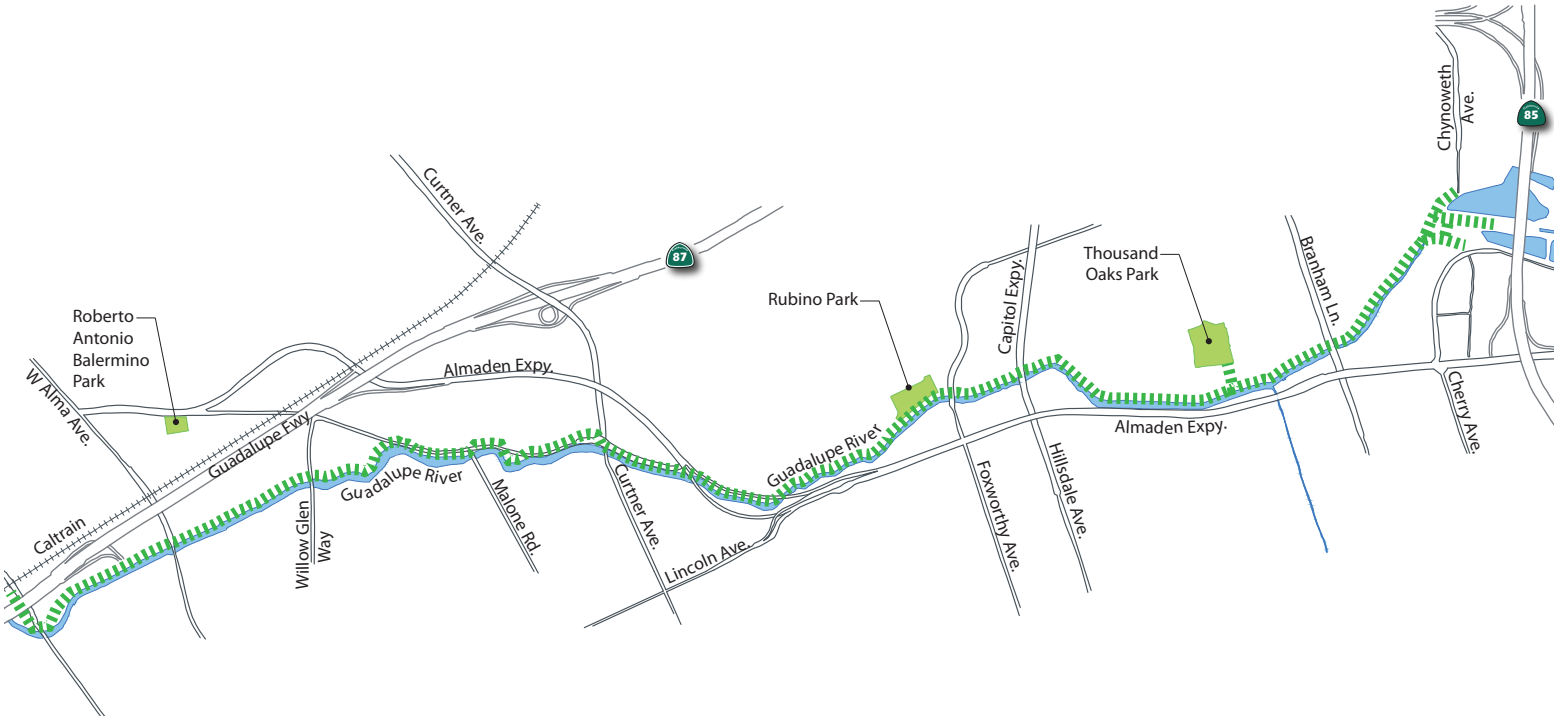
GUADALUPE RIVER TRAIL

Downtown to South San José
Virginia Street to Chynoweth Avenue
Master Plan



SAN JOSE
PARKS, RECREATION & NEIGHBORHOOD SERVICES

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

June 13, 2017

Guadalupe River Trail
Downtown to South San José
Virgina Street to Chynoweth Avenue

MASTER PLAN

Parks and Recreation Commission:
April 5, 2017

City Council:
June 13, 2017

CEQA No. PP17-027

Prepared for
CITY OF SAN JOSÉ
DEPARTMENT OF PARKS, RECREATION,
AND NEIGHBORHOOD SERVICES

Prepared by:
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June 13, 2017

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A Master Plan to extend a Class I trail through San José.

Credit: Billy Hustace Photography
View: Lower Guadalupe River Trail, north of master planning effort

MASTER PLAN OVERVIEW

This Master Plan document outlines the site setting, opportunities and constraints, planning process, and goals and objectives. These goals and objectives set the stage for the development of the trail alignment. A cost estimate with phasing opportunities, fund raising plan, and next steps are also outlined. This Master Plan document will be used as a tool by the City for development of the Guadalupe River Trail. Each step in the planning process engaged the community through scheduled workshops, informational presentations and social media outreach.

PURPOSE & BACKGROUND

The City has considered trail development along the Guadalupe River as part of prior planning efforts. In 1988, a Park Master Plan for Guadalupe River South Corridor was prepared by the Department of Parks and Recreation, with support from stakeholder departments and a consultant landscape architect firm. The plan considered trail development between Highway 280 (downtown) and Coleman Road (south San Jose. The plan focused on three priorities; 1) propose recreational improvements prior to flood control work, 2) identify unresolved issues/conflicts to development that need to be resolved, and 3) identification of adjacent land uses that support recreation. Over the past 30 years, limited trail development has occurred in the corridor. From the north, the trail system is developed from Highway 280 to Virginia Street, and from Chynoweth Avenue to Coleman Avenue. As was the case in 1988, pending flood control work raised questions about the placement and viability of a continuous trail between Virginia Street and Chynoweth Avenue. Development of the current master plan is timely as the Santa Clara Valley Water District and the US Army Corps have made significant advancements in flood control planning and for many areas of the river, the District and Corps are now seeking resources for construction. This trail master plan is based on that current planning and design work, and does support a continuous trail alignment that leverages recreational resources along the route.

The City of San José has one of the nation's largest urban trail networks with 60 miles of trails open to the public. The trail network serves recreation, and active transportation users throughout Silicon Valley. Master planning of individual trail systems, or segments of those systems, is required because of site complexities including limited right of way, private and public land ownership, environmental constraints and many other challenges.

The Guadalupe River Trail (GRT) is a partially developed regional trail. A 9 mile long completed paved reach commences at Gold Street in the Alviso Neighborhood along the San Francisco Bay and extends south to Virginia Street in Downtown San José. A 2.4 mile paved reach in South San José extends from Chynoweth Avenue to Coleman Road with direct links to Lake Amaden and Los Alamitos Creek trails.

Planning and construction of the existing GRT has been implemented in phases over many years as funding has been available or joint development could occur, as is the case with the flood control improvements through downtown.

The City Council commissioned this master plan in 2015 to provide the background and analysis necessary to guide future development of the remaining central reaches of the trail system. The adopted master plan will serve as a vehicle for acquiring funds for design and construction, establish a clear plan for implementation and insure the trail design is consistent with community and stakeholder expectations.

Implementation of this master plan will:

1. provide a continuous connection from the foothills of Almaden Valley in the south to the salt ponds of Alviso and regional San Francisco Bay Trail. Specific to this master plan, the trail's development runs through South San José, Willow Glen, Downtown, and North San José
2. increase resident and visitor access to recreation, active transportation, and nature

3. be consistent with the principles and commitments outlined in the:
   - City of San José's Greenprint 2009 Update for Parks and Community Facilities and Programs – A Strategic Plan to 2020
   - City's Envision San José 2040 General Plan
   - Santa Clara County's Countywide Trails Master Plan Update
   - City of San José Trail Program Strategic Plan (particular attention to the commitments of the strategic plan in regards to signature elements, placemaking, and branding).

PLANNING PROCESS

The master planning process is broken down into three phases: public outreach, project viability, and document refinement. This process was conducted with significant outreach as follows:

- Start-up meeting and site walk with City staff and Santa Clara Valley Water District (SCVWD) representatives
- Multiple meetings with Technical Advisory Committee (TAC) made up of representatives from vested agencies to provide input on their policies and regulations and future projects that may impact the trail development
- Multiple site investigations and opportunities and constraints identification
- Three community workshops
- Two informational presentations to a neighborhood association
- Public review of an environmental document that evaluated potential project impacts and identified measures to mitigate these impacts as required by the California Environmental Quality Act (CEQA).
- Preparation of an administrative draft master plan and submittal to City staff for review
- Refinement of the document into a draft master plan and submittal to City staff and TAC for review
- Preparation of the final master plan document once approved by City Council
- Presentation of a Draft Master Plan at public meetings, the Parks & Recreation Commission and the City Council

The City's goals, stakeholder agency needs, and the public's wishes for the project are balanced and integrated to the greatest extent possible in this document to guide design for construction.

ARCHAEOLOGICAL DISCOVERY AND CONDITIONS

In 2017 an archaeological report was prepared by a certified archaeologist at Holman & Associates. As outlined in the Initial Study and per State law there are a number of conditions that apply to project. These conditions were included in the project's Mitigation Monitoring and Reporting Plan (MMRP). As each reach moves forward to development, all pertinent conditions of the MMRP must be complied with. Additionally, the City's standard specifications (Section 7 Legal Relations and Responsibility) for construction provides direction in the event any archaeological or paleontological objects are discovered within the project limits during the course of work.

TRAIL ALIGNMENT

By focusing on project viability (off-street Class I trail improvments and Class IV sepearated bikeway imiprovements) and refinement, this master plan provides for the development of a multi-use recreational and active transportation trail within and along the Guadalupe River (GR). The alignment of the project generally follows existing and planned maintenance roads associated with the GR flood protection project, currently being implemented by the SCVWD and US Army Corp of Engineers (USACE). These maintenance roads typically follow the top of levees, channel banks, and under- crossings at roadway bridges. Dual use of these roads minimizes impact to nature by not encroaching further into the sensitive riparian environment. Early coordination through the master planning process supports the USACE's design that provides no greater than 8.33% incline/decline at under-crossing ramps; this leads to a trail system that is ADA compliant.

The majority of the trail would be a 16-foot wide (12 feet paved with 2 foot wide compacted base rock shoulders on either side) Class I trail, which is defined by the Caltrans Highway Design Manual as being separated

from streets and open to a number of user types (pedestrians, bicyclists, and equestrians). Physically constrained portions would be narrowed to a 10 foot wide paved trail without shoulders. Portions of the trail that would be below the 10 year flood water elevation (primarily at road undercrossings) would also lack shoulders to prevent washout of the associated gravel. These more narrow sections exceed the minimum 8 foot standard width for Class I trails. Limited landscaping is expected and will be on an as-needed basis to satisfy mitigation requirements.

The trail is located upon properties owned by the City, Caltrans, SCVWD, San José Water Company (SJWC). As this master plan is prepared, the USACE has not secured all lands impacted by flood control improvements. Some private parcels may appear impacted by the trail, however, the master plan defines future trail improvement once USACE or other agency has confirmed a flood control maintenance road alignment ansd is in process of securing land rights. The master plan's alignment through these parcels should be viewed as conceptual sinced the USACE project is a work in progress. Removal of structures is not anticipated for trail development though some SJWC equipment may need to be relocated. Use of all other lands is expected to occur via joint use agreements. Links to existing and future trails are identified wherever feasible. The alignment includes at-grade access points to all surface streets; undercrossings beneath streets and expressways in two locations; bridges to cross the river and future bypass channel when necessary; connections to existing and planned portions of the Guadalupe River Trail at either end of the project; the Three Creeks Trail, Rubino Park, and Thousand Oaks Park. Additionally, wayfinding is proposed to direct trail users to the parallel Highway 87 Bikeway because under-crossings of the Guadalupe River Trail are subject to 10-year flood events (beneath water infrequently, on average, a few days once every decade).

Reaches along the trail system are presented in a north to south manner. Discussion here is limited to general design parameters. Refer to the Trail Alignment section of this Master Plan for a detailed discussion of future work within each reach.

VIRGINIA AVE TO WILLOW ST REACH

- 1,050 feet long
- Link to existing northern trail per the 2004 Reach 6 Master Plan
- Class IV Bikeway along McLellan Avenue
- Class I Bikeway for remainder

WILLOW CALLE BRIDGE

- Located between the Caltrain grade separation and Highway 87
- Approximate 200ft pedestrian bridge
- 12ft wide with protective handrails
- Intended to be a signature element with colorful ornamentation and architectural detailing

WILLOW ST TO WEST ALMA AVE REACH

- 2,800 feet long
- Class I paved trail along east bank
- Primary trail runs along the western side of Lelong Street
- Class I unpaved gravel trail along west bank to create "Lelong Loop"

WEST ALMA AVE TO THREE CREEKS TRAIL REACH

- 830 feet long
- Class I paved trail along east bank
- Travels along the west side of SCVWD/USACE flood wall

THREE CREEKS TRAIL TO WILLOW GLEN WY REACH

- 1,500 feet long
- Class I paved trail along east bank
- Constructed along the western edge of Mackey Avenue with the removal of parking along the western edge of the street (CSJ-DOT to manage parking removal)

WILLOW GLEN WY TO ALMADEN RD REACH

- 1,500 feet long
- Class I paved trail along east bank
- Constructed along the western edge of SJWC well site property

ALMADEN RD TO CURTNER AVE REACH

- 3,225 feet long
- Class I paved trail along east bank
- Constructed along Almaden Road

FOXWORTHY AVE TO THOUSAND OAKS PARK REACH

- 6,000 feet long
- Class I paved trail along east bank
- Crosses under Capitol Expressway

THOUSAND OAKS PARK TO BRANHAM LN REACH

- 2,300 feet long
- Class I paved trail along east bank
- Spur connection to Thousand Oaks Park

BRANHAM LN TO CHYNOWETH AVE REACH

- 5,100 feet long
- Class I paved trail along east bank
- Three southern connections
  - at existing GRT at Chynoweth Ave
  - at existing GRT at Blossom River Dr
  - at Cherry Ave
- Trail runs along eastern river embankments around percolation pond to create the Erikson Loop with access on east side of the the river at Chynoweth
- New pedestrian bridge across river with spur connection to Cherry Avenue intended to be a signature element with decorative bridge footings and interpretive elements

TOTAL ESTIMATED CONSTRUCTION ESTIMATE

The total estimated cost for improvements of all reaches and overcrossings described in this master plan is approximately $47.3 million. This high cost of about $9,460,000/mile is largely due to bridge crossings, grading, drainage and trail amenities. This work is necessary in order to provide an entirely off-street Class I trail system, consistent with other trails in the San José Trail Network is necessary to provide an off-street trail that substantially meets Class I bikeway standars, with limited Class IV separated bikeway. Detailed per reach cost estimates are provided in Figure 42.

Note on cost: This high project cost and high per mile cost cost has been review carefully by the Department of Public Works and is consistent with the current bidding climate. The master plan does not define a "gold plated" project and efforts were made through the process to avoid significant costs. The plan does call for several signature elements and decorative gateways. Some opportunity for cost engineering present themselves and will be considered during budgeting for the design phase.

TRAIL IMAGE BOARD

Typical character and quality of improvements
Source: San José and other trail systems

REGIONAL CONTEXT

The County of Santa Clara boasts many regional parks, trails, and open spaces. Within the county, the City of San Jose has one of the nation's largest urban trail networks with 60 miles of trails open to the public. The City's Greenprint, General Plan, Bike Plan, and Strategic Plan all support further development, with a goal of a 100-mile paved trail network. This mileage is to be developed within 40 defined trail systems. Extending existing trails, closing gaps, and interconnecting trails are key objectives for development so that travel can occur entirely within an off-street environment. In many instances, the reaches of the GRT included in this master plan are included in the Santa Clara County Countywide Trails Master Plan Update, and the City of San José General Plan. Identified as a sub-regional trail route, the Guadalupe River Trail reaches are a component of the regional/countywide trails network. The overall Guadalupe River Trail system (known as countywide trail S3) connects to several other regional trail systems including:

- San Francisco Bay Trail (countywide trail route R4)
- Juan Bautista de Anza National Historic Trail (countywide trail route R1-A)
- Bay Area Ridge Trail (countywide trail route R5-C)
- Monterey-Yosemite Trail (countywide trail route R2)

The existing Guadalupe River Trail from Alviso to Downtown is recognized as part of the National Recreation Trail (NRT). This designation would be extended as the trail develops per this master plan.

As defined in the City's Greenprint, the Guadalupe River Trail connects to the following local trails within the City of San Jose:

- SF Bay Trail (planned)
- Highway 237 Bikeway (developed)
- Hetch Hetchy (planned)
- River Oaks Pathway (developed)
- Ryland Park Pathway (planned)
- Los Gatos Creek Trail (planned)
- Highway 87 Bikeway (planned)
- Three Creeks Trail (planned)
- Guadalupe Creek Trail (planned)
- Lake Almaden Trail (developed)
- Los Alamitos/Calero Creek Trail (developed)

The majority of open San Jose trails follow the rivers and creeks flowing towards the bay. These trails are shown as solid green lines on the existing Citywide Trail Network map (Figure 1). The Highway 87 Bikeway from Willow St to Santa Teresa Blvd offers partial class 1 access in a north to south route. Having a continuous Class I facility along a natural riparian corridor provides a desirable and continuous off-street route. This master plan guides the development of that trail.

LOCAL SITE CONTEXT

The proposed trail alignment extends approximately 5.5 miles primarily along the banks of the Guadalupe River. The SCVWD and the USACE have jointly planned the implementation of flood control facilities along the entire corridor. These improvements include but are not limited to: bypass channels, slope stabilization, flood/retaining walls, and maintenance roads. The SCVWD has been planning and programming the land acquisition of many privately-owned parcels within the riparian corridor. The trail will run along the east bank (in most locations) and have several undercrossings to avoid roadway crossings.

The planning area runs through an urban area with commercial development, transit stations, residential neighborhoods, schools and neighborhood parks. Adjacency to Rubino Park and Thousand Oaks Park can enhance travel along the trail.

The site survey revealed a variety of different constraints varying from: minimal right-of-way, steep grades, high water surface elevations, sensitive environment, constrained sight distances, and lack of setbacks.

The trail meanders through a riparian corridor populated with mature riparian trees, a mixture of thick vegetation and open grassy areas, steep embankments, and diverse wildlife. Significant portions of the property along the river corridor are owned by the City, SCVWD and SJWC. Commercial/retail centers are located near the proposed trail including the newly developed Almaden Ranch anchored by Bass Pro Shop (a regional draw) and the City Sports Club fitness center. Ten

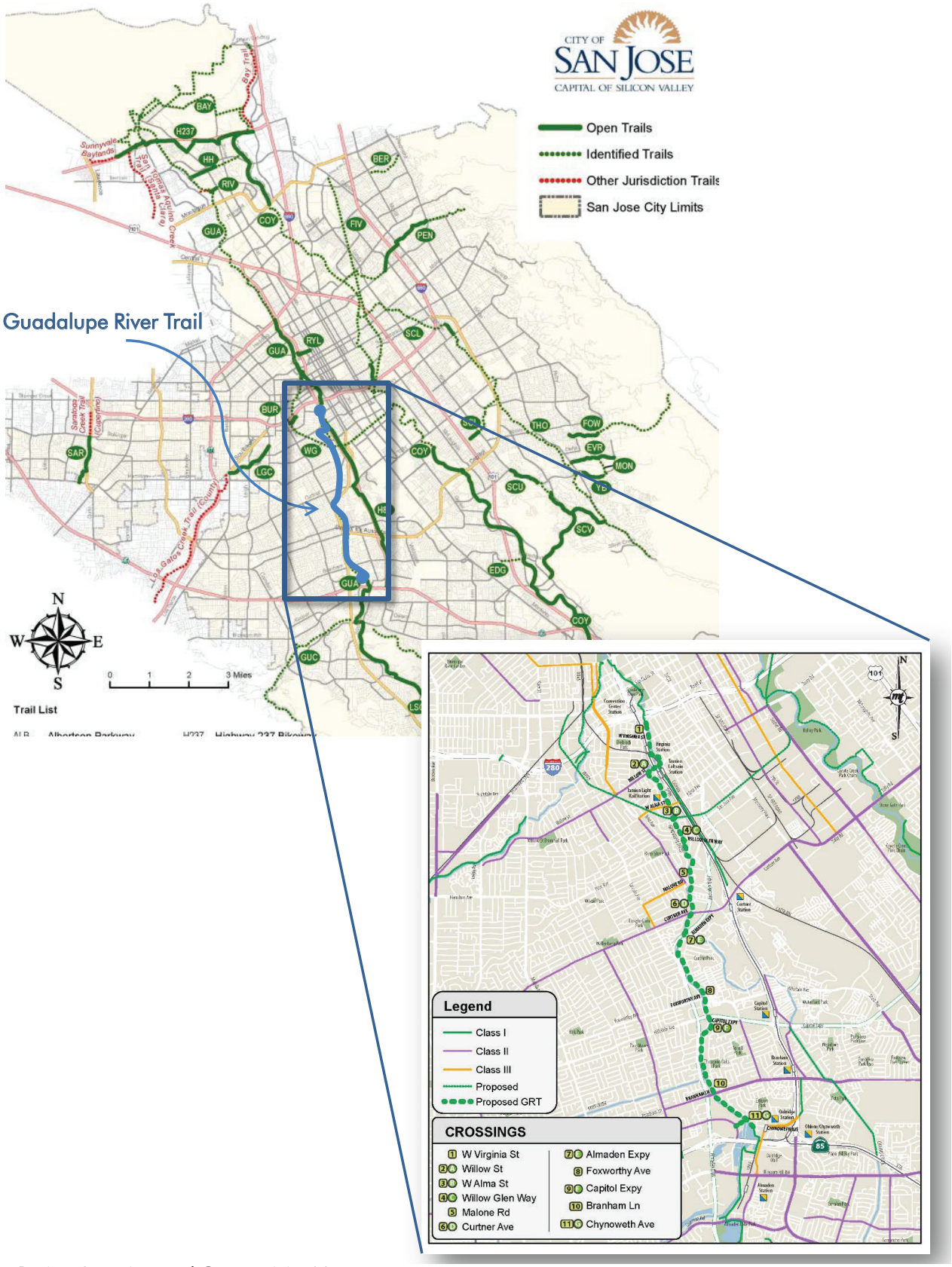


Figure 1: Project Location and Connectivity Map

neighborhood parks and one community garden are located near the trail. Land along the corridor includes existing and future SCVWD service roads providing alignment opportunities for the trail in already constrained locations.

CULTURAL HISTORY

The Guadalupe River flows from south to north through the City of San Jose. The river begins at the confluence of Alamitos Creek and Guadalupe Creek in south San Jose, and flows to the San Francisco Bay. It has played an important role in the City's history.

It is believed that the Ohlone Indians first inhabited the San Francisco Bay Region in 500 AD. For more than one thousand years, they lived as hunter-gatherers in this area from the Golden Gate south to Monterey, including settlements along what is now called Guadalupe River. Information gathered from community members suggest that the Guadalupe River was once fed from marshes in Willow Glen, and that the river's southern alignment may have resulted from late 19th century canal development in the area.

Named by the De Anza Expedition in 1776 the Guadalupe River was noted by the explorers of the time to be well supplied with timber and agricultural land, and that it appeared to be suitable for a large settlement. In 1777, both the Pueblo de San Jose (on the Guadalupe River) and Mission Santa Clara (located two miles away) were founded. The Spanish lived in the area until the mid-nineteenth century when the discovery of gold brought explorers from around the world to California by the thousands. By 1850, California was granted statehood and on March 27, 1850, San Jose became the first incorporated city in the state and served as the capitol until 1851.

In the first half of the 20th century, the fertile Santa Clara Valley was predominately covered in fruit and nut orchards which fueled an agricultural economy. However, during the 1960's and 1970's, the prosperous agricultural industry in Santa Clara Valley was slowly replaced by high tech research and development, office parks and new housing. This new technology-based industry spurred growth and development within the Santa Clara Valley which continues to this day.

With the emergence of the electronics industry, San Jose continued growing through the last half of the 20th century. Housing and commercial developments have extended along the river, leaving space to preserve nature and support access with a multi-use trail.

FLOOD PROTECTION

For years, the Guadalupe River frequently flooded San Jose's downtown and the Alviso community, with severe flood events in 1862, 1895, 1911, 1955, 1958, 1963, 1969, 1982, 1986 and 1995. Efforts to control the river began in the early 1940's with a study authorized by the U.S. Army Corps of Engineers. In subsequent decades, channel improvements and associated park development have made the river a centerpiece of the City's downtown and North San Jose neighborhoods.

The Upper Guadalupe River still floods; starting from Ross Creek in the Thousand Oaks area, homes have to pay flood insurance due to higher 100 year water surface elevations. The SCVWD and the USACE have been engineering the channel to retain a hundred year flood event. The USACE started designing channel improvements from Blossom Hill Road to Branham Lane to mitigate damage done by perpetual flooding. The USACE then proceeded to construct a bypass channel between West Virginia Street and Willow Glen Way. The remaining reaches are programmed to be designed progressively to complete the Guadalupe River Trail. A preliminary hydraulic design was completed in the early 2000s. Channel widening and erosion control are planned throughout the corridor, and will aid in the abatement of flood-induced damage within the area.

EXISTING CONDITIONS MAP

The Existing Conditions Map and Photographic Log (Figure 2) illustrates land uses, recreational destinations, light rail stations and the City's on-street bicycle network. This map was used in the development of the Opportunities and Constraints Summary Map (Figure 4). The photographic log shows typical views and key features along the alignment.

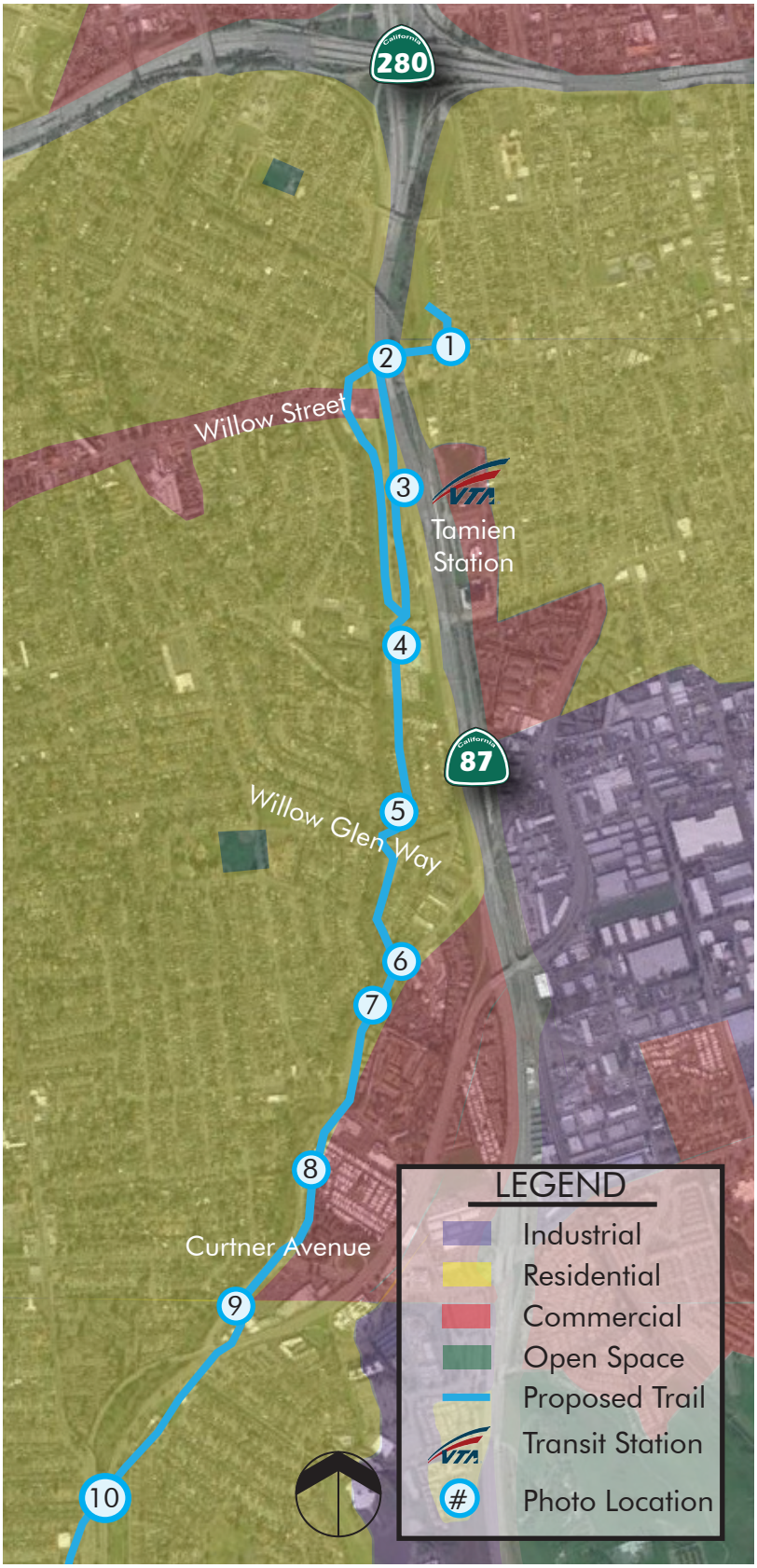


Figure 2: Existing Conditions and Photographic Log

1 View looking west along closed road near intersection of McLellan & Willow Street

2 Looking west under Highway 87 bridge

3 Looking south along Lelong Street

4 Gravel path along proposed Three Creeks Trail alignment

5 View looking east along Willow Glen Way at neighborhood entry monuments

6 View looking north along Almaden Road

7 View looking north along Almaden Road near dump station

8 Curtner Avenue/Almaden Road intersection

9 View under Almaden Expressway bridge

10 View of gabion walls along Guadalupe River at Almaden Expressway

Figure 2: Existing Conditions and Photographic Log (Cont.)

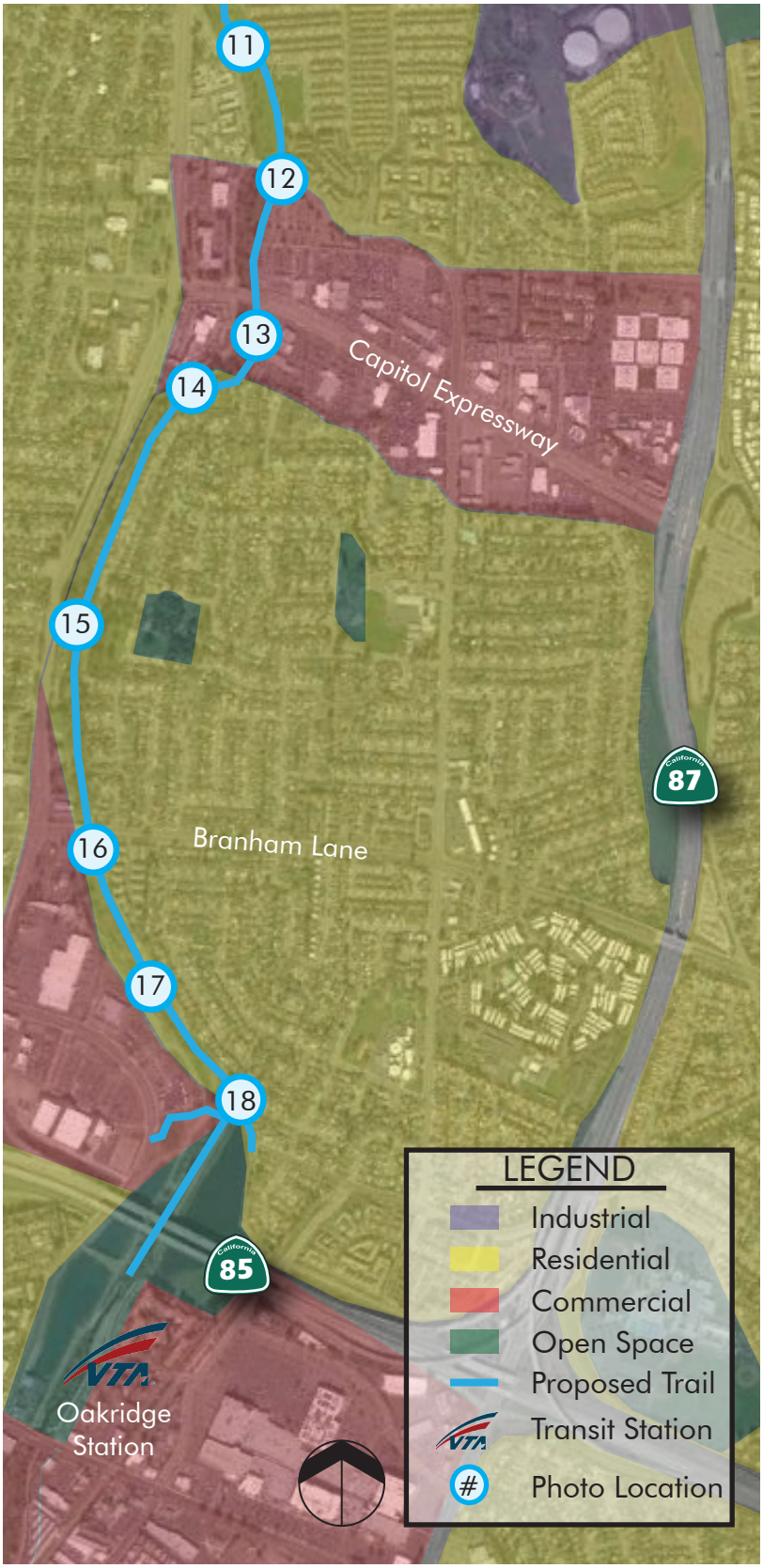


Figure 2: Existing Conditions and Photographic Log (Cont.)

11 View looking south at potential connection to Rubino Park

12 View looking at crossing under Foxworthy Avenue

13 View looking at Capitol Expressway Bridge

14 View looking west from Steval Place

15 View of open space area west of Thousand Oaks Park

16 View looking under Branham Lane

17 Limited clearance for trail of eastern embankment of Guadalupe River

18 Looking north from the trail connection location at Chynoweth Avenue

Figure 2: Existing Conditions and Photographic Log (Cont.)

ASSESSOR'S PARCEL INFORMATION

The trail alignment traverses the following assessor's parcel numbers, as located by defined trail reach.

