed trail alignment and constraints to the development of a creek side 'Class I' trail. Alternative 'trail types' are proposed and solutions for street crossings and grade protection are illustrated in cross section and plan view.

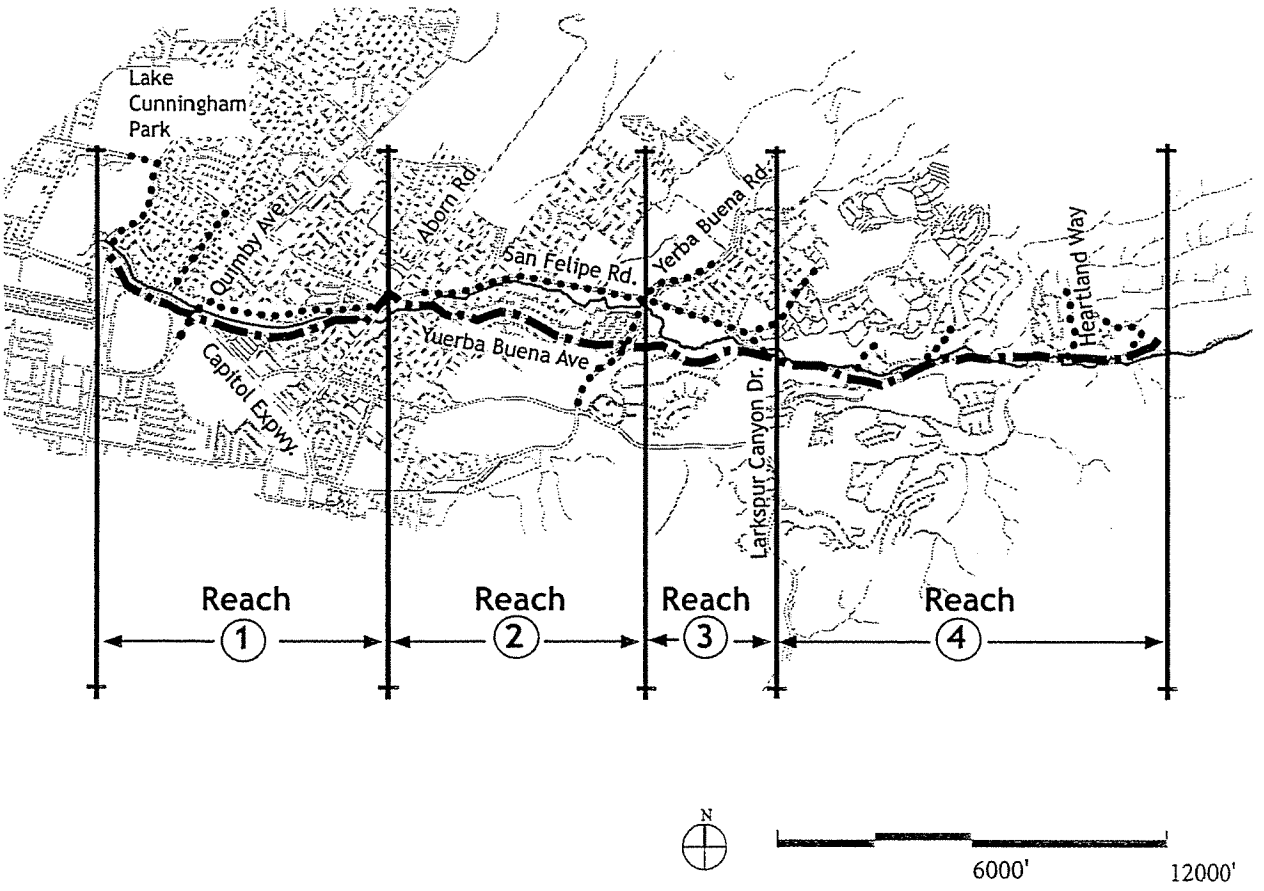
The creek is divided into the following "Reaches" or Trail segments to facilitate the development process:

Reach 1 - Lake Cunningham Park to Aborn Road

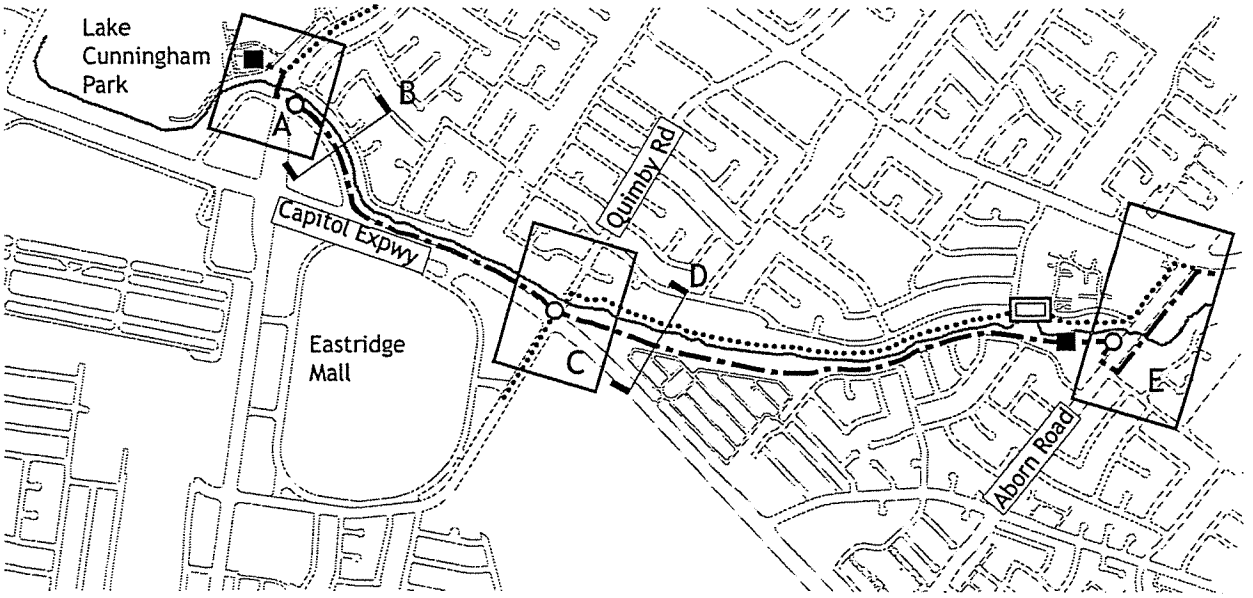
Reach 2 - Aborn Road to Wynfair Ridge Way

Reach 3 - Wynfair Ridge Way to Larkspur Canyon Drive

Reach 4 - The Villages to Heartland Way



Reach 1 - Lake Cunningham Park to Aborn Road



Reach (1)

N

800' 1600'

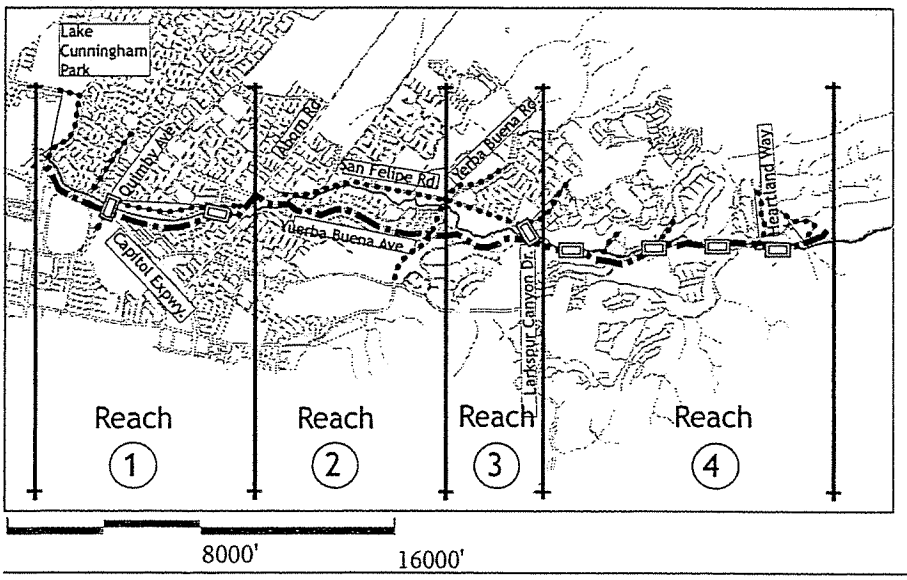
Index

A	Trailhead at Lake Cunningham and Tully Road Crossing
B	Levee Section at Capitol Expressway andTully Road
C	Quimby Road Crossing
D	Levee Section at Capitol Expressway and Quimby Road
E	Aborn Crossing

Legend for Proposed Trail

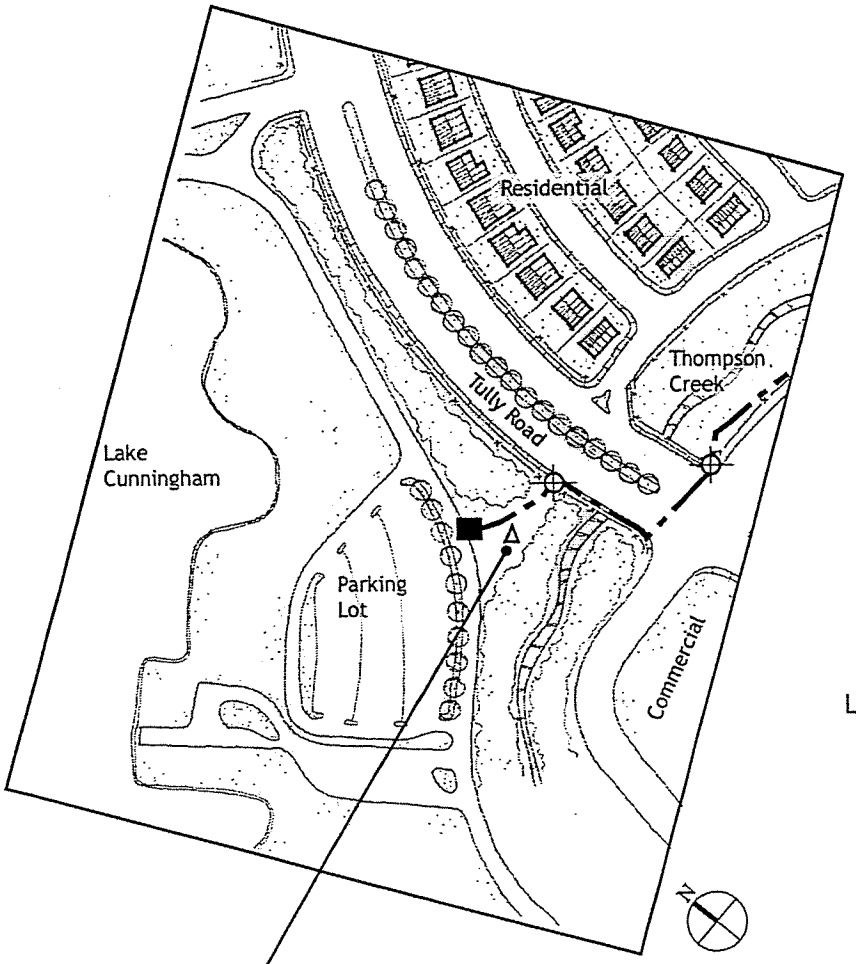
- Trail
- Spur Trail
- Trail Head
- Turnstyle
- Existing Bridge
- Plan Enlargement

Key Map



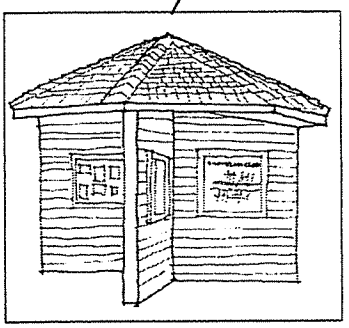
8000' 16000'

A. Trailhead at Lake Cunningham and Tully Road Crossing



Legend for Proposed Trail

- Trail
- Spur Trail
- Trail Head
- Turnstyle
- Kiosk

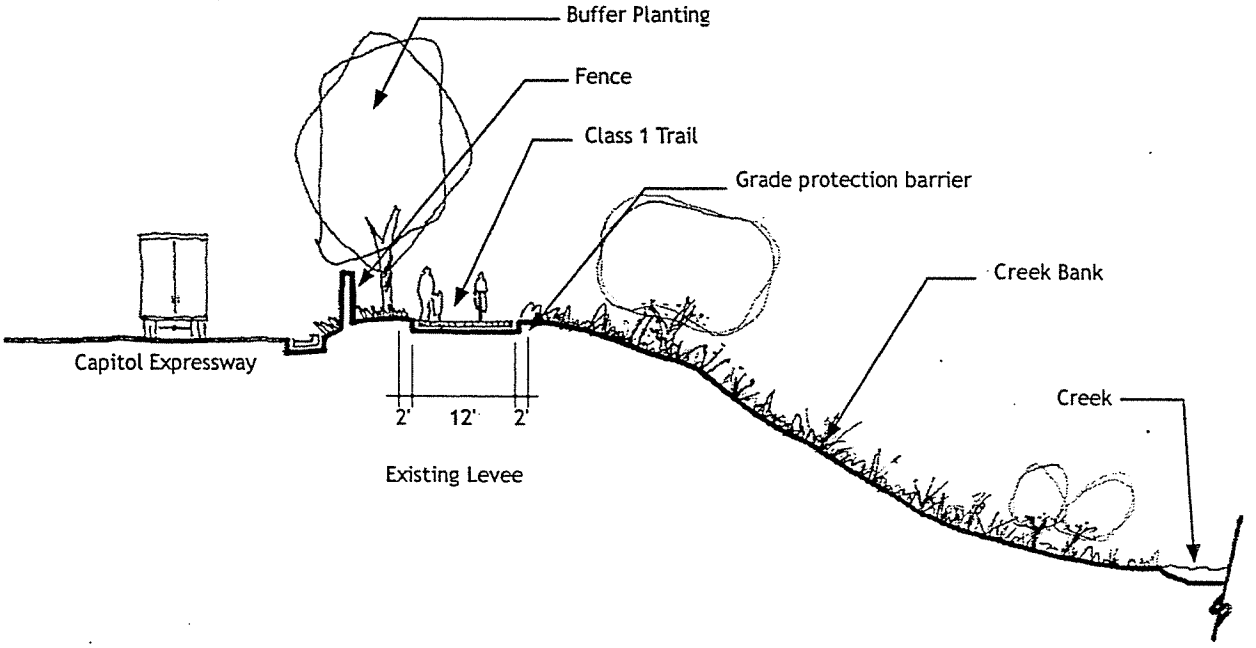


Kiosk Character Sketch

The proposed Thompson Creek trail alignment begins at the proposed trail head at Lake Cunningham A kiosk would contain information that is intended to provide clear orientation, safety and interpretive information including a trail map, illustrations of the local ecology and general trail information. Trail users may utilize the existing parking lot located at Lake Cunningham.

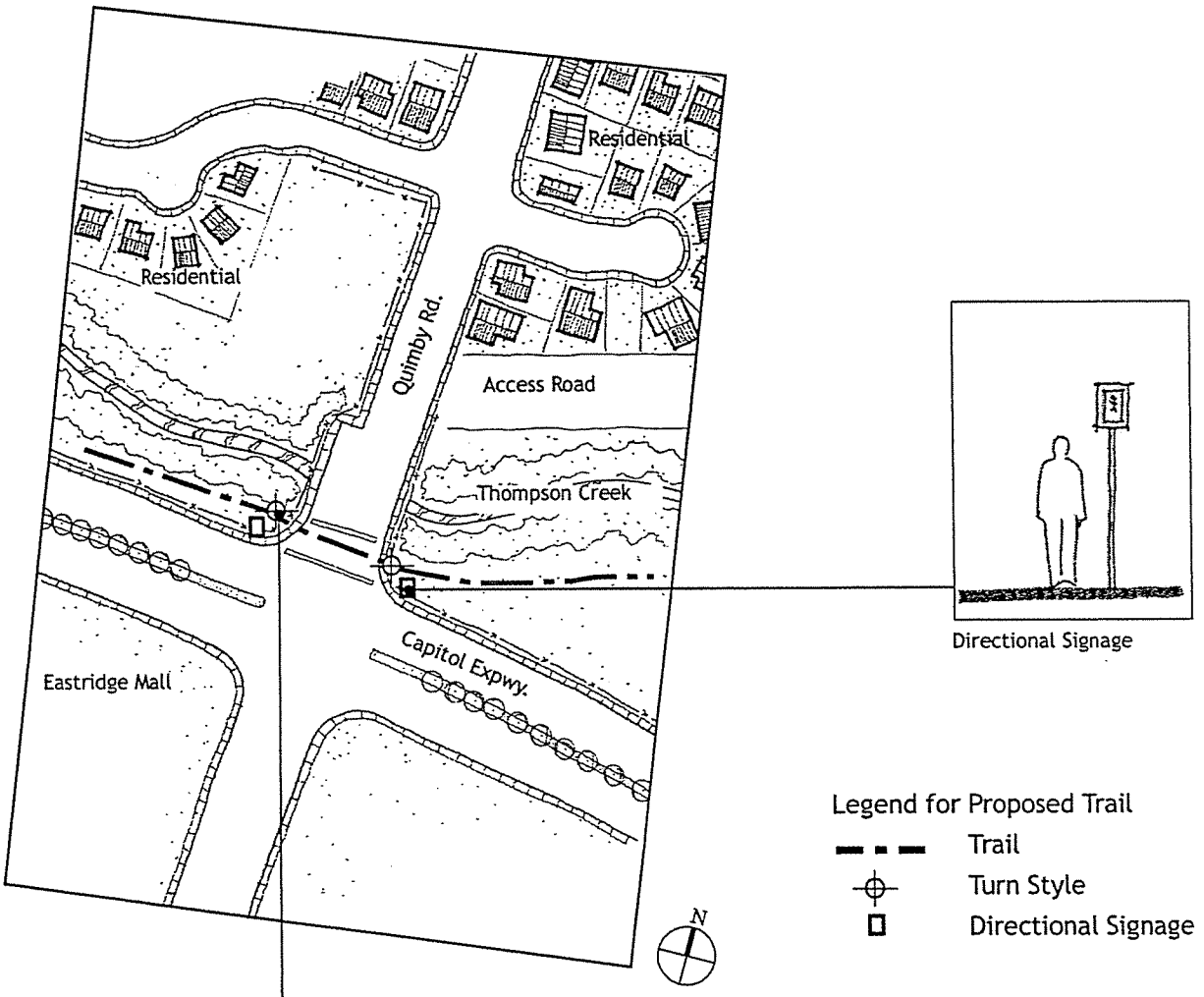
From the trailhead users will be expected to access the levee by crossing Tully Road at an existing stoplight. Signage along the trail would warn trail users of the crossing as well as direct them to the entrance across Tully Road. From there the proposed trail follows the levee to Quimby Road.