PARCEL	OWNER	DESCIRPTION
McLellan to Willow Reach		
264-48-006	PENINSULA CORRIDOR JOINT POWERS BOARD	RAILROAD TRACKS
264-40-078	SANTA CLARA VALLEY WATER DISTRICT (SCVWD)	PARK/ROAD
264-40-103	SCVWD	PARK/ROAD
264-40-117	SCVWD	PARK/ROAD
264-40-116	SCVWD	PARK/ROAD
264-40-126	SCVWD	PARK/ROAD
264-48-001	SCVWD	CHANNEL
264-48-113	SCVWD	CHANNEL
264-48-092	SCVWD	EMPTY LOT
434-04-083	SCVWD	EMPTY LOT
264-48-094	STATE OF CALIFORNIA	EMPTY LOT
264-48-010	STATE OF CALIFORNIA	EMPTY LOT
264-48-084	STATE OF CALIFORNIA	EMPTY LOT
Willow to Alma Reach		
434-04-084	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-04-003	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-04-004	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-04-011	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-04-012	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-04-013	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-04-014	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-04-066	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-04-079	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
434-13-034	SCVWD	EMPTY LOT/FUTURE BYPASS CHANNEL
Alma to Three Creeks Reach		
434-20-023	SCVWD/JOINT USE	PARKING LOT/FUTURE BYPASS CHANNEL
434-27-125	PRIVATE[1]	FUTURE BYPASS CHANNEL
Three Creeks to Willow Glen Reach		
434-27-125	PRIVATE[1]	FUTURE BYPASS CHANNEL
434-27-038	SCVWD	FUTURE BYPASS CHANNEL
434-27-031	SCVWD	FUTURE BYPASS CHANNEL
434-27-032	SCVWD	FUTURE BYPASS CHANNEL
434-27-033	SCVWD	FUTURE BYPASS CHANNEL
434-27-122	SCVWD	FUTURE BYPASS CHANNEL
434-27-039	SCVWD	FUTURE BYPASS CHANNEL
434-27-040	SCVWD	FUTURE BYPASS CHANNEL
434-27-041	SCVWD	FUTURE BYPASS CHANNEL
434-27-042	SCVWD	FUTURE BYPASS CHANNEL
434-27-043	SCVWD	FUTURE BYPASS CHANNEL
434-27-044	SCVWD	FUTURE BYPASS CHANNEL
434-27-045	SCVWD	FUTURE BYPASS CHANNEL
434-27-124	SCVWD	FUTURE BYPASS CHANNEL
434-27-027	SCVWD	FUTURE BYPASS CHANNEL
434-27-120	SCVWD	FUTURE BYPASS CHANNEL
434-27-120	SCVWD	FUTURE BYPASS CHANNEL
434-27-120	SCVWD	FUTURE BYPASS CHANNEL

PARCEL	OWNER	DESCIRPTION
Willow Glen to Almaden Rd Reach		
455-21-066	SJWC	WATER WORK FACILITY
455-21-056	PRIVATE[1]	FUTURE BYPASS CHANNEL
455-21-013	SCVWD	FUTURE BYPASS CHANNEL
455-21-067	SCVWD	FUTURE BYPASS CHANNEL
455-21-017	SCVWD	FUTURE BYPASS CHANNEL
455-21-068	SCVWD	FUTURE BYPASS CHANNEL
Almaden Rd to Curtner Reach		
455-18-007	CITY OF SAN JOSÉ	EMPTY LOT
455-21-057	SCVWD	FUTURE BYPASS CHANNEL
455-31-043	SCVWD	EMPTY LOT
455-31-044	SCVWD	EMPTY LOT
455-18-102	SCVWD	EMPTY LOT
455-31-027	SJWC	WATER WORK FACILITY
Curtner to Almaden Expy Reach		
455-27-010	CITY OF SAN JOSÉ	RIVER BANK
455-27-009	PRIVATE[1]	RIVER BANK
455-27-008	PRIVATE[1]	EMPTY LOT
Almaden Expy to Foxworthy Reach		
455-54-080	CITY OF SAN JOSÉ	PARK
455-53-LOT E	COMMON AREA	COMMON AREA
455-54-LOT B	COMMON AREA	COMMON AREA
455-14-013	SCVWD	RIVER BANK
455-13-035	SCVWD	RIVER BANK
455-13-033	SCVWD	SERVICE ROAD, RIVER BANK
455-12-010	SCVWD	RIVER BANK
455-39-018	SCVWD	RIVER BANK
455-39-016	SCVWD	RIVER BANK
455-39-024	SCVWD	RIVER BANK
455-39-001	SCVWD	RIVER BANK

Figure 3:Assessor's Parcel Numbers

[1]References to Private Lands
It should be noted that the potential Guadalupe River Trail alignment includes segments shown in the Master Plan as diagrammatic and is to be used for general planning purposes only. The alignment shown is proposed based upon plans provided by the US Army Corp of Engineers that show flood control work administered by the US Army Corps and Santa Clara Valley Water District will extend through these areas at some time in the future. The Santa Clara Valley Water District possesses a maintenance easement to cross private lands for its operations. The diagrammatic alignment should not, in any way, be interpreted as an existing or proposed trail through private property. The map for these segments of the trail system within the Master Plan illustrates a potential trail alignment including areas that are currently privately owned. By illustrating this potential trail alignment in the Guadalupe River Trail Master Plan, no determination is being made at this time to acquire any specific private properties for these improvements. Final trail alignment will depend upon weighing possible alignment alternatives in consultation with US Army Corps and Santa Clara Valley Water District flood control planning and at the actual time of property acquisition by US Army Corp to support trail construction. The Guadalupe River Trail Master Plan only illustrates possible development if implementation of the trail is pursued in the future.

PARCEL	OWNER	DESCIRPTION
Foxworthy to Thousand Oaks Reach		
455-39-001	SCVWD	RIVER BANK
455-39-021	SCVWD	RIVER BANK
459-04-001	SCVWD	RIVER BANK
459-04-002	SCVWD	RIVER BANK
459-03-008	SCVWD	SERVICE ROAD, RIVER BANK
459-06-036	SCVWD	SERVICE ROAD, RIVER BANK
459-06-036	SCVWD	SERVICE ROAD, RIVER BANK
459-06-047	SCVWD	SERVICE ROAD, RIVER BANK
459-06-031	SCVWD	SERVICE ROAD, RIVER BANK
459-06-032	SCVWD	SERVICE ROAD, RIVER BANK
459-11-094	SCVWD	SERVICE ROAD, RIVER BANK
459-02-013	PRIVATE[1]	RESIDENTIAL AREA
Thousand Oaks to Branham Reach		
459-13-024	CITY OF SAN JOSÉ	EMPTY LOT
459-02-004	SAN JOSÉ WATER CO (SJWC)	SERVICE ROAD, RIVER BANK
459-16-030	SCVWD	SERVICE ROAD, RIVER BANK
Branham to Chynoweth Reach		
458-17-033	PRIVATE[2]	FIRE ACCESS ROAD/TRAIL
458-01-029	SCVWD	TRAIL
458-01-034	SCVWD	PERC PONDS
458-01-032	SCVWD	PERC PONDS, EMPTY LOT
458-07-051	SCVWD	TRAIL
458-17-002	SCVWD	RIVER BANK
458-17-003	SCVWD	RIVER BANK
458-17-004	SCVWD	RIVER BANK
458-18-081	SCVWD	SERVICE ROAD, RIVER BANK
458-18-012	SJWC	WATER WORK FACILITY

Figure 3:Assessor's Parcel Numbers (Cont.)

Much of the proposed alignment of the GRT is on property owned by the SCVWD. For those parcels not owned by the SCVWD, it is likely that the SCVWD hold a maintenance easement within the river right-of-way. Because the SCVWD maintenance agreement does not include a recreational easement, it will be necessary for the City to obtain one. In three locations the trail passes through property owned by SJWC and while the SJWC has been involved in the TAC oversight of this master plan, the City will be required to enter into recreational access and maintenance agreements with the agency for these affected properties.

References to Private Lands

[1]It should be noted that the potential Guadalupe River Trail alignment between Foxworthy Avenue and Thousand Oaks Park includes a segment shown in the Master Plan as diagrammatic and is to be used for general planning purposes only. The alignment shown is proposed based upon the likelihood that nearby flood control work administered by the US Army Corps and Santa Clara Valley Water District will extend through this area at some time in the future. The Santa Clara Valley Water District possesses a maintenance easement to cross private lands for its operations. The diagrammatic alignment should not, in any way, be interpreted as an existing or proposed trail through private property. The map for this reach of the trail system within the Master Plan illustrates a potential trail alignment including areas that are currently privately owned. By illustrating this potential trail alignment in the Guadalupe River Trail Master Plan, no determination is being made at this time to acquire any specific private properties for these improvements. Final trail alignment will depend upon weighing possible alignment alternatives in consultation with US Army Corps and Santa Clara Valley Water District flood control planning and at the actual time of property acquisition to support trail construction. The Guadalupe River Trail Master Plan only illustrates possible development if implementation of the trail is pursued in the future in either the form of a gravel trail making use of maintenance road improvements or a fully paved trail.

[2]The City maintains an existing easement along the edge of the private parcel that the trail will be constructed within.

Guadalupe River corridor looking North from Interstate 280

With the existing conditions map in hand, a review of the site was conducted to observe and record the opportunities and constraints within the Guadalupe River corridor. Additionally, input was received from City staff, TAC members and the community. The opportunities and constraints helped to confirm a preferred trail alignment.

The following is a general summary of key opportunities and constraints, which are also represented in the map provided as Figure 4 Opportunities and Constraints Map.

OPPORTUNITIES

- Employment centers
- Residential (single family homes to high-density low rise developments)
- Commercial developments
- Retail (trail serving: food, snacks)
- Trail connections
- Recreational destinations
- Light rail stations
- Intersecting on-street bikeways
- Views of nature
- Existing and future SCVWD maintenance road
- Unique environments
- Access to neighboring schools and parks
- Current master planning, mitigation and construction efforts in adjacent City and County parks
- City and SCVWD owned parcels, as well as San José Water Company parcels
- Current trail planning efforts by the County or other regional trails providers

CONSTRAINTS

- USACE/SCVWD flood control improvements are in a preliminary stage of design development in some areas of the corridor
- Lack of continuous access
- Routine flooding of some undercrossings
- Reduced clearance at Capitol Expressway bridge
- Limited visibility between Willow Glen Way and Almaden Road
- Noise from proximity to expressways (Capitol and Almaden)
- Narrow right of way with limited landscape potential
- Commercial / industrial development that has turned its back to river
- Privately owned parcels
- Steep banks and/or narrow right- of-ways along some segments of the creek
- Sensitive habitats, riparian corridors, and mitigation areas
- Infrastructure that is not developed for pedestrian use

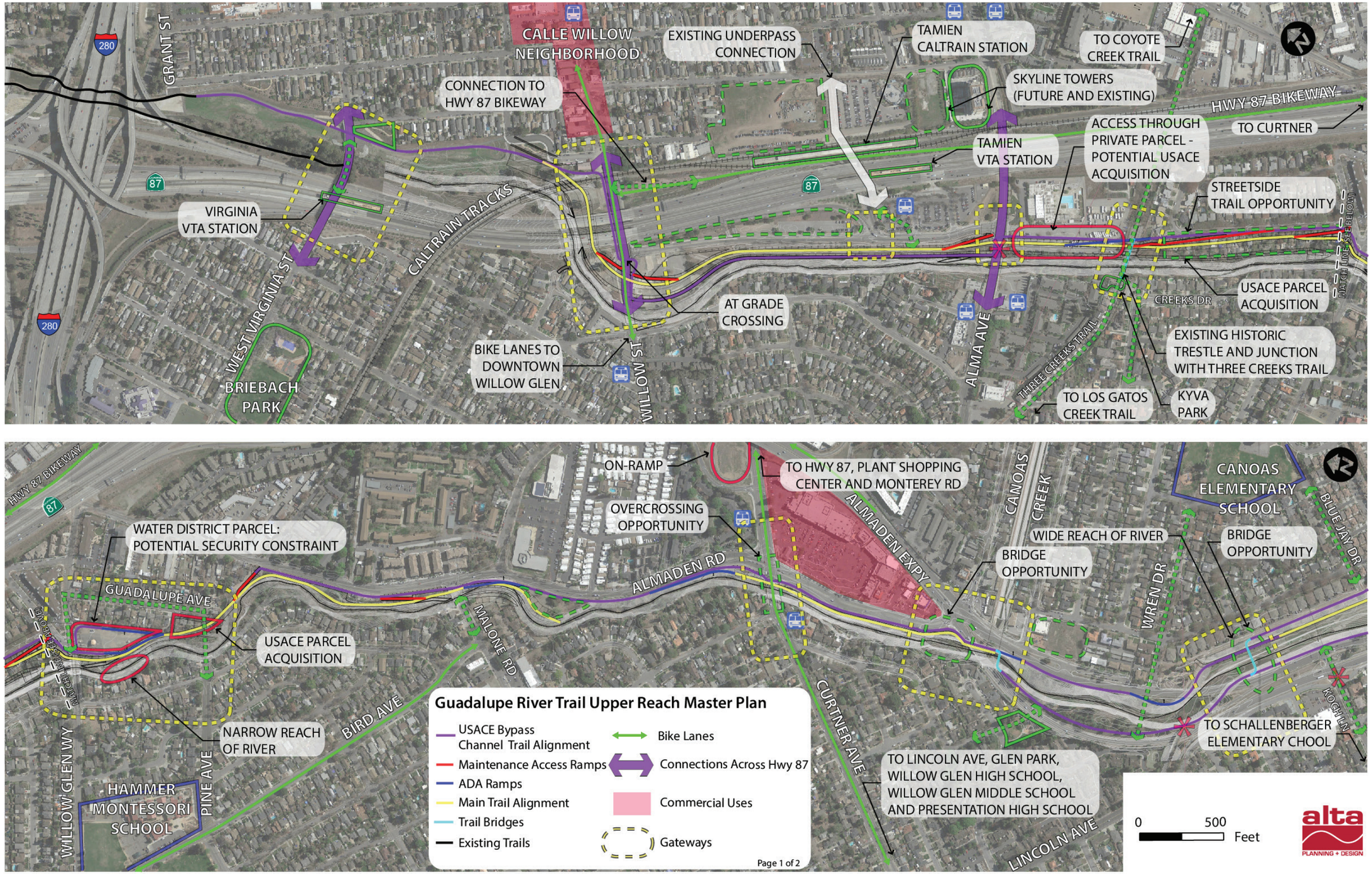


Figure 4: Opportunities and Constraints Map

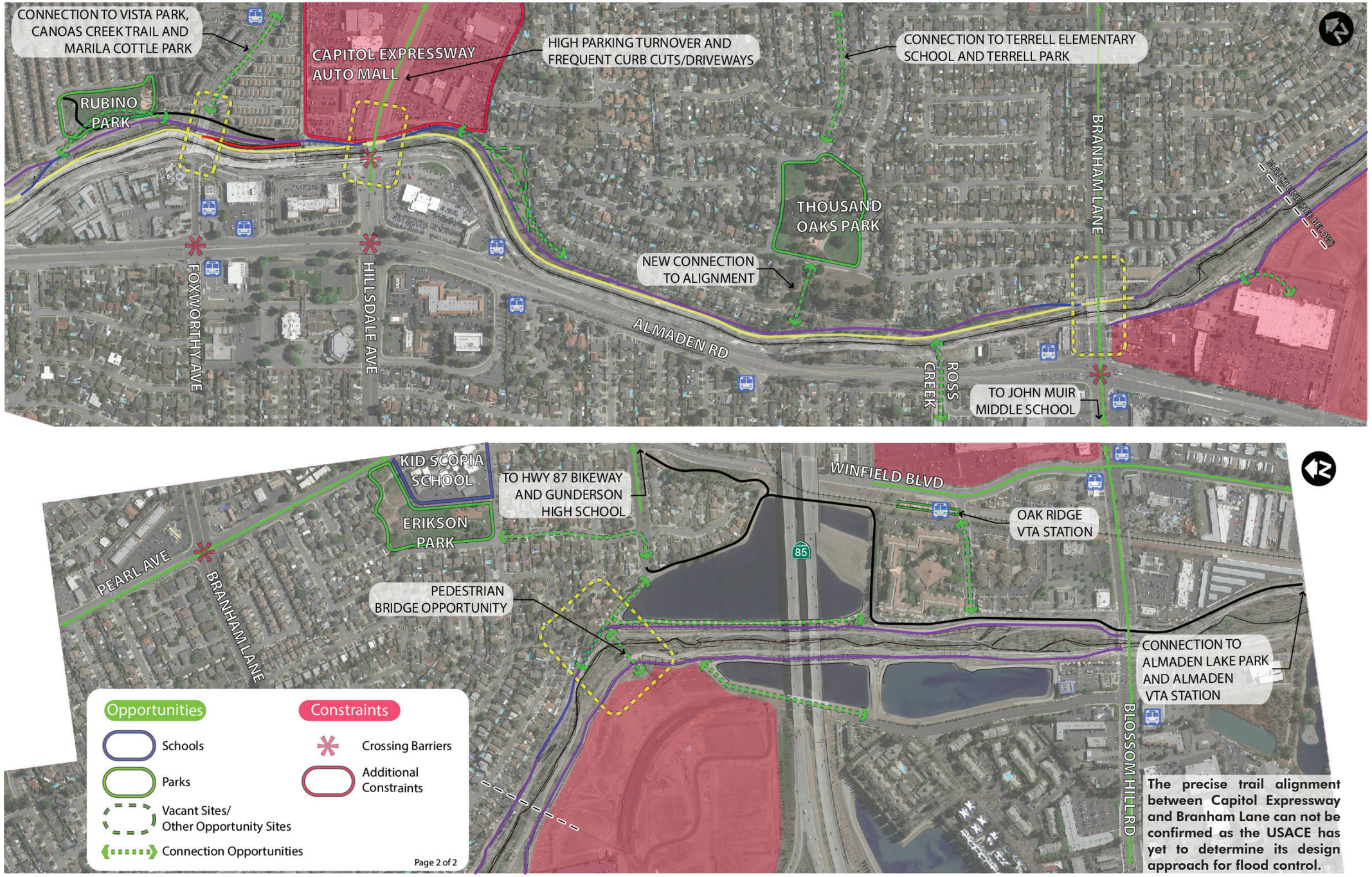


Figure 4: Opportunities and Constraints Map (Cont.)

Attendees discussing the project prior to one of the three community meetings

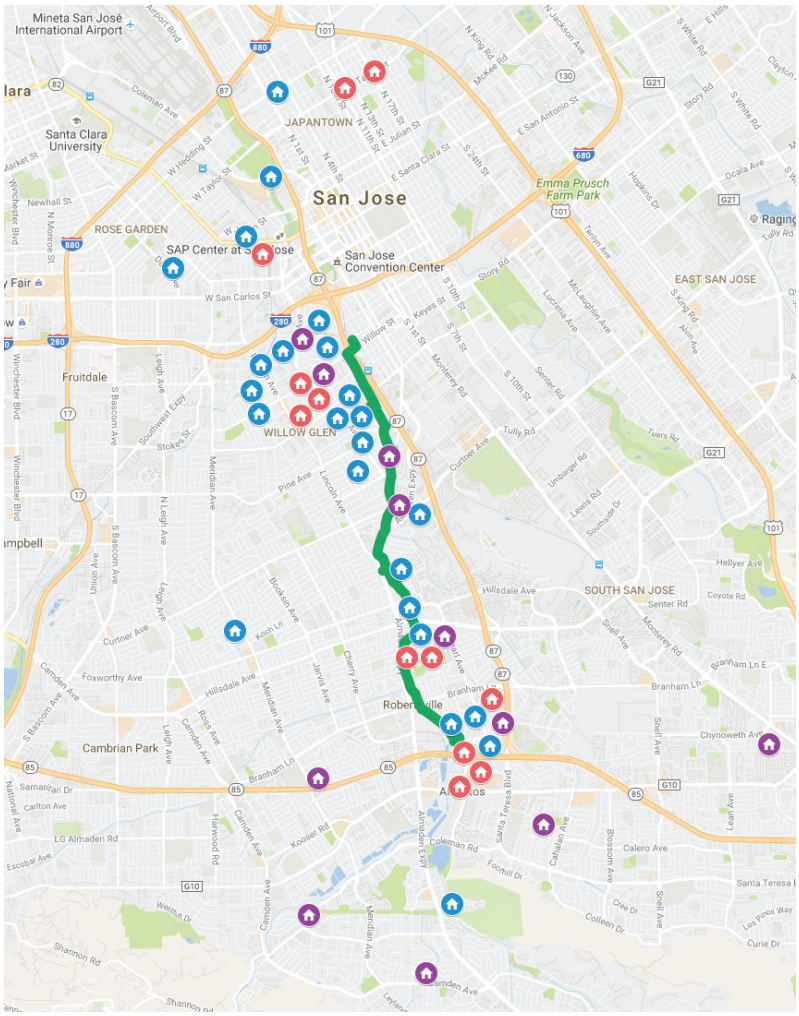


Figure 5: Public meeting attendees are represented by the colored house icons. Blue=Meeting #1; Purple=Meeting #2; Red=Meeting #3

The public outreach component included input from community members, stakeholders, and a number of agencies. The input received was considered and integrated when possible. Through a process of dialogue and analysis, design refinements were made to consider and address comments from the City, stakeholders, and Community members. This process of refinement has resulted in the recommended trail alignment shown in this document.

Figure 6 provides a graphic overview of the outreach meetings involved in the planning process. Detailed meeting minutes and summaries can be found in the Appendix.

COMMUNITY MEETINGS

All community meetings were held at Gardner Community Center, 520 Virginia Street in San José.

At the first meeting, the City and consultant team presented a summary of existing conditions, opportunities and constraints, a preliminary trail alignment plan developed after the first TAC meeting, and a list of potential trail amenities for the community to consider. The purpose of the first workshop was to gather data from the

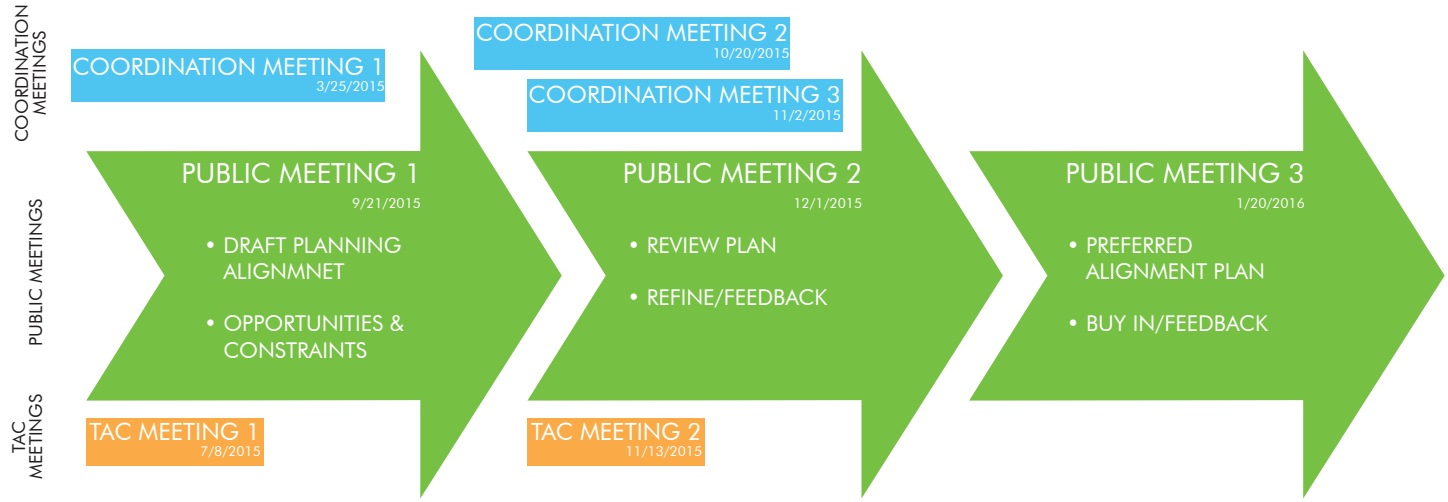


Figure 6: Public Outreach Process

public, uncover additional opportunities and concerns, and receive feedback on the public's priorities and needs as they relate to this project. The second community meeting focused on the community's evaluation of the revised trail alignment plan and the placement of trail amenities for the community to consider. The third and final community meeting's intent was to receive confirmation of the final trail alignment plan and receive any final comments from the public in a workshop setting. During the course of the meetings, the community expressed support for the project and indicated some wishes and concerns regarding the project moving forward. In summary, these concerns included:

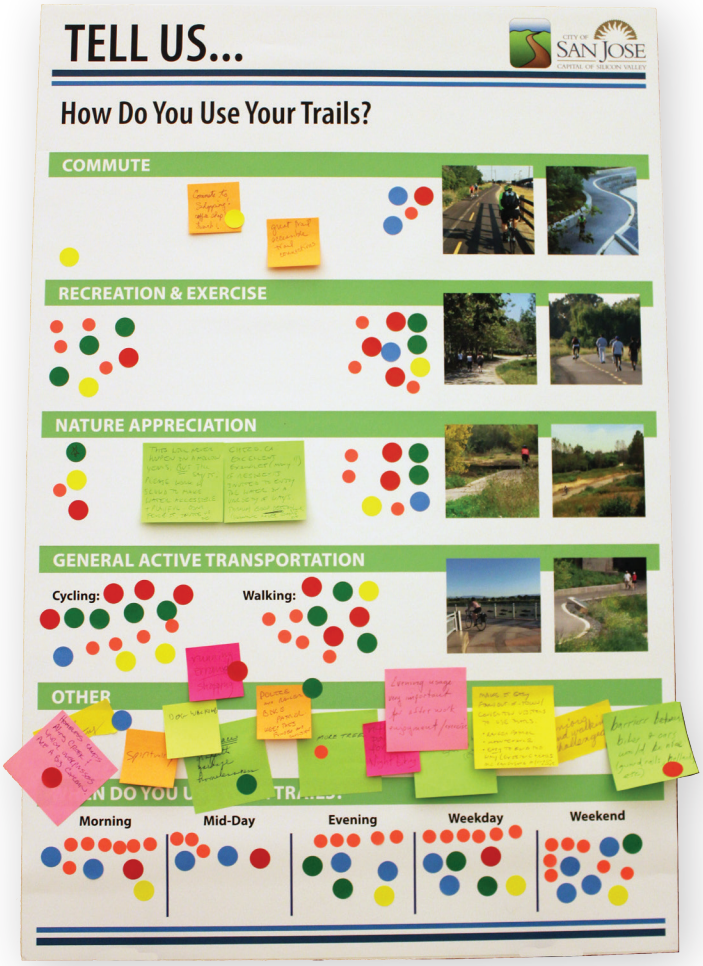
- Safety and security along the trail/riparian corridor
- Wayfinding, signage and connections to adjacent land uses
- Operations and maintenance of the trail
- Context sensitive design solutions
- Art, passive spaces, and separation of uses

In the course of the three community meetings, the City obtained over 120 comments from the community. Of those comments received:

- 56% of comments were incorporated as part of the master plan
- 31% will be considered during the design stage and/or subject to Department of Transportation for related roadway improvements
- 13% of comments were not incorporated because of technical, policy or other challenges

Further input was received from the Erikson Neighborhood at two seperate neighborhood meetings in 2015 and 2016.

Prior to the first public meeting, the City created a website



dedicated to providing the public with updates on the development of the master plan. The site included the community meeting presentations, meeting notes and maps of the proposed alignment. Participants at the community meetings were provided with the Trail Program Manager's contact information for follow up questions or comments. Additional comments were submitted and those email inquiries are included in the appendix.

The alignment defined by the Master Plan is as shown to the community in the third public meeting and the supporting documentation provides the context and analysis for the alignment.

TAC MEETINGS

The TAC was comprised of City, local and state agencies all with regulatory, managerial, and/or ownership responsibilities within the project site. The following organizations were participants of the TAC:

City of San Jose:

- City Council Office 3, 6, 9 and 10
- Department of Parks, Recreation and Neighborhood Services (PRNS)
- Department of Public Works, City Facilities Architectural Services Division (PW/CFAS)
- Department of Transportation (DOT)
- San Jose Police Department (SJPD)
- San Jose Fire Department (SJFD)

Other Agencies:

- Santa Clara Valley Water District (SCVWD)
- Santa Clara County, Roads and Airport Department
- California Department of Fish and Wildlife (CDFW)
- United States Army Corps of Engineer (USACE)
- Regional Water Quality Control Board (RWQCB)

At the first TAC meeting, the design team provided attendees with a virtual tour of the project site along with potential opportunities and constraints and a conceptual alignment of the trail. The Committee provided a technical review resulting in the refinement of the alignment to reflect the comments received (meeting minutes are provided in the Appendix).

The resulting alignment plan served as the basis for the community presentation at the first community meeting in September 2015. Input received at the meeting was shared with the TAC at the second TAC meeting and its members assisted in resolving issues. Final adjustments were then made to the alignment.

To ensure compliance with the master plan, the TAC will reconvene during the design phase to support problem solving and issue resolution on an as-needed basis.

COORDINATION MEETINGS

With the trail occurring largely within SCVWD and SJWC properties, additional meetings were held with these stakeholders. The primary focus was to consider and address impacts of the planned alignment upon their sites and operational activities. Meeting minutes are provided in the Appendix. Meetings also occurred with the City of San José's Department of Transportation in order document their recommendations for traffic controls at all at-grade crossings.

TRAIL IMAGE BOARD

Developed trails and undeveloped areas along the Guadalupe River corridor
Source: San José and site visits

In initiating the master plan process, the project team developed a set of goals and objectives. A successful plan would provide and support:

1. Connections
2. Access
3. Safety
4. Enjoyment
5. Preservation

TAC and community meetings gathered data and input to define a plan based on achieving these goals.

CONNECTIONS

- To commercial and employment hubs and points of interest.
- To transit including light rail.
- To existing Guadalupe River Trail (north and south), Highway 87 Bikeway, and planned Three Rivers Trail.
- To open space and park resources
- Include wayfinding and signage to alert trail users to off-site destinations.

ACCESS

- Create a trail that is accessible to people with varied abilities. Minimize pedestrian, bicycle, and vehicular conflicts by avoiding sharp turns at undercrossing ramps, bridge approaches and trail access points where possible.
- Make it easy for out-of-town/convention visitors to learn about, locate, and use the trails.
- Locate the trail out of areas prone to flooding to ensure year-round seasonal use.

Guadalupe River Trail will connect trail users to the corridors natural setting.

SAFETY

- Deter illicit behavior under bridges.
- Maximize visibility. Minimize "blind" spots along the trail.
- Employ measure to reduce user conflicts.
- Include wayfinding to inform and assure users.
- Provide milestone markers at 1/4-mile intervals.

ENJOYMENT

- Provide passive use opportunities for meditation, contemplation, and relaxation.
- Direct views of natural setting to facilitate the appreciation of the corridor.
- Include neighborhood identity elements for placemaking.
- Create sense of "destinations" with public art/ architecture, and/or placemaking features

PRESERVATION

- Provide educational interpretive displays relevant to site condition and location. The following topics may be highlighted:
  - natural setting of the corridor
  - Historical figures and events of the area
  - The history of flood control along the river
  - Cultural and natural history of the corridor
  - Chynoweth family
- Facilitate awareness of the sensitive riparian corridor environments.

Opportunities for passive use and enjoyment will be incorporated into the trail elements. (Existing passive space along Guadalupe River, Between Virginia St. & Willow Ave.)

The purpose of this master plan is to define a preferred alignment and to provide development guidelines that suggest characteristics of the completed trail based on the goals and objectives of the community and opportunities and constraints of the site. Since this trail will be part of a larger regional trail system, it must accommodate a known high level of pedestrian and bicycle traffic. Trail count stations along the Lower Guadalupe River Trail support estimated usage of between 500,000 and 800,000 annually (source: City of San Jose Annual Trail Count 2016 http://www.sanjoseca.gov/index.aspx?NID=5205). The City's standard trail width is 12 feet of hard paved surface, with 2 foot wide gravel shoulders, for a typical 16 foot area of development. This dimension is consistent with the Caltrans Highway Design Manual for recommended trail widths. Since this trail is mostly located in constrained conditions, there is a desire to minimize environmental impacts to the extent feasible. As such, the trail will take advantage of SCVWD service roads where possible and in some locations the total width may be limited to 10 feet. Centerline striping and signage will support safer use throughout. The recommended trail alignment is the result of reviewing and balancing the various criteria, priorities, and considerations for trail placement.

This master plan recommends start of work for the following trail reaches begin after USACE flood control improvements in the area have been completed. Flood control work began in 2016 along Reach 12 with future USACE improvements scheduled to begin in 2017 along Reach 12. Proceeding earlier with trail improvements will likely lead to a short-term loss of public investment.

If resources permit, the City may wish to enter into a joint design effort with USACE and SCVWD. USACE follows such arrangement that would include trail improvements as part of the flood control work, with the City paying all supplemental costs but likely seeing efficiency and cost savings via a consolidated construction contract meeting the needs of multiple agencies.