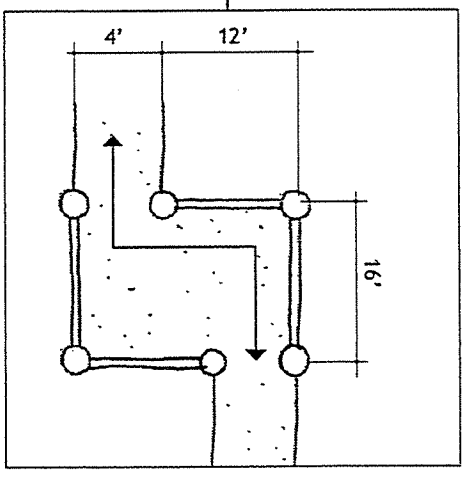
B. Levee Section at Capitol Expressway and Tully Road



After crossing tully Road the proposed trail alignment follows an existing levee. Along most of this section there is room for a Class 1 trail running parallel to Capitol Expressway. The trail would be protected from the road by vegetation buffer and an existing fence.

C. Quimby Road Crossing

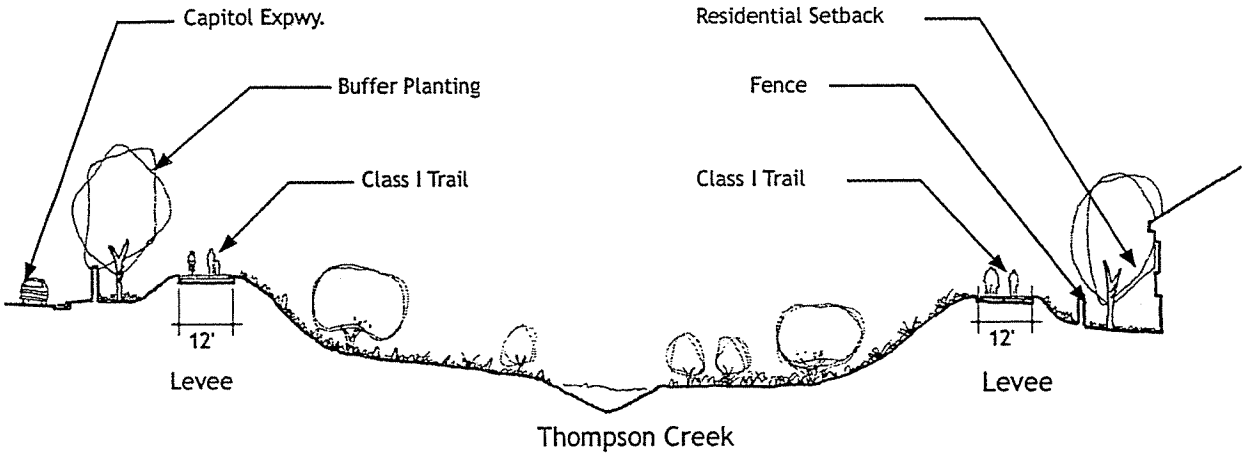




Turn Style Entry Detail

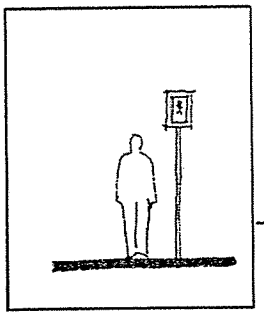
The second surface street crossing would occur at Quimby Road. Signs would warn users and motorists of the trail crossing. Two gates or turn style entrys would allow users to access the levee trail. A spur trail guides users to the access point on the east side of the creek. This allows users to use a proposed secondary trail that follows the eastern side of the levee to Aborn Road.

D. Levee Section at Capitol Expressway and Quimby Road

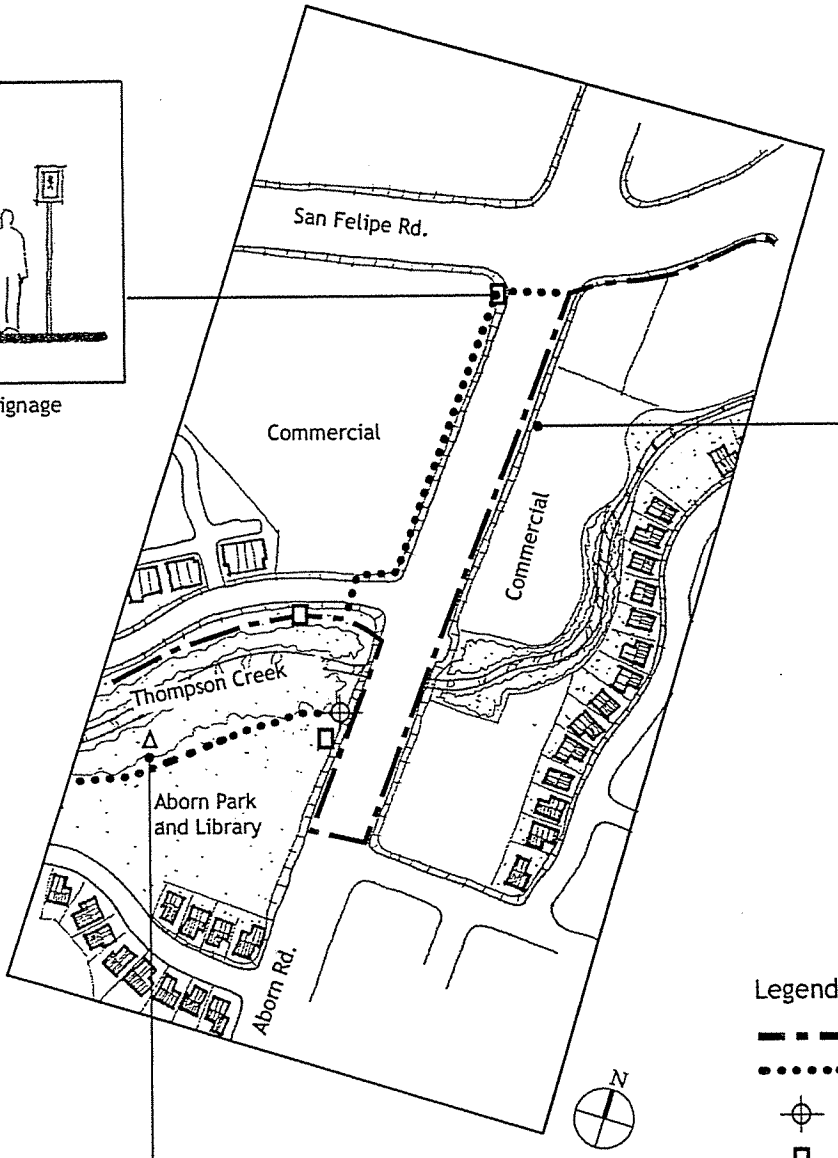


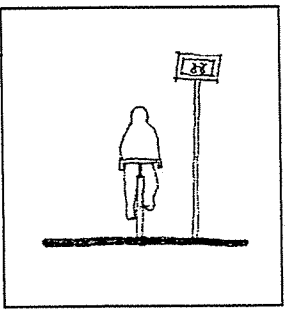
The proposed trail continues on both sides of the levee after Quimby Road. Both sides are similar in character following the upper portion of the levee along Thompson Creek. They follow the guidelines set for a class I trail with buffer planting between the trail and residential areas. As the trail progresses toward Aborn Road, the setting becomes quieter and more rural as it veers away from Capital Expressway. There is a 600 foot section near Pettigrew Drive that will require widening in order to accommodate the standard dimensions of a Class I trail.

E. Aborn Crossing



Directional Signage

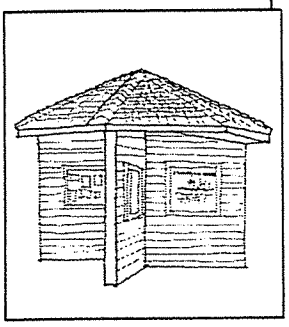




Bicycle Signage

Legend for Proposed Trail

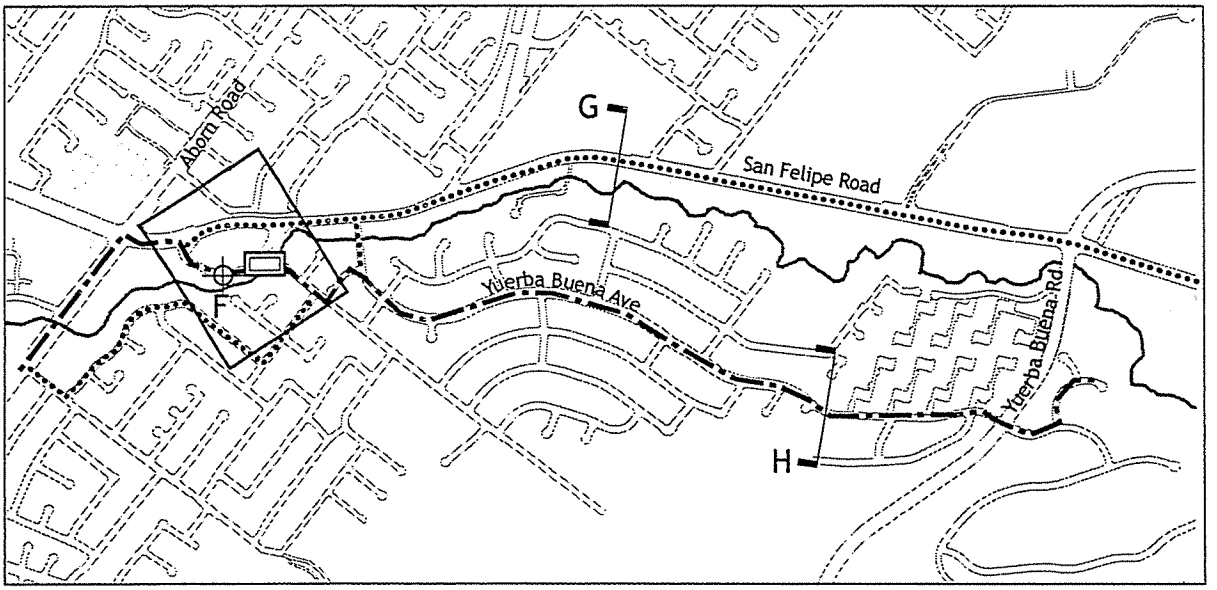
- Trail
- Spur Trail
- Turn Style
- Directional Signage
- Kiosk



Kiosk

The final proposed street crossing for Reach 1 occurs at Aborn Road. At this intersection a proposed pedestrian trail will follow existing sidewalks to San Felipe. A secondary trail leads bicyclists to an existing stoplight crossing to follow an existing bike lane to San Felipe Road. Directional signage for both these trails and a kiosk located in Aborn Park will provide information to users.

Reach 2: Aborn Road to Yerba Buena Road



Reach (2)

N

800' 1600'

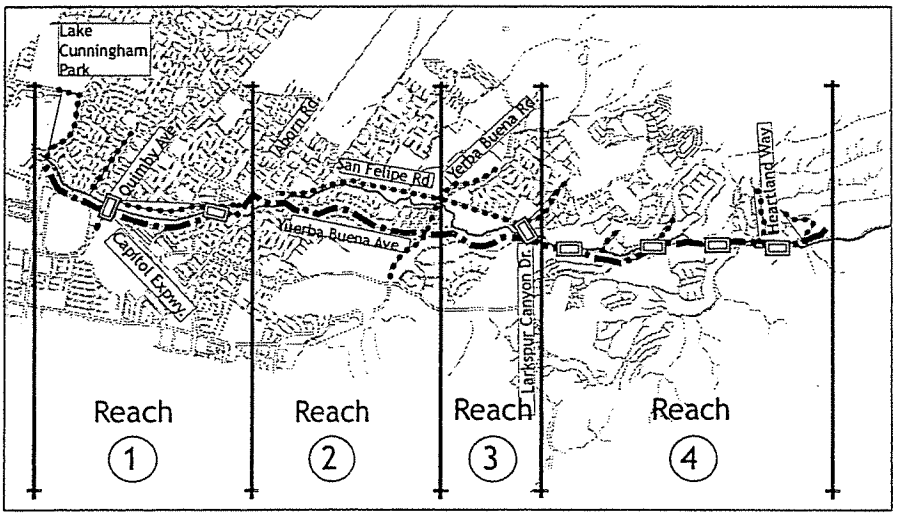
Index

F	Keaton Loop Bridge Crossing
G	Section at Yerba Buena Rd.
H	Class II Bike Way

Legend for Proposed Trail

- Trail
- Spur Trail
- Trail Head
- Turn Style
- Bridge
- Plan Enlargement

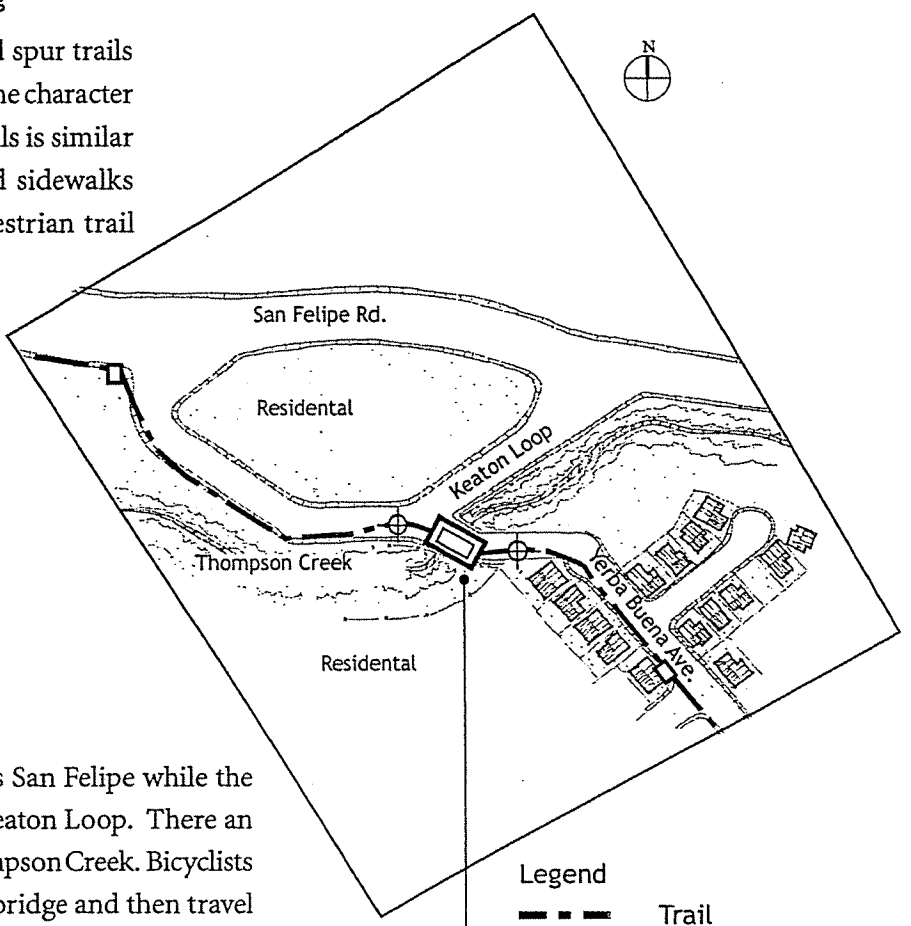
Key Map



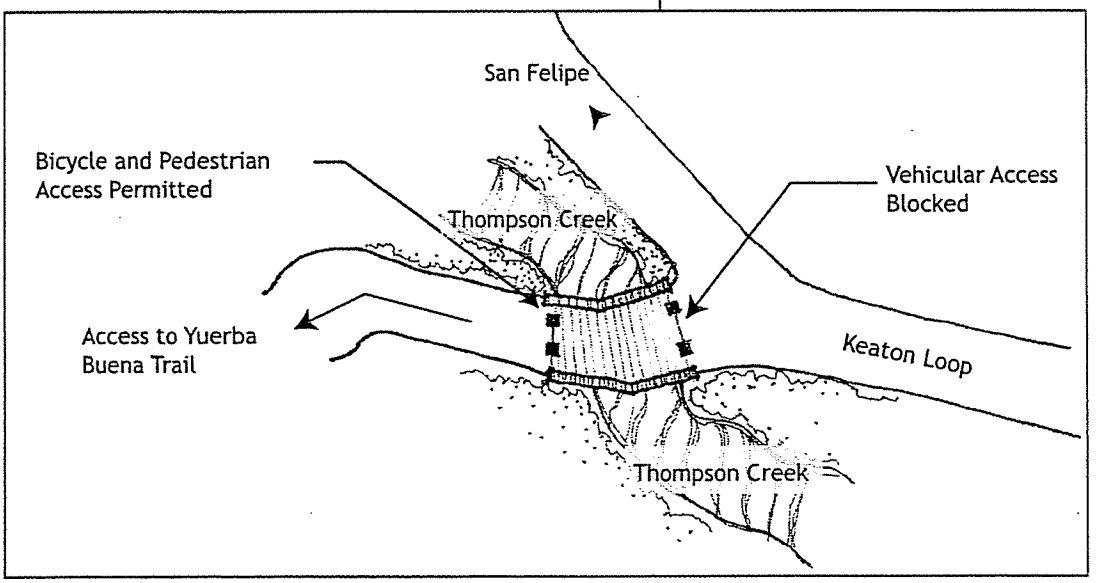
8000' 16000'

F. Keaton Loop Bridge Crossing

Both the proposed primary and spur trails follow existing surface streets. The character of the primary and the spur trails is similar with existing bicycle lanes and sidewalks facilitating both bike and pedestrian trail users.

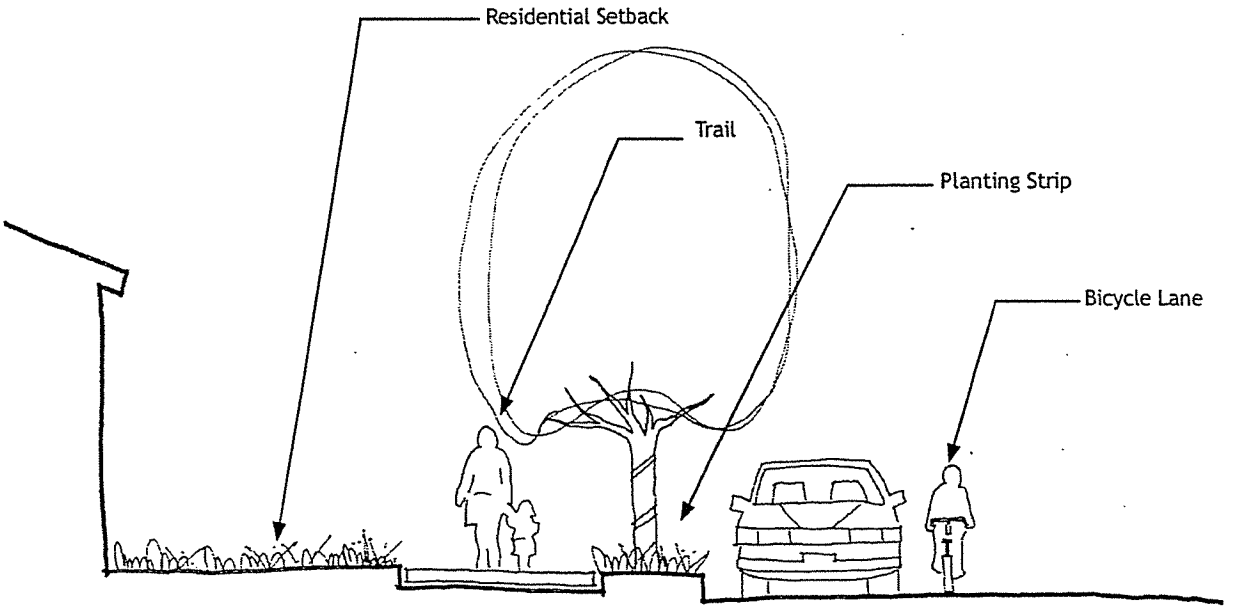


The proposed spur trail follows San Felipe while the primary trail branches off at Keaton Loop. There an existing bridge that crosses Thompson Creek. Bicyclists and pedestrians will cross this bridge and then travel along Yerba Buena Avenue to Yerba Buena Road. This bridge is in need of repair or replacement. It should be replaced with a bridge that can accommodate Class I pedestrian bicycle uses.



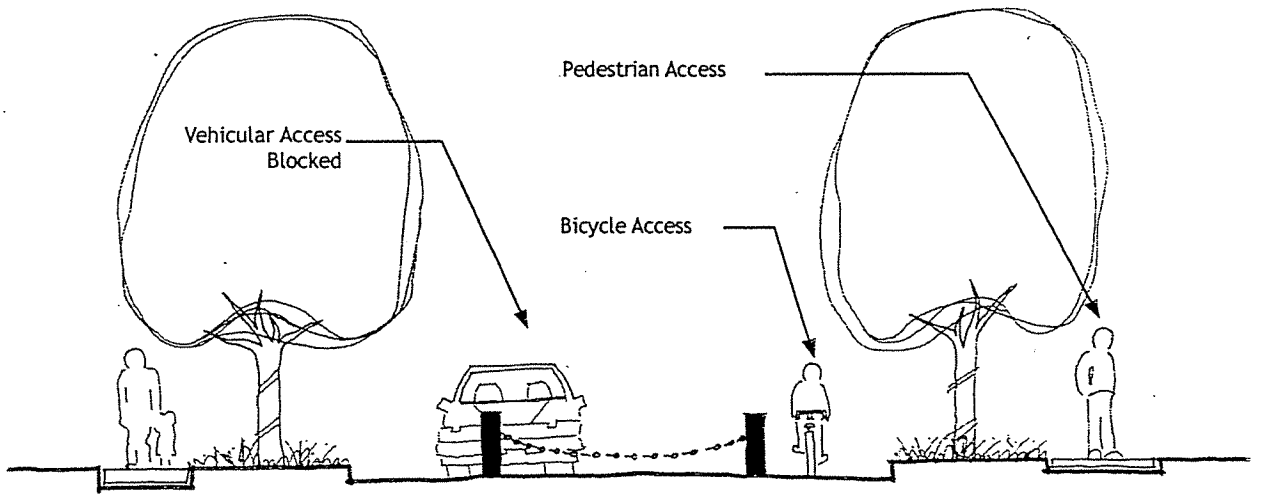
Plan view of Keaton Loop bridge diagram.

G. Class II Bike way (Bike Lane) and Sidewalk Facilities



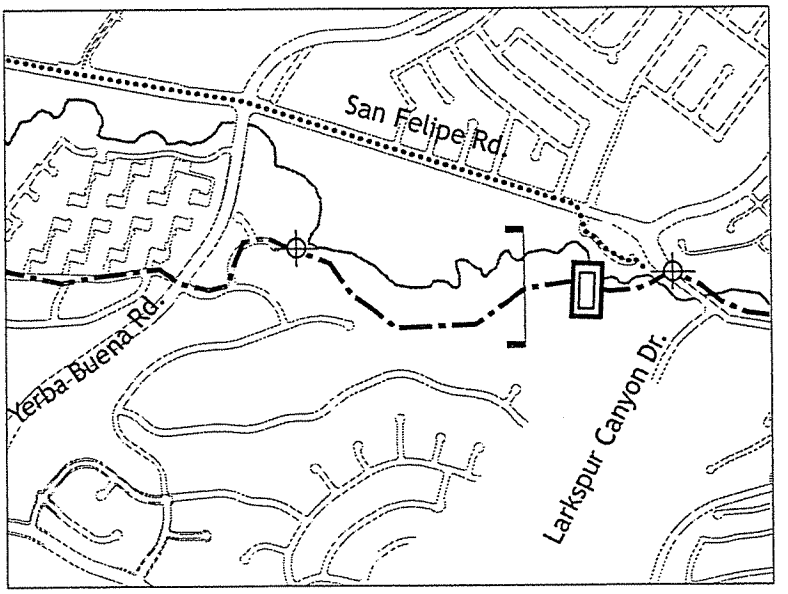
After the bridge crossing pedestrians and bicyclists would follow Yerba Buena Road to Yerba Buena Avenue. On these streets pedestrians and bicyclists would utilize a Class II bike lane. Existing sidewalks would be used by pedestrians and a bike lane would accomodate bicyclists.

H. Section at Yerba Buena Avenue



Through traffic is currently blocked along Yerba Buena Avenue. A throughway is currently blocked by a chain. This road block can easily be opened up to allow bicycle and pedestrian traffic. Bollards would block vehicular access.

Reach 3 - Yerba Buena Road to Larkspur Canyon Drive



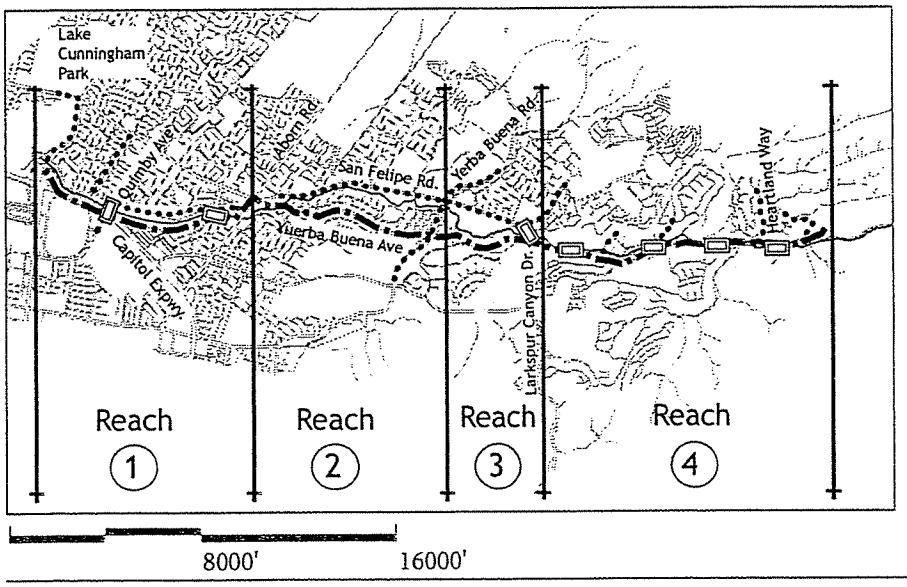
Index

I Scenic Trail Section

Legend for Proposed Trail

- Trail
- Spur Trail
- Turn Style
- Bridge

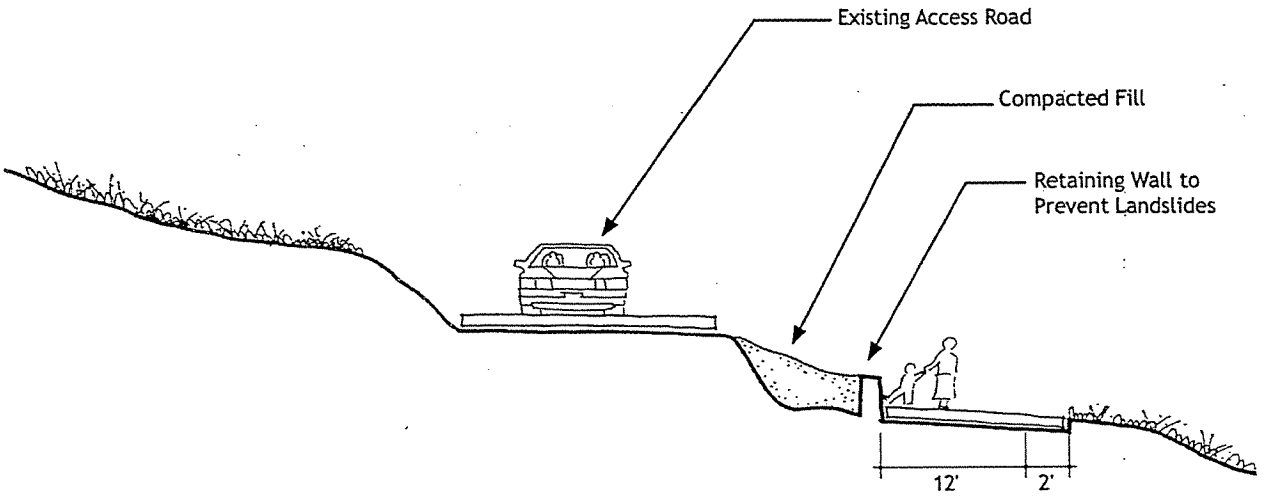
Key Map



Trail Character

The primary trail cuts through an existing wilderness area. This trail follows the creek through a visually stunning open space pocket. The area is geologically sensitive and is expected to be prone to landslides. To remain viable, this section of trail will require additional geotechnical evaluation and the construction of a retaining wall along slide prone sections of trail.

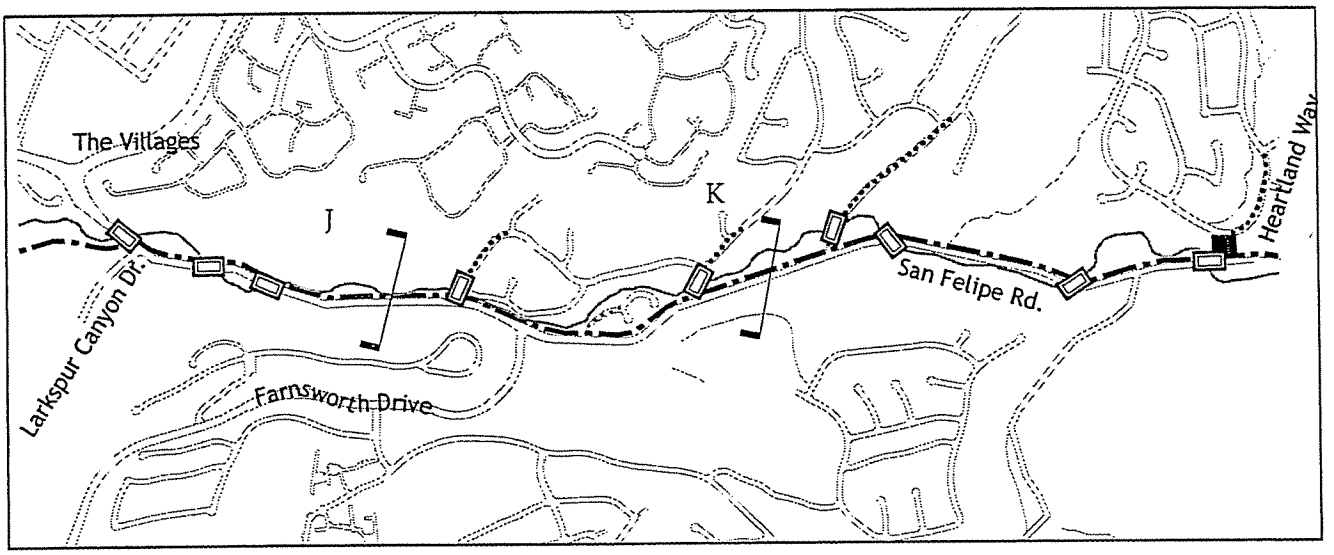
I. Scenic Trail Section



Access Road

Near Larkspur Canyon Road the trail follows an existing access road. A retaining wall may also be required in this section to prevent erosion in areas where the trail is placed at the base of a road embankment.