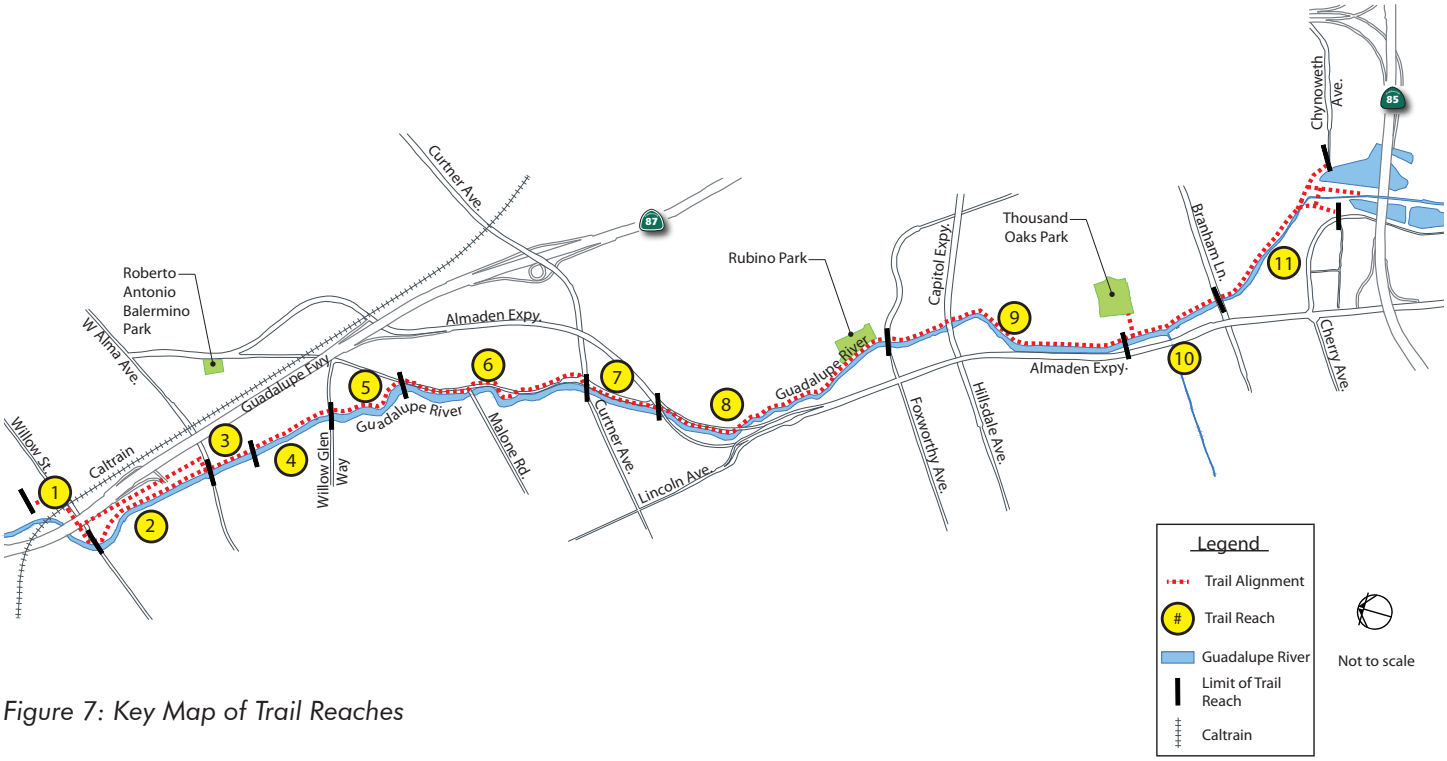
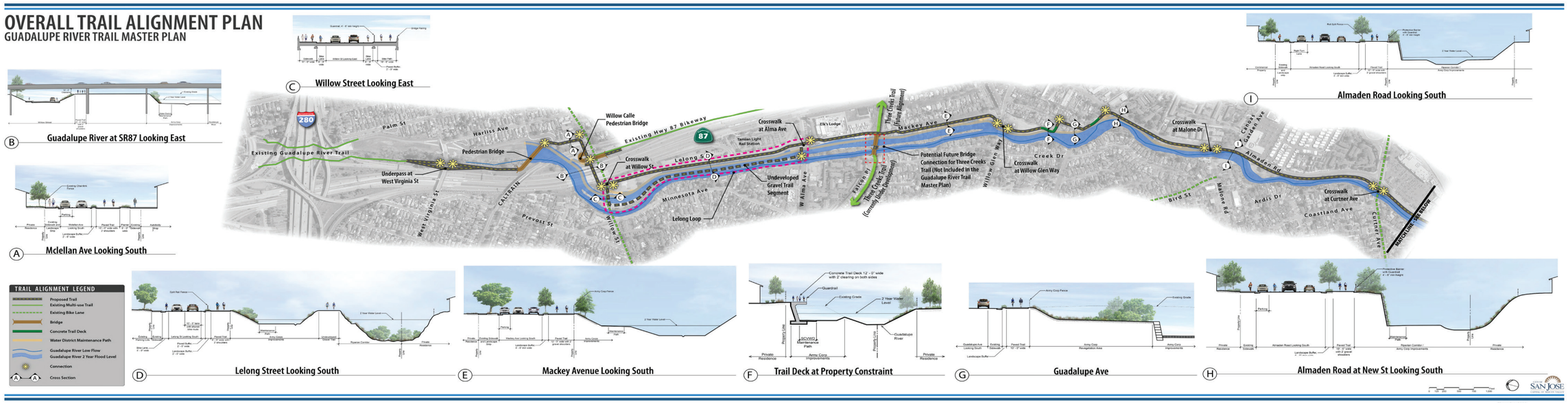


Figure 7: Key Map of Trail Reaches



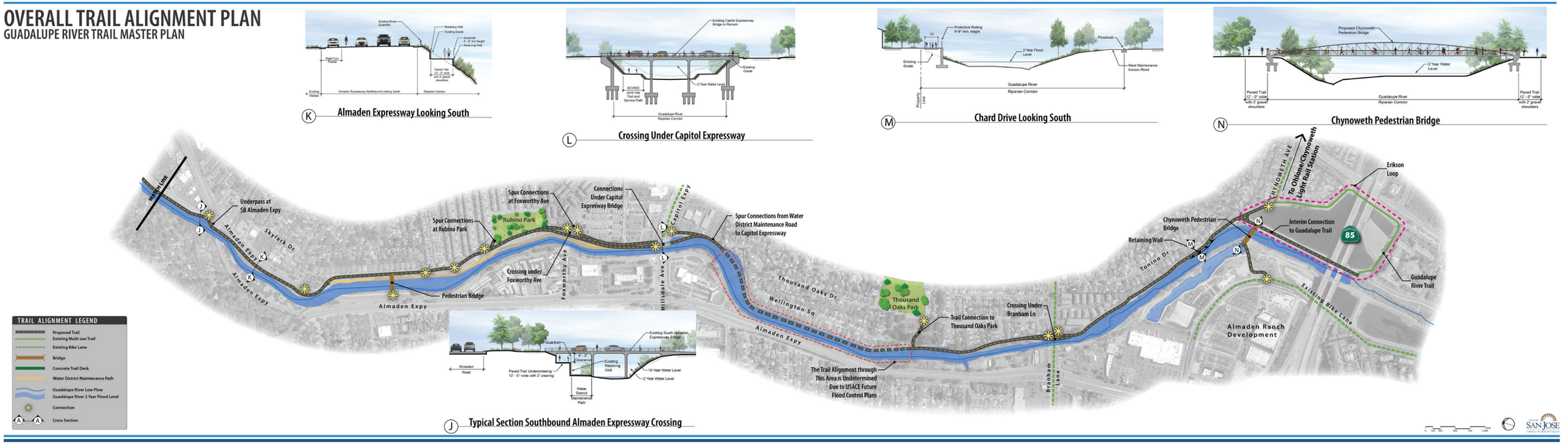


Figure 8: Overall Trail Alignment Plan

The following are descriptions of the considerations, recommendations, and resulting trail alignment for the Guadalupe River Trail from McLellan to Chynoweth Avenues.

The trail reaches are shown in key map Figure 7 and overall preferred trail alignment is shown in Figure 8. With each reach description, a focused plan view is provided along with various enlargement plans and illustrative cross sections of key areas.

1. VIRGINIA TO WILLOW REACH

Preferred Alignment and Characteristics:

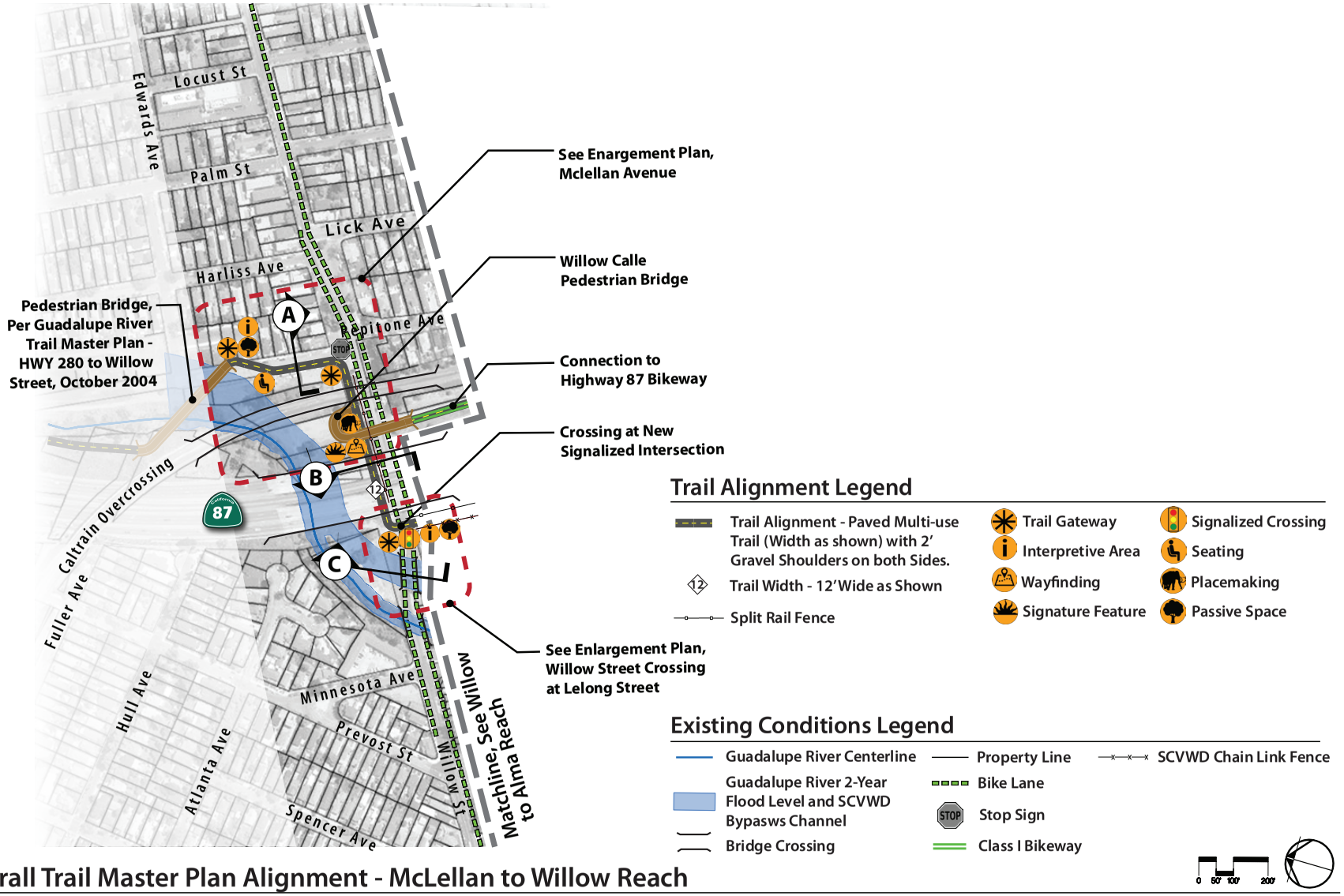
- Approximate length: 1,050 feet
- Reduction of the width of McLellan Ave to allow for the construction of a buffered Class 1 multi-use trail on the east side of the street
- Pedestrian level lighting along McLellan Ave
- Current sidewalk alignment will be maintained
- Construct multi-use trail along frontage of Willow Street (entirely within City right of way) crossing under JPB tracks and Highway 87
- Install lighting at the JPB and Highway 87 undercrossings
- Split rail fence at the top of slope along the trail under Highway 87
- Placemaking features including art and aesthetic lighting along highway bridge columns of both sides of Willow Street
- Three trail gateways
    - Near McLellan at Willow
    - North side of Willow Street at the Lelong Street intersection
    - Southwest corner of Lelong St/Willow St intersection
- Gateways include wayfinding signage, seating, enhanced pavement
- New traffic signals and a crosswalk at the Lelong St/Willow St intersection in accordance to San Jose Department of Transportation (SJDOT) future plans (to be funded by DOT)
- Pedestrian bridge span to link to Highway 87 Bikeway

Opportunities:

- Connection to Highway 87 Bikeway
- Frontage road segment of Willow Street provides ample clearance and right of way for trail construction and gateway features
- Concrete structures of Highway 87 and JPB provide opportunities for art, lighting and color
- Embankment along north side of Willow St provides good separation of trail users from cars while maintaining visibility
- Intersection at Willow and Lelong provides an at-grade crossing of the street
- Roadway cross-section does provide space for a Class I Bikeway connection

Constraints:

- Proximity of future bypass channel limits alignment options
- Homeless encampments may be issue under freeway



Overall Trail Master Plan Alignment - McLellan to Willow Reach

Figure 9: McLellan to Willow Reach Plan

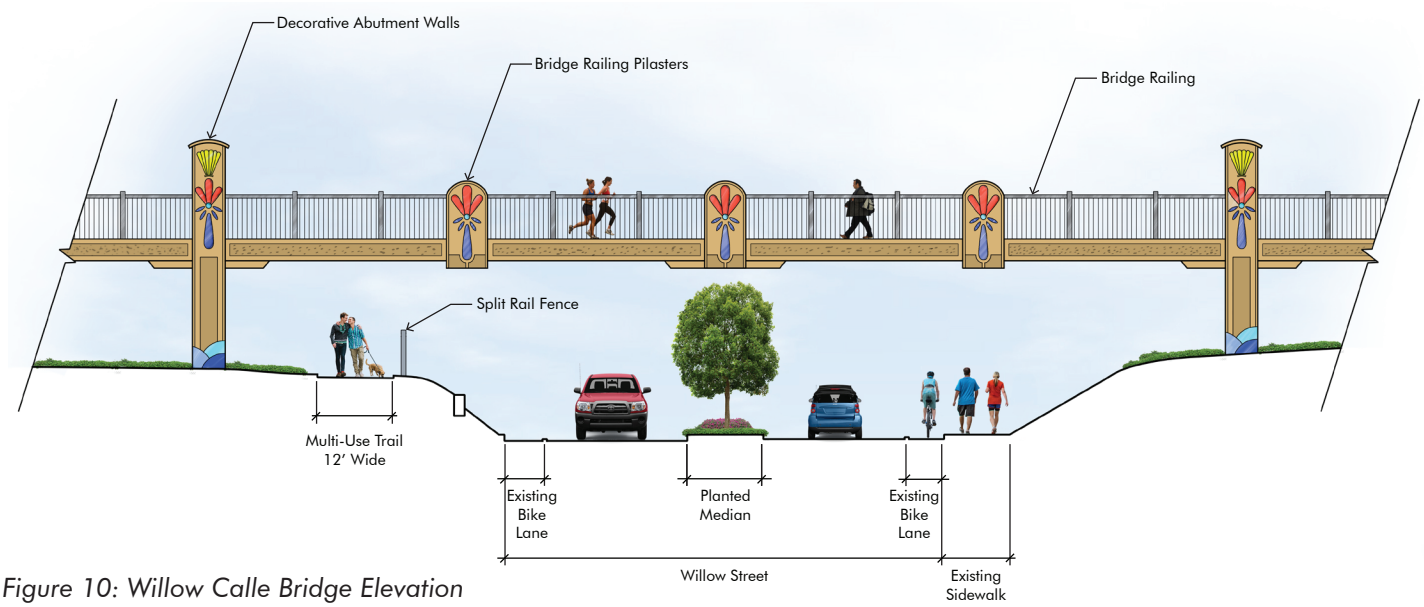


Figure 10: Willow Calle Bridge Elevation

1A. WILLOW CALLE BRIDGE

Preferred Alignment and Characteristics:

- One of two signature features
- Located between PCJPB Caltrain overcrossing and Highway 87, crossing over Willow Street
- Originally proposed as part of the 2004 GRT Reach 6 Master Plan
- Allows a connection from GRT to the existing Highway 87 Bikeway
- 12-15ft wide
- Architectural treatments that represent the Willow Street neighborhood
- Mosaic elements, tiles, vibrant accent colors, and wavy handrails may be incorporated into the bridge's design
- Space within the bridge's circular ramp may be an opportunity for placemaking (see Figure 10).

Bright colors, patterns, and floret shapes exhibited by this planter vase will be the inspiration for the Willow Calle Bridge.

Opportunities:

- **Opportunities:**
- Connection to Highway 87 Bikeway
- Abandoned portion of Willow Street right of way and SCVWD property provides adequate space for bridge ramp
- Unused center turning lane of Willow Street can be converted to a planted median
- High profile convergence of multiple modes of transportation

Constraints:

- Southern landing ramp of bridge is within Caltrans right of way and will require an encroachment permit
- Highway 87 and Caltrain bridges are a visual obstruction of the ped bridge from the auto vantage point
- Existing utilities will require relocation

Figure 11: Detail Plan - McLellan Avenue

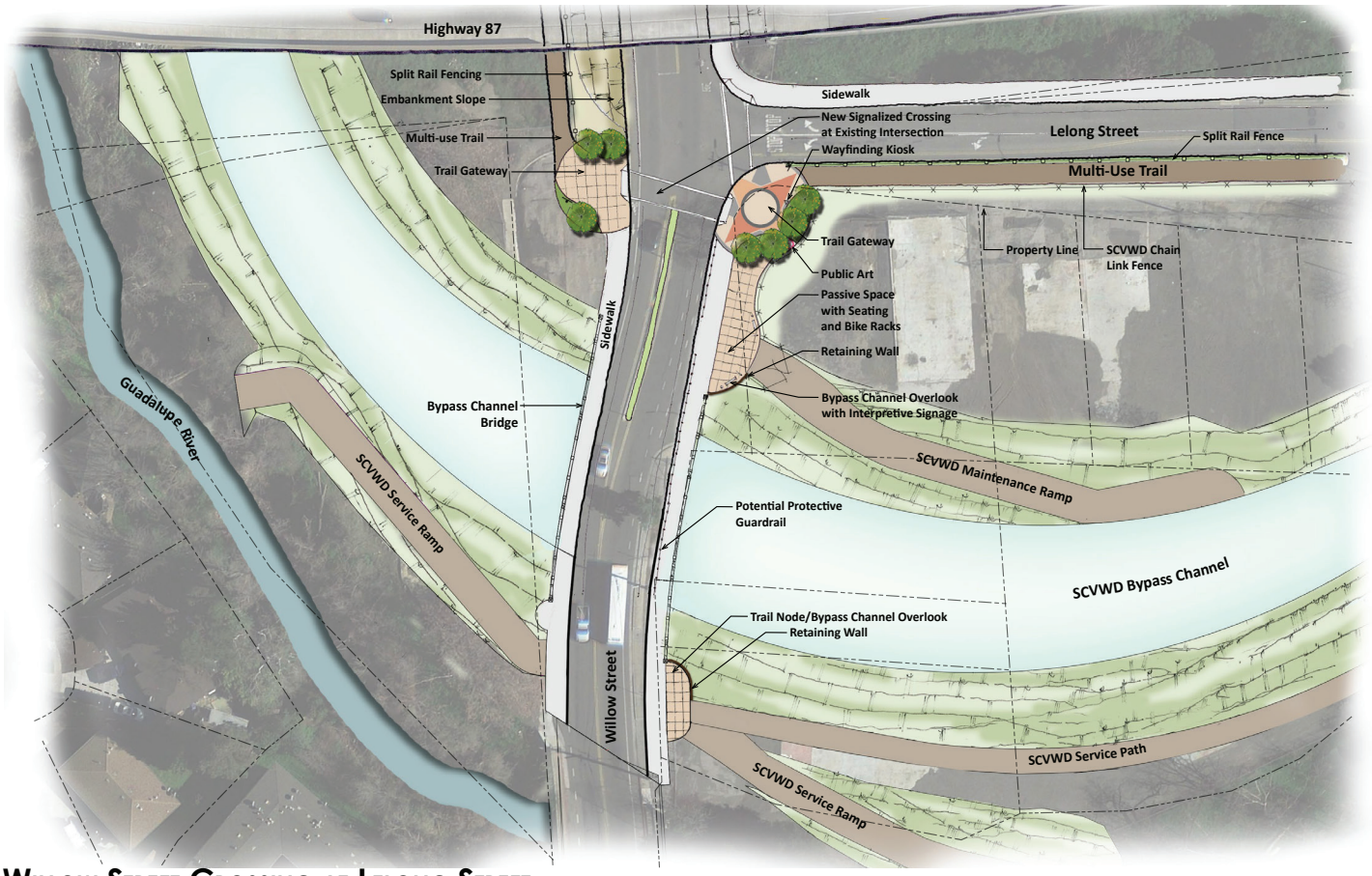


Figure 12: Detail Plan - Willow St Crossing at Lelong

2. WILLOW TO ALMA REACH

Preferred Alignment and Characteristics:

- From Lelong Street/Willow Street intersection to Alma Avenue
- Approximate length: 2,800 feet
- Utilizes a portion of the gravel USACE bypass channel service road to create the Lelong Loop
- USACE vehicular bridges at Willow Street and West Alma Avenue will be constructed with sidewalks wide enough to accommodate the trail as part of the bypass channel improvements
- Along Lelong Street the trail will be paved 8ft wide with 2ft gravel shoulders on either side
- A 2 foot park strip with a split-rail fence will be constructed between Lelong Street and the trail
- At grade connection across West Alma Avenue at the existing traffic signal at the Lelong Street intersection. Traffic signal will require modification with coordination from SJDOT
- Trail access nodes on north and south sides of West Alma Avenue for crossing queuing
- Wayfinding signage to be installed at Tamian Station and at the parking lot of Tamian Station

Opportunities:

- Unpaved levee between river and future bypass channel allows for an "loop" trail segment

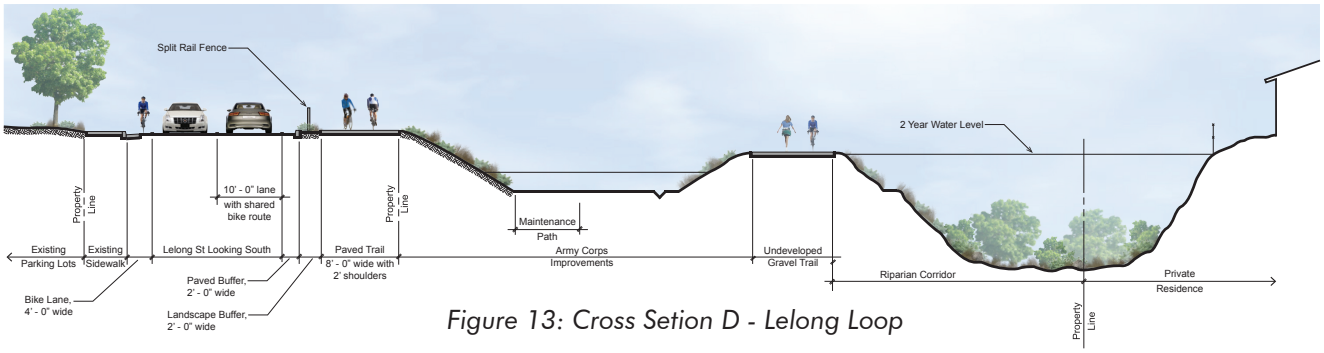


Figure 13: Cross Setion D - Lelong Loop

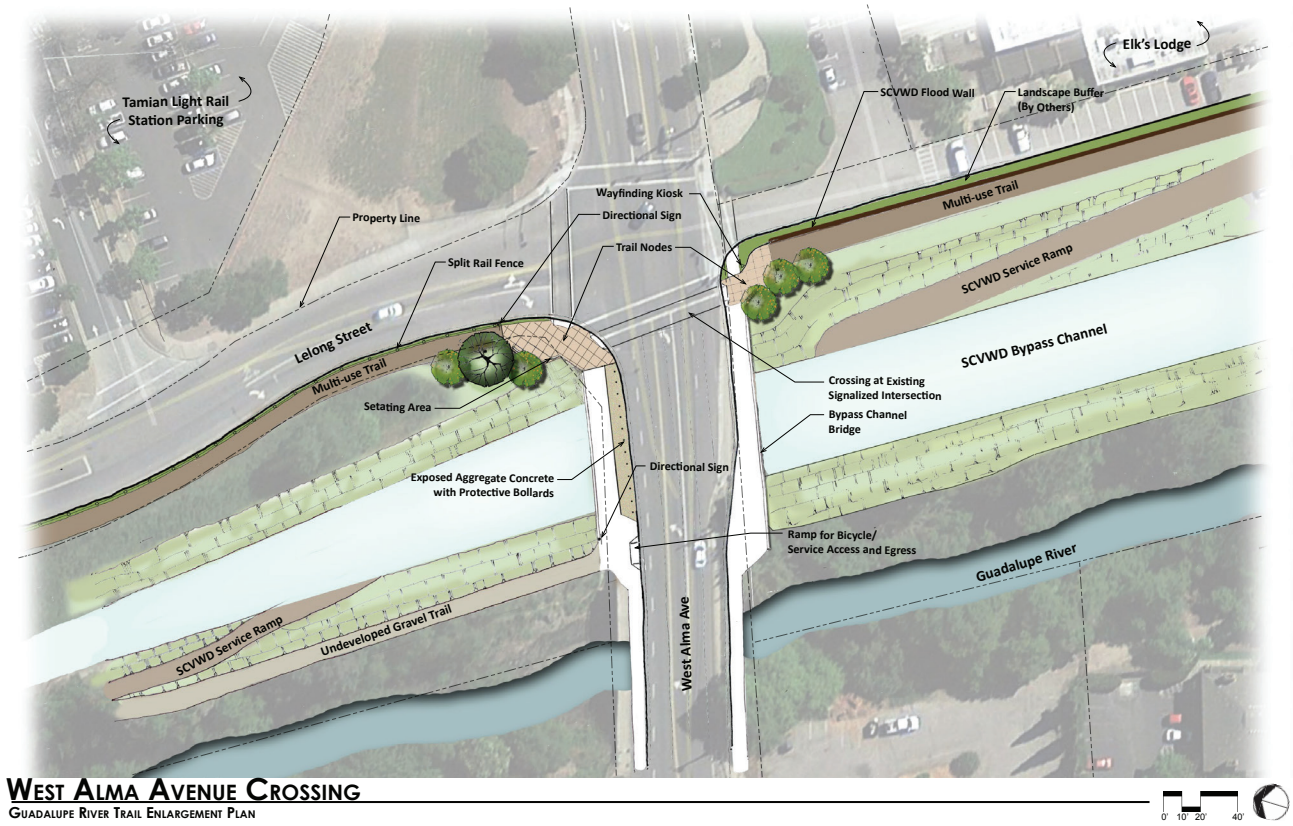
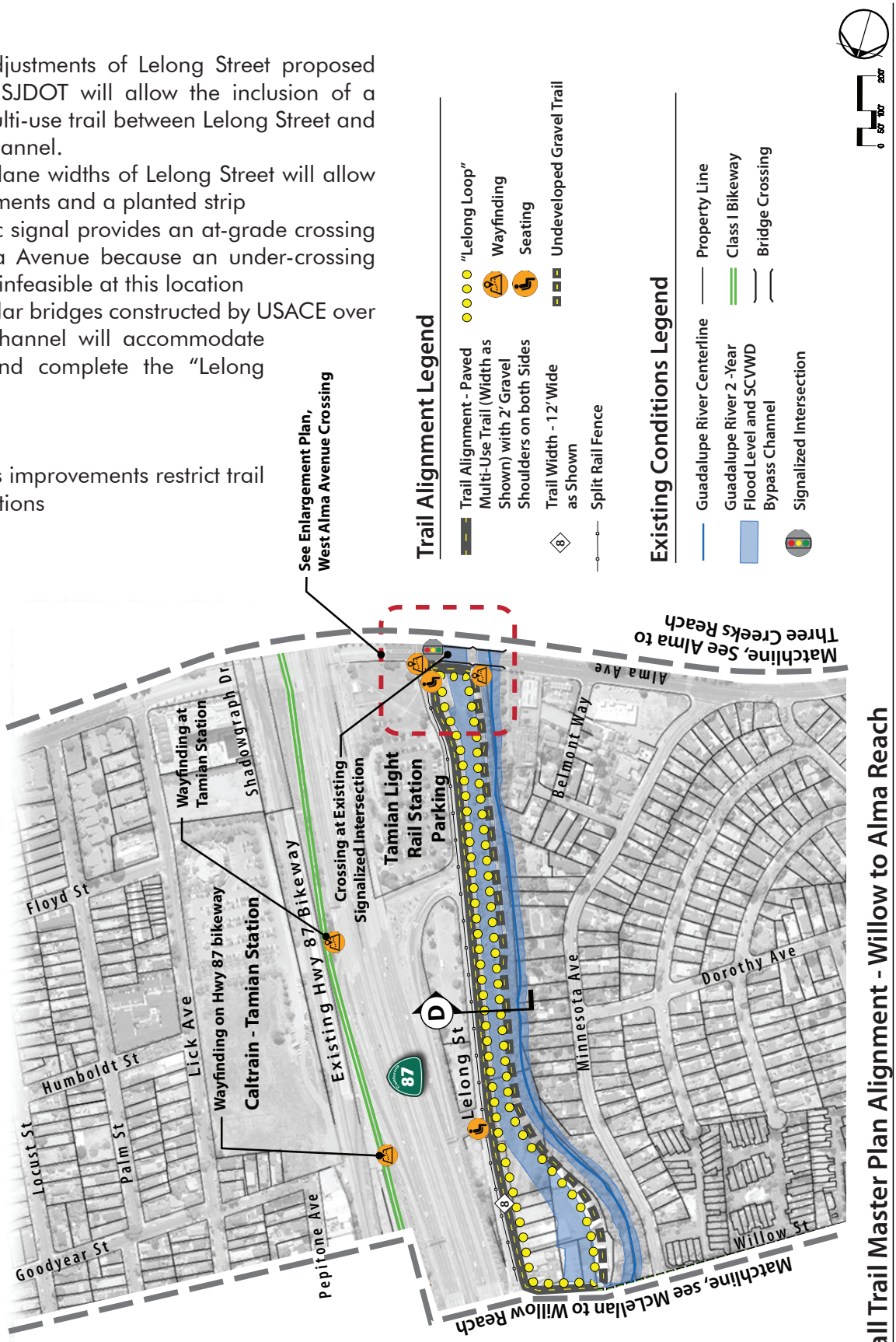


Figure 14: Detail Plan - West Alma Avenue Crossing

- Alignment adjustments of Lelong Street proposed by VTA and SJDOT will allow the inclusion of a separated multi-use trail between Lelong Street and the bypass channel.
- Reduction in lane widths of Lelong Street will allow trail improvements and a planted strip
- Existing traffic signal provides an at-grade crossing of West Alma Avenue because an under-crossing was deemed infeasible at this location
- Future vehicular bridges constructed by USACE over the bypass channel will accommodate trail users and complete the "Lelong Loop"

Constraints:

- Future bypass improvements restrict trail alignment options



Overall Trail Master Plan Alignment - Willow to Alma Reach

Figure 15: Willow to Alma Reach Plan

3. ALMA TO THREE CREEKS REACH

Preferred Alignment and Characteristics:

- From Alma Avenue to the future Three Creeks Trail
- Approximate length: 830 feet
- 12ft wide paved trail with 2ft wide gravel shoulders
- Trail will be constructed over a gravel SCVWD service path that will be constructed as part of the USACE flood control improvements on the west side of a future flood wall to be constructed as part of the flood control improvements as well
- Interconnection of the Guadalupe River Trail and future Three Creeks Trail will occur at a node; with special paving, seating, wayfinding signage, and an interpretive element.

Opportunities:

- Gravel SCVWD service road will provide base for paved trail
- Potential connection with future Three Creeks Trail

Constraints:

- Future bypass improvements restrict trail alignment options and prevents connection to the Three Creeks Trail west of the river
- Existing rail bridge status requires further structural and budgetary analysis prior to the City Council considering a reuse/replacement as a pedestrian bridge

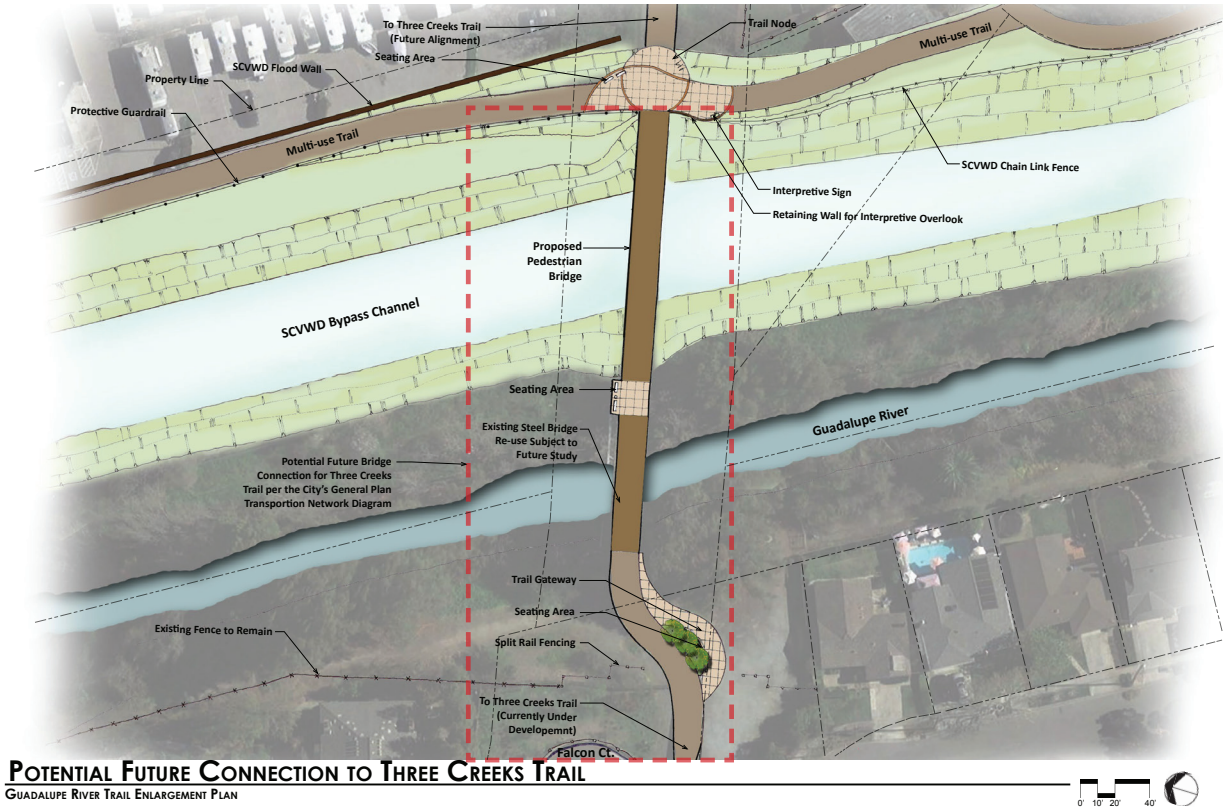
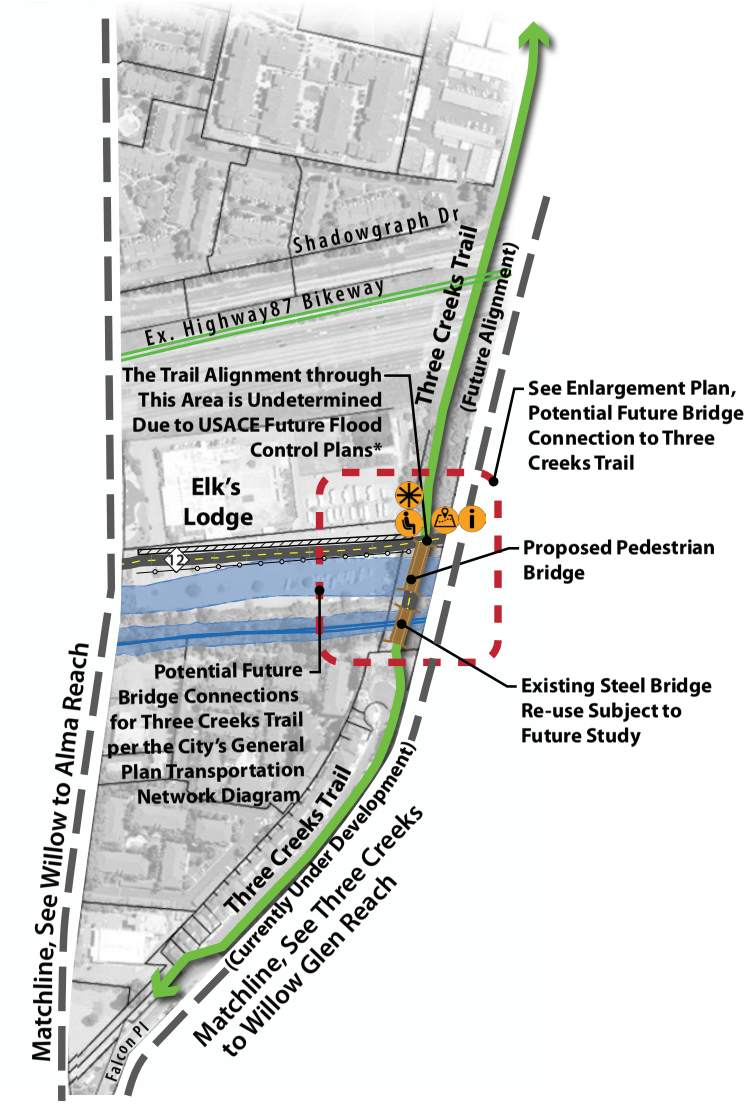


Figure 16: Detail Plan - Connection to Three Creeks Trail



Trail Alignment Legend

- Trail Alignment - Paved Multi-Use Trail (Width as Shown) with 2' Gravel Shoulders on both Sides
- Trail Width - 12' Wide as Shown
- Protective Guardrail
- Trail Gateway
- Interpretive Area
- Wayfinding
- Seating

Existing Conditions Legend

- Guadalupe River Centerline
- Guadalupe River 2-Year Flood Level and SCVWD Bypass Channel
- Property Line
- Class I Bikeway
- SCVWD Flood Wall

Note

*Final trail alignment within this reach to be determined as part of future flood control/ planning/ design work conducted by the US Army Corps and Santa Clara Valley Water District.