Reach 4 - Larkspur Canyon Drive to Heartland Way



Reach (4)

N

800' 1600'

Index

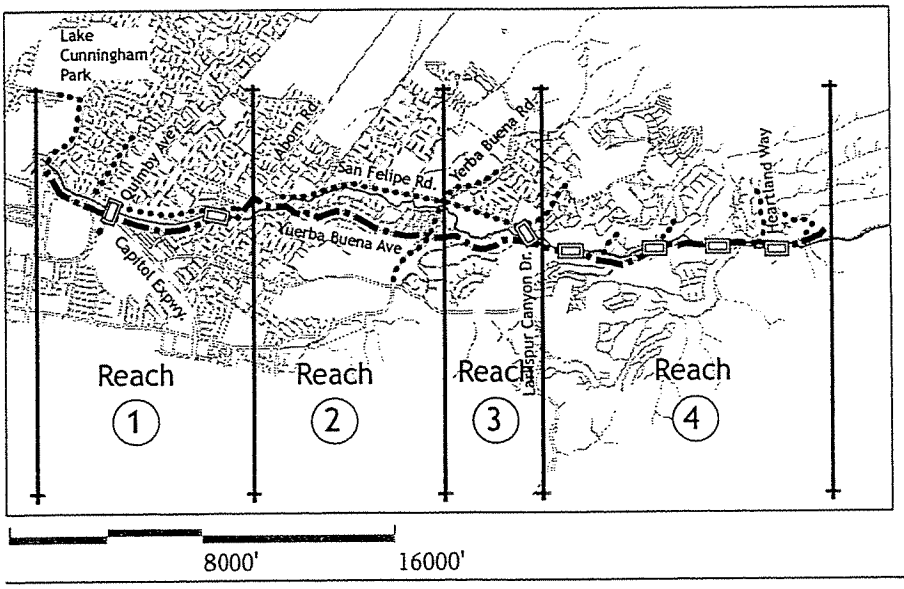
J San Felipe Section

K Trail Below Grade

Legend for Proposed Trail

- Trail
- Spur Trail
- Trail Head
- Bridge

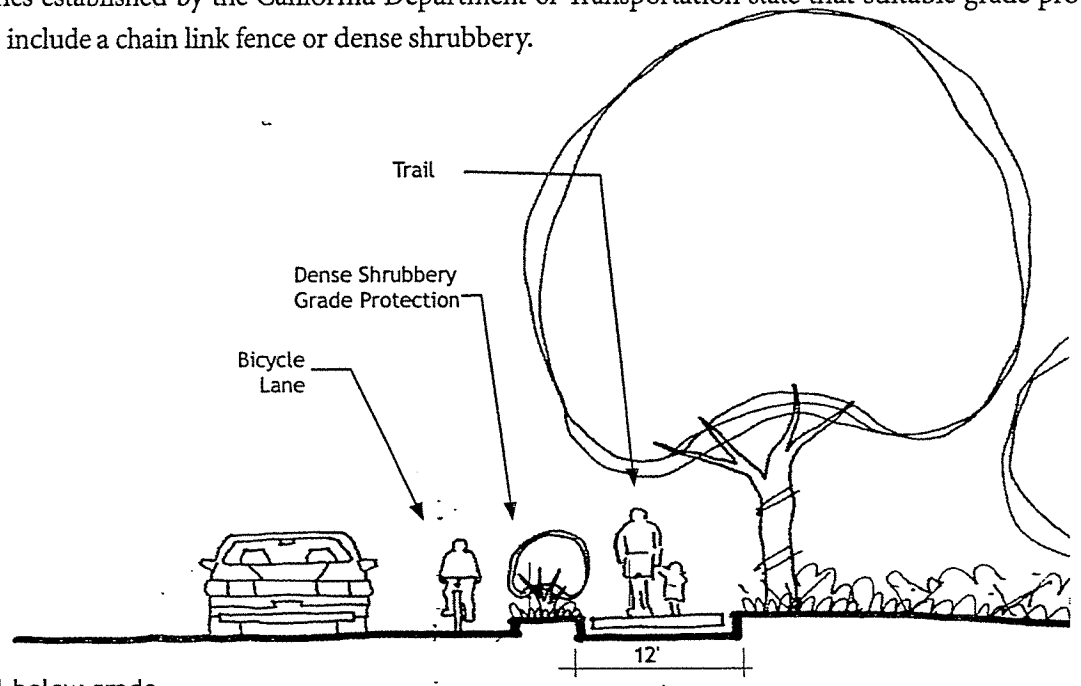
Key Map



Several trail types currently exist along this section of San Felipe Road. The primary trail type is a Class II Bikeway that follows the road allowing for pedestrians to use the sidewalk and bicyclists to use existing bicycle lanes. The study recommends grade protection barriers along these sections to provide a safety barrier between trail users and vehicular traffic. Existing bridges connect the trail to the surrounding residential neighborhoods

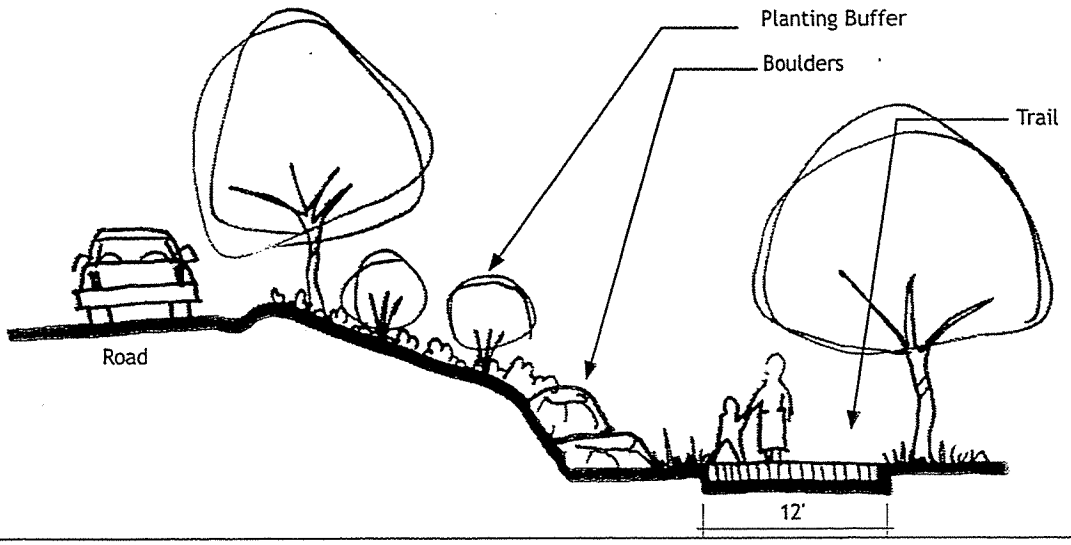
J. San Felipe Section

Pedestrians and bicyclists using the trails in this area are not always adequately protected from vehicular traffic. Guidelines established by the California Department of Transportation state that suitable grade protection barriers include a chain link fence or dense shrubbery.



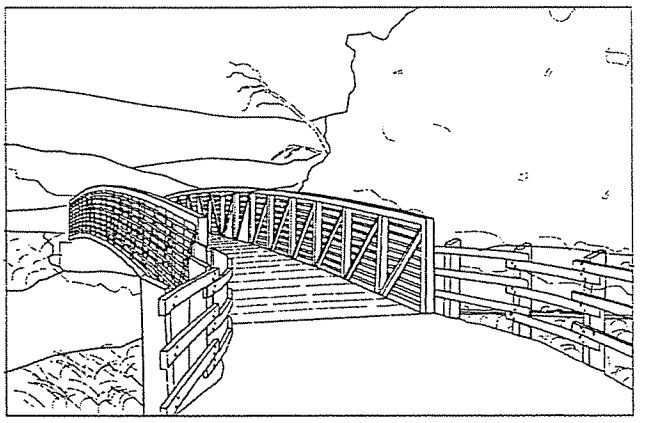
K. Trail below grade

Along San Felipe Road there are sections where the trail steps down from the road. At these points the trail widens and there is a planting buffer between the road and trail. These portions of the trail could be developed to accommodate a Class I trail.



Chapter 9

Evaluation of Feasibility



Construction Costs

Preliminary cost estimates indicate that the total cost for developing the Thompson Creek Trail would be approximately $9,000,000 including contingencies. This budget estimate includes the potential replacement of three bridges that do not meet class I standards, trail building along levees and in the open space areas, levee widening in a narrow section in Reach I, planting, irrigation and amenities, and the cost of grading and constucting a retaining wall in landslide prone areas. *The cost estimate does not include land acquisition and easement costs.* All estimates are in 2002 dollars.

The budget assumes the need to construct Class I trails and improve bridges to achieve that result. It also includes grade protection improvements in areas that are not on public land and cannot accommodate a Class I trail.

The estimate illustrates the cost per reach for trail construction and can be broken down as follows:

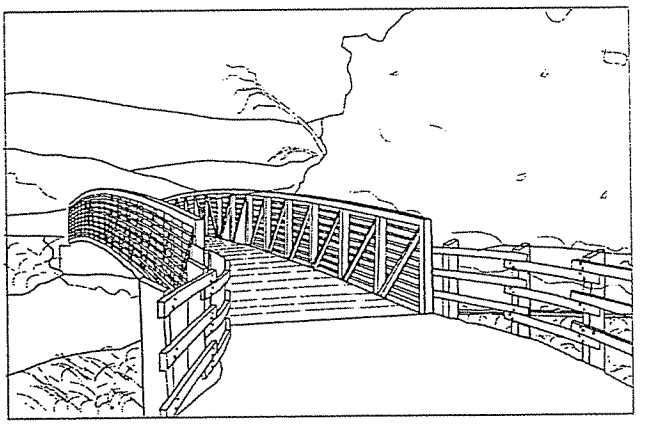
Reach 1	Lake Cunningham Park to Aborn Rd.	3,688,220
Reach 2	Aborn Rd. to Wynfair Ridge Way	170,600
Reach 3	Wynfair Ridge Way to Larkspur Canyon Dr.	3,469,000
Reach 4	Larkspur Canyon Dr. to Heartland Way	450,625
Subtotal ($)		7,778,445
Contingency (20%)		1,555,689
Design and Construction Management (35%)		2,722,455
Total $		12,056,589*

Changes in construction materials may be specified during the design phase and this will affect the cost of construction. Estimates are based on preliminary engineering information and determined by calculating estimated quantities. Budget estimates will be refined during the Master Plan Phase. Thorough geotechnical evaluation will be required during that portion of the design process. The total construction cost for the proposed alignment is summarize in Table 1.

**The cost estimate does not include land acquisition and easement costs.*

Chapter 10

Next Steps



Community Outreach

During the next phase of the planning process the City of San Jose will produce *The Thompson Creek Trail Master Plan*. Community outreach will be critical to the success of the master planning phase. The ultimate aim of the community outreach effort will be the development of strong community consensus concerning the proposed alignment and the goals, objectives and priorities for the trail implementation plan. It will be important that the Master Plan embodies the community's vision, values and concerns. The Master Plan will be based on the goals and objectives set by the 2020 General Plan and outlined in this report.

Key Design Concepts

The Thompson Creek Trail Master Plan will include trail corridor descriptions and a final set of maps for the Thompson Creek Trail Corridor. The Master Plan design for the various trail types and specific corridors will include field surveys and a complete assessment of the location of access points, staging areas, corridor crossings and connections between trail sections and to transit. The graphics of directional and interpretive signage will be based on state and local standards and an in depth site analysis. The Plan will identify the location and provide design details for fences, gates, turn styles and kiosks located along each of the study reaches.

Trail development measures will be designed to provide a safe and efficient trail network that encourages the use of alternative transportation, improves the trail user's recreational and aesthetic experience and enhances habitat for wildlife. The planning process will require the preparation of environmental documents under the California Environmental Quality Act (CEQA). Detailed geotechnical, biological and hydrological investigations may be part of the master planning or the construction document phase.

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Funding

Table 2: Potential Funding Sources for the Construction of Thompson Creek Trail

Funding Source	Type of Funding	Amount of Funding Available	Contact Information
2000 Bond Act & Proposition 40 2002 Bond Act			
Habitat Conservation Fund	Riparian Habitat, Trails	$2 Million	California State Parks Offices of Grants Local Services PO Box 942896 Sacramento, CA 94296
Land and Water Conservation Fund	Statewide Planning, Outdoor recreation areas and facilities	$13 Million in 2002 (40% to Northern CA)	California State Parks Offices of Grants Local Services PO Box 942896 Sacramento, CA 94296
Non-Motorized Trails Grant Program	Development, improvement, rehabilitation, restoration, non-motorized trails		California State Parks Offices of Grants Local Services PO Box 942896 Sacramento, CA 94296
Recreational Trails Program	Trail projects	$3.2 Million	California State Parks Offices of Grants Local Services PO Box 942896 Sacramento, CA 94296
Riparian and Riverine Habitat Grant Program	Increase public recreational access, awareness, protection and restoration of rivers and streams	$10 Million	
Per Capita Grant Program	Development, improvement, rehabilitation, restoration, interpretive facilities for local parks		
Roberti-Z'berg-Harris Grants	Urban Open Space and Recreation	$ 188,930,000	
Bicycle and Pedestrian Programs			
National Highway System	Construct bicycle transportation facilities and pedestrian walkways		
Surface Transportation Program	Construct bicycle transportation facilities and pedestrian walkways		
California Department of Transportation Transportation Efficiency Act of 1998	Conservation related projects including pedestrian and bike trail construction and enhancement		

Appendix A

Appendices

Biotic Resources Group
Biotic Assessments ♦ Resource Management ♦ Permitting

Thompson Creek Trail Feasibility Study

Initial Biological Assessment

Prepared for:

Ms. Chris Kook
Catalyst
And
City of San Jose

Prepared by:

Biotic Resources Group
Attn: Kathleen Lyons
Principal/Plant Ecologist

With
Dana Bland
Dana Bland & Associates

February 12, 2002

Post Office Box 14 ♦ Santa Cruz, California 95063 ♦ (831) 476-4803 ♦ Fax (831) 476-8038

FEASIBILITY STUDY OF THOMPSON CREEK TRAIL
CITY OF SAN JOSE

INITIAL BIOTIC ASSESSMENT STUDY

INTRODUCTION

The Thompson Creel Trail Project is located within in the southeastern portion of the City of San Jose, California. The proposed trail extends from Lake Cunningham upstream to parallel San Felipe Road; the general project area is depicted on Figures 1 and 2. The proposed trail parallels Thompson Creek for most of its length; however, in some area the trail follows City streets. In the downstream sections, the trail is proposed along existing Santa Clara Valley Water District maintenance roads. The proposed trail abuts several land uses, most commonly residential and commercial land uses.

Project Description

The City of San Jose proposes to develop a multi-use trail along approximately 3 miles of Thompson Creek. A conceptual design has been prepared for the trail (Conceptual Trail Design, Thompson Creek Feasibility Study, Tom Richman & Associates, January 2002).

The proposed multi-use trail will be comprised of an asphalt path with decomposed granite shoulders on either side. The trail will be designed to accommodate pedestrians and bicyclists in accordance with applicable laws, ordinances, and policies. It is the intent of the trail to provide access and links to the park chain and to adjacent neighborhoods and surface streets.

The existing trail that travels portions of the creek has seven pedestrian/bicycle bridges over the creek. One additional bridge is proposed in the Keaton Loop area to provide a trail connection across Thompson Creek. The design of the new bridge will be to allow only the intended trail users. The new bridge will be a clear span design, such that all footings will be located out of the creekbed.

Biological Assessment

A reconnaissance-level assessment of the biotic resources of the proposed Thompson Creek Trail project area was conducted in December 2001, January 2002 and February 2002. The focus of the assessment was to identify sensitive biotic resources within the project area that may affect development of the trail system. Specific tasks conducted for this study include:

- Characterize the major plant communities within the project area;
- Identify potential sensitive biotic resources, including plant and wildlife species of concern and native trees, within the project area,
- Evaluate the potential effects of the proposed development specific to the project on sensitive biotic resources and recommend measures to avoid or reduce such impacts,

EXISTING BIOTIC RESOURCES

METHODOLOGY

The biotic resources of the proposed Thompson Creek Trail were assessed through reconnaissance-level field observations in December 2001, January 2002 and February 2002. These field observations augmented previous surveys conducted of the project area in February 2001. The proposed trail route was traveled by a plant ecologist and wildlife biologist. During the 2001 and 2002 surveys, the plant communities on the site, based on the classification system developed in Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland, 1986), (and amended to reflect site conditions) were identified.

To assess the potential occurrence of special status biotic resources, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2001) and California Department of Fish & Game's (CDFG) RareFind database (CDFG, 2001) for the San Jose U.S.G.S. quadrangle. A previous biotic report conducted for the project site was also reviewed (Jana Sokale, Environmental Planning, Bioassessment of Thompson Creek Trail Project, September 1999).

This report summarizes the findings of the reconnaissance-level biotic assessment. The potential impacts of the proposed development of trail facilities along Thompson Creek on sensitive resources are discussed below. Measures to reduce significant impacts to a level of less-than-significant are recommended, as applicable.

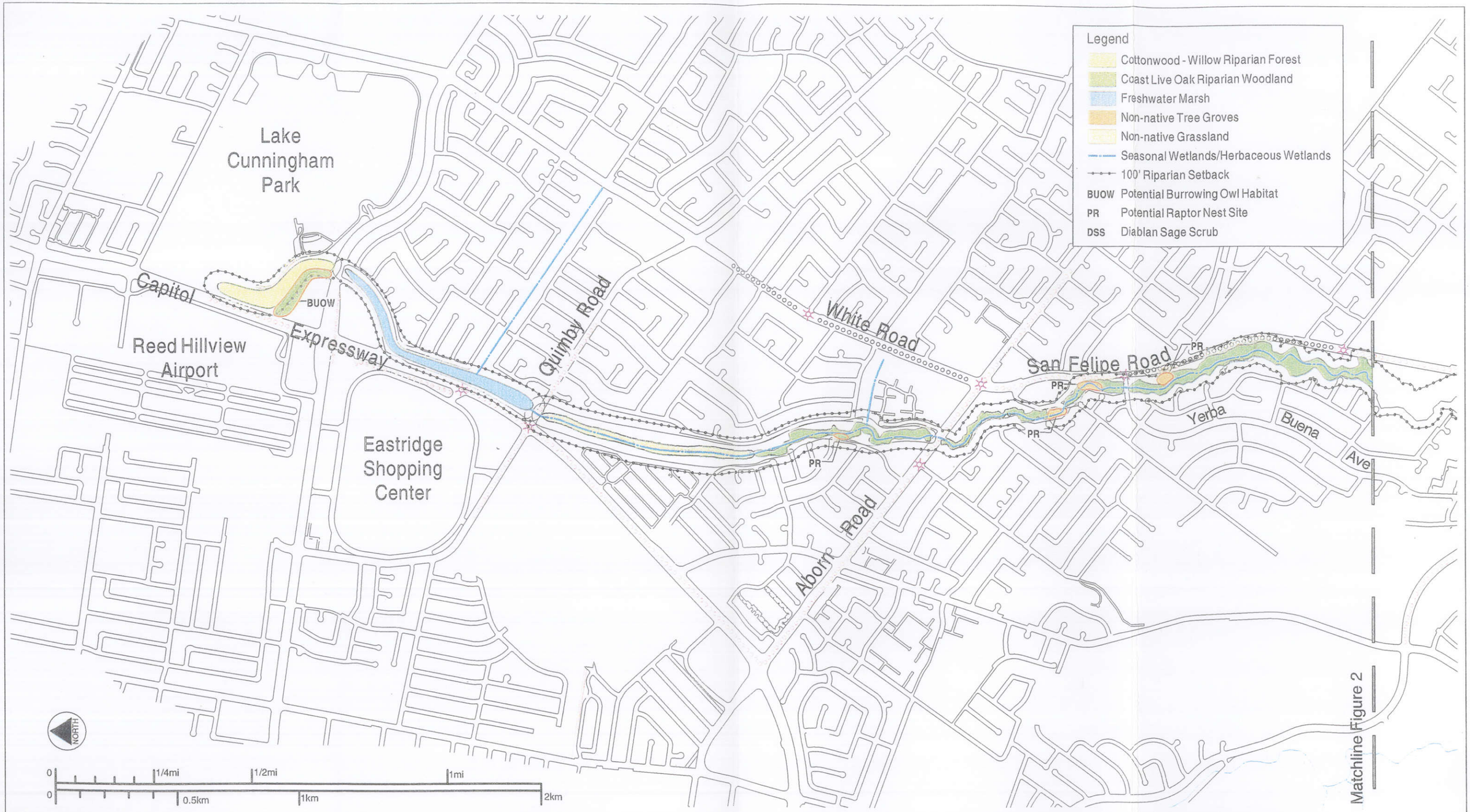
EXISTING BIOTIC RESOURCES

The trail corridor supports six principal plant communities, based on the site surveys. These include:

- Riparian woodland
    - Willow riparian woodland
    - Oak-sycamore riparian woodland
- Non-Native tree groves (primarily eucalyptus)
- Diablan sage scrub
- Non-native grassland
- Seasonal wetlands
- Freshwater marsh

In addition, the project site supports scattered landscape trees that occur adjacent to the riparian corridor.

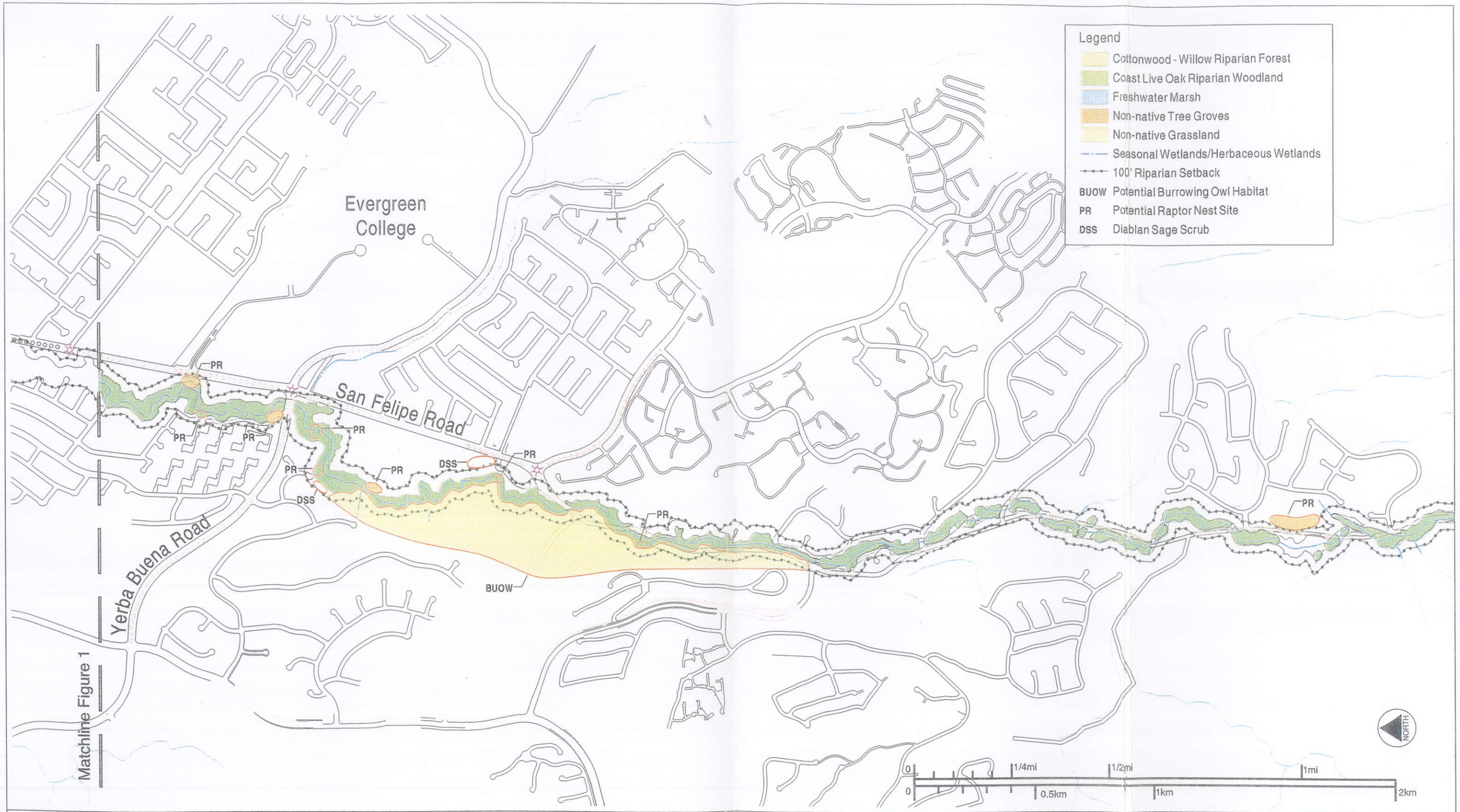
The distribution of the plant communities within the project area, including the edge of the riparian woodland along Thompson Creek, is depicted on Figures 1 and 2.



Biotic Resources Group
Post Office Box 14 ◆ Santa Cruz, California 95063
(831) 476-4803 ◆ Fax (831) 476-8038

Thompson Creek Trail Feasibility Study
Biotic Assessment
Existing Biological Resources

Figure 1
2/02
290-02



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Thompson Creek Trail Feasibility Study
Biotic Assessment
Existing Biological Resources

Figure 2
2/02
290-02

Riparian Woodlands

Willow Riparian Woodland. This riparian vegetation type is most prevalent in the downstream portions of the study area. There are patches of willow-dominated vegetation between Quimby and Aborn Road, as well as downstream of Tully Road (in Lake Cunningham Park). The dominant plant species within this woodland is willow (*Salix* spp.). In the Lake Cunningham area, non-native trees are also present, including blue gum eucalyptus (*Eucalyptus globulus)* and weeping willow (*Salix babylonica).* Walnuts (*Juglans* sp.) occur between Quimby and Aborn Road, presumably remnants of a previous orchard in the area. A small remnant orchard occurs between the creek and the District's maintenance road. Currently these trees intermix with patches of willow and Fremont cottonwood (*Populus fremontii).* The woodland also supports lesser amounts of coast live oak (*Quercus agrifolia)* and blue elderberry (*Sambucus mexicana).* The willow-riparian woodland supports some trees that may meet the City's definition of an ordinance tree, although a focused tree survey was not conducted at this preliminary project level.

Understory plant species include poison oak (*Toxicodendron diversilobum),* young trees of blue elderberry and coast live oak, as well as California blackberry (*Rubus ursinus),* California rose (*Rosa californica),* snowberry (*Symphoricarpos rivularis),* and coyote brush (*Baccharis pilularis).* Invasive, non-native plants are also prevalent within the willow-riparian woodland, including Himalayan blackberry *(Rubus procerus),* periwinkle (*Vinca major),* Cape Ivy (*Delaireia odorata),* French broom (*Genista monspessulanus)* and English ivy (*Hedera helix).* The creek also supports scattered occurrences of giant reed (*Arundo donax),* another invasive, non-native plant species.

The limit of the riparian corridor, as defined in the City's Riparian Corridor Policy, is the outside edge of the riparian habitat (or top of bank, whichever is greater). This edge is depicted on Figures 1 and 2. In some areas, remnant orchard trees are located immediately adjacent to the riparian trees and have overlapping tree canopies. Where this occurs, the remnant orchard trees were considered part of the riparian corridor.

Valley Oak-Sycamore Riparian Woodland. This riparian woodland is a dominant component of the vegetation along Thompson Creek. Mature trees of valley oak (*Quercus lobata),* coast live oak, and western sycamore (*Platanus racemosa*) dominate the forest. Associated tree species include willow (*Salix* sp.), blue elderberry and buckeye (*Aesculus californica).* Walnut trees also occur within the woodland, presumably remnants from previous orchards. Near Everdale Avenue, Fremont cottonwoods (*Populus fremontii)* were observed intermixed with the oak woodland. In some areas, the woodland contains large non-native blue gum eucalyptus trees; these trees occur as single occurrences or as small groves amid and otherwise native canopy. These occurrences are depicted on Figure 1 and 2. Similarly, the woodland supports scattered individuals of non-native Monterey pine (*Pinus radiata).*

The understory within the valley oak – sycamore woodland is diverse with both native and non-native plant species. Common plants include California blackberry, California rose, toyon (*Heteromeles arbutifolia),* holly-leaved cherry (*Prunus ilicifolia),* coyote brush, melic grass (*Melica* sp.) and snowberry (*Symphoricarpos alba).* Young trees of blue elderberry and coast live oak were also observed in the understory. Invasive, non-native plant species also occur in the woodland, including Himalayan berry, giant reed, Cape ivy and English ivy. Planted trees also occur in the area, such as myoporum (*Myoporum*

sp.) and pepper tree (*Schinus* sp.). In the upstream portion of Thompson Creek, coast redwood trees were observed (i.e., in the Villages area near Larkspur Canyon Drive).

The riparian corridor narrows in the upstream portion of the project area. Upstream of the Villages and along San Felipe Road, the corridor is constrained by the close proximity of the roadway and adjacent land uses. There are gaps in the vegetated corridor and in many areas, the understory vegetation is sparse. An existing trail travels along the creek; several bridges cross Thompson Creek as well as some small side tributaries that join Thompson Creek in this area.

Several large-sized valley and coast live oaks occur in the project area. Large-sized trees that are considered of particular botanical interest due to their size and diverse structure are depicted on Figure 2. Many of the trees within the woodland would meet the City's criteria of an ordinance-tree, based on their size (i.e., circumference greater than 56 inches). Portions of the riparian corridor have also been significantly affected by the close proximity of adjacent land uses. Some land uses, including residential areas, horse corrals and commercial development, are situated immediately adjacent and/or within the riparian corridor. In some area, riparian vegetation is absent and bank erosion is evident.

The limit of the riparian corridor, as defined in the City's Riparian Corridor Policy, is the outside edge of the riparian habitat (or top of bank, whichever is greater). This edge is depicted on Figures 1 and 2.

The riparian habitat is one of the highest value habitats for wildlife species diversity and abundance in California. Factors that contribute to the high wildlife value include the presence of surface water, the variety of niches provided by the high structural complexity of the habitat, and the abundance of plant growth. Riparian habitat adjacent to the project site may be used by a diversity of wildlife species for food, water, escape cover, nesting, migration and dispersal corridors, and thermal cover. The oaks provide valuable forage for several wildlife species, and the natural cavities in the oaks and sycamore provide nesting and roosting habitat for certain wildlife. The value of riparian areas to wildlife is underscored by the limited amount of remaining habitat that has not been disturbed or substantially altered by flood control projects, agriculture, or urbanization.

Common wildlife species that are expected to inhabit the riparian habitat include Pacific treefrog *(Hyla regilla),* bullfrog (*Rana catesbeiana*), western aquatic garter snake (*Thamnophis couchii*), Wilson's warbler *(Wilsonia pusilla),* Bewick's wren (*Thryomanes bewickii*), green heron (*Butorides striatus*), several species of swallows, scrub jay (*Aphelocoma coerulescens*), red-shouldered hawk (*Buteo lineatus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and California myotis (*Myotis californicus*).

Special status wildlife species that may inhabit the riparian habitat include steelhead (*Oncorhynchus mykiss*) (use as movement corridor to upstream spawning areas), California red-legged frog (*Rana aurora draytonii*), southwestern pond turtle (*Clemmys marmorata pallida*), Cooper's hawk (*Accipiter cooperii*), yellow warbler (*Dendroica petechia brewsteri*), yellow-breasted chat (*Icteria virens*), pallid bat (*Antrozous pallidus pacificus*), Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). In addition, several species of raptors were observed nesting in the oak-sycamore riparian woodland during surveys in 1998 and 1999 (Sokale 1999). Focused surveys would be necessary to determine presence of absence of these species on the site.

Non-Native Tree Groves (primarily eucalyptus)

The project area supports some groves of blue gum eucalyptus that occur both within and outside the Thompson Creek corridor. Some large eucalyptus trees also occur along San Felipe Road, as depicted on Figure 2; these trees were probably planted as landscape trees. The other tree groves are scattered along the length of the creek, as depicted on Figures 1 and 2. The groves are comprised of large-sized trees; the trees would likely meet the City's criteria of an ordinance-tree, based on their size (i.e., circumference greater than 56 inches). Within the Thompson Creek project area, the understory within the eucalyptus tree groves is similar to the adjacent oak-sycamore woodland; this is probably due to the groves relatively small size relative to the riparian woodland. Poison oak is the dominant understory plant species observed growing amid the eucalyptus trees.

Eucalyptus is not native to California, and does not support a very diverse wildlife assemblage. Common wildlife species that utilize eucalyptus groves include alligator lizard (*Gerrhonotus multicarinatus*), Anna's hummingbird (*Calypte anna*) and woodrat. The large eucalyptus groves along Thompson Creek also provide potential roosting and nesting habitat for raptors such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk, and great horned owl (*Bubo virginianus*).

Diablan Sage Scrub

This vegetation types occurs in small pockets in the project area. It was observed primarily on south-facing slopes and adjacent to recently developed residential areas in the upstream portions of the project area, as depicted on Figure 2. This scrub is dominated by California sage (*Artemisia californica).* Associated species include coyote brush, black sage (*Salvia mellifera),* California beeplant (*Schrophularia californica)* and coffeeberry (*Rhamnus californica).*

The berries of shrubs and the seeds of herbaceous plants in the sage scrub habitat provide important forage for wildlife. Wildlife may perch on the outer perimeter of mixed scrub to take advantage of hunting opportunities in adjacent openings, and take cover in the denser shrub patches as needed. Common wildlife species found in sage scrub include western fence lizard (*Sceloporus occidentalis*), California towhee *(Pipilo crissalis)*, white-crowned sparrow (*Zonotrichia leucophrys*), and coyote (*Canis latrans).*

Special status wildlife that may inhabit the sage scrub include nesting loggerhead shrike *(Lanius ludovicianus*).

Non-Native Grassland

The grassland encompasses the flat areas and hillsides that abut Thompson Creek. The grassland is limited to the upstream portions of the project area, such as upstream of Yerba Buena Road, as depicted on Figure 2. The dominant plant species are non-native and include wild oat (*Avena* sp.), Italian ryegrass (*Lolium multiflorum*), velvet grass (*Holcus lanatus),* Bermuda grass (*Cynodon dactylon)*, storkbill (*Erodium* sp.), cheeseweed (*Malva* sp.), yellow star thistle (*Centaurea soltitialis)*, prickly ox-tongue (*Picris echioides)* and

field mustard (*Brassica rapa)*. Blue wild rye (*Elymus glaucus)*, a native grass, was observed in dense patches in the grassland upstream of Yerba Buena Road; no other native grasses were observed during the 2001 and 2002 field surveys, however, many herbaceous species were no readily identifiable at the time of the surveys (i.e., winter months). There are also several planted trees within the grassland, presumably related to the adjacent residential developments. Trees of sycamore, coast live oak and valley oak were observed along the edge of the existing residential development.

Grasslands provide an important foraging resource for a wide variety of wildlife species. The grasses and forbs produce an abundance of seeds and attract numerous insects, providing food for granivorous and insectivorous wildlife. Sparrows, rabbits and rodents are commonly found in this habitat. Consequently, grasslands are valuable foraging sites for raptors such as hawks and owls, and other predators including coyote, fox, skunk and snakes. Aerial foraging species that occur over grasslands include bats and swallows. Common wildlife species expected to occur in this habitat are California ground squirrel *(Spermophilus beecheyi)*, Botta's pocket gopher (*Thomomys bottae*), and American robin (*Turdus migratorius*).

Special status wildlife that may inhabit the grasslands adjacent to Thompson Creek include western burrowing owl (*Athene cunicularia hypugea*).