0 50' 100' 200'

Overall Trail Master Plan Alignment - Alma to Three Creeks Reach

Figure 17: Alma to Three Creeks Reach Plan

4. THREE CREEKS TO WILLOW GLEN REACH

Preferred Alignment and Characteristics:

- From the future Three Creeks Trail to Willow Glen Way
- Approximate length: 1,500 feet
- Trail will be constructed along the west side within the existing Mackey Avenue right of way
- Trail to be 12 feet wide with 2 foot wide gravel shoulders on both sides
- Construction of the trail will require the reduction in width of Mackey by removal of the existing parallel parking to be completed as part of a separate SJDOT project
- 4 foot wide tree park strip buffer will separate the trail from Mackey Avenue
- Trail will continue to the intersection of Mackey Avenue and Northern Road where it will conform to the westbound shoulder of Northern Road
- Lanes will be modified at the Northern Road approach to Willow Glen Way in order to accommodate room for the trail
- The intersection of Northern Road and Willow Glen Way will be modified with bulb-outs, planter spaces, enhanced striping, and new stop signs to better accommodate for safe trail user crossing and control vehicular traffic
- A trail gateway plaza will be constructed at the northwest corner of Willow Glen and Northern complete with specialty paving, seating, a river overlook area, and architectural features to complement the existing gateway pilasters on the Willow Glen bridge

Opportunities:

- Future bypass improvements allow for the construction of a trail along the western edge of Mackey Ave.
- Open space at the intersection of Northern Road and Willow Glen Way
- Architectural treatments on Willow Glen Way bridge provide inspiration

Constraints:

- Future bypass improvements restrict trail alignment options
- No controlled crossing of Willow Glen Way

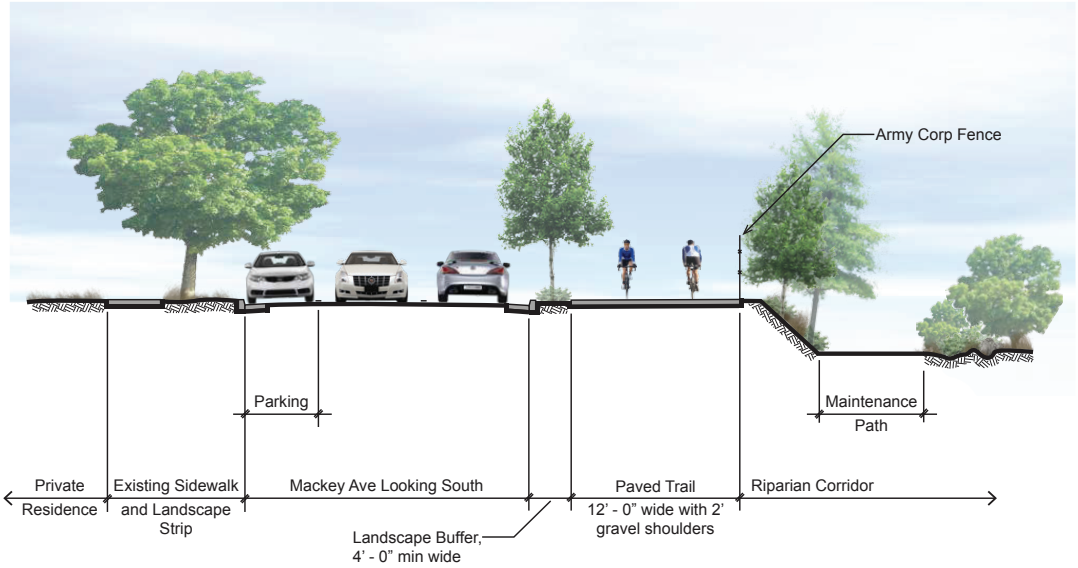
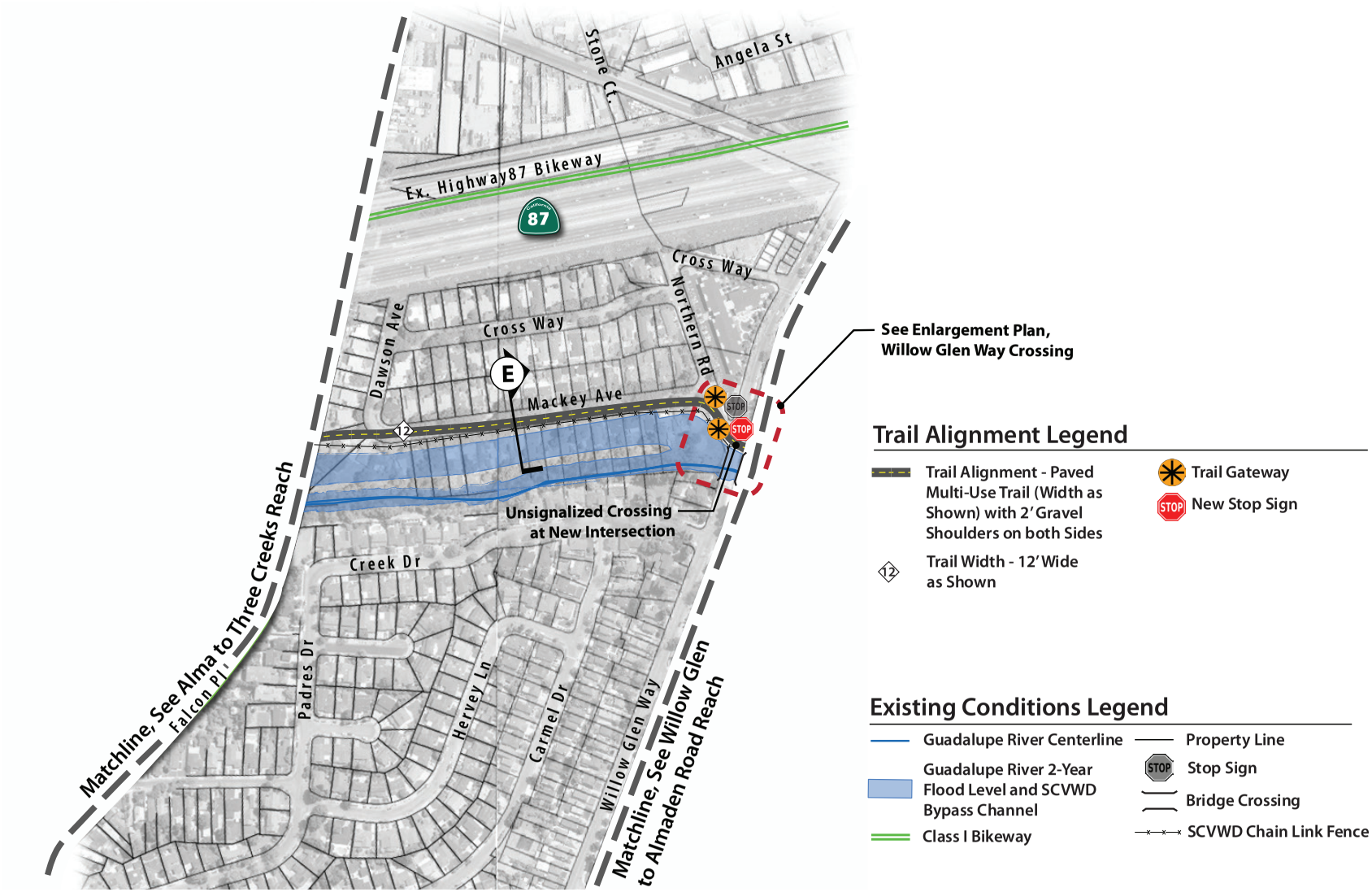


Figure 18: Cross Section E - Mackey Road



Overall Trail Master Plan Alignment - Three Creeks to Willow Glen Reach

Figure 19: Three Creeks to Willow Glen Reach Plan

5. WILLOW GLEN TO ALMADEN ROAD REACH

Preferred Alignment and Characteristics:

- From Willow Glen Way to Almaden Road
- Approximate length: 1,500 feet
- Cantilever trail deck structure in two locations due to USACE bypass channel encroachment into narrow available right-of-way
- A portion of the trail will be constructed within SJWC property. This portion will require fencing on both sides of the trail to restrict access to the river and to SJWC property
- 120 foot long accessible ramp with retaining walls from Willow Glen Way sidewalk to finish grade of SJWC property
- Relocation of a SJWC pumping station
- Widening of a portion of Guadalupe Avenue to allow for the trail and an interpretive station overlooking the USACE revegetation basin
- Minor gateway improvements to the trail at the end of Guadalupe Avenue
- Gateway plaza with seating and enhanced pavement at trails connection to Almaden Road
- Trail development to occur upon future maintenance road to Almaden Road per USACE flood control improvements

Opportunities:

- USACE revegation area can provide an interpretive opportunity
- Riparian corridor is close to Guadalupe Avenue and visually unobstructed by structures
- Future development in the area includes a trail easement

Constraints:

- Future bypass improvements and property lines restrict trail alignment options
- An approximate 5 foot elevation change along the back of sidewalk on the south side of Willow Glen Way
- SJWC property and well pump
- USACE flood control improvements restrict trail placement in two locations

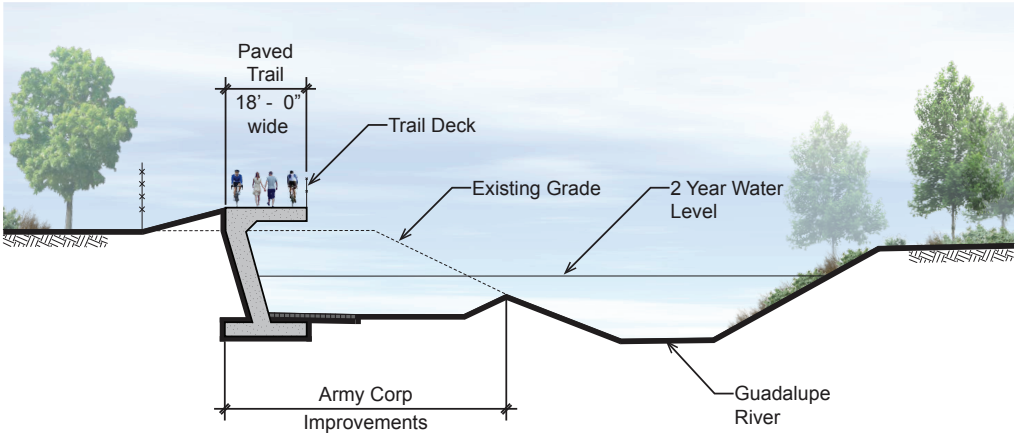
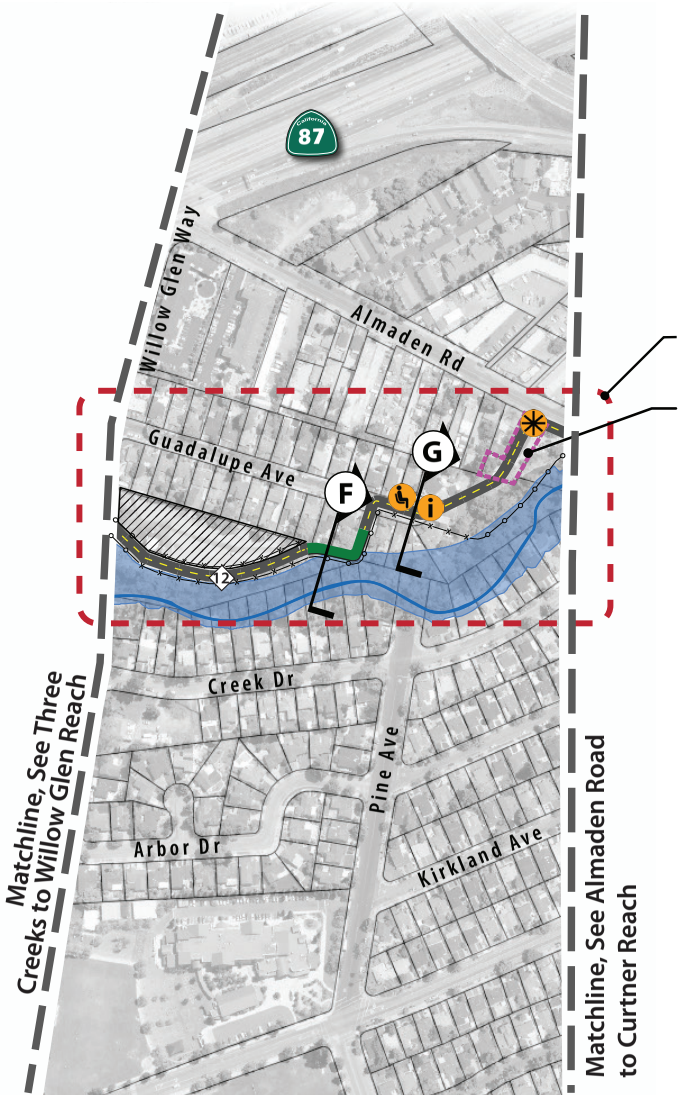
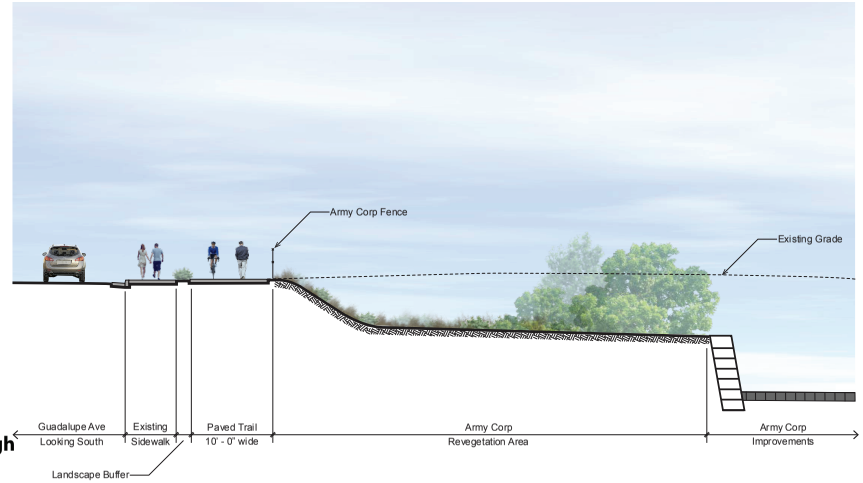


Figure 20: Cross Section F - Trail Deck



See Enlargement Plan, Guadalupe Avenue Area

The Trail Alignment through This Area is Undetermined Due to USACE Future Flood Control Plans*



Cross Section G

Trail Alignment Legend

- Trail Alignment - Paved Multi-Use Trail (Width as Shown) with 2' Gravel Shoulders on both Sides
- Trail Width - 12' Wide as Shown
- Chain Link Fence (Adjacent to SJWC Property)
- Protective Guardrail
- Concrete Trail Deck
- Interpretive Area
- Trail Gateway
- Seating

Existing Conditions Legend

- Guadalupe River Centerline
- Guadalupe River 2-Year Flood Level and SCVWD Bypass Channel
- Property Line
- SJWC Property
- SCVWD Chain Link Fence

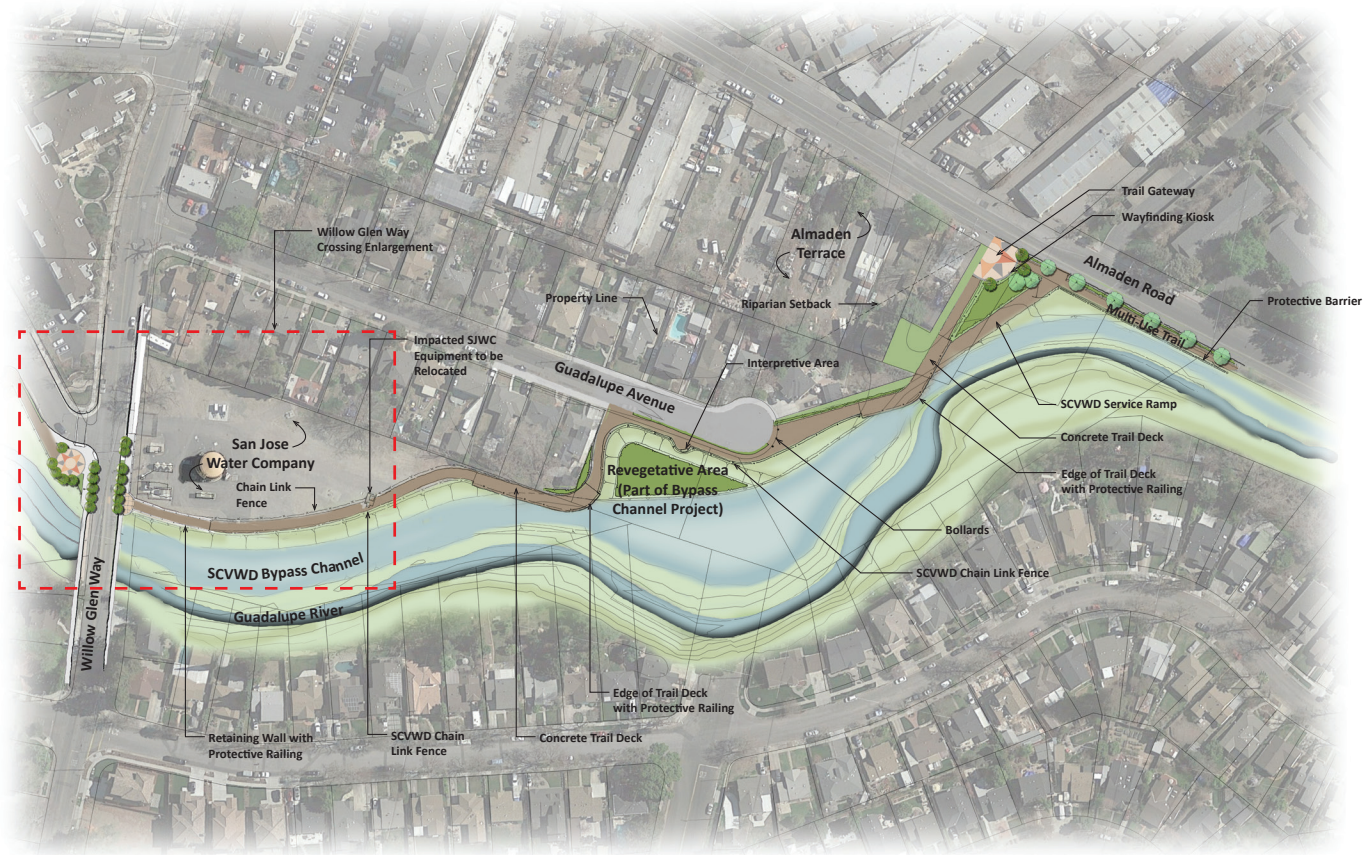
Note

*Final trail alignment within this reach to be determined as part of future flood control/ planning/ design work conducted by the US Army Corps and Santa Clara Valley Water District.

0 50' 100' 200'

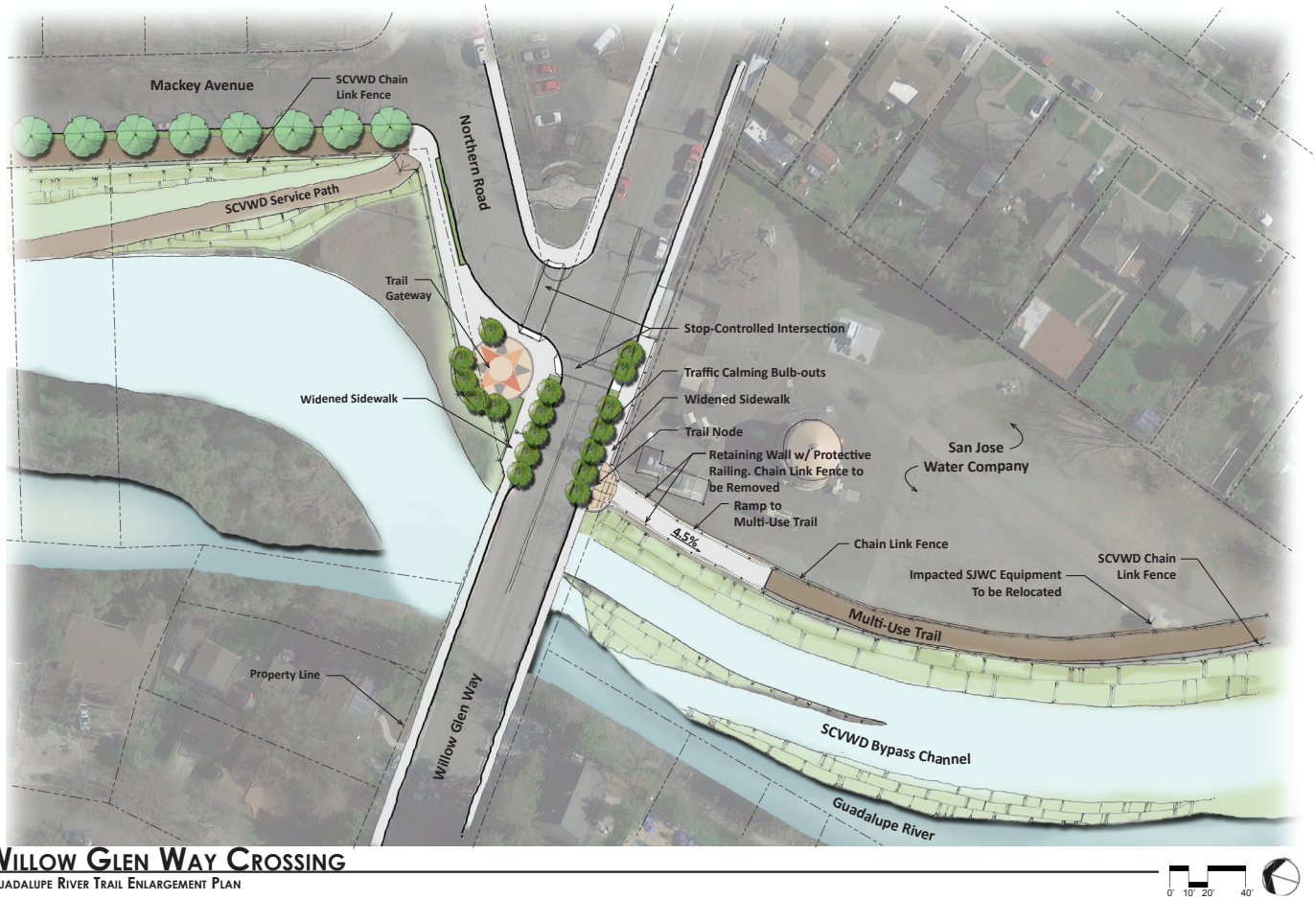
Overall Trail Master Plan Alignment - Willow Glen to Almaden Road Reach

Figure 21: Willow Glen to Almaden Rd Reach Plan



GUADALUPE AVENUE AREA
GUADALUPE RIVER TRAIL ENLARGEMENT PLAN

Figure 22: Detail Plan - Guadalupe Avenue Area



WILLOW GLEN WAY CROSSING
GUADALUPE RIVER TRAIL ENLARGEMENT PLAN

Figure 23: Detail Plan - Willow Glen Way Crossing

6. ALMADEN ROAD TO CURTNER REACH

Preferred Alignment and Characteristics:

- From Almaden Road Curtner Avenue
- Approximate length: 3,225 feet
- Runs along the west side (southbound lanes) of Almaden Road
- 12ft wide paved trail with 2ft wide gravel shoulders
- Construction of the alignment will require relocation of the southbound curb of Almaden Road and a reduction in lane widths
- A 4 foot wide park strip will separate the trail from Almaden Road
- A protective barrier with guardrail extension will be constructed between the trail and USACE flood control improvements to prevent access
- An existing driveway at the SJWC facility along Almaden Road will be reconstructed to accommodate the trail
- Crosses at-grade at existing signalized intersections of Malone Road and Curtner Avenue because under-crossings were deemed infeasible at these sites

Opportunities:

- Open green space along Almaden Road
- Existing signal allows for at grade crossing at Malone and Curtner

Constraints:

- Future bypass improvements restrict trail alignment options
- SJWC facility driveway obstructs clear trail use
- Street crossing at Malone Road and Curtner Avenue
- Large drop at the edge of the USACE flood control improvements

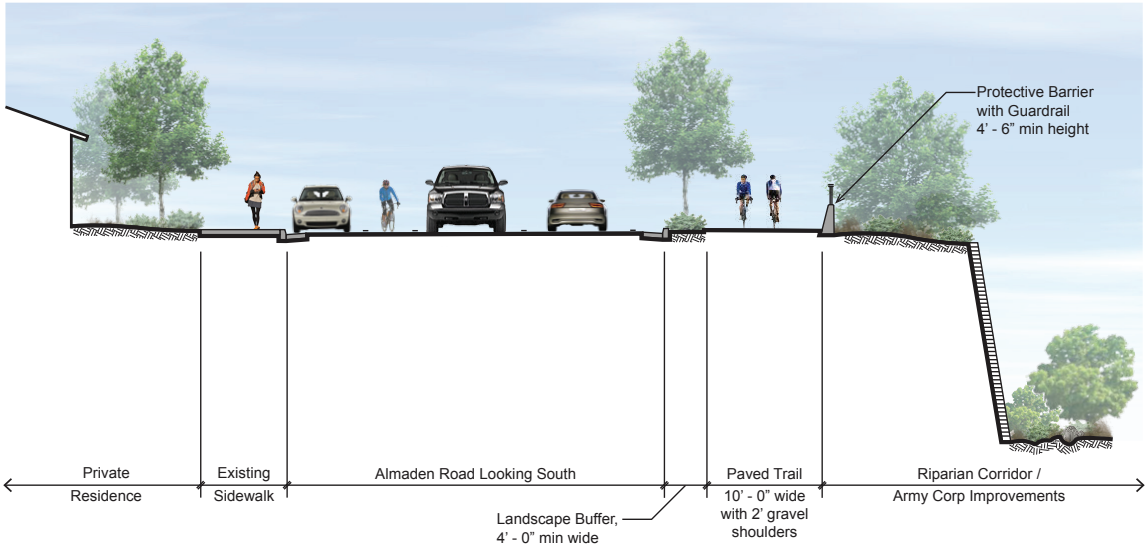
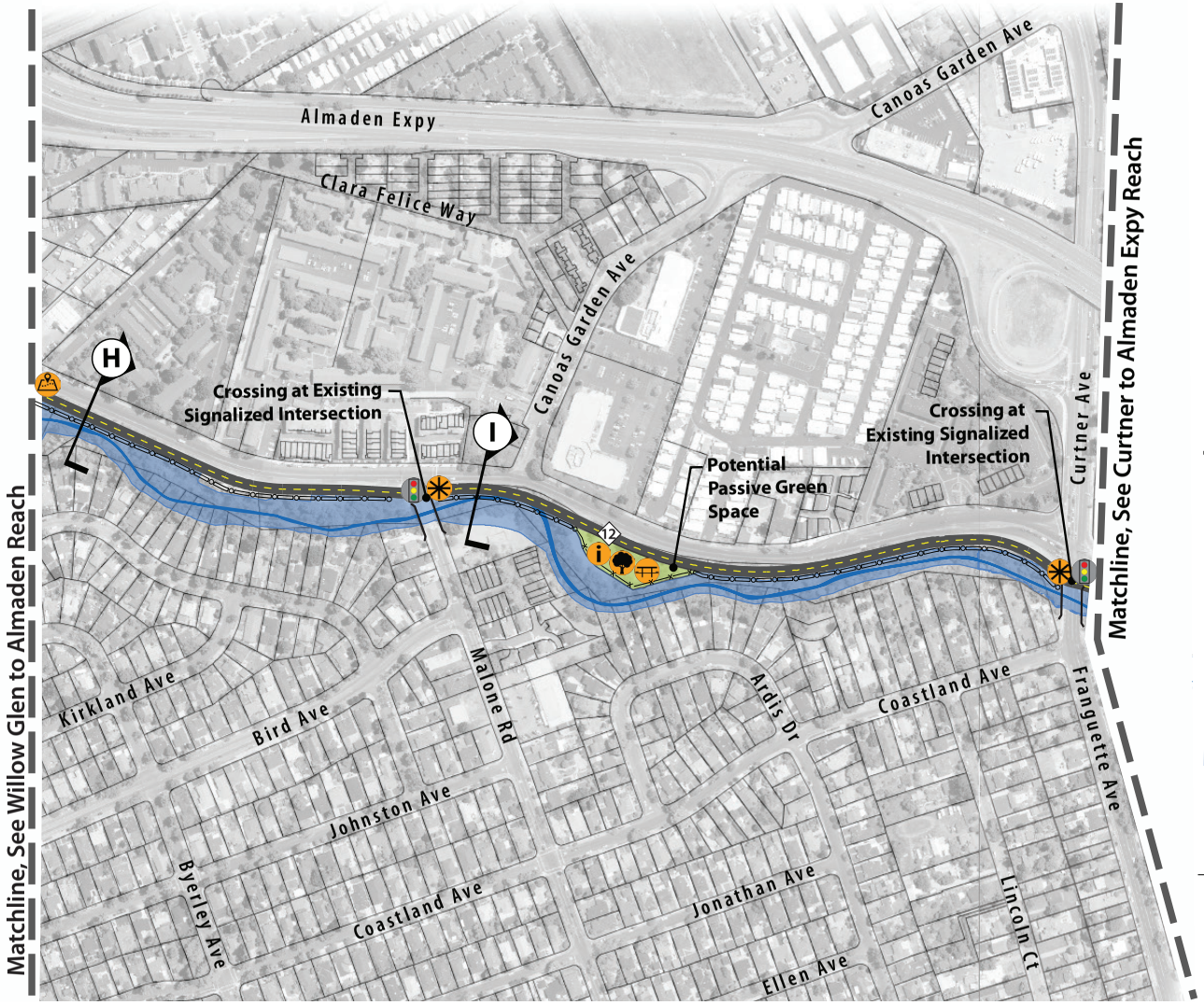


Figure 24: Cross Section H - Almaden Road



Trail Alignment Legend

- Trail Alignment - Paved Multi-Use Trail (Width as Shown) with 2' Gravel Shoulders on both Sides
- Trail Width - 12' Wide as Shown
- Protective Barrier
- Wayfinding
- Passive Space
- Picnic
- Trail Gateway
- Interpretive Area

Existing Conditions Legend

- Guadalupe River Centerline
- Guadalupe River 2-Year Flood Level and SCVWD Bypass Channel
- Property Line
- Bridge Crossing
- SCVWD Chain Link Fence
- Signalized Intersection

0 50' 100' 200'

Overall Trail Master Plan Alignment- Almaden Road to Curtner Reach

Figure 25: Almaden Road to Curtner Reach Plan

7. CURTNER TO ALMADEN EXPRESSWAY REACH

Preferred Alignment and Characteristics:

- From Curtner Avenue to Almaden Expressway
- Approximate length: 1,120 feet
- 12ft wide paved trail with 2ft wide gravel shoulders
- Continues south along the western edge of Almaden Road to the intersection at Almaden Expressway
- Small trail plaza at corner of Almaden Expressway intersection
- A 4 foot wide park strip will separate the trail from Almaden Road
- A protective barrier with guardrail extension will be constructed between the trail and USACE flood control improvements to prevent access

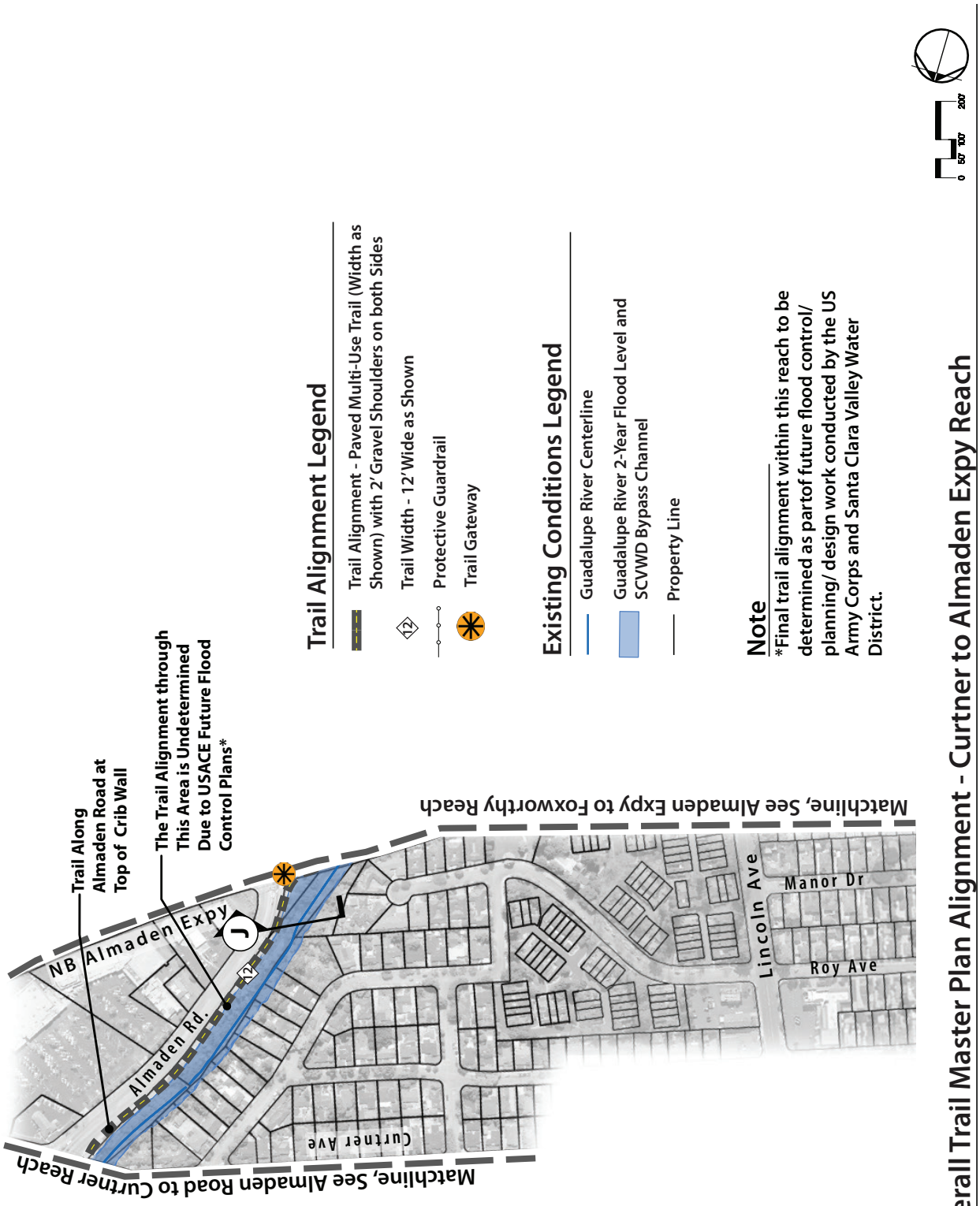
Opportunities:

- Open green space along the western edge of Almaden Rd

Constraints:

- Future bypass improvements restrict trail alignment options
- Large drop at the edge of the USACE flood control improvements

Note: due to the anticipated additional pedestrians and bicyclists accessing the corner of Almaden Rd and Almaden Expwy via the GRT, a traffic analysis will be required by the County at the time of the preliminary design phase for this reach.