Seasonal Wetlands

The project site supports an intermittent drainage channel that traverses through the non-native grassland south of Yerba Buena Road. During the December 2001 field visit, the channel was wet and plant species typical of seasonally wet conditions were observed. Plants of umbrella sedge (*Cyperus eragrostis*), cattail (*Typha sp.)* and rush (*Juncus sp.*) were observed growing in the drainage channel. This narrow wetland fringe may meet the criteria of wetlands as per the definition established by the U.S. Army Corps of Engineers, under the Clean Water Act. A detailed delineation of wetlands, conducted as U.S. Army Corps of Engineers criteria, would be necessary to determine the extent of jurisdictional wetlands in the project area.

Wildlife utilization of the drainage swale is expected to be similar to the surrounding grasslands during much of the year. When the channel has water (during winter months), wildlife typical of the nearby riparian woodland may utilize this area. Special status wildlife species that may occur in the drainage swale include California red-legged frog.

Freshwater Marsh

This vegetation type is the dominant plant community between Tully Road and Quimby Road, as depicted on Figure 1. The freshwater marsh inhabits the portion of Thompson Creek that has been widened for flood control purposes. The marsh vegetation is characterized by a dense growth of cattail (*Typha* sp.). There are a few scattered willow trees amid the cattails. Due to the modified condition of the channel, the side slopes are sparsely vegetated, primarily with non-native grasses and forbs. No other areas of freshwater marsh vegetation have been documented in the study area.

The presence of wetland plants such as cattails increases the wildlife value of the marsh by providing cover, breeding sites and a food base of a diversified aquatic invertebrate fauna, which forms a link in

many food webs. Common wildlife species that utilize freshwater marsh habitat on the central California coast include Pacific tree frog *(Hyla regilla)*, western toad (*Bufo boreas*), western aquatic garter snake (*Thamnophis couchii*), mallard *(Anas platyrhynchos)*, ruddy duck *(Oxyura jamaicensis)*, red-winged blackbird *(Agelaius phoeniceus)*, black phoebe *(Sayornis nigricans)*, cliff swallow *(Hirundo pyrrhonota)*, raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and several species of bats. Special status wildlife species that may utilize this freshwater marsh include California red-legged frog.

SENSITIVE BIOTIC RESOURCES

Sensitive Habitats

Sensitive habitats are defined by local, State, or Federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity.

The riparian forest along Thompson Creek is considered sensitive due to its importance to wildlife species and is recognized as such by both state resource agencies and the City of San Jose. The City of San Jose's Riparian Corridor Policy identifies minimum setbacks between development and riparian corridors. The policy recommends a minimum setback of 10 feet for multi-use trails, although trails can enter the corridor if necessary to maintain continuity. The Riparian Corridor Policy specifies a minimum setback of 100 feet for active recreation facilities (e.g., sport fields, buildings, other structures, impervious surfaces, active play areas, tot lots). If night lighting is proposed, a setback of at least 200 feet and screening in specified so that the light source is not visible from the riparian corridor (City of San Jose Riparian Policy Study, March 1999).

Ordinance Trees

Ordinance-sized trees are considered sensitive resources. The City of San Jose's Tree Removal Controls (San Jose City Code, sections 13.31.010 to 13.32.100) serve to protect all trees having a trunk measuring 56 inches or more in circumference (i.e., 18 inches in diameter) at the height of 24 inches above the natural grade of slope. A tree meeting this measurement is considered an "ordinance tree". The City's tree ordinance applies to both native and non-native species. A tree removal permit is required from the City of San Jose for removal of ordinance-sized trees. The City of San Jose requires, prior to issuance of any approval or permit for construction of any improvement of the project site, that all trees on the project site be inventories and categorized according to size, species and location.

For the Thompson Creek Trail project area, ordinance-sized trees occur within the project area, however a specific tree survey has not been conducted at this feasibility stage.

Heritage Trees

Any tree found by the City Council to have special significance can be designated as a heritage tree, regardless of tree species or size. City-designated heritage trees are considered sensitive resources. It is unlawful to vandalize, mutilate, remove or destroy heritage trees. There are no City-designated heritage trees in the project study area, as per the City's heritage tree list (City of San Jose, 2001).

Special Status Plant Species

Plant species of concern include those listed by either the Federal or State resource agencies as well as those identified as rare by CNPS (CNDDB, 2001). Based on a search of the CNPS and CNDDB inventories, potential species in the project area are listed on Table 1. Based on the visual observations of the habitats in the project site, the potential for most plant species of concern is considered low. This evaluation is based on the lack of suitable habitat for sensitive plant species (e.g., serpentine grassland, coastal prairie, chaparral, and vernal pools). No special status plant species were observed on the project area during the December 2001 and January 2002 reconnaissance surveys, however these surveys was conducted during the non-blooming season for most plant species. The grassland north of Yerba Buena Road may provide suitable habitat for two special status species: Contra Costa goldfields *(Lasthenia conjugens)* and Showy Indian clover *(Trifolium amoenum)*, as depicted on Table 1. Focused surveys, conducted during the blooming season of these two species, within this grassland area would be necessary to ascertain presence or absence of such species

Special Status Wildlife Species

Special status wildlife species include those listed by either the Federal or State resource agencies as well as those identified as State species of special concern. In addition, all raptor nests are protected by Fish and Game Code, and all nesting migratory birds are protected by the Federal Migratory Bird Act. Special status wildlife species were evaluated for their potential presence in the project area, and those expected to occur are described below.

Several special status wildlife species occur in the general vicinity of this project, but are considered unlikely to occur along the Thompson Creek corridor. California tiger salamander (*Ambystoma californiense*) are unlikely to occur because adjacent uplands which this species needs for summer habitat are largely developed and because the creek lacks ponded areas which this species needs for breeding. Foothill yellow-legged frog (*Rana boylii*) is presumed to be extinct in this portion of the Santa Clara valley (Harvey and Assoc. 1999). Least Bell's vireo (*Viero bellii pusillus*) and willow flycatcher (*Empidonax traillii*) are both thought to be extirpated as breeding species in the Santa Clara valley.

Steelhead is a State Species of Special Concern and Federally listed as threatened (South-Central California Coast Evolutionary Significant Unit). Steelhead are anadromous fish that migrate from the ocean up freshwater creeks and rivers to spawn. The young steelhead typically remain in the freshwater for two years before migrating to the ocean or bay. They typically spend 2-3 years in marine waters before returning to their natal stream to spawn (National Marine Fisheries Service 1997). Steelhead often spawn more than once before they die, and spawning usually occurs between December and June. Eggs are laid in gravels of streams, and take 1.5 to 4 months to hatch. The hatchlings are called alevins and remain in the gravels until their yolk sac is absorbed, at which time they emerge from the gravels as "fry" and begin actively feeding. After 1-4 years, the steelhead migrate to the ocean as "smolts."

Steelhead may occur in Thompson Creek, if there are no barriers to its movement upstream from Coyote Creek.

Table 1. List of Special Status Plant Species with Potential to Occur near the Thompson Creek Trail

Species	Status	Habitat	Potential or Known Occurrence on Site/Vicinity
Most-beautiful jewelflower (*Streptanthus albidus* ssp. *peramoenus)*	CNPS: List 1B State: None Federal: SSC	Rocky outcrops in serpentine derived substrates	Not observed on site and unlikely due to lack of serpentine substrate; known from Hayes Valley, southwest of San Martin
Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus)*	CNPS: List 1B State: None Federal: E	Rocky outcrops in serpentine derived substrates	Not observed on site and unlikely due to lack of serpentine substrate; known from Llagas Ave., 1.5 miles east of Oak Glen Ave.
Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta)*	CNPS: List 1B State: T Federal: E	Root parasite; found within serpentine grasslands	Not observed on site and unlikely due to lack of serpentine substrate; known from lands east of Anderson Reservoir at Metcalf Canyon.
Coyote ceanothus (*Ceanothus ferrisae)*	CNPS: List 1B State: None Federal: E	Serpentine chaparral and Diablan sage scrub	Not observed on site and unlikely due to lack of serpentine substrate; known from Kirby Canyon Landfill and adjacent areas.
Santa Clara Valley dudleya (*Dudleya setchellii)*	CNPS: List 1B State: None Federal: E	Rocky outcrops in serpentine derived substrates	Not observed on site and unlikely due to lack of serpentine substrate; known from Hayes Valley, Kirby Canyon Landfill and lands east of Anderson Reservoir.
Sharsmith's onion (*Allium sharsmithae)*	CNPS: List 1B State: None Federal: None	Serpentine woodland and grassland	Not observed on site and unlikely due to lack of serpentine substrate; known from greater Mt. Hamilton Range.
Big-scale balsamroot (*Balsamorhiza macrolepis macrolepis)*	CNPS: List 1B State: None Federal: None	Serpentine woodland and grassland	Not observed on site and unlikely due to lack of serpentine substrate; known from Coyote Lake Dam area and greater Mt. Hamilton Range.
Mt. Hamilton harebell (*Campanula sharsmithae)*	CNPS: List 1B State: None Federal: None	Serpentine woodland and grassland	Not observed on site and unlikely due to lack of serpentine substrate; known from greater Mt. Hamilton Range.
South Bay clarkia (*Clarkia concinna ssp. automixa)*	CNPS: List 1B State: None Federal: None	Woodlands	Not observed on site and unlikely due to lack of suitable woodland habitat; known from greater Mt. Hamilton Range.
Mt. Hamilton coreopsis (*Coreopsis hamiltonii)*	CNPS: List 1B State: None Federal: None	Woodland	Not observed on site and unlikely due to lack of suitable woodland habitat; known from greater Mt. Hamilton Range.
Hospital Canyon larkspur (*Delphinium californicum ssp. interius)*	CNPS: List 1B State: None Federal: None	Woodland	Not observed on site and unlikely due to lack of suitable woodland habitat; known from greater Mt. Hamilton Range.
Talus fritillary (*Fritillaria falcata)*	CNPS: List 1B State: None	Serpentine woodland and grassland	Not observed on site and unlikely due to lack of serpentine substrate; known from Coyote Lake area and greater Mt. Hamilton Range

Species	Status	Habitat	Potential or Known Occurrence on Site/Vicinity
	Federal: None	grassland	Lake area and greater Mt. Hamilton Range.
Contra Costa goldfields *(Lasthenia conjugens)*	CNPS: List 1B State: None Federal: None	Valley and foothill grassland and vernal pools	Not observed on site, yet potential exists in moist grassland areas upstream of Yerba Buena Road.
Smooth lessingia *(Lessingia micradenia var. glabrata)*	CNPS: List 1B State: None Federal: None	Serpentine chaparral and rock outcrops	Not observed on site and unlikely due to lack of serpentine substrate; known from Mt. Hamilton Range.
Mt. Diablo phacelia *(Phacelia phaceliodes)*	CNPS: List 1B State: None Federal: None	Serpentine chaparral and rock outcrops	Not observed on site and unlikely due to lack of serpentine substrate; known from Mt. Hamilton Range.
Serpentine linanthus *(Linanthus ambiguus)*	CNPS: List 4 State: None Federal: None	Serpentine grassland	Not observed on site and unlikely due to lack of serpentine substrate; known from Mt. Hamilton Range.
San Francisco wallflower *(Erysimum franciscanum)*	CNPS: List 4 State: None Federal: None	Serpentine grassland	Not observed on site and unlikely due to lack of serpentine substrate; known from Mt. Hamilton Range.
San Joaquin spearscale *(Atriplex joaquiniana)*	CNPS: List 1B State: None Federal: None	Scrub and grasslands	Not observed on site and unlikely due to lack of suitable habitat.
Loma Prieta hoita *(Hoita stobilina)*	CNPS: List 1B State: None Federal: None	Serpentine chaparral	Not observed on site and unlikely due to lack of serpentine substrate; known from Mt. Hamilton Range.
Showy Indian clover *(Trifolium amoenum)*	CNPS: List 1B State: None Federal: E	Scrub and grassland	Not observed on site yet potential exists in grassland areas upstream of Yerba Buena Road.

CNPS Status:

List 1B: These plants (predominately endemic) are rare through their range and are currently vulnerable or have a high potential for vulnerability due to limited or threatened habitat, few individuals per population, or a limited number of populations. List 1B plants meet the definitions of Section 1901, Chapter 10 of the CDFG Code.
List 3: This is a review list of plants that lack sufficient data to assign them to another list.
List 4: List 4 is a watch list of plants with limited distribution in the state that has low vulnerability and threat at this time. These plants are uncommon, often significant locally, and should be monitored.
Federal and State Status:
T: Designated as a threatened species by the federal government or the California Fish and Game Commission
E: Designated as an endangered species by the federal government or the California Fish and Game Commission
SSC: Species of Special Concern

The California red-legged frog is a State Species of Special Concern and Federally listed as threatened. This species is found in quiet pools along streams, in marshes, and ponds. Red-legged frogs are closely tied to aquatic environments and favor intermittent streams, including some areas with water at least 2.5 ft. deep, a largely intact emergent or shoreline vegetation, and a lack of introduced bullfrogs and non-native fishes. This species' breeding season spans January to April (Stebbins 1985). Females deposit large egg masses on submerged vegetation at or near the surface. Embryonic stages require a salinity of $\leq$4.5 parts per thousand (Jennings and Hayes 1994). They are generally found on streams having a small drainage area and low gradient (Hayes and Jennings 1988). Recent studies have shown that although only a small percentage of red-legged frogs from a pond population disperse, they are capable of moving distances of up to 2 miles (Bulger 1999). The red-legged frog occurs west of the Sierra Nevada-Cascade crest and in the Coast Ranges along the entire length of the state. Much of its habitat has undergone significant alterations in recent years, leading to extirpation of many populations. Other factors contributing to its decline include its former exploitation as food, water pollution, and predation and competition by the introduced bullfrog and green sunfish (Moyle 1973, Hayes and Jennings 1988).

There are records of California red-legged frogs from ponds and wetlands less than 2 miles from Thompson Creek (Harvey and Assoc. 1997), and they may occur along the riparian and freshwater marsh habitats within the project area.

The southwestern pond turtle is a Federal and State Species of Special Concern. This aquatic turtle inhabits ponds, lakes, streams, marshes, and other permanent waters located in woodland, grassland, and open forests below 6,000 ft (Stebbins 1985). Pond turtles can often be seen basking in the sun on partially submerged logs, rocks, mats of floating vegetation or mud banks. During cold weather, they hibernate in bottom mud. The diet of these turtles consists of aquatic vegetation, insects, fish, worms, and carrion. Females dig soil nests in or near stream banks (Nussbaum et *al.* 1983). Eggs are deposited between April and August. One factor in the decline of this species is the introduction of non-native fish that prey on hatchlings and juveniles.

A pond turtle was observed during the 1998-99 surveys (Sokale 1999), and they are expected to utilize portions of the Thompson Creek corridor.

The Cooper's hawk is a State species of special concern. Like the sharp-shinned hawk, this species is a rare breeder in the Santa Cruz Mountains, though somewhat more numerous than the former. Cooper's hawks prefer forested habitats in mountainous regions, but also use riparian woodlands. Cooper's hawks feed primarily on small birds, but also take small mammals, reptiles, and amphibians. Foraging occurs in both dense cover and open habitats. Nests are constructed in a variety of trees, but stands of live oaks may be preferred. Cooper's hawks build stick nests in similar situations as the sharp-shinned hawk and the nest site is vigorously defended by the adults. The local breeding season probably spans March/April through July (Suddjian 1990). Cooper's hawks are uncommon migrants and winter visitors. Migrant and wintering individuals occur in a variety of habitats, including oak woodland, conifer and mixed broadleaf forests, grasslands, residential areas and riparian woodland. Habitat destruction and falconry practices have been attributed to this species' decline in California (Remsen 1978).

Cooper's hawk may nest in the denser oak/sycamore riparian habitats along Thompson Creek, and are probably winter residents.

Burrowing owls are a California species of special concern and are protected under the Migratory Bird Treaty Act. They inhabit annual or perennial grasslands or areas with less than 30 percent canopy coverage as a resting site during migration, as feeding habitat, and as a breeding ground. The nesting season for burrowing owls occurs between February 1 and August 31 and peaks around April 15-July 15 (California Burrowing Owl Consortium 1993). Burrowing owls nest in single pairs, or more often, in small colonies and make their nests in burrows created by fossorial mammals, artificial burrows (i.e. pipes), or crevices in piles of rubble (CDFG 1995). They forage nocturnally and crepuscularly for insects and small rodents. During the daylight hours burrowing owls may perch conspicuously either at the entrance to their burrow or on a nearby post or shrub (Zeiner et al. 1990). Burrowing owls have declined in recent decades throughout California. The primary cause of decline is attributed to habitat loss due to development (CDFG 1995).

Burrowing owls are known to occur at Cunningham Park at the north end of the project area, and at Evergreen College near Yerba Buena and San Felipe Roads (CDFG 2001). There is a portion of the pathway that is proposed to traverse a grassland just south of Yerba Buena Road (west of Evergreen College) where suitable burrows for this owl were observed.

The loggerhead shrike is a Federal and State species of special concern. Common residents of lowlands and foothills, this species prefers open habitats with scattered shrubs, trees, fences, or other lookout posts. Loggerhead shrikes occur only rarely in heavily urbanized areas. They hunt insects, snakes, small birds, and rodents that they often impale on thorns or barbed wire to hold it while they eat. Eggs are laid from March to May, with a clutch size of 4-7 eggs, in shrubs and trees with dense vegetation for concealment. The breeding season spans April to late July.