Overall Trail Master Plan Alignment - Curtner to Almaden Expy Reach

Figure 26: Curtner to Almaden Expy Reach Plan

8. ALMADEN EXPRESSWAY TO FOXWORTHY REACH

Preferred Alignment and Characteristics:

- From Almaden Expressway to Foxworthy Avenue
- Approximate length: 5,000 feet
- 12ft wide paved trail with 2ft wide gravel shoulders
- Crosses under Almaden Expressway at two locations
- At the undercrossing of the southbound leg of Almaden Expressway, a protective guardrail will be constructed atop the existing retaining wall
- Excavation of soil between the bridge abutment and existing retaining wall under the southbound Almaden Expwy bridge will be required to achieve proper trail clearance
- Continues along the river side of the northbound leg of Almaden Expressway
- Alignment will be slightly downslope to provide a safer horizontal and vertical separation from Almaden Expressway and will require removal of riparian vegetation. To achieve balanced cut and fill, a short retaining wall will be necessary on both sides of the trail in this section. A 4'-6" tall pedestrian/bicycle railing will be constructed atop the wall on the downslope side of the trail
- Pedestrian bridge will clear span the river providing a connection to Kock Lane/Almaden Expressway intersection. On the east end of the bridge a small trail node plaza will allow for safe transition. On the west side the bridge will connect to the existing Almaden Expressway sidewalk with a gateway plaza that will include seating, wayfinding, and enhanced pavement.
- The crosswalk at Almaden Expwy will be realigned as a project developed in partnership with CSJ-DOT
- Trail connection nodes will be constructed to McBride Loop and Rubino Park
- At the Rubino Park connection, an interpretive area will be constructed
- Trail lighting will be installed at each undercrossing
- Spur connection to north side of Foxworthy Ave with gateway plaza
- The southern connection and Foxworthy undercrossing will be constructed as part of the Foxworthy to Steval Reach

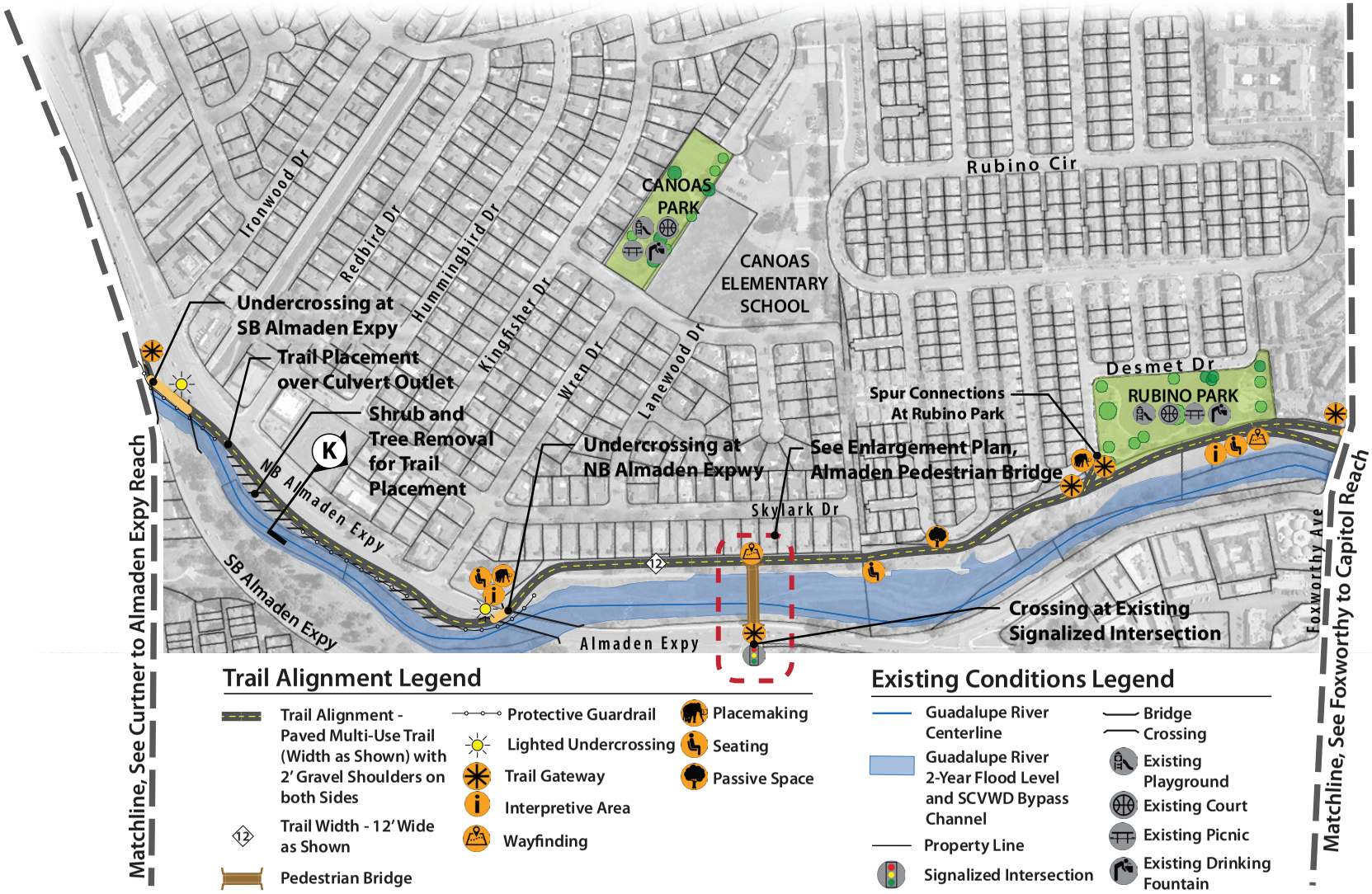
Opportunities:

- Existing retaining wall under the southbound bridge of Almaden Expwy
- Open green space at the end of Wren Drive
- Flat service path along top of stepped wall along alley south of Wren
- Access points at several streets
- Rubino Park directly adjacent to river
- Future SCVWD paved service path under Foxworthy
- Intersection at Koch Lane can provide safe crossing of Almaden Expwy to neighborhoods west of the river

Constraints:

- Future bypass improvements restrict trail alignment options
- Gabion walls at undercrossing of northbound leg of Almaden Expwy
- No connection across river
- Riparian corridor runs directly along Almaden Expwy
- Drainage outfall to the south of the first undercrossing of Almaden Expwy

Note: due to the anticipated additional pedestrians and bicyclists accessing the intersection of Koch Lane and Almaden Expwy via a new pedestrian bridge over Guadalupe River, a traffic analysis will be required by the County at the time of the preliminary design phase for this bridge.



Overall Trail Master Plan Alignment - Almaden Expy to Foxworthy Reach

Figure 27: Almaden Expy to Foxworthy Reach Plan

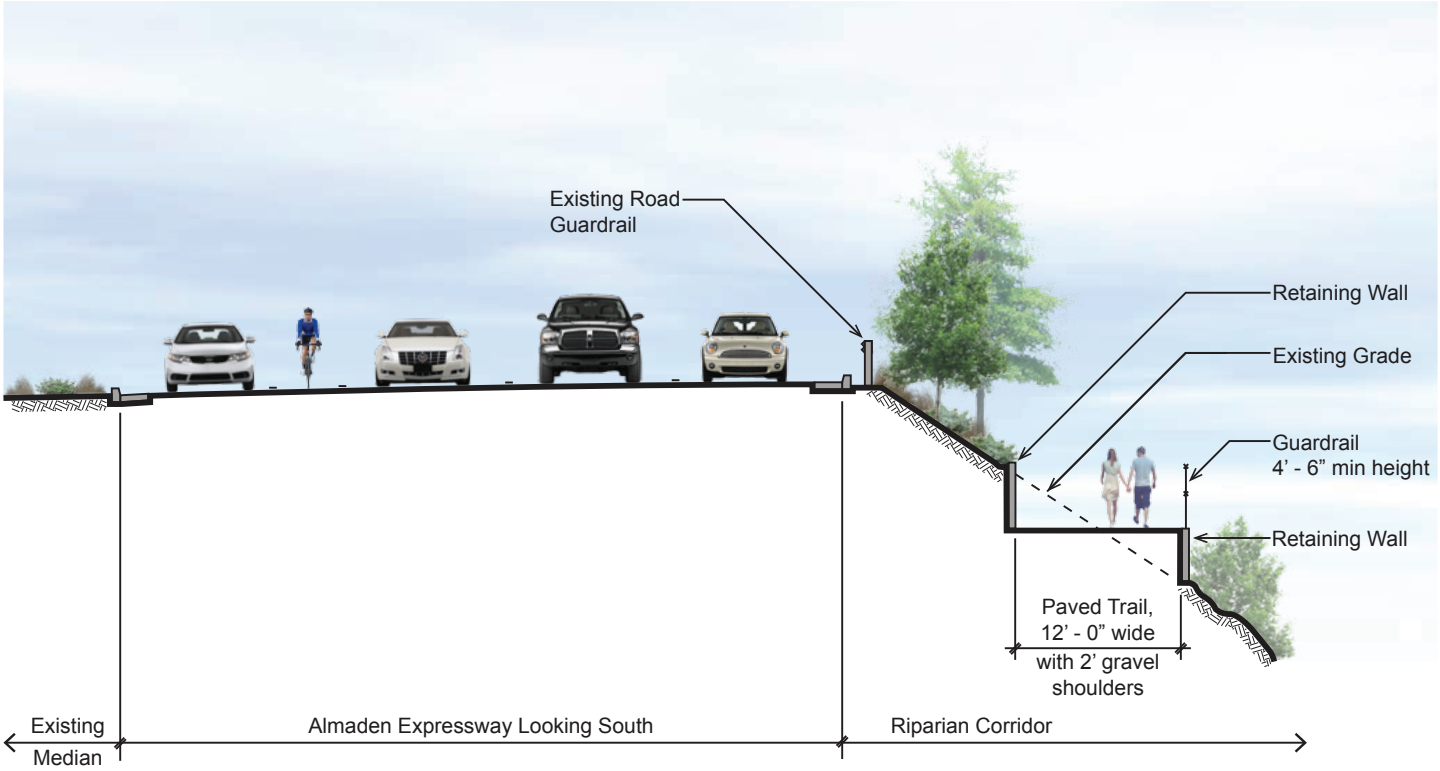
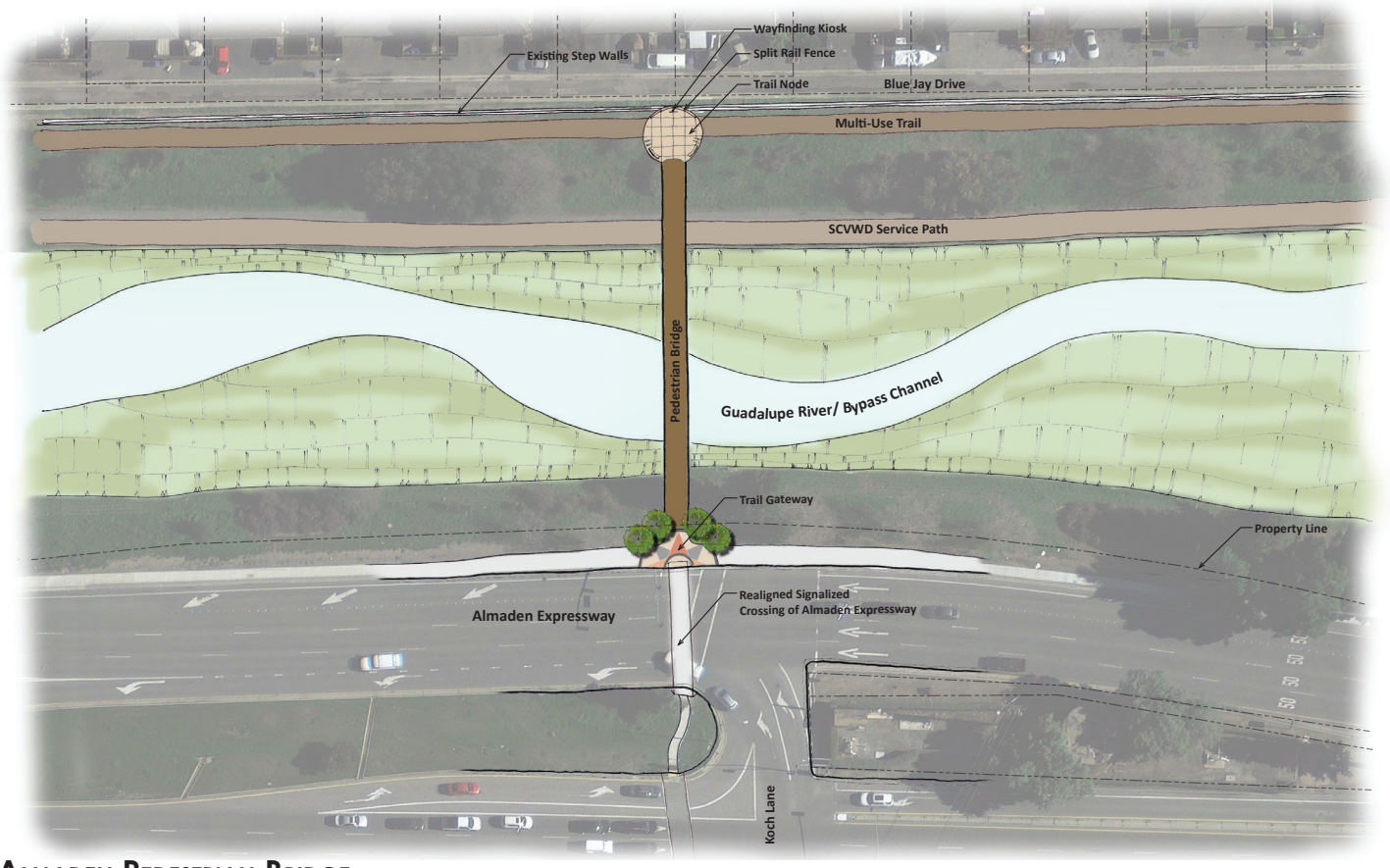


Figure 28: Section K - Almaden Expy



ALMADEN PEDESTRIAN BRIDGE
GUADALUPE RIVER TRAIL ENLARGEMENT PLAN

0' 10' 20' 40'

Figure 29: Detail Plan - Almaden Pedestrian Bridge

9. FOXWORTHY TO THOUSAND OAKS REACH

Preferred Alignment and Characteristics:

- From Foxworthy Avenue to Thousand Oaks Park
- Approximate length: 6,000 feet
- 12ft wide paved trail with 2ft wide gravel shoulders
- Crosses under Foxworthy Ave and Capitol Expressway utilizing future SCVWD service roads
- A spur connection will be constructed to the south side of Foxworthy
- Spur connections to both sides of Capitol Expressway with separated sidewalks widened to 8 feet and connecting to a new signalized crossing at the intersection approximately 500 feet north of the trail
- Trail will be constructed within property owned by SCVWD south of Capitol Expressway
- Connection node at Steval Place
- The USACE intends on constructing a new channel within the area south of Capitol, complete with large crib walls to support the loads of riverside homes within the area. However, the SCVWD stated that the USACE's plans are uncertain at the time of this master plan; the preliminary design and planning are still unknown. Construction of the USACE's plans is expected much later in the future than this reach's construction and the SCVWD has approved for the continued use of the existing service path from Steval Place to Thousand Oaks. As the USACE project moves forward, the City will work with SCVWD and USACE to accommodate a 12 ft. wide paved trail.
- The City typically defines trail reaches from one major arterial roadway to another arterial roadway, or to a park site. Along trail reaches, there may be neighborhood street or other public connection but trail plans avoid designating these access points as major or sole entry points. Ideally the trail provides entry and exit via the arterial roadways so that they are highly visible and easy to recognize. This master plan indicates a long reach from Foxworthy Avenue to Thousand Oaks Park. A pedestrian bridge at Capitol Expressway will only permit a south side entry point, so the reach extends southward to Thousand Oaks Park. A neighborhood cul-de-sac will provide access from Steval Way but this is not recommended as an interim trail terminus due to likely neighborhood impacts.

Opportunities:

- Graded service path along the top of the eastern embankment
- Access point at the western end of Hillsdale Avenue and Steval Place
- Wide right-of-way of Capitol Expressway
- Proximity to commercial centers along Capitol
- Ample passive green space near Steval Place
- Open green space between the trail alignment and Thousand Oaks Park
- Proximity to Thousand Oaks Park and its amenities

Constraints:

- Future bypass improvements restrict trail alignment options
- Insufficient clearance under Capitol Expwy to construct an undercrossing that will not be below the 2 year flood level of the river
- No nearby signalized crossing of Capitol Expwy
- Trail alignment interrupted by property near Wellington Square extends to the west side of the river
- Riparian embankment and vegetation runs immediately along Almaden Expressway on the west side of the river

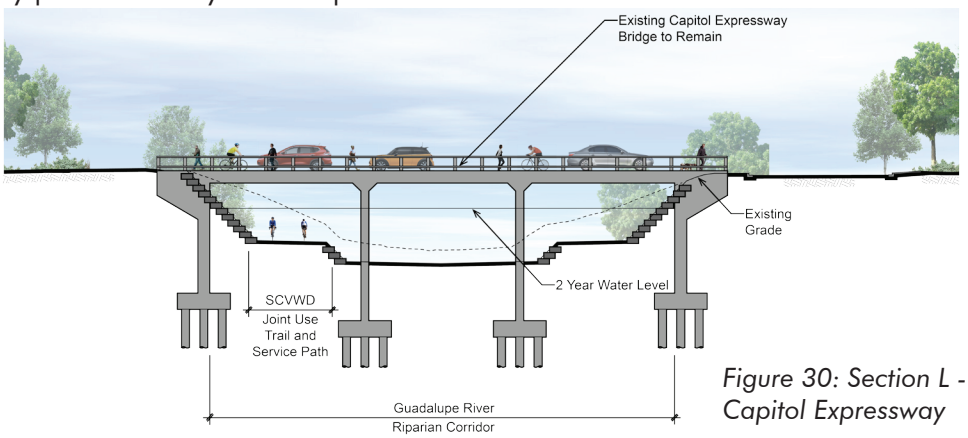
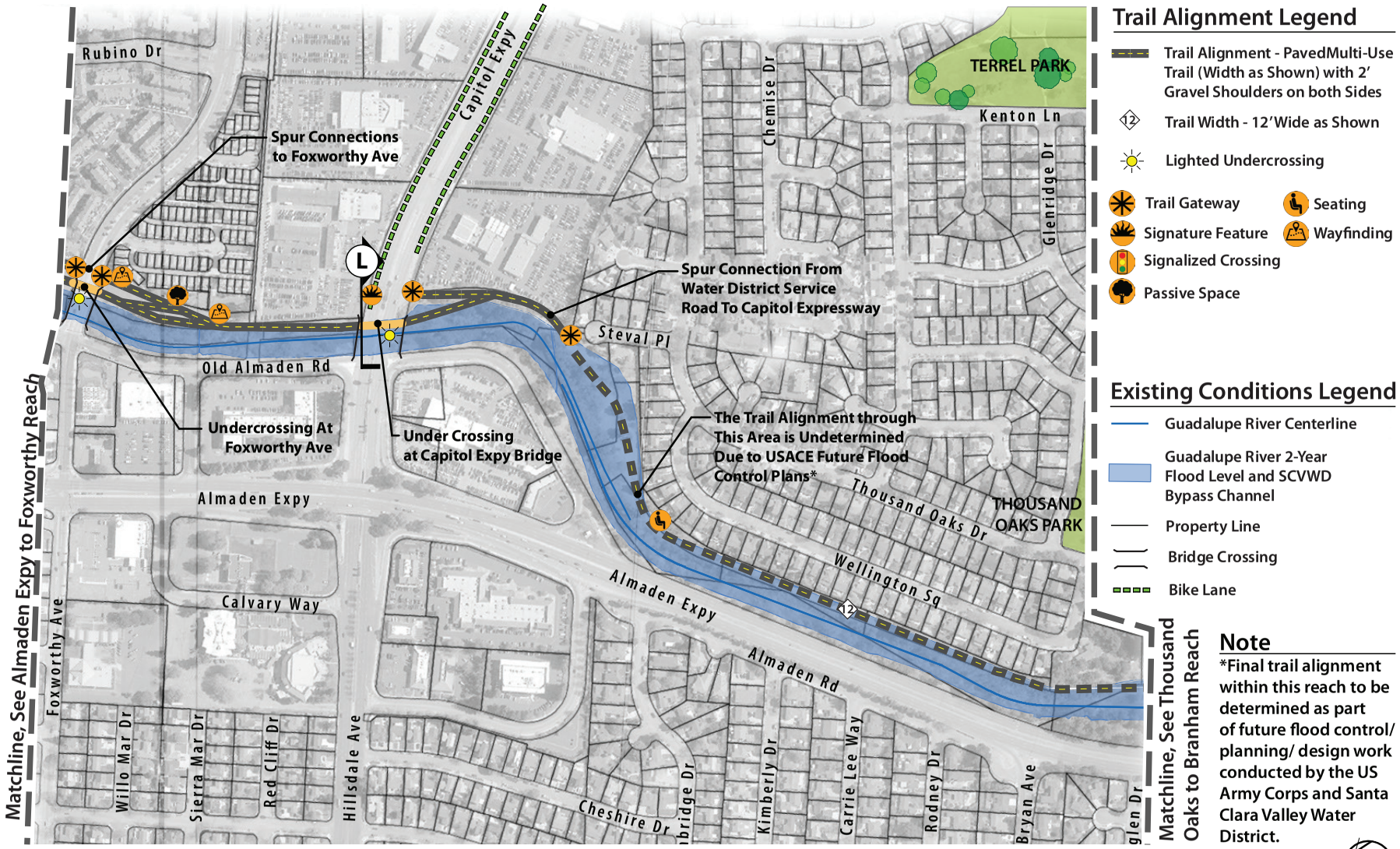


Figure 30: Section L - Capitol Expressway



Overall Trail Master Plan Alignment - Foxworthy to Thousand Oaks Reach

Figure 31: Foxworthy to Thousand Oaks Reach Plan

10. THOUSAND OAKS TO BRANHAM REACH

Preferred Alignment and Characteristics:

- From Thousand Oaks Park to Branham Lane
- Approximate length: 2,300 feet
- 12ft wide paved trail with 2ft wide gravel shoulders
- Undercrossing at Branham Lane
- Spur connection to the north and south sides of Branham Ln
- The USACE has preliminary drafts for construction of hydromodification within the area (specifically Ross Creek), but have not proceeded to develop design plans. Due to the uncertainty of USACE future design developments, the SCVWD has approved the construction of this master plan's trail going forward.
- A spur connection to Thousand Oaks Park through the existing open green space to the west of the park will be constructed with picnic tables, seating and/or fitness elements.
- An at grade crossing at the intersection of Thousand Oaks Dr and Brockhampton Ct will provide a connection to the existing park

Opportunities:

- Graded service path along the top of the eastern embankment
- Convergence point at Ross Creek
- Adequate clearance for trail undercrossing of Branham Ln

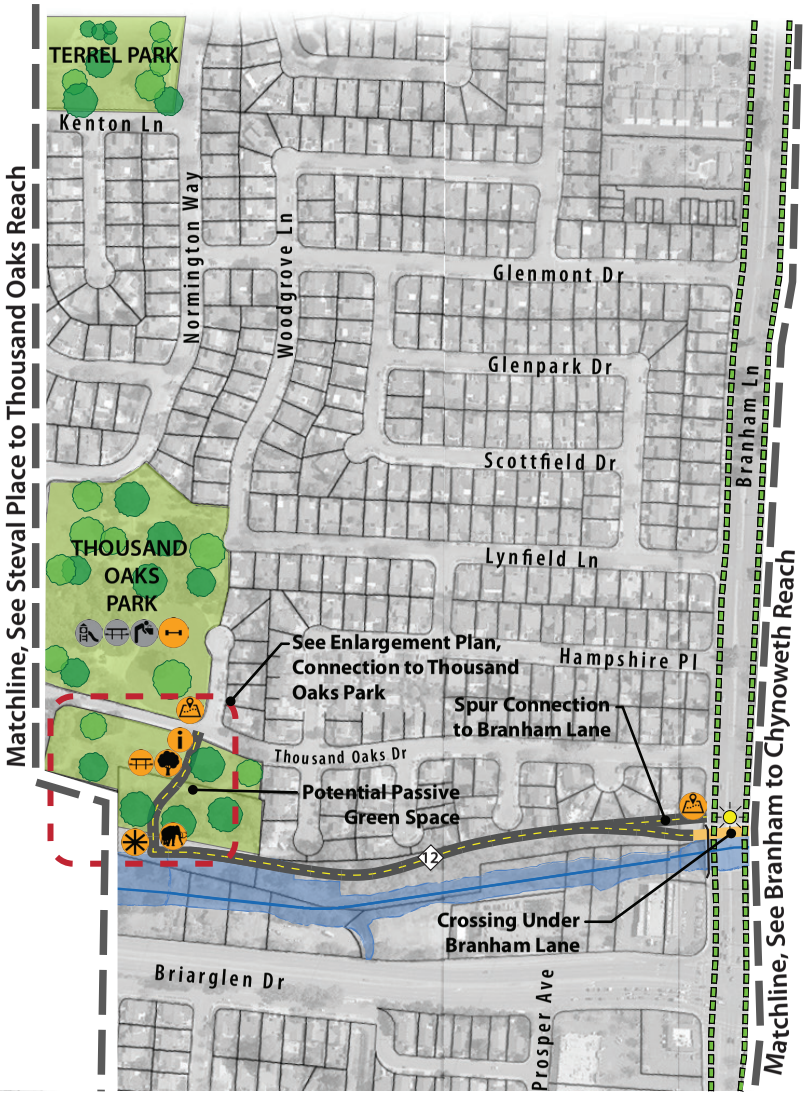
Constraints:

- Future bypass improvements are early in concept phase but will affect the trail at an unknown time in the future

CONNECTION TO THOUSAND OAKS PARK
GUADALUPE RIVER TRAIL ENLARGEMENT PLAN

0' 10' 20' 40'

Figure32: Detail Plan - Connection to Thousand Oaks Park



Trail Alignment Legend

- Trail Alignment - Paved Multi-Use Trail (Width as Shown) with 2' Gravel Shoulders on both Sides
- Trail Width - 12' Wide as Shown
- Lighted Undercrossing
- Trail Gateway
- Placemaking
- Interpretive Area
- Wayfinding
- Seating
- Passive Space
- Picnic
- Fitness Stations

Existing Conditions Legend

- Guadalupe River Centerline
- Guadalupe River 2-Year Flood Level and SCVWD Bypass Channel
- Property Line
- Bridge Crossing
- Bike Lane
- Existing Playground
- Existing Picnic
- Existing Drinking Fountain

0 50' 100' 200'

Overall Trail Master Plan Alignment - Thousand Oaks to Branham Reach

Figure 33: Thousand Oaks to Branham Reach Plan

11. BRANHAM TO CHYNOWETH REACH

Preferred Alignment and Characteristics:

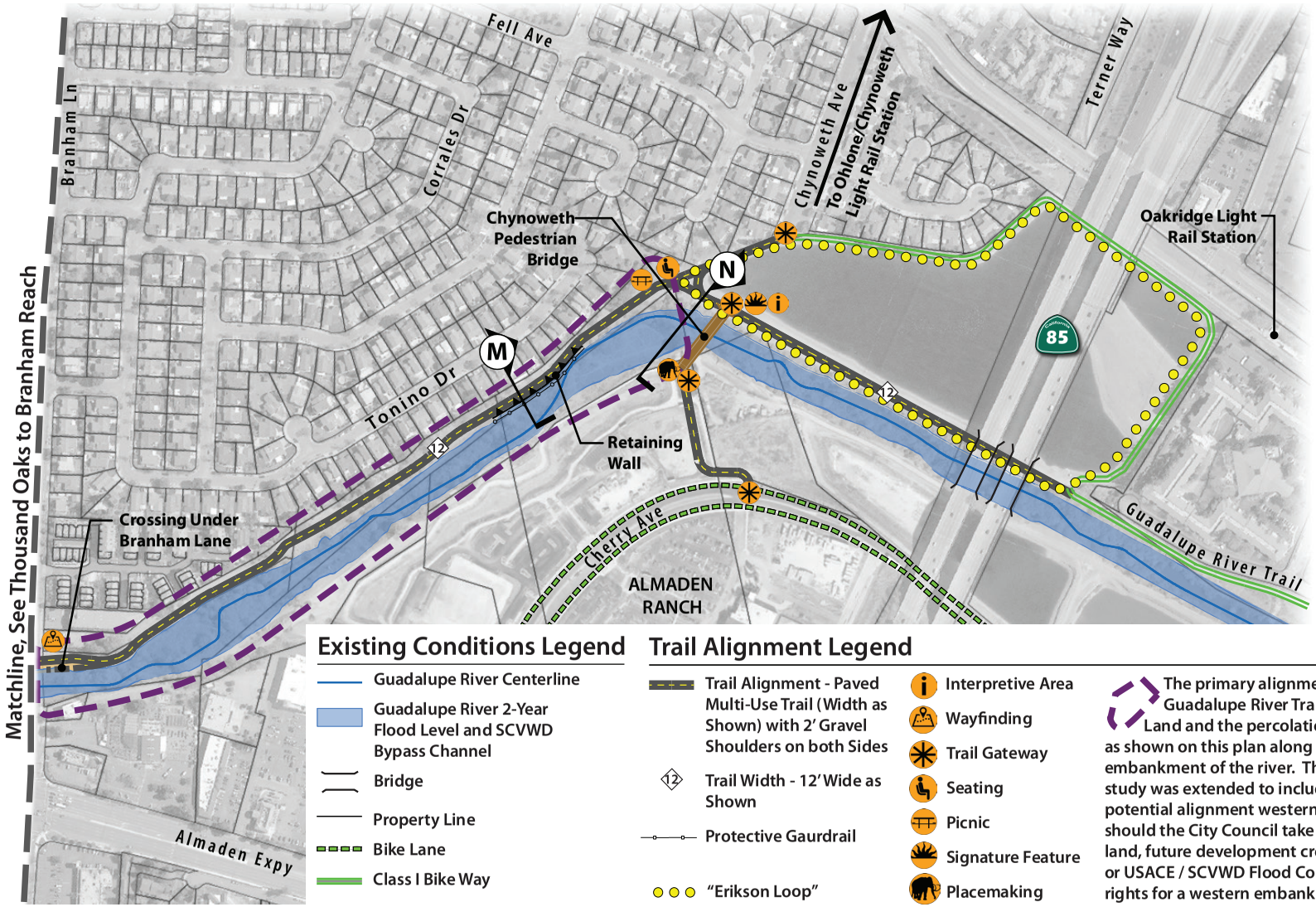
- From Branham Ln to Chynoweth Ave, Blossom River Dr, and Cherry Ave
- Approximate length: 5,100 feet
- 12ft wide paved trail with 2ft wide gravel shoulders constructed over SCVWD gravel service roads
- This segment of trail will be constructed after USACE hydromodification and flood control improvements are completed in 2017
- Cross under Branham Ln creating a north/south connection on the east side of the centerline of the river and then ramp back up to the top of embankment on the south side of Branham.
- Safety lighting will be installed under the Branham Ln bridge
- Along the eastern embankment of the river between Branham and the percolation pond, the trail will:
  - For a portion, travel within SJWC property requiring the chain link fencing of two well pumps
  - Require an approximately 400 foot long retaining wall (with structural backfill) be constructed at a topographic constraint approximately 1,000 feet south of Branham.
  - A protective railing will be mounted atop the retaining wall.
- Near the northern tip of the percolation pond, a prefabricated steel pedestrian bridge will clear span Guadalupe River.
  - Design of bridge will be bowstring
  - Approximately 175 feet long
  - Position allows pedestrians and cyclists coming onto the trail from the Chynoweth Avenue connection node to see the bridge and know their available route options
  - Trail node plazas will be constructed at each abutment. These plazas will have architectural treatments inspired by the Hayes Mansion and will include specialty paving, seating, and interpretive signage.
  - A percolation pond overlook point at the east abutment plaza will allow trail users to see the surrounding area from an elevated point
- From the eastern abutment the trail will split to Chynoweth Ave and Blossom River Dr.
  - The spur to Blossom River will be straight and include a split rail fence along the top of bank of the percolation pond. At Blossom River Drive, a fully accessible trail gateway will include bench seating, specialty paving, and a wayfinding kiosk.
  - The spur to Chynoweth will include some picnic tables, a continuation of the split rail fence along the top of bank of the percolation pond, and a gateway plaza at the end of Chynoweth and the existing Guadalupe River Trail. This plaza will include, seating, a landmark feature, specialty paving, and wayfinding.
- From the western abutment a paved spur trail will connect to the Cherry Avenue crosswalk to the southwest. The path will be constrained to the south by a SCVWD property's fence line and will need to be placed accordingly to avoid encroachment.
- At Cherry Ave, an enhanced mid-block crosswalk across Cherry Avenue complete with a gateway plaza providing seating, and queuing space for users prior to crossing the street.

Opportunities:

- Graded service path along the top of the eastern embankments
- Vegetation clearing for a Chynoweth pedestrian bridge with clear sightlines to and from the neighborhood
- Percolation pond
- Fire access easement and road within Almaden Ranch can be used for a trail spur from Chynoweth Bridge and GRT to Cherry Ave
- Connection to GRT at Chynoweth Ave and Blossom River Dr
- An open green space/clearing near the northern tip of the percolation pond

Constraints:

- Topographic pinch point interrupts SCVWD service path and subsequently the trail
- Proximity of backyard fences to trail alignment
- Percolation pond



Existing Conditions Legend

- Guadalupe River Centerline
- Guadalupe River 2-Year Flood Level and SCVWD Bypass Channel
- Bridge
- Property Line
- Bike Lane
- Class I Bike Way

Trail Alignment Legend

- Trail Alignment - Paved Multi-Use Trail (Width as Shown) with 2' Gravel Shoulders on both Sides
- Trail Width - 12' Wide as Shown
- Protective Gaurdrail
- "Erikson Loop"
- Interpretive Area
- Wayfinding
- Trail Gateway
- Seating
- Picnic
- Signature Feature
- Placemaking

The primary alignment for the Guadalupe River Trail between Branham Land and the percolation ponds is located as shown on this plan along the eastern embankment of the river. The project's initial study was extended to include impacts for a potential alignment western embankment should the City Council take steps to acquire land, future development creates opportunities, or USACE / SCVWD Flood Control projects secure rights for a western embankment trail.

0 50' 100' 200'

Overall Trail Master Plan Alignment - Branham to Chynoweth Reach

Figure 34: Branham to Chynoweth Reach Plan

SEQUENCING

As noted in this master plan, implementation of the various segments of the GRT should follow the completion of relevant reaches of flood control construction projects by the USACE and as funding is secured. The following table (Figure 35) summarizes the potential sequencing of trail construction as it relates to the flood control improvements. It should be noted that the schedule for USACE improvements is shown as it is understood at the time of this master plan's publishing and subject to change by the USACE. As such, it should be verified with USACE regularly and updated accordingly.

USACE Flood Control Reach	Anticipated Year for Construction Completion	Guadalupe River Trail Reach	Possible Estimated Year for Construction*
Reach 6: West Virginia Street to Willow Street	2019	Reach 1: West Virginia Street to Willow Street	2021 - 2023 (follows completion of USACE Reach 6)
Reach 7: Willow Street to Three Creeks Trail	2019	Reach 2: Willow Street to Alma Avenue Reach 3: Alma to Three Creeks Trail	2021 - 2023 (follows completion of USACE Reach 7) If divided, Reach 2 should proceed first for system continunity.
Reach 8: Three Creeks Trail to Willow Glen Way	2019	Reach 4: Three Creeks Trail to Willow Glen Way	2021 - 2023 (follows completion of USACE Reach 8 and GRT Reach 3)
Reach 9: Willow Glen Way to Curtner Avenue	To Be Determined	Reach 5: Willow Glen Way to Almaden Road Reach 6: Almaden Road to Curtner Avenue	To Be Determined by USACE Project Reach 9 To Be Determined by USACE Project Reach 9
Reach 10: Curtner Avenue to Capitol Expressway	To Be Determined	Reach 7: Curtner Avenue to Almaden Expressway Reach 8: Almaden Expressway to Foxworthy Avenue	To Be Determined by USACE Project Reach 10 To Be Determined by USACE Project Reach 10
Reach 11: Capitol Expressway to Branham Lane	To Be Determined	Reach 9: Foxworthy Avenue to Thousand Oaks Park Reach 10: Thousand Oaks Park to Branham Lane	To Be Determined by USACE Project Reach 10 and 11 To Be Determined by USACE Project Reach 11
Reach 12: Branham Lane to Chynoweth Avenue	2017	Reach 11: Branham Lane to Chynoweth Avenue	2019/2020 (Partial funding in place for design work to proceed in FY 17/18)

* Estimated dates for trail construction suggest the earliest that work could occur due to related flood control work. These schedules are dependent upon the securingn and allocation local or grant funding. City Council actions are required to support advancement of these projects per these schedules.

Figure 35: Reach Phasing Schedule

DESTINATIONS

The Guadalupe River Trail system will require bridge spans and significant engineering work at points along the trail to ensure continuity and connectivity. The master plan seeks to leverage this work, as well as superior engineering and architectural solutions to create a sense of destination and placemaking along the corridor.

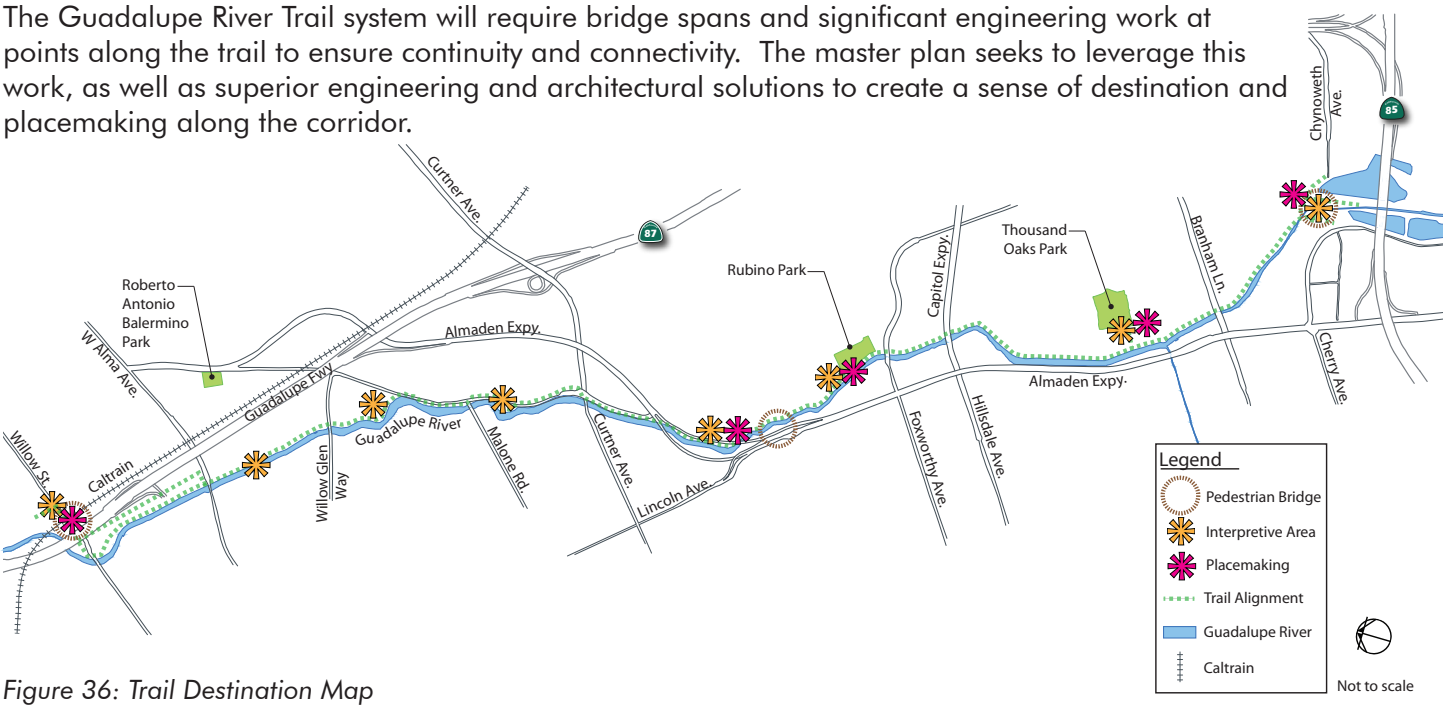


Figure 36: Trail Destination Map

BRIDGES

Bridges will occur at the following points:

- Willow Street/"Willow Calle Bridge" (aligned with trail, spans over Willow Street)
- Koch Lane (generally aligned with roadway, spans over river)
- Near Chynoweth Avenue (generally aligned with roadway, spans over river)

Each structure presents an opportunity for placemaking. The plan proposes a strategy outlined in Figure 37.

SPAN LOCATION	THEME / ARCHITECTURE	JUSTIFICATION	AUDIENCE/VIEWERS
Willow Street	Common truss or concrete structure with themed design elements (theme: Willow Calle, tile work, bright colors, festive character)	Bridge can serve as gateway to established Calle Willow business district. Willow Street is relatively low volume so limited visibility.	Motorists, Pedestrians and Bicyclists along Willow Street, and Trail Visitors. Commuters on VTA light rail, Caltrain, and Highway 87 Bikeway.
Koch Lane	Common truss structure with custom bridge footings (theme: not defined)	This site has high traffic volume along Almaden Expressway, but likely low volume as a neighborhood connector.	Motorists, Pedestrians and Bicyclists along Almaden Expressway, and Trail Visitors
Chynoweth Avenue	Common truss structure with custom bridge footings and interpretive signage (theme: Chynoweth Family History)	This site has limited visibility from Chynoweth Avenue and none from Cherry Avenue. Design elements should enrich experience for the trail users as the primary audience.	Trail Visitors

Figure 37: Bridge Design Matrix

PLACEMAKING

San Jose has received positive press for the "Lupe" public art installation found at Trimble Road along the Lower Guadalupe River Trail. The sculpture of a Columbian Mammoth has been identified as a tourist attraction per Google Maps and RoadTrippers.com. Additionally, the mammoth sculpture creates a destination for trail users along the regional trail. Engineering, architecture and public art along the master planned trail should serve a similar function and should be strategically placed to encourage visits and a reward to trail users.

The master plan proposes of placemaking and/or public art installations in locations outlined in Figure 38.

PLANNED SITE	OPPORTUNITY	INTENT
At Willow Calle Bridge	Visible from Willow Street, VTA light rail, and Caltrain. To be placed near node along the trail system and function as a visual anchor for the bridge.	Decorative features should be vertical in construction, lighted, colorful and integrated into the structure of the bridge.
Adjacent to the existing wooded passive open green space at the terminus of Wren Drive	Established over 30 years ago by the County and Canoas Gardens neighborhood this informal pocket park provides a natural backdrop for an art element as a focal feature not only for the trail but for the neighborhood as well stimulating legitimate interest in this public asset.	Furnishings or paths should be integrated into the natural setting and could take advantage of the additional space the parcel provides by creating a "walk-thru" artistic experience.
Spur Connection at Rubino Park	Highly visible location adjacent to Rubino Park, this place-making element could provide a strong gateway into the park.	This element should be directional and meaningful with a sense of inviting and playful experience.
Spur Connection near Thousand Oaks Park	Visible from the trail system near Thousand Oaks Park.	This placemaking element could reflect local community culture characterized by forms of art.
At Chynoweth Pedestrian Bridge	This placemaking element is precast pilasters incorporated at the plaza nodes, functioning as a visual anchor for the bridge.	The design will reflect the architecture and aesthetic of the Hayes Mansion to establish a theming connection to the Chynoweth family

Figure 38: Placemaking Opportunities

INTERPRETIVE AREAS

One of the core objectives for this master plan is to provide educational interpretive facilities and elements throughout the corridor. Such improvements enhance the user's understanding of the setting and history, thereby increasing their personal connection to their environment. It is a common and successful element on all trails within the City and County. To maximize the enrichment of the experience, each interpretive area should utilize the method of communication that best suits the setting and topic. This may occur in the form of signs as well as furnishings, pavement details, and fencing.

The master plan proposes interpretive areas and facilities as described in Figure 39.

PLANNED SITE	OPPORTUNITY	TOPIC
McLellan Avenue	In the passive green space located in the S-curve of McLellan Ave	Drought tolerant and native plantings within the green space that can be incorporated into residents yards
Gateway Plaza at Three Creeks Trail	At the junction node of the Guadalupe River Trail and the future Three Creeks Trail	The history and impact of the railroad upon Willow Glen
Guadalupe Avenue	USACE and SCVWD will be constructing a revegetation basin adjacent to Guadalupe Avenue as part of the bypass channel improvements	The importance of revegetating natural landscapes, via a modest viewing space upon the USACE revegetation area
Almaden Road near Canoas Garden Avenue	An open green area will provide a setting for a multi topic interpretive area with seating and picnic tables	Sycamore Grove Stagecoach stop, the construction of the "Lewis Canal" (now Guadalupe River), and Civil War shootout in the area
Adjacent to the existing wooded passive open green space at the terminus of Wren Drive, overlooking the riparian corridor	Can be designed to be integrated into the planned "walk-thru" art experience with multiple interpretive panels/ exhibits	The flooding history of Guadalupe River • The Bridges (washouts) of Guadalupe • Flood control • The importance of flooding and its role in ecological health

Figure 39: Interpretive Areas and Facilities

Rubino Park	Can be designed to be integrated into or as an auxiliary to the park land	Horio Farm owned by two Japanese farmers at the turn of 20th century and Dutch nobleman Baron William Frederik D'Ablaing Van Giessenberg's homestead in the area
Thousand Oaks Park	A spur trail connecting Thousand Oaks Park to the Guadalupe Trail via an open green space provides the setting for one to three interpretive stations	Isaac "Uncle Ike" Branham and the natural beauty of this open space
Chynoweth Bridge	Connection nodes on either end of the Chynoweth Pedestrian Bridge. Interpretive signage can be integrated into the design of the architectural elements	Hayes Mansion on the east end of the bridge and the history of Robertsville Corners on the west end

Figure 39 (continue): Interpretive Areas and Facilities

LOOP TRAILS

Loop trails are incorporated at two points along the trail system. Loops are popular with persons seeking a shorter walking/hiking experience, and prefer to see new views along the entire route.

Loops will occur at the following locations:

- Lelong Loop: Between Alma Avenue and Willow Street
- Erikson Loop: Between Blossom River Drive and Branham Lane

The loops will include supplemental signage to identify the walking path within the trail system, with distance information. Loops may have both paved and gravel surfaces in order to minimize the addition of non-permeable surfaces.

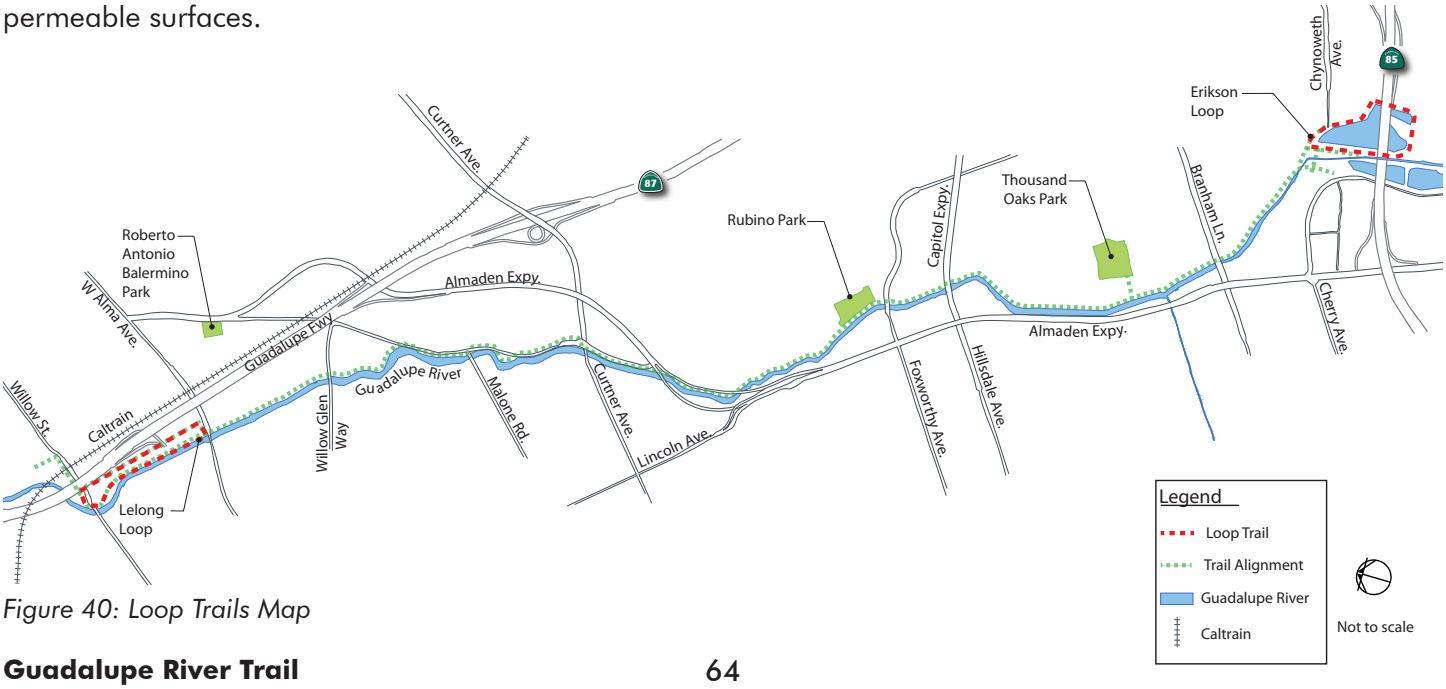


Figure 40: Loop Trails Map

ON-STREET IMPROVEMENTS

This master plan proposes a variety of improvements within the public right-of-way. They include the reduction of travel lanes, conversion to one-way travel, traffic calming, and a variety of traffic control devices at roadway intersections. All improvements indicated by this master plan are to be a financial responsibility for the City's Department of Transportation. The Department of Parks Recreation & Neighborhood Services will coordinate early and seek to align budgets for timely delivery of trail improvements and their adjacent roadway enhancements.

Reach	Street/Intersection	Nature of Work
McLellan to Willow	McLellan Ave.	Coversion of street to one-way travel
McLellan to Willow	Willow St./Lelong St.	New signal addition
Willow to Alma	Lelong St.	Reduction of road width
Willow to Alma	West Alma Ave./Lelong St.	Adding ramp for bicycle/service access and egress
Three Creeks to Willow Glen	Mackey Ave.	Reduction of road width
Three Creeks to Willow Glen	Willow Glen Ave./ Northern Road	Adding new stop sign & boulbouts at intersection for traffic calming
Almaden Road to Curtner	Almaden Road	Reduction of road width
Almaden Expyway to Foxworthy	Northbound Almaden Expressway/ Koch Lane	Modification to existing crosswalk and signal

Figure 41: On-Street Improvements Matrix

OVERVIEW OF COSTS

Cost estimates for the various reaches of the Guadalupe River Trail reflect the proposed trail alignment as envisioned in this master plan. Figure 42 provides an overall cost followed by itemized estimates for each segment.

Because these estimates were prepared without specific design drawings, they are preliminary in nature and will be further refined when the design development plans and construction documents are prepared. Contingency costs were included in each reach to reflect the preliminary nature of the estimate and to account for potential changes, inaccuracies, and fluctuations in market costs. Estimated fees for the preparation of construction documents and construction management and inspection have been reflected in the itemized construction costs and are included in the total project cost.

PHASING OPPORTUNITIES

Most trail projects of this size are constructed in phases due to the cost of trail construction and the limited funding available. In order to facilitate obtaining grant funding, the master plan is broken down into Reaches. These reaches were determined based on current available funding, public priorities, constructability of trail reaches, sequencing of the SCVWD/USACE flood control improvements, and maximizing the overall competitiveness of each reach for grant funding. The Branham to Chynoweth Reach has been identified by the City as the first reach for implementation because funding for this reach is already available. An additional benefit to constructing this reach first is it will demonstrate project readiness to funding agencies. The Thousand Oaks to Branham Reach would likely follow to provide a complete southern connection to Thousand Oaks Park. Other reaches can be constructed in any particular order. For more information on potential funding sources, see Figure 42.

As part of the annual budget process, staff will preview all potential trail projects and offer the City Council recommendations consistent with the prioritization process.

Reach	Total Estimated Reach Cost
McLellan to Willow	$2,719,780.00
Willow Calle Bridge	$9,459,560.00
Willow to Alma	$2,427,680.00
Alma to Three Creeks	$725,000.00
Three Creeks to Willow Glen	$1,548,870.00
Willow Glen to Almaden Road	$5,060,310.00
Almaden Road to Curtner	$3,276,640.00
Curtner to Almaden Expwy	$717,000.00
Almaden Expwy to Foxworthy	$4,877,360.00
Almaden Pedestrian Bridge	$4,140,710.00
Foxworthy to Thousand Oaks	$3,333,320.00
Thousand Oaks to Branham	$1,275,370.00
Branham to Chynoweth	$2,966,080.00
Chynoweth Bridge and Trail Spur	$4,763,640.00
TOTAL	$47,291,320.00

Figure 42: Cost Summary Table

About Project Cost

The cost of trail development is approximately $9,000,000/mile. This high cost reflects the complexity of site conditions and the need for bridge structures, under-crossings, and roadway alterations to ensure a Class I off-street trail. The planning process has attempted to minimize project costs through the use of pre-fabricated bridges, conventional trail pavement and modest gateway improvements, and a number of strategically placed destination/aesthetic features. The development of a well-thought master plan with quality improvements and routing solutions supports the City's competitiveness for external funding sources. Granting agencies seek to fund high-quality and significant projects as defined by this plan.

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
McLellan to Willow Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$114,791.00	$114,791.00	
2.	Bonding (1.5%)	1	LS	$17,218.65	$17,218.65	
3.	Construction Staking (3%)	1	LS	$34,437.30	$34,437.30	
4.	Temporary Construction Fencing	2,800	LF	$15.00	$42,000.00	
						$208,450.00
B	**Demolition**					
1.	Clear and Grub	30,000	SF	$0.50	$15,000.00	
2.	Gravel Service Road Removal	1,200	SF	$5.00	$6,000.00	
3.	Asphalt Surfacing	9,000	SF	$3.00	$27,000.00	
4.	Lights	2	EA	$800.00	$1,600.00	
5.	Concrete (Curb)	300	LF	$20.00	$6,000.00	
6.	Tree	5	EA	$800.00	$4,000.00	
7.	Drainage	1	LS	$0.00	$0.00	
8.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	60	LF	$25.00	$1,500.00	
9.	Split Rail Fencing	200	LF	$4.00	$800.00	
10.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$62,900.00
C	**Grading and Drainage**					
1.	Rough Grading	350	CY	$75.00	$26,250.00	
2.	Catch Basin	2	EA	$2,725.00	$5,450.00	
3.	Jute Netting and Mulch	15,000	SF	$5.00	$75,000.00	
4.	Inlet Modification	2	EA	$2,000.00	$4,000.00	
5.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$111,700.00
D	**Utilities**					
1.	Utility Box Adjustments	1	LS	$700.00	$700.00	
2.	Relocate Utility Pole	1	EA	$2,500.00	$2,500.00	
3.	Traffic Signal	1	EA	$200,000.00	$200,000.00	
						$203,200.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	1,100	LF	$54.00	$59,400.00	
2.	Aggregate Base (12' Width, 6" Thick)	1,100	LF	$16.00	$17,600.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	1,100	LF	$5.25	$5,775.00	
4.	Striping	1,775	LF	$1.75	$3,106.25	
5.	Concrete Pavement	5,610	SF	$6.50	$36,465.00	
6.	Headerboard	2,200	LF	$5.50	$12,100.00	
7.	Concrete Curb Ramp and Detectable Warning Surface	4	EA	$3,500.00	$14,000.00	
8.	Concrete Retaining Wall (4' High)	850	LF	$250.00	$212,500.00	
9.	Split Rail Fencing	350	LF	$75.00	$26,250.00	
10.	Specialty Concrete	1,520	SF	$15.00	$22,800.00	
11.	Concrete Driveway	1,800	SF	$20.00	$36,000.00	
12.	Chain Link Fence	140	LF	$45.00	$6,300.00	
13.	Concrete Curb and Gutter	200	LF	$40.00	$8,000.00	
14.	Lights (Pole-mounted)	5	EA	$5,000.00	$25,000.00	
15.	Lights (Recessed into UPRR Overcrossings, Highway 87 Overcrossings)	6	EA	$6,000.00	$36,000.00	
						$521,300.00
F	**Site Furnishings**					
1.	Gateway Feature	1	EA	$15,000.00	$15,000.00	
2.	Directional Signage	3	EA	$500.00	$1,500.00	
3.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
4.	Rules and Regulations Signage	5	EA	$250.00	$1,250.00	
5.	Interpretive Signage	1	EA	$5,000.00	$5,000.00	
6.	Mileage Marker	2	EA	$250.00	$500.00	
7.	Bench	8	EA	$2,500.00	$20,000.00	
8.	Trash Receptacle	4	EA	$1,800.00	$7,200.00	
9.	Bollard	4	EA	$200.00	$800.00	

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
McLellan to Willow Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
10.	Emergency Call Box	2	EA	$10,000.00	$20,000.00	
11.	Bike Rack	2	EA	$800.00	$1,600.00	
						$76,350.00
G	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	2,400	LF	$4.00	$9,600.00	
2.	Storm Drain Filters	4	EA	$180.00	$720.00	
3.	Construction Entrance	4	EA	$3,200.00	$12,800.00	
4.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
						$24,120.00
H	**Soil Preparation and Fine Grading**					
1.	Soil Preparation and Fine Grading	12,750	SF	$1.00	$12,750.00	
2.	Mulch	12,750	SF	$0.50	$6,375.00	
						$19,130.00
I	**Irrigation**					
1.	Controller, Centrally Controlled	1	EA	$10,000.00	$10,000.00	
2.	Backflow Preventer and Meter	1	EA	$10,000.00	$10,000.00	
3.	Tree Bubbler (2 per Tree)	128	EA	$95.00	$12,160.00	
4.	Quick Coupler Valves	5	EA	$185.00	$925.00	
5.	Electrical Service for Controller	1	LS	$15,000.00	$15,000.00	
6.	Irrigation System (Shrub and Groundcover)	12,750	SF	$2.50	$31,875.00	
						$79,960.00
J	**Planting**					
1.	Tree, 15 Gallon	64	EA	$125.00	$8,000.00	
2.	Groundcover / Shrubs	12,750	SF	$3.00	$38,250.00	
						$46,250.00
K	**Landscape Maintenance**					
1.	Landscape Maintenance (3 Months)	3	MO	$1,000.00	$3,000.00	
						$3,000.00
L	**Total for Construction**					$1,356,360.00
M	**Public Art Program**					
1.	Public Art (2%)	1	LS	$27,127.20	$27,127.20	
						$27,130.00
N	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$135,636.00	$135,636.00	
2.	Design Changes (10%)	1	LS	$135,636.00	$135,636.00	
3.	Inflation (5% per year for 3 years)	1	LS	$203,454.00	$203,454.00	
4.	Level of Estimate Accuracy (10%)	1	LS	$135,636.00	$135,636.00	
						$610,360.00
O	**City Design Management and Construction Inspection (30%)**	1	LS	$406,908.00	$406,908.00	$406,910.00
P	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$59,815.50	$59,815.50	
2.	Design Development (3%)	1	LS	$59,815.50	$59,815.50	
3.	Construction Documents (8%)	1	LS	$159,508.00	$159,508.00	
4.	Bidding and Construction Administration (1%)	1	LS	$19,938.50	$19,938.50	
5.	Testing and Special Inspection (1%)	1	LS	$19,938.50	$19,938.50	
						$319,020.00
Q	**Total Estimated Project Costs**					**$2,719,780.00**

This estimate has been developed for the purpose of establishing an anticipated project construction budget at a master planning level. The items, amounts, quantities, and related information provided are based on MTCo's judgment at this level of document preparation and is offered only as reference data. MTCo has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Willow Calle Bridge
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$422,338.00	$422,338.00	
2.	Bonding (1.5%)	1	LS	$63,350.70	$63,350.70	
3.	Construction Staking (1%)	1	LS	$42,233.80	$42,233.80	
4.	Temporary Construction Fencing	700	LF	$15.00	$10,500.00	
						$538,420.00
B	**Demolition**					
1.	Clear and Grub	12,000	SF	$0.50	$6,000.00	
2.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$7,000.00
C	**Grading and Drainage**					
1.	Import Fill	1,250	CY	$50.00	$62,500.00	
2.	Miscellaneous Drainage Provisions	1	LS	$5,000.00	$5,000.00	
						$67,500.00
D	**Utilities**					
1.	Utility Adjustments	1	LS	$3,000.00	$3,000.00	
						$3,000.00
E	**Hwy 87 Bikeway Connection Spur**					
1.	Asphalt Path (12' Width, 4" Thick)	300	LF	$54.00	$16,200.00	
2.	Aggregate Base (12' Width, 6" Thick)	300	LF	$16.00	$4,800.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	600	LF	$5.25	$3,150.00	
4.	Striping	300	LF	$1.75	$525.00	
5.	Retaining Wall	1,200	SFF	$200.00	$240,000.00	
6.	Headerboard	600	LF	$5.50	$3,300.00	
						$267,980.00
F	**Bridge**					
1.	Concrete Bridge (15' width including abutments)	1	LS	$3,000,000.00	$3,000,000.00	
3.	Bridge Ramp	1	LS	$250,000.00	$250,000.00	
4.	Bridge Entrance Plaza	1,000	SF	$15.00	$15,000.00	
5.	Architectural Treatments	1	LS	$200,000.00	$200,000.00	
6.	Bridge and Art Lighting	1	LS	$250,000.00	$250,000.00	
						$3,715,000.00
G	**Willow Street Median**					
1.	Concrete Curb	700	LF	$40.00	$28,000.00	
2.	Adjusted Striping	1	LS	$10,000.00	$10,000.00	
3.	Sawcut, Excavation, and Removal	3,350	SF	$8.00	$26,800.00	
4.	Import Topsoil	300	CY	$35.00	$10,500.00	
5.	Soil Prep and Fine Grading	3,200	SF	$1.50	$4,800.00	
6.	Trees	15	EA	$150.00	$2,250.00	
7.	Planting	3,200	SF	$5.00	$16,000.00	
8.	Irrigation	3,200	SF	$5.00	$16,000.00	
9.	Irrigation POC	1	EA	$20,000.00	$20,000.00	
						$134,350.00
H	**Site Furnishings**					
1.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
2.	Rules and Regulations Signage	2	EA	$250.00	$500.00	
3.	Bench	2	EA	$2,500.00	$5,000.00	
4.	Trash Receptacle	2	EA	$1,800.00	$3,600.00	
5.	Emergency Call Box	1	EA	$10,000.00	$10,000.00	
						$22,600.00
I	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	300	LF	$4.00	$1,200.00	
2.	Storm Drain Filters	1	EA	$250.00	$250.00	
3.	Construction Entrance	1	EA	$3,200.00	$3,200.00	
4.	Trailside Seeding (2' on each side)	600	LF	$0.50	$300.00	
5.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
						$5,950.00
J	**Total for Construction**					$4,761,800.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Willow Calle Bridge
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
K	**Public Art Program**					
1.	Public Art (2%)	1	LS	$95,236.00	$95,236.00	
						$95,240.00
L	**Contingencies**					
1.	Contingencies (10%)	1	LS	$485,704.00	$485,704.00	
2.	Inflation (5% per year for 3 years)	1	LS	$728,556.00	$728,556.00	
3.	Level of Estimate Accuracy	1	LS	$485,704.00	$485,704.00	
4.	Permits	1	LS	$48,570.40	$48,570.40	
						$1,748,530.00
M	**City Design Management and Construction Inspection (30%)**	1	LS	$1,981,671.00	$1,981,671.00	$1,981,670.00
N	**Professional Services**					
1.	Topographic Survey (1%)	1	LS	$66,055.70	$66,055.70	
2.	Design Development (3%)	1	LS	$145,711.20	$145,711.20	
3.	Construction Documents (8%)	1	LS	$528,445.60	$528,445.60	
4.	Bidding and Construction Administration (1%)	1	LS	$66,055.70	$66,055.70	
5.	Permitting Assistance (1%)	1	LS	$66,055.70	$66,055.70	
						$872,320.00
O	**Total Estimated Project Costs**					**$9,459,560.00**

This estimate has been developed for the purpose of establishing an anticipated project construction budget at a master planning level. The items, amounts, quantities, and related information provided are based on MTCo's judgment at this level of document preparation and is offered only as reference data. MTCo has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Willow Street to West Alma Avenue Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$103,634.00	$103,634.00	
2.	Bonding (1.5%)	1	LS	$15,545.10	$15,545.10	
3.	Construction Staking (3%)	1	LS	$31,090.20	$31,090.20	
4.	Temporary Construction Fencing	2,550	LF	$15.00	$38,250.00	
						$188,520.00
B	**Demolition**					
1.	Clear and Grub	250	SF	$2.00	$500.00	
2.	Asphalt Surfacing	23,000	SF	$3.00	$69,000.00	
3.	Lights	12	EA	$800.00	$9,600.00	
4.	Concrete (Curb)	2,300	LF	$20.00	$46,000.00	
5.	Chain Link Fence	2,500	LF	$2.00	$5,000.00	
6.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	60	LF	$25.00	$1,500.00	
7.	Metal Beam Guardrail	1,600	LF	$6.00	$9,600.00	
8.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$142,200.00
C	**Grading and Drainage**					
1.	Catch Basin	1	EA	$2,725.00	$2,725.00	
2.	Storm Water Infiltration Swale w/ Plants	2,300	LF	$90.00	$207,000.00	
3.	Inlet Modification	6	EA	$2,000.00	$12,000.00	
4.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$222,730.00
D	**Utilities**					
1.	Utility Box Adjustments	1	LS	$5,600.00	$5,600.00	
2.	Relocate Utility Pole	1	EA	$2,500.00	$2,500.00	
3.	Traffic Signal Modification	1	EA	$75,000.00	$75,000.00	
						$83,100.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	2,200	LF	$54.00	$118,800.00	
2.	Aggregate Base (12' Width, 6" Thick)	2,200	LF	$16.00	$35,200.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	2,200	LF	$5.25	$11,550.00	
4.	Striping	2,400	LF	$1.75	$4,200.00	
5.	Concrete Pavement	2,350	SF	$6.50	$15,275.00	
6.	Exposured Aggregate Concrete	800	SF	$10.00	$8,000.00	
7.	Protective Bollards	13	EA	$500.00	$6,500.00	
8.	Headerboard	4,560	LF	$5.50	$25,080.00	
9.	Concrete Curb Ramp and Detectable Warning Surface	4	EA	$3,500.00	$14,000.00	
10.	Split Rail Fencing, Riparian Edge (3' High)	2,200	LF	$75.00	$165,000.00	
11.	Concrete Driveway	1	EA	$5,000.00	$5,000.00	
12.	Chain Link Fence	100	LF	$55.00	$5,500.00	
13.	Concrete Curb & Gutter	2,300	LF	$40.00	$92,000.00	
14.	Lights (Pole-mounted)	11	EA	$5,000.00	$55,000.00	
						$561,110.00
F	**Site Furnishings**					
1.	Directional Signage	3	EA	$500.00	$1,500.00	
2.	Rules and Regulations Signage	2	EA	$250.00	$500.00	
3.	Bench	2	EA	$2,500.00	$5,000.00	
4.	Trash Receptacle	1	EA	$1,800.00	$1,800.00	
						$8,800.00
G	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	2,300	LF	$4.00	$9,200.00	
2.	Storm Drain Filters	10	EA	$180.00	$1,800.00	
3.	Construction Entrance	2	EA	$3,200.00	$6,400.00	
4.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
						$18,400.00
H	**Total for Construction**					$1,224,860.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Willow Street to West Alma Avenue Reach

prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
I	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$122,486.00	$122,486.00	
2.	Design Changes (10%)	1	LS	$122,486.00	$122,486.00	
3.	Inflation (5% per year for 3 years)	1	LS	$183,729.00	$183,729.00	
4.	Level of Estimate Accuracy (10%)	1	LS	$122,486.00	$122,486.00	
						$551,190.00
J	**City Design Management and Construction Inspection (30%)**	1	LS	$367,458.00	$367,458.00	$367,460.00
K	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$53,281.50	$53,281.50	
2.	Design Development (3%)	1	LS	$53,281.50	$53,281.50	
3.	Construction Documents (8%)	1	LS	$142,084.00	$142,084.00	
4.	Bidding and Construction Administration (1%)	1	LS	$17,760.50	$17,760.50	
5.	Testing and Special Inspection (1%)	1	LS	$17,760.50	$17,760.50	
						$284,170.00
L	**Total Estimated Project Costs**					**$2,427,680.00**