Suitable breeding habitat for the loggerhead shrike exists in the dense shrubs of the sage habitat adjacent to upper portions of Thompson Creek.

Yellow warblers are a California Species of Special Concern. They are common during spring and fall migration in central California, and uncommon to locally fairly common during the breeding season (Suddjian 1990, Roberson and Tenney 1993). Yellow warblers are obligate riparian breeding birds; they are most numerous where substantial areas of riparian habitat remain along major creeks and rivers. A variety of riparian trees are used during foraging, but habitats with willows and cottonwoods or willows and sycamores, with dense undergrowth, seem to be favored (Robison and Tenney 1993). Outside the breeding season, this species may occur in a variety of habitats, but is still most numerous in riparian habitats. The yellow warbler's diet consists of spiders and insects, which it gleans from understory vegetation and the canopies of deciduous trees. Nests are constructed low in trees, typically from 2-12 feet above the ground (Harrison 1978). Numbers of yellow warblers are greatly reduced over much of their California breeding range, largely due to loss of riparian habitat and nest parasitism by the brown-headed cowbird (Remsen 1978).

Yellow warblers may nest in the denser willow riparian areas along Thompson Creek.

The yellow-breasted chat is a state Species of Special Concern. It was once a fairly common summer resident in riparian woodland throughout California. In central California, yellow-breasted chats appear to prefer dense riparian habitats dominated by willows, sycamores, and cottonwoods, with a well-developed

understory, and are considered a riparian obligate species (Roberson and Tenney 1993). They inhabit the area from April to early August (Roberson and Tenney 1993). Yellow-breasted chats forage at various heights in dense riparian foliage, gleaning insects from leaves and bark, and feeding on small fruits. They build their nest in dense vegetation, typically from 1-8 feet above the ground (Harrison 1978, Ehrlich *et al.* 1988). This species' numbers have declined dramatically in many parts of California, primarily due to loss and alteration of riparian habitat and possibly due to nest parasitism by brown-headed cowbirds (Remsen 1978).

Yellow-breasted chat may nest in the denser riparian areas along Thompson Creek.

The Townsend's western big-eared bat is a state and federal species of special concern. Big-eared bats occur in a variety of plant communities throughout California, including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands and high elevation forests (Williams 1986). In coastal California, the big-eared bat is primarily associated with riparian forests, where it gleans insects from leaf surfaces. Roosting sites for Townsend's big-eared bat include limestone caves, lava tubes, mine tunnels, buildings, bridges, and other human-made structures within 100m of riparian habitat (Williams 1986, Pierson 1988). Townsend's big-eared bats are extremely sensitive to human disturbances at roost sites.

Townsend's big-eared bats may roost under bridges within the Thompson Creek corridor.

The pallid bat is a state species of special concern. Pallid bats are found in a variety of habitats. This species moves about locally on a seasonal basis, but is not considered to be migratory (Jameson and Peeters 1988). During the day pallid bats roost in buildings, crevices, caves, mines, and hollow trees (CDFG 1986). Maternity roosts are colonial, while males and feeding bats roost singly. This species is very sensitive to disturbances at roost sites (E. Pierson, pers. comm.). During the night, pallid bats glean moths from leaves and forage on the ground for invertebrates, especially Jerusalem crickets.

The pallid bat may roost in tree crevices or under bridges along the Thompson Creek corridor.

San Francisco dusky-footed woodrat is a State species of special concern. These small mammals build large stick nests at the bases of trees and shrubs. They prefer forested habitat with a moderate canopy and brushy understory, and are often found on the upper banks of riparian forests. This woodrat feeds on a variety of woody plants, fungi, flowers and seeds (Jameson and Peeters 1988).

Dusky-footed woodrat nests may occur in the denser oak/sycamore riparian portions of the Thompson Creek corridor.

IMPACT AND MITIGATION DISCUSSION

IMPACT CRITERIA

The thresholds of significance presented the California Environmental Quality Act (CEQA) Guidelines were used to evaluate project impacts and to determine if the proposed development of a park poses significant impacts to biological resources. In addition to these criteria, removal of ordinance-sized trees was deemed a significant impact, in accordance to the City of San Jose's tree ordinance.

For this analysis, significant impacts are those that substantially affect either:

- A species (or its habitat) listed or proposed for listing by State or Federal governments as rare or endangered (i.e., California red-legged frog, steelhead);
- Breeding/nesting habitat for a State species of special concern (i.e., burrowing owl);
- A plant considered rare (i.e., List 1B) by CNPS (i.e., Contra Costa goldfields *(Lasthenia conjugens)* and Showy Indian clover *(Trifolium amoenum)*;
- A habitat regulated by State or Federal law (i.e., riparian forest, wetlands),
- Nesting birds regulated under the Federal Migratory Bird Treaty Act (i.e., nesting raptors), or
- A habitat or resource recognized as sensitive by the City of San Jose (i.e., riparian habitat and ordinance-size trees).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Impacts to the Riparian Woodland

Within the Thompson Creek Trail project area, the Trail Plan specifies the construction of a multi-use trail along the west side of the creek between Tully Road and Aborn Road. Upstream of Aborn Road, the trail will follow City streets (Aborn Road and San Felipe Road) to Yerba Buena Avenue. At Yerba Buena Ave, the trail will cross back to west bank and traverse grassland. The trail will continue through the grassland until the junction with San Felipe Road. Upstream of this point the trail will utilize the existing trail that parallels San Felipe Road. One new bridge is proposed over the creek in the Keaton Loop area.

In most instances, the trail will be placed within the 100-foot riparian setback area; however, based on a review of the preliminary design, minimal amounts of riparian woodland will be directly affected, as the majority of trail work will occur outside the dripline of the existing riparian woodland or along existing District maintenance roads. More detailed design plans will need to be reviewed to more accurately quantify the amount of riparian woodland potentially affected by the trail project.

The preliminary trail plan specifies the construction of one new bridges over Thompson Creek. Construction of these bridges may result in the removal of riparian habitat, depending upon the exact location and bridge design. Direct impacts to the riparian corridor may occur by the removal riparian

vegetation, including possible ordinance-sized trees. Construction activities relating to trail and bridge construction may also result in temporary impacts to area wildlife from construction noise. This impact is significant during the breeding season, particularly in areas adjacent to known or potential raptor nest sites (potential raptor nest sites are depicted on Figures 1 and 2). No security lighting is proposed along the trail.

Impacts to Non-Native Grassland

Implementation of the Thompson Creek Trail Plan and construction of the trail upstream of Yerba Buena Road will require removal of non-native grassland. The removal of the non-native grassland is not considered significant impact to botanical resources. This is due to the disturbed nature of the communities and the prevalence of non-native plant species. However, the grassland may provide suitable habitat for two special status plant species: Contra Costa goldfields *(Lasthenia conjugens)* and Showy Indian clover *(Trifolium amoenum)*. Impacts to these species would be a significant.

The removal of the open grassland is also considered significant from a wildlife perspective, due to the potential use of the grassland by burrowing owl (a State Species of Concern). Although the burrowing owl has not been recorded from the project area, protocol-level surveys have not been conducted to ascertain presence or absence of the species (breeding and/or foraging habitat). If active burrowing owl nests occur in the project area, any construction activities adjacent to the nest sites could result in the direct loss of nests, including eggs and young, or the abandonment of an active nest by the adults. The loss of active burrowing owl nests would adversely affect this species. Areas deemed potential burrowing owl habitat are depicted on Figures 1 and 2.

Impacts to Potential Wetlands

The trail construction is not expected to alter the existing intermittent drainage channel that traverses the grassland upstream of Yerba Buena Road. The trail is proposed to be constructed above this drainage; therefore, no fill or other construction activity will occur such that no consultation or permitting under the federal Clean Water Act is expected.

Recommendations to Avoid and/or Minimize Impacts to Biological Resources

The actions described above may result in significant impacts to the biotic resources within the project area. Successful implementation of Mitigation Measures 1 through 8, below, will reduce these impacts to a less-than-significant level.

Mitigation Measure 1: Consistent with the City of San Jose's Riparian Corridor Policy, the trails along the riparian corridor shall be set back from the existing riparian dripline by a minimum of 10 feet (except for the existing bridges and the one new bridge crossings), or where the trail follows existing District maintenance roads.

Although the location of the multi-use trails are consistent with the City's Riparian Corridor Policy, indirect impacts to the woodland habitat may occur by off-trail use by bicycles and humans. To minimize off-trail uses within the riparian woodland, the City shall install a low split-rail type fence between the riparian

woodland and the trails where the trail is located adjacent to the riparian woodland. The fence would minimize off-trail bicycle use and protect the riparian area from indirect impacts from park users (i.e., trampling, deposition of debris, etc.). Following trail construction activities, the City shall revegetate disturbed areas with native trees, shrubs or groundcovers that are compatible with the adjacent riparian woodland (i.e., utilize native species as specified in the Riparian Corridor Policy Study).

Upon development of a more detailed trail plan, the City shall conduct a tree survey within all areas where vegetation will be removed, trees are to be limbed or heavy construction may occur within the dripline of trees. The survey shall document the species and diameter of each tree. The project shall incorporate tree protection measures to avoid adverse impacts to trees that are to be retained during all stages of site construction work. Measures to avoid impacts to trees that are to be retained shall be depicted onto the project plans, including temporary protective fencing during construction, hand-cutting of tree roots and methods for limbing native riparian trees. Fencing shall be erected along the dripline of the trees adjacent to construction work. All construction activities, including storage of construction materials, parking of vehicles and deposition of trash, should be prohibited from the fenced areas. The integrity of the fencing should be checked periodically and repaired if damage is noted. The condition of the fencing should be documented at periodic intervals during the construction process. If damage to the trees occurs, a remediation program should be developed by a certified arborist and implemented; the measures shall be inspected by the City and a certified arborist.

Mitigation Measure 2: Based on the preliminary trail design, construction of the one new bridge in the Keaton Loop area will result in the removal of approximately 600 square feet of riparian woodland, including possible ordinance-sized trees. As compensation for these impacts, the City shall implement a riparian revegetation plan that specifies a 3:1 riparian replacement ratio. Based on the preliminary trail plan design, approximately 12,000 square feet (0.28 acre) of riparian revegetation shall be installed within the project site. If the impact area is reduced during the final design phase of the project, a smaller revegetation area would be acceptable, so long as a 3:1 acreage replacement ratio is implemented. Suitable revegetation areas occur adjacent to the existing riparian woodland; the exact location of the riparian revegetation shall be specified on the construction plan. Pursuant to guidelines established in the City's Riparian Corridor Policy Study and requirements of CDFG, the City shall obtain a 1601 Streambed Alteration Agreement (SAA) with CDFG. As part of the City's application of the SAA, the City shall submit a riparian revegetation plan to CDFG. The plan shall specify the location of all plantings, the use of locally native riparian plant species and specify a 5-year maintenance and monitoring program. The plan shall specify success criteria and remedial measures should the success criteria not be achieved.

Mitigation Measure 3: The City shall consult with the U.S. Fish and Wildlife Service regarding the need for preconstruction surveys for California red-legged frog in areas where the new bridge is proposed. If red-legged frogs are found in the work area, work shall be postponed until the frog leaves the area of its own accord.

Mitigation Measure 4: The project shall incorporate erosion control measures to preclude erosion or sediments from entering the riparian corridor during and after construction. Specific measures shall be identified in the project plans and specifications and should include the following features: measures for dust control, erosion control seeding following construction, use of straw bales to prevent sediments from entering the creek, and other measures as appropriate. Following construction, the effectiveness of the

erosion control measures shall be monitored during the first year's rainy season and remedial measures implemented if erosion is noted.

Mitigation Measure 5: The City shall hire a qualified biologist to determine if bats are roosting in the trees that will be removed. If bats are roosting in these trees, the qualified biologist shall prepare a plan and consult with CDFG regarding use of exclusionary devices to allow bats to exit the tree cavities, but not return.

Mitigation Measure 6: Site grading and other heavy equipment work within the 100-foot riparian setback area shall occur outside the breeding period of riparian bird species (e.g., construction shall occur after August 1 and before March 15th). If this is not feasible, the City shall hire a qualified biologist to survey those areas to determine if any sensitive species of nesting birds occur, and if the construction would impact nesting success. If sensitive nesting bird species are found, the biologist shall suggest a suitable buffer area around the nest site to avoid impacts from construction noise and dust, until the young have fledged.

Mitigation Measure 7. A qualified wildlife biologist, under contract to the City, shall conduct pre-construction surveys for nesting raptors to determine if they occur within the project corridor. The surveys shall be conducted by a qualified biologist no earlier than 30 days prior to commencement of grading or construction. If raptors are nesting on the site, the wildlife biologist shall recommend a suitable buffer area between the nest site and construction activity (e.g., 300 feet) and the City shall postpone construction within buffer area until all young have fledged. The wildlife biologist shall document that the young have fledged prior to construction work.

Mitigation Measure 8: In order to determine whether or not burrowing owls breed on or near the project area, a qualified biologist, under contract to the City, shall conduct a protocol-level burrowing owl survey. The survey shall be conducted according to the survey guidelines described in the Burrowing Owl Survey Protocol and Mitigation Guidelines (Burrowing Owl Consortium, 1993). These surveys are required to be conducted between April 15 and July 15.

> **Mitigation Measure 8a.** If burrowing owls are found on the project site, the project shall be reconfigured to avoid impacting the species. This shall be accomplished by establishing a buffer area around the occupied habitat. The buffer areas shall be established by a qualified biologist in consultation with CDFG. If impacts cannot be avoided, the City shall establish and preserve a minimum of 6.5 acres of off-site habitat for each pair of owls or each unpaired owl impacted by the project. At least two enhanced or artificial burrows shall be provided for each burrow impacted. The land identified to offset impacts to burrowing owls shall be protected in perpetuity by either a conservation easement or fee title acquisition. The burrowing owl habitat mitigation land shall be adjacent to occupied burrowing owl foraging habitat in the San Jose area. The final mitigation requirements will depend upon the number of pairs of birds or single birds that are found in the surveys and the City's consultation with CDFG. Site construction in occupied burrowing owls habitats shall not occur until this habitat mitigation plan and mitigation agreement is finalized between the City and CDFG.
>
> **Mitigation Measure 8b.** As it is unlawful to take, possess or destroy burrowing owls, their nests or their eggs, any impacts to the species during the breeding season (February 1-August 31) shall

be avoided. Additionally, impacts to the species during the winter residency period (December 1- through January 31) shall be avoided. To avoid impacts to the species, pre-construction surveys shall be conducted to avoid impacting individual owls and/or their nest sites. No earlier than 30 days prior to commencement of grading or construction on or adjacent to the grassland, a qualified wildlife biologist, under contract to the City, shall conduct protocol-level pre-construction surveys for burrowing owls. The surveys shall be conducted by a qualified biologist according to current CDFG survey protocol. The results of the pre-construction surveys shall be submitted to the California Department of Fish and Game for review and approval prior to site construction.

Mitigation Measure 8c: If active nests are found within the project area, the City shall postpone all construction within 250 feet of occupied burrows. Under the direction of a qualified wildlife biologist (under contract to the City), the outside edge of the 250 –foot wide protective buffer shall be demarcated by the placement of plastic construction fencing. Prior to commencement of construction activities, the City shall arrange for a qualified wildlife biologist to inform workers of the presence of burrowing owls, their protected status, work boundaries and measures to be implemented to avoid loss of these species during construction activities. Construction workers shall be informed that no construction activities are to occur within the buffer area until owls depart from the site and as directed by the consulting wildlife biologist.

Mitigation Measures 8d. If pre-construction surveys are conducted during the non-breeding season and owls are observed on the site, the City shall consult with CDFG on owl eviction only after the habitat mitigation plan and mitigation agreement, addressed in Mitigation Measure 8a, above, have been finalized.

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Report Prepared by:

Kathleen Lyons, M.A.
Plant Ecologist

With

Dana Bland, M.S.
Wildlife Biologist

Appendix B

February 5, 2002
E3297A

TO: Chris Kook
CATALYTST
577 Second Street, Suite 203
San Francisco, California 94107

SUBJECT: Summary Report of Geotechnical Findings
RE: Thompson Creek Trail Feasibility Study
San Jose, California

We have completed our geotechnical feasibility evaluation of constructing a pedestrian/bicycle trail adjacent to Thompson Creek in south San Jose. Our scope of work has included:

- Geotechnical inspection of possible trail alignments;
- Evaluation of geotechnical constraints along the trail alignments;
- Previous measurement (12/98) of existing bridge dimensions where trail underpasses have been considered;
- Preparation of construction cost estimates for selected, engineered improvements along trail alignments;
- Participation in project planning and field inspection meetings; and
- The preparation of this letter report.

REGIONAL GEOLOGY AND STREAM MORPHOLOGY

The Thompson Creek Trail is proposed as a pedestrian/bicycle trail that will follow portions of the course of Thompson Creek (TC) for approximately 7.5 miles from Lake Cunningham, south to Heartland Way in south San Jose, California. In general, TC flows north-northwest through the foothills that form the eastern boundary of the Santa Clara Valley. More specifically, from Heartland Way to the confluence with Yerba Buena Creek, TC flows through hillside terrain underlain by the unconsolidated and generally weak claystones, siltstones,

sandstones, and conglomerates of the Santa Clara Formation. From the YBC confluence to Lake Cunningham, TC flows through relatively flat valley bottom terrain underlain by alluvial fan deposits composed of clay, silt, sand, and gravel. Along the proposed alignment, TC is approximately 2 miles west of the Hayward fault, 4000 feet west of the Evergreen fault, and 4000 feet east of the Silver Creek fault (Dibblee, 1972; and Helley and Wesling, 1990). Both the Hayward and Evergreen faults are considered active by the California Division of Mines and Geology (Davis, 1982).