This estimate has been developed for the purpose of establishing an anticipated project construction budget at a master planning level. The items, amounts, quantities, and related information provided are based on MTCo's judgment at this level of document preparation and is offered only as reference data. MTCo has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
West Alma Avenue to Three Creeks Trail Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$30,899.00	$30,899.00	
2.	Bonding (1.5%)	1	LS	$4,634.85	$4,634.85	
3.	Construction Staking (3%)	1	LS	$9,269.70	$9,269.70	
4.	Temporary Construction Fencing	800	LF	$15.00	$12,000.00	
						$56,800.00
B	**Demolition**					
1.	Clear and Grub	100	SF	$2.00	$200.00	
2.	Tree	2	EA	$800.00	$1,600.00	
3.	Chain Link Fence	150	LF	$6.00	$900.00	
4.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	60	LF	$25.00	$1,500.00	
5.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$5,200.00
C	**Grading and Drainage**					
1.	Rough Grading	550	CY	$75.00	$41,250.00	
2.	Catch Basin	1	EA	$2,725.00	$2,725.00	
3.	Sump (at Drinking Stations)	1	EA	$1,500.00	$1,500.00	
4.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$46,480.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	1,100	LF	$54.00	$59,400.00	
2.	Aggregate Base (12' Width, 6" Thick	1,100	LF	$16.00	$17,600.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	1,600	LF	$5.25	$8,400.00	
4.	Striping	1,150	LF	$1.75	$2,012.50	
5.	Concrete Pavement	4,610	SF	$6.50	$29,965.00	
6.	Headerboard	1,100	LF	$5.50	$6,050.00	
7.	Concrete Curb Ramp and Detectable Warning Surface	4	EA	$3,500.00	$14,000.00	
8.	Concrete Retaining Wall	30	LF	$560.00	$16,800.00	
9.	Split Rail Fencing, Riparian Edge (3' High)	24	LF	$75.00	$1,800.00	
10.	Protective Guardrail	600	LF	$110.00	$66,000.00	
						$222,030.00
G	**Site Furnishings**					
1.	Directional Signage	2	EA	$500.00	$1,000.00	
2.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
3.	Rules and Regulations Signage	1	EA	$250.00	$250.00	
4.	Mileage Marker	1	EA	$250.00	$250.00	
5.	Bench	2	EA	$2,500.00	$5,000.00	
6.	Trash Receptacle	1	EA	$1,800.00	$1,800.00	
7.	Emergency Call Box	1	EA	$10,000.00	$10,000.00	
8.	Bike Rack	1	EA	$800.00	$800.00	
						$22,600.00
H	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	1,000	LF	$4.00	$4,000.00	
2.	Storm Drain Filters	1	EA	$180.00	$180.00	
3.	Construction Entrance	2	EA	$3,200.00	$6,400.00	
4.	Hydroseeding	11,000	LF	$0.10	$1,100.00	
5.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
						$12,680.00
N	**Total for Construction**					$365,790.00
O	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$36,579.00	$36,579.00	
2.	Design Changes (10%)	1	LS	$36,579.00	$36,579.00	
3.	Inflation (5% per year for 3 years)	1	LS	$54,868.50	$54,868.50	
4.	Level of Estimate Accuracy (10%)	1	LS	$36,579.00	$36,579.00	
						$164,610.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
West Alma Avenue to Three Creeks Trail Reach

prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
Q	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$15,912.00	$15,912.00	
2.	Design Development (3%)	1	LS	$15,912.00	$15,912.00	
3.	Construction Documents (8%)	1	LS	$42,432.00	$42,432.00	
4.	Bidding and Construction Administration (1%)	1	LS	$5,304.00	$5,304.00	
5.	Testing and Special Inspection (1%)	1	LS	$5,304.00	$5,304.00	
						$84,860.00
R	**Total Estimated Project Costs**					**$725,000.00**

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Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Three Creeks to Willow Glen Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$66,351.00	$66,351.00	
2.	Bonding (1.5%)	1	LS	$9,952.65	$9,952.65	
3.	Construction Staking (3%)	1	LS	$19,905.30	$19,905.30	
4.	Temporary Construction Fencing	1,450	LF	$15.00	$21,750.00	
						$117,960.00
B	**Demolition**					
1.	Clear and Grub	100	SF	$2.00	$200.00	
3.	Asphalt Surfacing	11,000	SF	$3.00	$33,000.00	
4.	Lights	1	EA	$2,000.00	$2,000.00	
5.	Concrete (Curb)	1,200	LF	$20.00	$24,000.00	
6.	Drainage	1	LS	$0.00	$0.00	
7.	Chain Link Fence	150	LF	$6.00	$900.00	
8.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	30	LF	$25.00	$750.00	
9.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$61,850.00
C	**Grading and Drainage**					
1.	Catch Basin	1	EA	$2,725.00	$2,725.00	
2.	Outfall Modifications	1	LS	$0.00	$0.00	
3.	Storm Water Infiltration Swale w/ Plants	1,500	LF	$90.00	$135,000.00	
4.	Inlet Modification	2	EA	$2,000.00	$4,000.00	
5.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$142,730.00
D	**Utilities**					
1.	Utility Box Adjustments	1	LS	$3,500.00	$3,500.00	
						$3,500.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	1,500	LF	$54.00	$81,000.00	
2.	Aggregate Base (12' Width, 6" Thick	1,500	LF	$16.00	$24,000.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	3,000	LF	$5.25	$15,750.00	
4.	Striping	1,575	LF	$1.75	$2,756.25	
5.	Concrete Pavement	4,250	SF	$6.50	$27,625.00	
6.	Headerboard	1,500	LF	$5.50	$8,250.00	
7.	Concrete Curb Ramp and Detectable Warning Surface	2	EA	$3,500.00	$7,000.00	
8.	Specialty Concrete	2,000	SF	$15.00	$30,000.00	
9.	Protective Guardrail	270	LF	$110.00	$29,700.00	
10.	Concrete Curb & Gutter	1,200	LF	$40.00	$48,000.00	
11.	Lights (Pole-mounted)	8	EA	$5,000.00	$37,500.00	
	Stop Sign	2	EA	$500.00	$1,000.00	
						$312,580.00
F	**Site Furnishings**					
1.	Gateway Feature	2	EA	$500.00	$1,000.00	
2.	Directional Signage	2	EA	$3,500.00	$7,000.00	
4.	Rules and Regulations Signage	1	EA	$250.00	$250.00	
5.	Mileage Marker	1	EA	$250.00	$250.00	
6.	Bench	3	EA	$2,500.00	$7,500.00	
7.	Trash Receptacle	1	EA	$1,800.00	$1,800.00	
8.	Emergency Call Box	1	EA	$10,000.00	$10,000.00	
						$27,800.00
G	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	1,500	LF	$4.00	$6,000.00	
2.	Storm Drain Filters	5	EA	$180.00	$900.00	
3.	Construction Entrance	2	EA	$3,200.00	$6,400.00	
4.	Hydroseeding	15,000	SF	$0.10	$1,500.00	
5.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
6.	Erosion Control Fabric	100	SF	$1.00	$100.00	
						$15,900.00
H	**Soil Preparation and Fine Grading**					
1.	Soil Preparation and Fine Grading	6,200	SF	$0.25	$1,550.00	
2.	Mulch	6,200	SF	$0.50	$3,100.00	
						$4,650.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Three Creeks to Willow Glen Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
I	**Irrigation**					
1.	Controller, Centrally Controlled	1	EA	$10,000.00	$10,000.00	
2.	Backflow Preventer and Meter	1	EA	$10,000.00	$10,000.00	
3.	Tree Bubbler (2 per Tree)	86	EA	$95.00	$8,170.00	
4.	Quick Coupler Valves	10	EA	$185.00	$1,850.00	
5.	Electrical Service for Controller	1	LS	$15,000.00	$15,000.00	
6.	Irrigation System (Shrub and Groundcover)	6,200	SF	$2.50	$15,500.00	
						$60,520.00
J	**Planting**					
1.	Tree, 15 Gallon	43	EA	$125.00	$5,375.00	
2.	Groundcover / Shrubs	6,200	SF	$3.00	$18,600.00	
						$23,980.00
K	**Landscape Maintenance**					
1.	Landscape Maintenance (3 months)	1	LS	$10,000.00	$10,000.00	
						$10,000.00
L	**Total for Construction**					$781,470.00
M	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$78,147.00	$78,147.00	
2.	Design Changes (10%)	1	LS	$78,147.00	$78,147.00	
3.	Inflation (5% per year for 3 years)	1	LS	$117,220.50	$117,220.50	
4.	Level of Estimate Accuracy (10%)	1	LS	$78,147.00	$78,147.00	
						$351,660.00
N	**City Design Management and Construction Inspection (30%)**	1	LS	$234,441.00	$234,441.00	$234,440.00
O	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$33,993.90	$33,993.90	
2.	Design Development (3%)	1	LS	$33,993.90	$33,993.90	
3.	Construction Documents (8%)	1	LS	$90,650.40	$90,650.40	
4.	Bidding and Construction Administration (1%)	1	LS	$11,331.30	$11,331.30	
5.	Testing and Special Inspection (1%)	1	LS	$11,331.30	$11,331.30	
						$181,300.00
P	**Total Estimated Project Costs**					**$1,548,870.00**

This estimate has been developed for the purpose of establishing an anticipated project construction budget at a master planning level. The items, amounts, quantities, and related information provided are based on MTCo's judgment at this level of document preparation and is offered only as reference data. MTCo has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Willow Glen to Almaden Road Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$222,260.00	$222,260.00	
2.	Bonding (1.5%)	1	LS	$33,339.00	$33,339.00	
3.	Construction Staking (3%)	1	LS	$66,678.00	$66,678.00	
4.	Temporary Construction Fencing	550	LF	$15.00	$8,250.00	
						$330,530.00
B	**Demolition**					
1.	Clear and Grub	3,100	SF	$0.50	$1,550.00	
2.	Chain Link Fence	100	LF	$6.00	$600.00	
3.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	30	LF	$25.00	$750.00	
4.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$3,900.00
C	**Grading and Drainage**					
1.	Rough Grading	25	CY	$75.00	$1,875.00	
2.	Catch Basin	1	EA	$2,725.00	$2,725.00	
3.	Outfall Modifications	1	LS	$0.00	$0.00	
4.	Inlet Modification	1	EA	$2,000.00	$2,000.00	
5.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$7,600.00
D	**Utilities**					
1.	Utility Box Adjustments	1	LS	$0.00	$0.00	
2.	Pump Station Relocation	1	LS	$50,000.00	$50,000.00	
						$50,000.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	1,710	LF	$54.00	$92,340.00	
2.	Aggregate Base (12' Width, 6" Thick)	1,710	LF	$16.00	$27,360.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	3,420	LF	$5.25	$17,955.00	
4.	Striping	1,800	LF	$1.75	$3,150.00	
5.	Concrete Pavement	1,000	SF	$6.50	$6,500.00	
6.	Headerboard	2,210	LF	$5.50	$12,155.00	
7.	Concrete Curb Ramp and Detectable Warning Surface	2	EA	$3,500.00	$7,000.00	
8.	Concrete Retaining Wall	200	LF	$560.00	$112,000.00	
9.	Split Rail Fencing, Riparian Edge (3' High)	1,090	LF	$75.00	$81,750.00	
11.	Specialty Concrete	2,000	SF	$15.00	$30,000.00	
12.	Concrete Driveway	1	SF	$5,000.00	$5,000.00	
13.	Protective Guardrail	150	LF	$110.00	$16,500.00	
14.	Cantilever Structure	310	LF	$5,140.00	$1,593,400.00	
15.	Chain Link Fence	450	LF	$45.00	$20,250.00	
						$2,025,360.00
F	**Site Furnishings**					
2.	Directional Signage	1	EA	$500.00	$500.00	
3.	Rules and Regulations Signage	1	EA	$250.00	$250.00	
4.	Interpretive Signage	1	EA	$5,000.00	$5,000.00	
5.	Mileage Marker	1	EA	$250.00	$250.00	
6.	Bench	1	EA	$2,500.00	$2,500.00	
7.	Trash Receptacle	1	EA	$1,800.00	$1,800.00	
8.	Bollard	3	EA	$200.00	$600.00	
9.	Emergency Call Box	1	EA	$10,000.00	$10,000.00	
10.	Bike Rack	2	EA	$800.00	$1,600.00	
						$22,500.00
G	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	500	LF	$4.00	$2,000.00	
2.	Storm Drain Filters	3	EA	$180.00	$540.00	
3.	Construction Entrance	1	EA	$3,200.00	$3,200.00	
4.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
5.	Erosion Control Fabric	250	SF	$3.00	$750.00	
						$7,490.00
H	**Soil Preparation and Fine Grading**					
1.	Soil Preparation and Fine Grading	10,350	SF	$0.25	$2,587.50	
2.	Mulch	10,350	SF	$0.50	$5,175.00	
						$7,760.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Willow Glen to Almaden Road Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
I	**Irrigation**					
1.	Controller, Centrally Controlled	1	EA	$10,000.00	$10,000.00	
2.	Backflow Preventer and Meter	1	EA	$10,000.00	$10,000.00	
3.	Tree Bubbler (2 per Tree)	10	EA	$95.00	$950.00	
4.	Quick Coupler Valves	8	EA	$185.00	$1,480.00	
5.	Electrical Service for Controller	1	LS	$15,000.00	$15,000.00	
6.	Irrigation System (Shrub and Groundcover)	10,350	SF	$2.50	$25,875.00	
						$63,310.00
J	**Planting**					
1.	Tree, 15 Gallon	5	EA	$125.00	$625.00	
2.	Groundcover / Shrubs	10,350	SF	$3.00	$31,050.00	
						$31,680.00
K	**Landscape Maintenance**					
1.	Landscape Maintenance (3 months)	3	MO	$1,000.00	$3,000.00	
						$3,000.00
L	**Total for Construction**					$2,553,130.00
M	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$255,313.00	$255,313.00	
2.	Design Changes (10%)	1	LS	$255,313.00	$255,313.00	
3.	Inflation (5% per year for 3 years)	1	LS	$382,969.50	$382,969.50	
4.	Level of Estimate Accuracy (10%)	1	LS	$255,313.00	$255,313.00	
						$1,148,910.00
N	**City Design Management and Construction Inspection (30%)**	1	LS	$765,939.00	$765,939.00	$765,940.00
O	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$111,061.20	$111,061.20	
2.	Design Development (3%)	1	LS	$111,061.20	$111,061.20	
3.	Construction Documents (8%)	1	LS	$296,163.20	$296,163.20	
4.	Bidding and Construction Administration (1%)	1	LS	$37,020.40	$37,020.40	
5.	Testing and Special Inspection (1%)	1	LS	$37,020.40	$37,020.40	
						$592,330.00
P	**Total Estimated Project Costs**					**$5,060,310.00**

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Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Almaden Road to Curtner Reach
prepared on: April 5h, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$143,271.00	$143,271.00	
2.	Bonding (1.5%)	1	LS	$21,490.65	$21,490.65	
3.	Construction Staking (3%)	1	LS	$42,981.30	$42,981.30	
4.	Temporary Construction Fencing	850	LF	$15.00	$12,750.00	
						$220,490.00
B	**Demolition**					
1.	Clear and Grub	2,000	SF	$0.25	$500.00	
2.	Asphalt Surfacing	46,500	SF	$3.00	$139,500.00	
3.	Concrete (Curb)	400	LF	$20.00	$8,000.00	
4.	Drainage	1	LS	$0.00	$0.00	
5.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	75	LF	$25.00	$1,875.00	
6.	Split Rail Fence	50	LF	$4.00	$200.00	
7.	Metal Beam Guardrail	300	LF	$6.00	$1,800.00	
8.	Asphalt Dike	500	LF	$3.00	$1,500.00	
9.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$154,380.00
C	**Grading and Drainage**					
1.	Catch Basin	2	EA	$2,725.00	$5,450.00	
2.	Outfall Modifications	1	LS	$0.00	$0.00	
3.	Inlet Modification	4	EA	$2,000.00	$8,000.00	
4.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$14,450.00
D	**Utilities**					
1.	Utility Box Adjustments	1	LS	$2,100.00	$2,100.00	
2.	Relocate Utility Pole	17	EA	$2,500.00	$42,500.00	
3.	Traffic Signal Modification	2	EA	$75,000.00	$150,000.00	
						$194,600.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	3,200	LF	$54.00	$172,800.00	
2.	Aggregate Base (12' Width, 6" Thick)	3,200	LF	$16.00	$51,200.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	6,400	LF	$5.25	$33,600.00	
4.	Striping	3,575	LF	$1.75	$6,256.25	
5.	Headerboard	6,800	LF	$5.50	$37,400.00	
6.	Concrete Curb Ramp and Detectable Warning Surface	4	EA	$3,500.00	$14,000.00	
7.	Split Rail Fencing, Riparian Edge (3' High)	3,200	LF	$75.00	$240,000.00	
8.	Specialty Concrete	1,200	SF	$15.00	$18,000.00	
9.	Concrete Driveway	200	SF	$20.00	$4,000.00	
10.	Protective Barrier	1,970	LF	$110.00	$216,700.00	
11.	Concrete Curb and Gutter	3,200	LF	$40.00	$128,000.00	
						$793,960.00
F	**Site Furnishings**					
1.	Directional Signage	2	EA	$500.00	$1,000.00	
2.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
3.	Rules and Regulations Signage	3	EA	$250.00	$750.00	
4.	Mileage Marker	2	EA	$250.00	$500.00	
5.	Bench	4	EA	$2,500.00	$10,000.00	
6.	Trash Receptacle	3	EA	$1,800.00	$5,400.00	
7.	Emergency Call Box	1	EA	$10,000.00	$10,000.00	
8.	Picnic Tables	2	EA	$4,500.00	$9,000.00	
9.	Bike Rack	1	EA	$800.00	$800.00	
						$40,950.00
G	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	250	LF	$4.00	$1,000.00	
2.	Storm Drain Filters	12	EA	$180.00	$2,160.00	
3.	Construction Entrance	1	EA	$3,200.00	$3,200.00	
4.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
						$7,360.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Almaden Road to Curtner Reach
prepared on: April 5h, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
H	**Soil Preparation and Fine Grading**					
1.	Soil Preparation and Fine Grading	25,000	SF	$0.25	$6,250.00	
2.	Mulch	25,000	SF	$0.50	$12,500.00	
						$18,750.00
I	**Irrigation**					
1.	Controller, Centrally Controlled	1	EA	$10,000.00	$10,000.00	
2.	Backflow Preventer and Meter	1	EA	$10,000.00	$10,000.00	
3.	Tree Bubbler (2 per Tree)	150	EA	$95.00	$14,250.00	
4.	Quick Coupler Valves	25	EA	$185.00	$4,625.00	
5.	Electrical Service for Controller	1	LS	$15,000.00	$15,000.00	
6.	Roadway Trenching and Sleeving	180	LS	$25.00	$4,500.00	
7.	Irrigation System (Shrub and Groundcover)	25,000	SF	$2.50	$62,500.00	
						$120,880.00
J	**Planting**					
1.	Tree, 15 Gallon	75	EA	$125.00	$9,375.00	
2.	Groundcover / Shrubs	25,000	SF	$3.00	$75,000.00	
						$84,380.00
K	**Landscape Maintenance**					
1.	Landscape Maintenance (3 months)	3	MO	$1,000.00	$3,000.00	
						$3,000.00
L	**Total for Construction**					$1,653,200.00
M	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$165,320.00	$165,320.00	
2.	Design Changes (10%)	1	LS	$165,320.00	$165,320.00	
3.	Inflation (5% per year for 3 years)	1	LS	$247,980.00	$247,980.00	
4.	Level of Estimate Accuracy (10%)	1	LS	$165,320.00	$165,320.00	
						$743,940.00
N	**City Design Management and Construction Inspection (30%)**	1	LS	$495,960.00	$495,960.00	$495,960.00
O	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$71,914.20	$71,914.20	
2.	Design Development (3%)	1	LS	$71,914.20	$71,914.20	
3.	Construction Documents (8%)	1	LS	$191,771.20	$191,771.20	
4.	Bidding and Construction Administration (1%)	1	LS	$23,971.40	$23,971.40	
5.	Testing and Special Inspection (1%)	1	LS	$23,971.40	$23,971.40	
						$383,540.00
P	**Total Estimated Project Costs**					**$3,276,640.00**

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Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Curtner to Almaden Expressway Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$29,825.00	$29,825.00	
2.	Bonding (1.5%)	1	LS	$4,473.75	$4,473.75	
3.	Construction Staking (3%)	1	LS	$8,947.50	$8,947.50	
4.	Temporary Construction Fencing	1,350	LF	$15.00	$20,250.00	
						$63,500.00
B	**Demolition**					
1.	Clear and Grub	100	SF	$0.90	$90.00	
2.	Remove Asphalt Surfacing	11,000	SF	$3.00	$33,000.00	
3.	Concrete Curb	135	LF	$20.00	$2,700.00	
4.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	15	LF	$25.00	$375.00	
						$36,170.00
C	**Grading and Drainage**					
1.	Catch Basin	1	EA	$2,725.00	$2,725.00	
2.	Inlet Modification	1	EA	$2,000.00	$2,000.00	
3.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$5,730.00
D	**Utilities**					
1.	Relocate Utility Pole	1	EA	$2,500.00	$2,500.00	
						$2,500.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	1,100	LF	$54.00	$59,400.00	
2.	Aggregate Base (12' Width, 6" Thick)	1,100	LF	$16.00	$17,600.00	
3.	Base Rock Shoulders (2' Width)	2,200	LF	$5.25	$11,550.00	
4.	Striping	1,150	LF	$1.75	$2,012.50	
5.	Headerboard	2,200	LF	$5.50	$12,100.00	
6.	Concrete Curb Ramp and Detectable Warning Surface	1	EA	$3,500.00	$3,500.00	
7.	Split Rail Fencing	100	LF	$75.00	$7,500.00	
8.	Specialty Concrete	1,200	SF	$15.00	$18,000.00	
9.	Concrete Curb and Gutter	1,100	LF	$40.00	$44,000.00	
						$175,660.00
F	**Site Furnishings**					
1.	Gateway Feature	1	EA	$15,000.00	$15,000.00	
2.	Directional Signage	1	EA	$500.00	$500.00	
3.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
4.	Rules and Regulations Signage	2	EA	$250.00	$500.00	
5.	Mileage Marker	1	EA	$250.00	$250.00	
6.	Bench	2	EA	$2,500.00	$5,000.00	
7.	Trash Receptacle	2	EA	$1,800.00	$3,600.00	
						$28,350.00
G	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	100	LF	$4.00	$400.00	
2.	Storm Drain Filters	1	EA	$180.00	$180.00	
3.	Construction Entrance	1	EA	$3,200.00	$3,200.00	
4.	Hydroseeding	11,000	SF	$0.10	$1,100.00	
5.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
6.	Erosion Control Fabric	100	SF	$1.00	$100.00	
						$5,980.00
H	**Soil Preparation and Fine Grading**					
1.	Soil Preparation and Fine Grading	600	SF	$1.00	$600.00	
2.	Mulch	600	SF	$0.50	$300.00	
						$900.00
I	**Irrigation**					
1.	Controller, Centrally Controlled	1	EA	$10,000.00	$10,000.00	
2.	Backflow Preventer and Meter	1	EA	$10,000.00	$10,000.00	
3.	Tree Bubbler (2 per Tree)	12	EA	$95.00	$1,140.00	
4.	Quick Coupler Valves	2	EA	$185.00	$370.00	
5.	Electrical Service for Controller	1	LS	$15,000.00	$15,000.00	
6.	Irrigation System (Shrub and Groundcover)	600	SF	$2.50	$1,500.00	
						$38,010.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Curtner to Almaden Expressway Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
J	**Planting**					
1.	Tree, 15 Gallon	6	EA	$125.00	$750.00	
2.	Groundcover / Shrubs	600	SF	$3.00	$1,800.00	
						$2,550.00
K	**Landscape Maintenance**					
1.	Landscape Maintenance (3 months)	3	MO	$800.00	$2,400.00	
						$2,400.00
L	**Total for Construction**					$361,750.00
M	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$36,175.00	$36,175.00	
2.	Design Changes (10%)	1	LS	$36,175.00	$36,175.00	
3.	Inflation (5% per year for 3 years)	1	LS	$54,262.50	$54,262.50	
4.	Level of Estimate Accuracy (10%)	1	LS	$36,175.00	$36,175.00	
						$162,790.00
N	**City Design Management and Construction Inspection (30%)**	1	LS	$108,525.00	$108,525.00	$108,530.00
O	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$15,736.20	$15,736.20	
2.	Design Development (3%)	1	LS	$15,736.20	$15,736.20	
3.	Construction Documents (8%)	1	LS	$41,963.20	$41,963.20	
4.	Bidding and Construction Administration (1%)	1	LS	$5,245.40	$5,245.40	
5.	Testing and Special Inspection (1%)	1	LS	$5,245.40	$5,245.40	
						$83,930.00
P	**Total Estimated Project Costs**					**$717,000.00**

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Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Almaden Expressway to Foxworthy Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$208,109.00	$208,109.00	
2.	Bonding (1.5%)	1	LS	$31,216.35	$31,216.35	
3.	Construction Staking (3%)	1	LS	$62,432.70	$62,432.70	
4.	Temporary Construction Fencing	3,300	LF	$15.00	$49,500.00	
						$351,260.00
B	**Demolition**					
1.	Clear and Grub	14,000	SF	$0.20	$2,800.00	
2.	Tree Removal	8	EA	$800.00	$6,400.00	
3.	Chain Link Fence	1,100	LF	$6.00	$6,600.00	
4.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	45	LF	$25.00	$1,125.00	
5.	Gabion Baskets	9,200	LF	$1.00	$9,200.00	
6.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$27,130.00
C	**Grading and Drainage**					
1.	Rough Grading	1,000	CY	$75.00	$75,000.00	
2.	Catch Basin	4	EA	$2,725.00	$10,900.00	
3.	Outfall Modifications	1	LS	$15,000.00	$15,000.00	
4.	Sump (at Drinking Stations)	1	EA	$1,500.00	$1,500.00	
5.	Inlet Modification	4	EA	$2,000.00	$8,000.00	
6.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$111,400.00
D	**Utilities**					
1.	Relocate Utility Pole	1	EA	$2,500.00	$2,500.00	
2.	Utility Relocation	1	LS	$73,500.00	$73,500.00	
						$2,500.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	4,200	LF	$54.00	$226,800.00	
2.	Aggregate Base (12' Width, 6" Thick)	4,200	LF	$16.00	$67,200.00	
3.	Base Rock Shoulders (2' Width)	8,400	LF	$5.25	$44,100.00	
4.	Striping	5,250	LF	$1.75	$9,187.50	
5.	Concrete Pavement	1,500	SF	$6.50	$9,750.00	
6.	Headerboard	10,000	LF	$5.50	$55,000.00	
7.	Concrete Curb Ramp and Detectable Warning Surface	4	EA	$3,500.00	$14,000.00	
8.	Concrete Retaining Wall	3,700	LF	$250.00	$925,000.00	
9.	Specialty Concrete	628	SF	$15.00	$9,420.00	
10.	Protective Guardrail	2,300	LF	$110.00	$253,000.00	
						$1,613,460.00
F	**Site Furnishings**					
1.	Directional Signage	3	EA	$500.00	$1,500.00	
2.	Wayfinding Kiosk	2	EA	$3,500.00	$7,000.00	
3.	Rules and Regulations Signage	4	EA	$250.00	$1,000.00	
4.	Interpretive Signage	1	EA	$500.00	$500.00	
5.	Mileage Marker	2	EA	$250.00	$500.00	
6.	Bench	6	EA	$2,500.00	$15,000.00	
7.	Trash Receptacle	3	EA	$1,800.00	$5,400.00	
8.	Emergency Call Box	2	EA	$10,000.00	$20,000.00	
9.	Picnic Tables	3	EA	$4,500.00	$13,500.00	
10.	Bike Rack	2	EA	$800.00	$1,600.00	
	Drinking Fountain and Water POC	1	LS	$10,000.00	$10,000.00	
						$76,000.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Almaden Expressway to Foxworthy Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
G	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	4,000	LF	$4.00	$16,000.00	
2.	Storm Drain Filters	8	EA	$180.00	$1,440.00	
3.	Construction Entrance	5	EA	$3,200.00	$16,000.00	
4.	Hydroseeding	40,000	SF	$0.10	$4,000.00	
5.	Slope Stablization	48,000	SF	$2.00	$96,000.00	
6.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
7.	Erosion Control Fabric	23,000	SF	$1.00	$23,000.00	
						$157,440.00
H	**Soil Preparation and Fine Grading**					
1.	Soil Preparation and Fine Grading	9,800	SF	$0.25	$2,450.00	
2.	Mulch	9,800	SF	$0.50	$4,900.00	
						$7,350.00
I	**Irrigation**					
1.	Controller, Centrally Controlled	1	EA	$10,000.00	$10,000.00	
2.	Tree Bubbler (2 per Tree)	32	EA	$95.00	$3,040.00	
3.	Quick Coupler Valves	2	EA	$185.00	$370.00	
4.	Electrical Service for Controller	1	LS	$7,500.00	$7,500.00	
5.	Irrigation System (Shrub and Groundcover)	9,800	SF	$2.50	$24,500.00	
						$45,410.00
J	**Planting**					
1.	Tree, 15 Gallon	16	EA	$125.00	$2,000.00	
2.	Groundcover / Shrubs	9,800	SF	$3.00	$29,400.00	
						$31,400.00
K	**Landscape Maintenance**					
1.	Landscape Maintenance (3 months)	3	MO	$3,000.00	$9,000.00	
						$9,000.00
L	**Total for Construction**					$2,432,350.00
M	**Public Art Program**					
1.	Public Art (2%)	1	LS	$48,647.00	$48,647.00	
						$48,650.00
N	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$243,235.00	$243,235.00	
2.	Design Changes (10%)	1	LS	$243,235.00	$243,235.00	
3.	Inflation (5% per year for 3 years)	1	LS	$364,852.50	$364,852.50	
4.	Level of Estimate Accuracy (10%)	1	LS	$243,235.00	$243,235.00	
						$1,094,560.00
O	**City Design Management and Construction Inspection (30%)**	1	LS	$729,705.00	$729,705.00	$729,710.00
P	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$107,266.80	$107,266.80	
2.	Design Development (3%)	1	LS	$107,266.80	$107,266.80	
3.	Construction Documents (8%)	1	LS	$286,044.80	$286,044.80	
4.	Bidding and Construction Administration (1%)	1	LS	$35,755.60	$35,755.60	
5.	Testing and Special Inspection (1%)	1	LS	$35,755.60	$35,755.60	
						$572,090.00
Q	**Total Estimated Project Costs**					**$4,877,360.00**

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Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Almaden Pedestrian Bridge
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$182,066.00	$182,066.00	
2.	Bonding (1.5%)	1	LS	$27,309.90	$27,309.90	
3.	Construction Staking (3%)	1	LS	$54,619.80	$54,619.80	
4.	Temporary Construction Fencing	300	LF	$15.00	$4,500.00	
						$268,500.00
B	**Demolition**					
1.	Clear and Grub	3,000	SF	$0.20	$600.00	
2.	Tree Removal	2	EA	$800.00	$1,600.00	
3.	Miscellaneous Removals	1	LS	$500.00	$500.00	
						$2,700.00
C	**Grading and Drainage**					
1.	Rough Grading	550	CY	$75.00	$41,250.00	
2.	Miscellaneous Drainage Provisions	1	LS	$500.00	$500.00	
						$41,750.00
D	**Bridges**					
1.	Prefabricated Steel Bridge (12.5' Width)	1	LS	$1,630,000.00	$1,630,000.00	
2.	Concrete Abutments	1	LS	$50,000.00	$50,000.00	
3.	Bridge Entrance Plazas	710	SF	$15.00	$10,650.00	
4.	Lights (at undercrossings)	6	EA	$6,000.00	$36,000.00	
						$1,726,650.00
E	**Site Furnishings**					
1.	Bench	2	EA	$2,500.00	$5,000.00	
2.	Trash Receptacle	1	EA	$1,800.00	$1,800.00	
						$6,800.00
F	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	200	LF	$4.00	$800.00	
2.	Storm Drain Filters	2	EA	$180.00	$360.00	
3.	Construction Entrance	1	EA	$3,200.00	$3,200.00	
4.	Hydroseeding	2,000	SF	$0.10	$200.00	
5.	Slope Stablization	2,000	SF	$2.00	$4,000.00	
6.	Miscellaneous SWPPP Provisions	1	LS	$500.00	$500.00	
7.	Erosion Control Fabric	2,000	SF	$1.00	$2,000.00	
						$11,060.00
G	**Soil Preparation and Fine Grading**					
1.	Soil Preparation and Fine Grading	200	SF	$0.25	$50.00	
2.	Mulch	200	SF	$0.50	$100.00	
						$150.00
H	**Irrigation**					
1.	Controller, Centrally Controlled	1	EA	$10,000.00	$10,000.00	
2.	Backflow Preventer and Meter	1	EA	$10,000.00	$10,000.00	
3.	Tree Bubbler (2 per Tree)	8	EA	$95.00	$760.00	
4.	Quick Coupler Valves	1	EA	$185.00	$185.00	
5.	Electrical Service for Controller	1	LS	$7,500.00	$7,500.00	
6.	Irrigation System (Shrub and Groundcover)	200	SF	$2.50	$500.00	
						$28,950.00
I	**Planting**					
1.	Tree, 15 Gallon	4	EA	$125.00	$500.00	
2.	Groundcover / Shrubs	200	SF	$3.00	$600.00	
						$1,100.00
J	**Landscape Maintenance**					
1.	Landscape Maintenance (3 months)	3	MO	$500.00	$1,500.00	
						$1,500.00
K	**Total for Construction**					$2,089,160.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Almaden Pedestrian Bridge
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
L	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$208,916.00	$208,916.00	
2.	Design Changes (10%)	1	LS	$208,916.00	$208,916.00	
3.	Inflation (5% per year for 3 years)	1	LS	$313,374.00	$313,374.00	
4.	Level of Estimate Accuracy (10%)	1	LS	$208,916.00	$208,916.00	
						$940,120.00
M	**City Design Management and Construction Inspection (30%)**	1	LS	$626,748.00	$626,748.00	$626,750.00
N	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$90,878.40	$90,878.40	
2.	Design Development (3%)	1	LS	$90,878.40	$90,878.40	
3.	Construction Documents (8%)	1	LS	$242,342.40	$242,342.40	
4.	Bidding and Construction Administration (1%)	1	LS	$30,292.80	$30,292.80	
5.	Testing and Special Inspection (1%)	1	LS	$30,292.80	$30,292.80	
						$484,680.00
O	**Total Estimated Project Costs**					**$4,140,710.00**