From Heartland Way to Yerba Buena Creek, TC generally flows straight through a ravine incised within the Santa Clara bedrock. At a few locations however, TC does meander through short stretches that are much wider. Ravine width is typically between 20 to 80 feet and the depth ranges from 6 to 50 feet. The ravine walls are very steep to vertical and sparsely vegetated. The ravine walls show abundant evidence of erosion related to stream scour and slope failures due to gravity. Typical ravine wall failures are shallow rotational slumps (up to 10' deep) and shallow slab failures that are typically 2 to 3 feet deep. At the bottom of the ravine is the active stream channel that is from 10 to 20 feet wide and a discontinuous narrow floodplain that is typically about 3 to 4 feet above the channel bottom. Vegetation on the floodplain is dense, and large trees and brush within the ravine effectively canopy 80 to 90 percent of the ravine bottom.

From Yerba Buena Creek to a point about 800 feet downstream of the Everdale footbridge, TC flows through a ravine incised within alluvial fan materials (primarily silt). Ravine width is typically between 40 and 100 feet wide and depth ranges from 6 to 20 feet. The ravine walls are very steep to vertical and unvegetated. The ravine walls show abundant evidence of erosion related to stream scour and slope failures due to gravity. Typical ravine wall failures are shallow rotational slumps (up to 5 feet deep) and shallow slab failures that are typically 2 to 3 feet wide. At the bottom of the ravine is the active stream channel that is from 10 to 20 feet wide and a discontinuous narrow floodplain that is typically about 3 to 4 feet above the channel bottom. Vegetation on the floodplain is dense, and large trees and brush within the ravine effectively canopy 80 to 90 percent of the ravine bottom.

From the point roughly 800 feet downstream of the Everdale foot bridge to Tully Road, TC has been channelized. Consequently, the stream flows in both braided and meandering

patterns along the center of a 200- to 300-foot wide floodway bounded by levees that are 5 to 10 feet above the channel bottom. The levees and floodway are sparsely vegetated with grass and low shrubs; there is no stream canopy.

EVALUATIONS OF GEOTECHNICAL FEASIBILITY

Tully Road to Quimby Road

Construction of the proposed trail along this segment is feasible along the western levee. We understand that a supplemental alignment along the eastern levee is also being considered with the only reported constraints to be areas of isolated erosional damage. This section includes bridges at Tully and Quimby roads. These bridges are too small for the construction of trail undercrossings. Consequently, trail crossings over Tully and Quimby will have to be accomplished at road grade. Currently, the existing levee roadway dips down at the downstream side of the Quimby Road bridge. There was much evidence that winter streamflow inundates this portion of the road. Consequently, in order to prevent the proposed trail from being inundated during high flows, and to also provide a more gentle ramp up to Quimby Road, placement of engineered fill will be required along the levee for approximately 1,000 feet.

Quimby Road to Aborn Road

Construction of the proposed trail along this section is feasible along the existing levee from Quimby Road until it intersects with Pettigrew Drive. From that point to the Everdale pedestrian bridge (approximately 600 feet), the levee may have to be doubled in width. This widening would be necessary to achieve a standard Class 1 Trail (12-foot wide paved trail with two, 2-foot wide soft shoulders). If strict adherence to Class 1 Trail Standards is not necessary, then the levee would not need to be increased in width. Construction of the proposed trail along the levee adjacent to Scotsdale is considered feasible as is the section along Aborn Court up to the Aborn Road Bridge. Both of the pedestrian bridges at Everdale and Scotsdale may need to be widened, the footings replaced, and erosion control measures implemented. Again, the existing bridges could likely be repaired to address erosion and not be fully replaced if a reduced trail width is acceptable. The Aborn Road Bridge is too small for the construction of a trail undercrossing. Thus, the proposed trail will have to cross Aborn Road at streetlights.

Aborn Road to Heartland Way

From Aborn Road south to Heartland Way, TC flows within the narrow steep-sided ravine described above and meanders tightly throughout this section. This tortuous ravine is too small to accommodate the proposed trail. Consequently, the proposed trail must be constructed outside of the ravine. Because of the geologic evidence that indicates active channel scour, erosional gullying, and slope failures along the TC ravine, the trail must be set back from the edge of the ravine. The setback distance should be site-specific, and be at least equal to the depth of the ravine (top of ravine to bottom of active channel). On average, the minimum setback distance would be between 15 and 20 feet.

For 1550 feet between Aborn Road and Keaton Loop, businesses and residential development crowd the top of the ravine. Several existing structures are located within an average of approximately 10 feet from the edge. Through this tightly meandering section are dramatic examples of channel scour and slope failure. A potential trail alignment through this section is highly constrained by adverse geotechnical factors. We understand that the consensus of project consultants is that a top of creek bank alignment in this area is too highly constrained to warrant further investigation.

Complicating the feasibility of a trail along this section is the cultural development in the valley. Commonly, this development extends right up to the edge of the TC ravine. At many locations, roadways and fences have been constructed right along the edge of the ravine, and some buildings are less than 20 feet from the ravine edge. In particular, San Felipe Road is a 4-lane thoroughfare that in many places lies immediately adjacent to the TC ravine.

Bridges Between Aborn Road and Heartland Way

From Aborn Road to Yerba Buena Road there are a number of bridges. Major bridges are located at Cadwallader Avenue, Yerba Buena Avenue, Thompson Creek Court, and Yerba Buena Road. In between these major bridges are a number of small old bridges that provide access to private properties. Of the major bridges, only the bridge at Yerba Buena Road is large enough to accommodate a trail undercrossing. The construction cost of this undercrossing is estimated to be $375,000. We understand that this undercrossing is not a recommended trail improvement at this

time. From Yerba Buena Road to Heartland Way there are also a number of small bridges. Most of the bridges are box culverts that allow San Felipe Road to cross over TC. Immediately adjacent to these box culverts are 6-foot wide steel pedestrian bridges that link an existing bicycle path adjacent to San Felipe Road. Additionally, there are a number of small old bridges that provide access to private properties. Furthermore, there are newer bridges at Scenic Meadow and Meadowlands Lane that provide access to new subdivisions. All of the bridges between Yerba Buena Road and Heartland Way are too small to accommodate a trail undercrossing.

Wynfair Ridge Way to Larkspur Canyon Drive

An alternative trail alignment located west of TC between Yerba Buena Road and Larkspur Canyon Drive has been evaluated in a preliminary manner. The trail alignment along this segment would initiate from the southern terminus of Wynfair Ridge Way and extend across an open grassland area of rolling hillside topography. Apparently the land along this potential trail segment is owned largely (if not fully) by the City of San Jose. Land ownership issues, including the potential of accessing this trail segment from Wynfair Ridge Way, will need to be confirmed.

If land ownership along this trail segment is favorable, then completed preliminary field reconnaissance suggests that a viable alignment (in terms of meeting maximum trail gradients) could be obtained through this foothill area. The alignment would be located well west of the TC channel in order to avoid erosional instability issues. This trail alignment would not, however, be able to avoid crossing several small and large landslides of various ages. Because establishment of this trail segment would require some degree of hillside grading, with the potential to have adverse stability impacts on the underlying landslides, a more detailed scope of geotechnical investigation would be required to conclusively determine trail feasibility.

The scope of necessary geotechnical investigation to determine trail segment feasibility would include detailed landslide mapping followed by a program of subsurface investigation (exploratory drilling) addressing portions of the trail alignment with moderate to high levels of risk for slope instability. A detailed topographic map of this hillside area would be required prior to initiation of geotechnical investigation. If it could be confirmed that trail construction would not have adverse impacts to slope stability, then potential liability issues associated with trail

construction (primarily to upslope private property) would be satisfactorily addressed. However, it is likely that even a very detailed scope of geotechnical investigation could result in a determination that the trail alignment will not be entirely safe from slope instability. Consequently, even after a detailed alignment investigation, the City would likely need to accept the need for trail maintenance and even possible reconstruction of trail segments due to future landsliding. A better understanding of the degree of slope instability risk present along the trail alignment would result from completion of a site-specific geologic and geotechnical investigation.

Alternative Trail Alignments - Public Streets

We understand that a trail alignment along public streets, located away from the creek riparian corridor, is under consideration extending from Aborn Road to Yerba Buena Avenue, and then connecting to Yerba Buena Road and Wynfair Ridge Way. An alternative, eastern alignment, would include a trail along San Felipe Road extending south to Larkspur Canyon Drive. A single trail alignment along the eastern side of San Felipe Road from Larkspur Canyon Drive to Heartland Way is also proposed. An existing pedestrian path with eight existing pedestrian bridges could be upgraded to improve the existing trail resource in this area. It is our current understanding that the above considered street-side alignments are more constrained by traffic safety issues than geotechnical issues. In some cases, it may be beneficial to improve separation of trail traffic from roadway traffic. For example, in some areas the edge of the trail abuts the roadway pavement with no grade separation. In these areas, consideration should be given to options such as raising the trail surface elevation by at least 10 inches and establishing a vertical curb at the edge of the street traffic lane.

SUMMARY OF COST ESTIMATES

The following engineer's construction cost estimates are based on limited fieldwork and simplified assumptions. They should be considered preliminary and subject to adjustment.

Tully Road to Quimby Road - Fill Ramp
Placement of engineered fill at Quimby Road and construction of a drainage system. $84,000

Quimby Road to Aborn Road
Placement of engineered fill and replacement of 2 pedestrian bridges. $375,000

LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted engineering geology and geotechnical engineering principles and practices. No warranty, expressed or implied, or merchantability of fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings.

Depicted designs for the improvements are preliminary and conceptual. Site-specific topographic surveying and investigation will be necessary to finalize improvement designs. Preliminary construction costs have been estimated by roughly calculating quantities based on conceptual design and then applying unit costs to those quantities. It should be understood that these numbers are of only "ballpark" accuracy for comparison purposes and that more precise cost figures should be estimated once final designs are formulated.

We appreciate the opportunity to have provided you with our geotechnical services on this project. If you have any questions, or need additional information, please contact us.

Respectfully submitted,

COTTON, SHIRES AND ASSOCIATES, INC.

Ted Sayre
Supervising Engineering Geologist
CEG 1795

Patrick O. Shires
Principal Geotechnical Engineer
GE 770

POS:TS:rb

Attachments: Reference List.

REFERENCES

Davis, J. F., 1982, State of California special studies zones, San Jose East Quadrangle, Calif. Div. Mines and Geology Alquist-Priolo Map.

Dibblee, T. W, 1972, Preliminary geologic map of the Lick Observatory Quadrangle, Santa Clara County, U.S. Geological Survey Open-File Report 72-90.

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Appendix C

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: Bill Halleck

FROM: Dave Schaeffer#2471
SJPD CPTED Detail

SUBJECT: Thompson Creek Trail Feasibility

DATE: March 27, 2002

The Chief of Police requests that the following conditions be appended to the subject application:

Trails should offer as many safety and beautification features as possible. This will increase usage thereby minimizing an environment that attracts crime. The safety features and design applications built into the trail and surrounding areas should include some of the following considerations:

- Isolated parking areas should not exist at any trail access point, (which don't afford natural surveillance from adjacent roads, businesses, etc.).

- Interesting features along the trail should draw more desired people into the area, i.e.: interesting pictorial wildlife displays with educational information about local habitat, rock gardens, written points of interest, etc.

- Numbered, clearly marked hands-free emergency phone/call boxes should be located at regular intervals along the trail, (1/3rd mile intervals recommended in more remote areas where trail access can be gained from nearby roads, parking lots, etc).

- Lighting such as high-pressure sodium, (where ambient light is good), low-pressure sodium, (where ambient light is bad) should be used under highway bridges which cross over trails. The receptacles should be housed in vandal-proof housings and no light fade should exist.

- Bridges that have shared forms of transportation should afford a clear demarcation barrier between vehicular and pedestrian/bicycle traffic. The pedestrian and bicycle thoroughfares should be wide enough to mitigate possible bicycle and pedestrian conflicts.

- Foliage within close proximity to both sides of a lower bridge underpass should offer no concealment.

- Likewise, landscaping offering concealment should be curtailed or maintained in a safety conscious manner in the following area: Any raised portion of land that offers visibility to long portions of the trail from a secluded segment near a main road or bridge. As a general rule tree canopies in certain areas, such as this, should be maintained at a minimum of seven feet in height. Higher if topography dictates. Bushes/shrubbery in this immediate area are not recommended.

- In locations where pedestrian/bicycle pathways are directed under bridges that afford no or little natural surveillance, the approaching pathways, from both directions, should have slopes designed to be as gradual as possible.

- If pedestrian bridges are placed in more out of the way locations, then some form of police vehicular access, which would afford visual scrutiny of the area, is desired.

- Generally, a pedestrian bridge should be built at grade level unless topography or landscaping, which cannot be removed or altered due to riparian guidelines, dictates otherwise. No oversized support columns or solid railings should be present which offer unneeded surfaces for graffiti or that impedes surveillance. One surveillance-enhancing application is utilizing a metallic mesh travel span for see-through transparency. This kind of bridge not only enables the area under the bridge to be visually cleared from a higher plain, but it deters subjects from sleeping or setting up unwanted campsites below the span after the creek subsides.

- There should be a buffer zone along more out-of–the-way trail portions where tall grass or landscaping is present, which could possibly conceal a person. This type of landscaping should be kept away from the trail at least fifteen feet to allow reaction time and/or time for someone to yell for help if necessary. The number one thing that sexual predators look for to carry out their crime is concealment. The second thing are escape routes. Hopefully, a maintenance plan will be in place where regular trimmings, inspections, repairs, and cleanup, etc. are carried out. A copy of a regular maintenance log needs to be maintained and kept in case litigation were to ever ensue.

- Signage indicating trail hours, rules and regulations, should be clearly posted at all trail access points. Broken painted lines should divide opposing lanes at and near trail access points and dangerously sharp or blind corners.

- Where lengthy portions of trails exist, signage or something such as cartoon emblems or logos could clearly identify locations for trail using children or adults who may need to utilize a call box to call for help or find there way home. Color-coded mileage markers or signs are another option to simplify trail locations. Trails can also be given unique but easy to remember names such as, "west-bank trail" or "duckwalk," etc.

- It's safer for children in general if paths don't meander too closely to roadways, especially roads where blind curves or corners exist.

- Police and emergency personnel will want vehicular trail access to portions of the trail that are more out-of-the-way, (bollards, half curves, gate access, etc. can be utilized to facilitate this).

- Any bollards utilized should be painted in contrasting colors to trail background tones from opposing trail views.

- Concrete benches placed along the trail should be painted with graffiti proof paint. Additionally, these benches should only be placed near areas where natural surveillance is maximized, such as near trail entry/exit points. One design feature with regard to benches is to make them without back supports so people won't stay on them for long periods of time. Another is to have a mid-point armrest.that attaches to the bench portion to discourage people from sleeping on them or to prevent the damage incurred from the performance of skateboard or rollerblade tricks on the benches.

- Someone once said, "Gang members are like dogs…they mark their territory by spraying it." This is why it's important to head problems off before they have a chance to develop. Fast growing drought resistant vines such as Boston Ivy, (deciduous/changes color) or Creeping Fig Ivy, (evergreen) should be grown on concrete supports and retaining walls along and near the trail to increase aesthetics and discourage graffiti.

- Restrooms are often located in "out of sight, out of mind" locations for reasons that are not grounded in common sense crime prevention principles. Restrooms can be a magnet for illicit behavior, vandalism, and narcotics use, especially if available surveillance is under utilized. Restrooms should be located in very convenient and easily accessible areas, not only to increase usage, but also to increase the perception of safety. A maze type entry system, or doors placed in a locked open position will also increase convenience and safety. With this type of entry/exit setup, users may determine who is in the restroom by glancing around the corner. Potential lawless acts will be deterred through the greater risk of detection. It also offers the ability for someone who doesn't feel comfortable after entering the restroom to quickly exit. Another much cheaper but good option is to have single occupancy sized portable toilets.

- If drinking fountains are to be a feature along trails they should be positioned in a recessed area off the trail so pedestrians and bicyclists won't interfere with each other.

- An adequate number of trash bins, which are designed to make graffiti and vandalism difficult, should be present at trail entering points. Fixture durability along the trail is important. Make sure it is durable and as vandal proof as possible from the start.

- Proper regular maintenance with regard to lighting, landscaping, trash pick-ups, etc. will go along way in creating territorial reinforcement and pride of public ownership. This in turn can have a contagious affect on trail users who hopefully won't take the trail for granted and will hopefully report suspicious activity before it turns into criminal behavior. An adopt-a-trail program that utilizes the volunteer efforts of bordering neighborhoods is ideal.

- A phone number where maintenance concerns can be called in should be clearly posted on the trail.

Officer David B.Schaeffer #2471
Crime Prevention Unit
Environmental Design Detail