This estimate has been developed for the purpose of establishing an anticipated project construction budget at a master planning level. The items, amounts, quantities, and related information provided are based on MTCo's judgment at this level of document preparation and is offered only as reference data. MTCo has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Foxworthy to Thousand Oaks Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$145,899.00	$145,899.00	
2.	Bonding (1.5%)	1	LS	$21,884.85	$21,884.85	
3.	Construction Staking (3%)	1	LS	$43,769.70	$43,769.70	
4.	Temporary Construction Fencing	750	LF	$15.00	$11,250.00	
						$222,800.00
B	**Demolition**					
1.	Clear and Grub	12,100	SF	$0.21	$2,490.00	
2.	Concrete (Curb)	700	LF	$20.00	$14,000.00	
3.	Tree Removal	10	EA	$800.00	$8,000.00	
4.	Chain Link Fence	300	LF	$6.00	$1,800.00	
5.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	60	LF	$25.00	$1,500.00	
6.	Metal Beam Guardrail	35	LF	$6.00	$210.00	
7.	Miscellaneous Removals	1	LS	$2,000.00	$2,000.00	
						$30,000.00
C	**Grading and Drainage**					
1.	Rough Grading	1,000	CY	$75.00	$75,000.00	
2.	Catch Basin	5	EA	$2,725.00	$13,625.00	
3.	Outfall Modifications	1	LS	$2,000.00	$2,000.00	
4.	Storm Water Infiltration Swale w/ Plants	700	LF	$90.00	$63,000.00	
5.	Inlet Modification	5	EA	$2,000.00	$10,000.00	
6.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$164,630.00
D	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	5,500	LF	$54.00	$297,000.00	
2.	Aggregate Base (12' Width, 6" Thick)	5,500	LF	$16.00	$88,000.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	11,000	LF	$5.25	$57,750.00	
4.	Striping	5,775	LF	$1.75	$10,106.25	
5.	Concrete Pavement	14,400	SF	$6.50	$93,600.00	
6.	Headerboard	11,000	LF	$5.50	$60,500.00	
7.	Concrete Curb Ramp and Detectable Warning Surface	5	EA	$3,500.00	$17,500.00	
8.	Concrete Retaining Wall	550	LF	$250.00	$137,500.00	
9.	Split Rail Fencing, Riparian Edge (3' High)	100	LF	$75.00	$7,500.00	
10.	Specialty Concrete	1,200	SF	$15.00	$18,000.00	
						$787,460.00
E	**Site Furnishings**					
1.	Gateway Feature	1	EA	$15,000.00	$15,000.00	
2.	Directional Signage	2	EA	$500.00	$1,000.00	
3.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
4.	Rules and Regulations Signage	2	EA	$250.00	$500.00	
5.	Interpretive Signage	1	EA	$5,000.00	$5,000.00	
6.	Mileage Marker	2	EA	$250.00	$500.00	
7.	Bench	7	EA	$2,500.00	$17,500.00	
8.	Trash Receptacle	4	EA	$1,800.00	$7,200.00	
9.	Collapsible Bollard	2	EA	$800.00	$1,600.00	
10.	Emergency Call Box	2	EA	$10,000.00	$20,000.00	
						$71,800.00
F	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	5,500	LF	$4.00	$22,000.00	
2.	Storm Drain Filters	5	EA	$180.00	$900.00	
3.	Construction Entrance	4	EA	$3,200.00	$12,800.00	
4.	Trailside Seeding (2' Each Side)	5,500	LF	$35.00	$192,500.00	
5.	Hydroseeding	22,000	SF	$0.10	$2,200.00	
6.	Miscellaneous SWPPP Provisions	1	LS	$2,000.00	$2,000.00	
7.	Erosion Control Fabric	10,100	SF	$1.00	$10,100.00	
						$242,500.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Foxworthy to Thousand Oaks Reach

prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
G	**Soil Preparation and Fine Grading**					
1.	Soil Preparation and Fine Grading	10,000	SF	$1.00	$10,000.00	
2.	Mulch	10,000	SF	$0.50	$5,000.00	
						$15,000.00
H	**Irrigation**					
1.	Controller, Centrally Controlled	3	EA	$10,000.00	$30,000.00	
2.	Backflow Preventer and Meter	3	EA	$10,000.00	$30,000.00	
3.	Tree Bubbler (2 per Tree)	32	EA	$95.00	$3,040.00	
4.	Quick Coupler Valves	3	EA	$185.00	$555.00	
5.	Electrical Service for Controller	1	LS	$15,000.00	$15,000.00	
6.	Irrigation System (Shrub and Groundcover)	10,000	SF	$2.50	$25,000.00	
						$103,600.00
I	**Planting**					
1.	Tree, 15 Gallon	16	EA	$125.00	$2,000.00	
2.	Groundcover / Shrubs	10,000	SF	$3.00	$30,000.00	
						$32,000.00
J	**Landscape Maintenance**					
1.	Landscape Maintenance (3 months)	3	MO	$4,000.00	$12,000.00	
						$12,000.00
K	**Total for Construction**					$1,681,790.00
L	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$168,179.00	$168,179.00	
2.	Design Changes (10%)	1	LS	$168,179.00	$168,179.00	
3.	Inflation (5% per year for 3 years)	1	LS	$252,268.50	$252,268.50	
4.	Level of Estimate Accuracy (10%)	1	LS	$168,179.00	$168,179.00	
						$756,810.00
M	**City Design Management and Construction Inspection (30%)**	1	LS	$504,537.00	$504,537.00	$504,540.00
N	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$73,158.00	$73,158.00	
2.	Design Development (3%)	1	LS	$73,158.00	$73,158.00	
3.	Construction Documents (8%)	1	LS	$195,088.00	$195,088.00	
4.	Bidding and Construction Administration (1%)	1	LS	$24,386.00	$24,386.00	
5.	Testing and Special Inspection (1%)	1	LS	$24,386.00	$24,386.00	
						$390,180.00
O	**Total Estimated Project Costs**					**$3,333,320.00**

This estimate has been developed for the purpose of establishing an anticipated project construction budget at a master planning level. The items, amounts, quantities, and related information provided are based on MTCo's judgment at this level of document preparation and is offered only as reference data. MTCo has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Thousand Oaks to Branham Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$55,107.00	$55,107.00	
2.	Bonding (1.5%)	1	LS	$8,266.05	$8,266.05	
3.	Construction Staking (3%)	1	LS	$16,532.10	$16,532.10	
4.	Temporary Construction Fencing	2,450	LF	$15.00	$36,750.00	
						$116,660.00
B	**Demolition**					
1.	Clear and Grub	27,000	SF	$0.90	$24,300.00	
2.	Tree	5	EA	$800.00	$4,000.00	
3.	Drainage	1	LS	$500.00	$500.00	
4.	Chain Link Fence	640	LF	$6.00	$3,840.00	
5.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	45	LF	$25.00	$1,125.00	
						$33,770.00
C	**Grading and Drainage**					
1.	Rough Grading	150	CY	$75.00	$11,250.00	
2.	Catch Basin	2	EA	$2,725.00	$5,450.00	
3.	Outfall Modifications	1	LS	$2,000.00	$2,000.00	
4.	Sump (at Drinking Stations)	1	EA	$1,500.00	$1,500.00	
5.	Miscellaneous Drainage Provisions	1	LS	$1,000.00	$1,000.00	
						$21,200.00
D	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	2,300	LF	$54.00	$124,200.00	
2.	Aggregate Base (12' Width, 6" Thick)	2,300	LF	$16.00	$36,800.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	4,000	LF	$5.25	$21,000.00	
4.	Striping	2,520	LF	$1.75	$4,410.00	
5.	Concrete Pavement	4,000	SF	$6.50	$26,000.00	
6.	Concrete Pavement (at Trail Undercrossing)	2,400	SF	$6.50	$15,600.00	
7.	Decomposed Granite Paving	7,781	SF	$4.00	$31,124.00	
8.	Decomposed Granite Path Headers	2,862	LF	$5.50	$15,741.00	
9.	Headerboard	4,800	LF	$5.50	$26,400.00	
10.	Concrete Curb Ramp and Detectable Warning Surface	3	EA	$3,500.00	$10,500.00	
11.	Split Rail Fencing	200	LF	$75.00	$15,000.00	
12.	Concrete Driveway	2	EA	$5,000.00	$10,000.00	
14.	Lights (Pole-mounted)	3	EA	$5,000.00	$15,000.00	
15.	Lights (Mouted to Branham Bridge)	2	EA	$6,000.00	$12,000.00	
16.	Electrical POC and Panel	1	LS	$20,000.00	$20,000.00	
						$383,780.00
E	**Site Furnishings**					
1.	Directional Signage	3	EA	$500.00	$1,500.00	
2.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
3.	Rules and Regulations Signage	2	EA	$250.00	$500.00	
4.	Interpretive Signage	2	EA	$5,000.00	$10,000.00	
5.	Mileage Marker	1	EA	$250.00	$250.00	
6.	Bench	2	EA	$2,500.00	$5,000.00	
7.	Trash Receptacle	4	EA	$1,800.00	$7,200.00	
8.	Emergency Call Box	1	EA	$10,000.00	$10,000.00	
9.	Picnic Tables	3	EA	$4,500.00	$13,500.00	
10.	Bike Rack	4	EA	$800.00	$3,200.00	
11.	Meditation Maze	1	LS	$10,000.00	$10,000.00	
12.	Log Bench (Relocation)	17	EA	$150.00	$2,550.00	
13.	Drinking Fountain and Water POC	1	LS	$10,000.00	$10,000.00	
						$77,200.00
F	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	2,300	LF	$4.00	$9,200.00	
2.	Storm Drain Filters	4	EA	$180.00	$720.00	
3.	Construction Entrance	2	EA	$3,200.00	$6,400.00	
4.	Trailside Seeding (2' Each Side)	4,000	LF	$0.50	$2,000.00	
5.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
6.	Maintenance (2 years)	1	LS	$1,800.00	$1,800.00	
7.	Erosion Control Fabric	14,000	SF	$1.00	$14,000.00	
						$35,120.00
G	**Total for Construction**					$667,730.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Thousand Oaks to Branham Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
H	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$66,773.00	$66,773.00	
2.	Design Changes (10%)	1	LS	$66,773.00	$66,773.00	
3.	Inflation (5% per year for 3 years)	1	LS	$100,159.50	$100,159.50	
4.	Level of Estimate Accuracy (10%)	1	LS	$66,773.00	$66,773.00	
						$300,480.00
I	**City Design Management and Construction Inspection (30%)**	1	LS	$200,319.00	$200,319.00	$200,320.00
J	**Professional Services**					
1.	Topographic Survey (3%)	1	LS	$20,031.90	$20,031.90	
2.	Design Development (3%)	1	LS	$20,031.90	$20,031.90	
3.	Construction Documents (8%)	1	LS	$53,418.40	$53,418.40	
4.	Bidding and Construction Administration (1%)	1	LS	$6,677.30	$6,677.30	
5.	Testing and Special Inspection (1%)	1	LS	$6,677.30	$6,677.30	
						$106,840.00
K	**Total Estimated Project Costs**					**$1,275,370.00**

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Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Branham to Chynoweth Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$107,877.00	$107,877.00	
2.	Bonding (1.5%)	1	LS	$16,181.55	$16,181.55	
3.	Construction Staking (3%)	1	LS	$32,363.10	$32,363.10	
4.	Temporary Construction Fencing	1,000	LF	$15.00	$15,000.00	
						$171,420.00
B	**Demolition**					
1.	Clear and Grub	48,000	SF	$0.50	$24,000.00	
2.	Asphalt Surfacing	1,170	SF	$3.00	$3,510.00	
3.	Tree	9	EA	$800.00	$7,200.00	
4.	Drainage	1	LS	$700.00	$700.00	
5.	Chain Link Fence	125	LF	$6.00	$750.00	
6.	Concrete Curb & Gutter (for ADA Ramps, 15' Each)	45	LF	$25.00	$1,125.00	
7.	Road End Fencing at Chynoweth Ave	1	LS	$500.00	$500.00	
8.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$38,790.00
C	**Grading and Drainage**					
1.	Rough Grading	330	CY	$75.00	$24,750.00	
2.	Catch Basin	2	EA	$2,725.00	$5,450.00	
3.	Outfall Modifications	1	LS	$2,000.00	$2,000.00	
4.	Miscellaneous Drainage Provisions	1	LS	$5,000.00	$5,000.00	
						$37,200.00
D	**Utilities**					
1.	Utility Adjustments	1	LS	$3,000.00	$3,000.00	
						$3,000.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	5,000	LF	$54.00	$270,000.00	
2.	Aggregate Base (12' Width, 6" Thick)	5,000	LF	$16.00	$80,000.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	10,000	LF	$5.25	$52,500.00	
4.	Striping	5,000	LF	$1.75	$8,750.00	
5.	Wood Headerboard	10,000	LF	$5.50	$55,000.00	
6.	Concrete Curb Ramp and Detectable Warning Surface	3	EA	$3,500.00	$10,500.00	
7.	Concrete Retaining Wall (12'-16' High)	400	LF	$560.00	$224,000.00	
8.	Split Rail Fencing	350	LF	$75.00	$26,250.00	
9.	Protective Guardrail (4'-6' High)	400	LF	$110.00	$44,000.00	
10.	Speciality Concrete	1,200	SF	$15.00	$18,000.00	
11.	Concrete Driveway	1	EA	$5,000.00	$5,000.00	
12.	Chain Link Fence (6' Height)	85	LF	$45.00	$3,825.00	
14.	Concrete Pavement	6,000	SF	$6.50	$39,000.00	
						$836,830.00
F	**Site Furnishings**					
1.	Gateway Feature	1	EA	$15,000.00	$15,000.00	
2.	Directional Signage	4	EA	$500.00	$2,000.00	
3.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
4.	Rules and Regulations Signage	3	EA	$250.00	$750.00	
5.	Interpretive Signage	1	EA	$5,000.00	$5,000.00	
6.	Mileage Marker	2	EA	$250.00	$500.00	
7.	Bench	5	EA	$2,500.00	$12,500.00	
8.	Trash Receptacle	3	EA	$1,800.00	$5,400.00	
9.	Bollard	2	EA	$800.00	$1,600.00	
10.	Emergency Call Box	1	EA	$10,000.00	$10,000.00	
11.	Picnic Tables	1	EA	$4,500.00	$4,500.00	
						$60,750.00
G	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	5,000	LF	$4.00	$20,000.00	
2.	Storm Drain Filters	2	EA	$250.00	$500.00	
3.	Construction Entrance	3	EA	$3,200.00	$9,600.00	
4.	Hydroseeding	38,000	SF	$0.10	$3,800.00	
5.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
						$34,900.00
H	**Soil Preparation and Fine Grading (at Chynoweth Ave trail gateway)**					
1.	Soil Preparation and Fine Grading	1,000	SF	$1.00	$1,000.00	
2.	Mulch	1,000	SF	$0.50	$500.00	
						$1,500.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Branham to Chynoweth Reach
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
I	**Irrigation (at Chynoweth Ave trail gateway)**					
1.	Controller, Centrally Controlled	1	EA	$10,000.00	$10,000.00	
2.	Backflow Preventer and Meter	1	EA	$10,000.00	$10,000.00	
3.	Tree Bubbler (2 per Tree)	18	EA	$95.00	$1,710.00	
4.	Quick Coupler Valves	1	EA	$185.00	$185.00	
5.	Electrical Service for Controller	1	LS	$15,000.00	$15,000.00	
6.	Roadway Trenching and Sleeving	775	LF	$25.00	$19,375.00	
7.	Irrigation System (Shrubs/groundcover)	1,000	SF	$3.00	$3,000.00	
						$59,270.00
J	**Planting (at Chynoweth Ave trail gateway)**					
1.	Tree, 15 Gallon	9	EA	$125.00	$1,125.00	
2.	Shrubs and Groundcover	1,000	SF	$3.00	$3,000.00	
						$4,130.00
K	**Landscape Maintenance (at Chynoweth Ave trail gateway)**					
1.	Landscape Maintenance	3	MO	$800.00	$2,400.00	
						$2,400.00
L	**Total for Construction**					$1,250,190.00
M	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$125,019.00	$125,019.00	
2.	Design Changes (10%)	1	LS	$125,019.00	$125,019.00	
3.	Inflation (5% per year for 3 years)	1	LS	$187,528.50	$187,528.50	
4.	Level of Estimate Accuracy (10%)	1	LS	$125,019.00	$125,019.00	
5.	Permits (1%)	1	LS	$12,501.90	$12,501.90	
						$575,090.00
N	**City Design Management and Construction Inspection (30%)**	1	LS	$547,584.00	$547,584.00	$547,580.00
O	**Professional Services**					
1.	Topographic Survey (2%)	1	LS	$36,510.00	$36,510.00	
2.	Design Development (6.5%)	1	LS	$118,640.00	$118,640.00	
3.	Construction Documents (20%)	1	LS	$365,060.00	$365,060.00	
4.	Bidding and Construction Administration (3%)	1	LS	$54,760.00	$54,760.00	
5.	Permitting Assistance (1%)	1	LS	$18,250.00	$18,250.00	
						$593,220.00
P	**Total Estimated Project Costs**					**$2,966,080.00**

This estimate has been developed for the purpose of establishing an anticipated project construction budget at a master planning level. The items, amounts, quantities, and related information provided are based on MTCo's judgment at this level of document preparation and is offered only as reference data. MTCo has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Chynoweth Bridge and Trail Spur
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Project Start-up**					
1.	Mobilization (10%)	1	LS	$194,372.00	$194,372.00	
2.	Bonding (1.5%)	1	LS	$29,155.80	$29,155.80	
3.	Construction Staking (3%)	1	LS	$58,311.60	$58,311.60	
4.	Temporary Construction Fencing	700	LF	$15.00	$10,500.00	
						$292,340.00
B	**Demolition**					
1.	Clear and Grub	5,000	SF	$0.50	$2,500.00	
2.	Miscellaneous Removals	1	LS	$1,000.00	$1,000.00	
						$3,500.00
C	**Grading and Drainage**					
1.	Rough Grading	30	CY	$75.00	$2,250.00	
2.	Miscellaneous Drainage Provisions	1	LS	$5,000.00	$5,000.00	
						$7,250.00
D	**Utilities**					
1.	Utility Adjustments	1	LS	$3,000.00	$3,000.00	
2.	Sewer Line Relocation	1	LS	$75,000.00	$75,000.00	
						$78,000.00
E	**Trail**					
1.	Asphalt Path (12' Width, 4" Thick)	500	LF	$54.00	$27,000.00	
2.	Aggregate Base (12' Width, 6" Thick)	500	LF	$16.00	$8,000.00	
3.	Base Rock Shoulders (2' Width, 10" Thick)	1,000	LF	$5.25	$5,250.00	
4.	Striping	525	LF	$1.75	$918.75	
5.	Headerboard	1,000	LF	$5.50	$5,500.00	
6.	Concrete Pavement	2,600	SF	$15.00	$39,000.00	
						$85,670.00
F	**Bridge**					
1.	Prefabricated Steel Bridge (12.5' width)	1	LS	$1,640,000.00	$1,640,000.00	
2.	Concrete Abutments	1	LS	$25,000.00	$25,000.00	
3.	Bridge Entrance Plazas	2,000	SF	$15.00	$30,000.00	
4.	Entrance Architectural Treatments	1	LS	$20,000.00	$20,000.00	
5.	Miscellaneous Fencing	1	LS	$5,000.00	$5,000.00	
						$1,720,000.00
G	**Site Furnishings**					
1.	Directional Signage	2	EA	$500.00	$1,000.00	
2.	Wayfinding Kiosk	1	EA	$3,500.00	$3,500.00	
3.	Rules and Regulations Signage	2	EA	$250.00	$500.00	
4.	Interpretive Signage	1	EA	$5,000.00	$5,000.00	
5.	Bench	4	EA	$2,500.00	$10,000.00	
6.	Trash Receptacle	3	EA	$1,800.00	$5,400.00	
7.	Emergency Call Box	1	EA	$10,000.00	$10,000.00	
						$35,400.00
H	**Storm Water Pollution Prevention Provisions**					
1.	Fiber Rolls	700	LF	$4.00	$2,800.00	
2.	Storm Drain Filters	1	EA	$250.00	$250.00	
3.	Construction Entrance	3	EA	$3,200.00	$9,600.00	
4.	Trailside Seeding (2' on each side)	500	LF	$0.50	$250.00	
5.	Miscellaneous SWPPP Provisions	1	LS	$1,000.00	$1,000.00	
						$13,900.00
I	**Total for Construction**					$2,236,060.00
J	**Public Art Program**					
1.	Public Art (2%)	1	LS	$44,721.20	$44,721.20	
						$44,720.00

Figure 43: Detailed Cost Estimates by Reach

Estimate of Probable Construction Costs
Guadalupe River Trail Master Plan
Chynoweth Bridge and Trail Spur
prepared on: April 5th, 2017

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
K	**Contingencies**					
1.	Construction Changes (10%)	1	LS	$228,078.00	$228,078.00	
2.	Design Changes (10%)	1	LS	$228,078.00	$228,078.00	
3.	Inflation (5% per year for 3 years)	1	LS	$342,117.00	$342,117.00	
4.	Level of Estimate Accuracy	1	LS	$228,078.00	$228,078.00	
5.	Permits	1	LS	$22,807.80	$22,807.80	
						$1,049,160.00
L	**City Design Management and Construction Inspection (30%)**	1	LS	$998,982.00	$998,982.00	$998,980.00
M	**Professional Services**					
1.	Topographic Survey (1%)	1	LS	$33,299.40	$33,299.40	
2.	Design Development (3%)	1	LS	$68,423.40	$68,423.40	
3.	Construction Documents (8%)	1	LS	$266,395.20	$266,395.20	
4.	Bidding and Construction Administration (1%)	1	LS	$33,299.40	$33,299.40	
5.	Permitting Assistance (1%)	1	LS	$33,299.40	$33,299.40	
						$434,720.00
N	**Total Estimated Project Costs**					**$4,763,640.00**

This estimate has been developed for the purpose of establishing an anticipated project construction budget at a master planning level. The items, amounts, quantities, and related information provided are based on MTCo's judgment at this level of document preparation and is offered only as reference data. MTCo has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

FUNDING

Implementation of the master plan will require significant funding. The City of San José funds trail development Park Trust and C&C funding sources, generated from local transactions. Trails are one eligible project category, and a wide range of funding proposals are considered by the City Council annually as part of the budget process and as competitive grant programs are announced thoughout the year.

The Department of Parks, Recreation, and Neighborhood Services has a strong record in securing grant funding from local, state, and federal sources; over $40,000,000 in funds has been secured since 2002.

The completed master plan makes the project more competitive for local and external resources because their is clarity about the scope of work, challenges and opportunities, and environmental clearance.

City staff will propose annually to the City Council a preferred development approach for citywide trail development, which may include projects along the Guadalupe River. Staff will also make the Council aware of well-aligned grant programs as they become available.

The following bullet points list grant programs available at the time of this document's publication. See Figure 43 for additional details. An independent and up to date list of grant programs and sources is maintained by City staff.

State Grants

- Habitat Conservation Fund (trails/programs)
- Recreational Trails Programs (Construction maintenance, restoration, purchase and lease of lands, motorized equipment, education programs to promote trail safety)
- Environmental Justice: Context Sensitive Planning (Programming and implementation of transportation improvements)
- California River Parkways (Trails along rivers and streams)
- Transportation for Livable Communities (For projects developed through an inclusive community planning effort, providing for a range of transportation choices, and supporting connectivity between transportation investments and land uses)
- Bicycle Transportation Account (Improve safety and convenience for bicycle commuters)
- Land and Water Conservation Fund (Acquisition or development of outdoor recreation areas and facilities including trails)
- Transportation Funds for Clean Air (Projects to reduce air pollution from motor vehicles)

Federal Grants

- Active Transportation Program (ATP)
- Rivers, Trails and Conservation Assistance Program (Technical assistance for projects that conserve rivers, preserve open space, and develop trails and greenways)

Grant Source	Potential Award (max.)	Contact Info	Website	Match
One Bay Area Grant - MTC	$16.4M	MTC Mallory Atkinson 415 778 6793 matkinson@mtc.ca.gov	http://abag.ca.gov/priority/conservation/ PCA Map: http://abag.ca.gov/priority/conservation/pdfs/maps/SantaClara_PCAs_11x17_low.pdf	None

Figure 44: Possible Funding Sources Table

HCF (Habitat Conservation Fund)	$2,000,000 (Program budget)	John Mason, Lead Project Officer (916) 651-3143 or jmason@parks.ca.gov California State Parks Office of Grants & Local Services PO Box 942896 Sacramento, CA 94296-0001 TEL 916-653-7423	www.parks.ca.gov/grants	50%, Non-state dollars
RTP (Recreational Trails Program)	$1,000,000	Richard Rendon (916) 651-8579 or rrend@parks.ca.gov California State Parks Office of Grants and Local Services P O Box 942896 Sacramento, CA 94296-0001	www.parks.ca.gov/grants	30%
Open Space Authority - 20% Funds	Variable; available balance allocated to San José	Megan Dreger; mdreger@openspaceauthority.org	https://www.openspaceauthority.org/urban/index.html	None

Open Space Authority – Measure Q	~$1,000,000 annually	Megan Dreger; mdreger@ openspaceauth ority.org	https://www. openspaceautho rity.org/about/ openspacefund ing.html	50% preferred
RTCA (Rivers, Trails and Conservation Assistance Program)	Technical assistance	National Park Service, Rivers, Trails, and Conservation 1111 Jackson St., Suite 700 Oakland, CA 94607 Barbara Rice, Program Manager barbara_rice@ nps.gov (510) 817-1449	www.nps.gov/ ncrc/programs/ rtca	None
California Coastal Conservatory	No Maximum	Matt Gerhart matt.gerhart@ scc.ca.gov 510-286-0317	http://scc. ca.gov/	Suggested
Sustainable Transportation Planning	~4100k to $500k	Becky Frank 510 286-5536 becky.frank@ dot.ca.gov	http://www.dot. ca.gov/hq/tpp/ grants.html	20% (non-federal)
Affordable Housing and Sustainable Communities (AHSC) Program	~$3M to $20M	http://www. sgc.ca.gov/ Grant-Programs/ AHSC-Program.html	http://www. sgc.ca.gov/ Grant-Programs/ AHSC-Guidelines.html	None

Transportation Investment Generating Economic Recovery Program (TIGER)	~$100M	US DOT https://www.transportation.gov/contact-us	https://www.transportation.gov/tiger	None
Transportation Innovation & Finance (TIFIA)	no max		http://www.fhwa.dot.gov/ipd/tifia/	None
Active Transportation Program	no max	teresa.mcwilliam@dot.ca.gov ATP Website Inquiry (916) 653-0328	http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html	Not required for state but points are awarded to projects that leverage non-ATP funds
Recreational Trails Program	no max	Richard Rendon, State Trail Administrator Office of Grants and Local Services California State Parks 916 651 7600 Richard.Rendon@parks.ca.gov	http://www.fhwa.dot.gov/environment/recreational_trails/	None

Figure 44: Possible Funding Source Table

REQUIRED APPROVALS/PERMITS

The following agency approvals will need to be obtained prior to implementation of any site work on the project:

- Caltrans - Maintenance agreement and Encroachment permit for the Willow Calle Bridge connection to the Highway 87 Bikeway.
- California Department of Fish and Wildlife - 1602 Streambed Alteration Agreement for ground disturbing activities within riparian areas (generally within the banks of the Guadalupe); for work related to the undercrossings and for any incidental intrusion onto the inner banks of the levees during construction
- Regional Water Quality Control Board - 401 Water Quality Certification permit and National Pollution Discharge Elimination System (NPDES) permit, including a Stormwater Pollution Prevention Plan (SWPPP)
- United States Army Corps of Engineers (USACE) - Permits as required and confirmed flood control plan and alignment for maintenance road, where future trail development is proposed to share that space
- Santa Clara Valley Water District (SCVWD) - encroachment permit and Joint Trail Agreement
- San Jose Water Company (SJWC) – encroachment permit
- Santa Clara Valley Habitat Conservation Plan

In addition, this project will be required to comply with all mitigation and monitoring requirements stated in the environmental clearance for this project:

Guadalupe River Trail Master Plan Initial Study, (date) Mitigated Negative Declaration ## State Clearinghouse #XXXX and HCP

ACKNOWLEDGMENTS

Mayor
Sam Liccardo

City Council

	Budget Approval	Plan Approval
District 1	Charles "Chappie" Jones	Charles "Chappie" Jones
District 2	Ash Kalra	Sergio Jimenez
District 3	Raul Peralez	Raul Peralez
District 4	Manh Nguyen	Lan Diep
District 5	Magdalena Carrasco	Magdalena Carrasco
District 6	Pierluigi Oliverio	Devora "Dev" Davis
District 7	Tam Nguyen	Tam Nguyen
District 8	Rose Herrera, Vice Mayor	Sylvia Arenas
District 9	Donald Rocha	Donald Rocha
District 10	Johnny Khamis	Johnny Khamis

Department of Parks, Recreation and Neighborhood Services
Angel Rios, Jr., Director

Department of Public Works
Barry Ng, Director

Technical Advisory Committee (TAC)

City of San Jose
- Yves Zsutty, Department of Parks, Recreation and Neighborhood Services, Trail Manager
- Jane Wu, Department of Public Works, Acting Sr Landscape Architect
- Mike Pruitt, Department of Public Works, Associate Landscape Designer
- Zahi Khattab, Department of Transportation, Principal Engineer
- Jair Camacho, Department of Transportation, Associate Engineer
- John Brazil, Department of Transportation, Active Transportation Program
- Manjit, Banwait, Department of Public Works, Associate Engineer
- Kevin Mank, Police Department, Officer

Santa Clara Valley Water District (SCVWD)
- Beth Dyer
- Sue Tippets
- Lotina Nishijima
- James Ujah
- Javier Valencia

US Army Corp of Engineers (USACE)
- Andrew Smith
- Jay Kinbengen

San Jose Water Company (SJWC)
Francois Rodigari
Casey Claborn

Santa Clara County, Roads and Airport Department
Dawn Cameron
Dan Collen

California Department of Fish and Wildlife (CDFW)
David Johnston

Regional Water Quality Control Board (RWQCB)
Brian Wines

Mark Thomas & Company (Consultant)
Sasha Dansky
Erik Smith
Vignesh Swaminathan

COMMUNITY MEETING 1 : COMMENT SUMMARY

When: September 21, 2015 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT (#) indicates number of community members who wrote that they agreed with the comment	RESPONSE
A. TELL US : What Should be Included Along a Trail?		
Interpretive / Education / Viewing Areas:		
1	Nature and historical plaques like the stretch of trail through the Rose Garden and Little Italy.	Master Plan will define content and location for interpretive signs. Topics to be introduced as next workshop.
2	Plaques on inclusive ecology; i.e. we're all connected.	Master Plan will define content and location for intrpretive signs (may include ecology, biology and flood control).
3	Don't like a lot of clutter. Concentrate info in just a few places.	Seek to consolidate general information signs at trail gateways. Directional and warning signs may be required along trail alignment. Goal is to consolidate and avoid sign clutter.
Art & Neighborhood Identity:		
4	No ugly art to detract from nature and be defaced.	Art will be proposed at limited and high visibility location(s). Art will be developed through a public process and engagement of the City's Arts Commission.
5	Historic Neighborhood (1)	Master Plan will consider context and adjacent places, and reflect in design of amenities and aesthetic when possible.
6	Native Americans (local) (1)	An existing interpretive area dedicated to the Ohlone Tribe is located north of Virginia St. Will consider additional interpretation as part of sigange plan for entire alignment.
7	Provide permanent locations for temporary art; i.e. every few months a sculpture will be replaced, but remain in the same location	Art will be proposed at high visible select location(s). To accomplish a more visually engaging feature, the application of a kenetic (moving) art piece will be evaluated.
Gateway Elements:		
8	Include lots of wayfinding elements.	Wayfinding will be integral to the trail design (offering guidance to points of interest, historical sites, restrooms and services). A "you are here" map will appear at trail gateways (like along existing trail). Signage will comply with San Jose's "Trail Signage Guidelines"
9	Gateways should describe where the path is going to, or where pedestrians are exiting the trail.	Signage will be posted along trail either in advance of a roadway, or on the raodway bridge structure, to guide persons to destinations. Wayfinding signage will supplement to direct to points of interest.
10	Gateway on Chynoweth needs to be in the middle of the street for safety	Planning team is coordinating with San Jose Dept of Transportation for road terminus design. Design recommendation to be included in the master plan, but work may be conducted by DOT as an independentp roject.
Passive Park-Like Open Areas:		
11	I'd like to see more "natural" areas along trails. We need more respites from the 'city-life'. (5)	Due to much of the project limits being within Santa Clara Valley Water District (SCVWD) jurisdiction, planning team will coordinate with SCVWD for allowable improvements.
Exercise Stations:		
12	I don't like this. Keep the trail clutter-free.	Master Plan will identify a variety of features but seek to consolidate their placement. An exercise station may be best suited for an adjacent park (where space permits) and would be installed as a collection, and not scattered along the entire trail.
13	Provide options for seniors and physically-challenged people.	Future design of an exercise station will consider a variety of user abilities.
Other:		
14	Include local history and historic elements along the trail. (3)	See response to Issue A1.
15	Include Restrooms; maybe the type that require coins to access. (1)	Wayfinding signage will direct users to closest restroom. The infastructure to support a restroom installation (electrical, plumbing, etc.) could limit or conflict with future flood control alternations or annual maintenance of the channel.
16	Include water (drinking) fountains.	Wayfinding signage will direct users to closest fountain. Wayfinding may also direct to "food" provided by private retail. The infastructure to support a drinking fountain installation (electrical, plumbing, etc.) could limit or conflict with future flood control alternations or annual maintenance of the channel.
17	Improve live trout habitat. (1)	Master Plan being developed with support from a Technical Advisory Comiittee that includes regulatory agencies charged with habitat and wildlife protection.
18	Include Dog-poo bags, trash receptacles, and signs to encourage use.	City of San Jose no longer funds the supply and upkeep of mutt-mitt dispensers. City has worked with the San Jose Parks Foundation organization and continues to explore options for provision of the service. But currently, City encourages pet owners to visit trails prepared with their own supplies for clean-up. Trail improvements will include occasional signage to encourage good pet-owner conduct like the CSJ-TR4 sign
19	Access to community resources: shopping, restaurants, food trucks, book stores	Wayfinding signage will direct trail users to resources with general messages like "Food" or "Restroom". The City does not direct to specific retailers.
20	Have rangers patrol the trail.	At time of construction, the City Council will receive a budget recommendation for Park Ranger staff to monitor the trail (at staffing rate used for all trail facilities)
21	Indicate how long it will take to bike/hike from one landmark to another [Also on the master plan for better understanding]	Master Plan will include a complete signage plan that includes Mileage Markers posted at 1/4-mile increments. The markers offer distance but are also tied to the 911 system so that trail users can more rapidly access services if needed.

COMMUNITY MEETING 1 : COMMENT SUMMARY

When: September 21, 2015 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT (#) indicates number of community members who wrote that they agreed with the comment	RESPONSE
B. TELL US : How Do You Use Your Trails?		
Commute:		
1	Provide ways to commute to restaurants, shopping areas, coffee shops, family outings and work. (4)	Wayfinding signage will offer general guidance to resources.
2	Create accessible trail connections.	Guadalupe River Trail and it's connections will accommodate all users and abilities. Under-crossings are developed as part of flood control improvements and may not achieve ADA-slope recommendations - these locations will be signed in advance if minimum slopes are exceeded.
Recreation & Exercise: (no comments received)		
Nature Appreciation:		
3	Please work with SCVWD to make water accessible and playful. Invite us in. Chico, CA has excellent examples of how to provide residents with water access in a variety of ways through good design (swimming holes, stone stains, etc.)	Planning team will coordinate with SCVWD, permitting and regulatory agencies to determine opportunities for greater proximity to the waterway. From past projects, it does not appear likely that the trail will offer direct access to water both due to regulatory agencies and exceeding maintenance goals to keep the surface clear of storm debris.
General Active Transportation:		
4	Design for dog-walking	The trail will meet California Highway Design Manual standards for Class I Trails (12' wide with 2' gravel shoulders) which provide room for multiple users. Post rules will remind dog owners that the pet, leash and themselves need to stay to the right of the centerline.
Other:		
5	Homeless camps along creek and under overpasses are a big concern. (1)	See reponse to Issue A20. In addition, the SCVWD is co-funding four City Park Ranger positions to increase enforcement of no camping rules, applicable laws, and clearing of encampments.
6	Provide elements that allow people to practice spiritually; i.e. places for meditation, etc.	The intent of the trail is to provide passive areas in appropriate locations that fit within the guidelines and constraints of the site and project partners. Master Plan will seek to reinforce the connection to adjacent park spaces which offer a greater variety of spaces.
7	How will the trail be maintained; how will graffiti, garbage, and homelessness be handled? (2)	At time of construction, the City Council will receive a budget recommendation for Park Ranger staff to monitor the trail and Park Mainteannce staff to maintain regularly (at staffing rate used for all trail facilities)
8	Have police and ranger bike patrol. Keep the funding consistent. (2)	See reponse to Issue A20.
9	Include more trees. (1)	Master Plan will identify opportunities for tree planting where feasibile. Narrow site constaints and regulatory issues limit opportunities. Unable to plant trees that could obstruct water channels, reduce access for regular maintenance or damage levees.
10	Use reflective paint on bike lane striping for night biking.	Design of trail will use San Jose's specifications for ultra-thin, thermoplastic striping.
11	Evening usage is very important for after work enjoyment/exercise.	Posted hours are currenlty one hour before sunrise and one hour after sunset, but City is evaluating 24/7 usage. The annual Trail Count documents a high number of commuters along the Guadalupe River Trail, with usage prior to 7:00am and after 7:00 pm (counts occur in September).
12	Make it easy for out-of-town/convention visitors to use trails. Existing trails more confusing at/under roads.	Wayfinding signage will offer general guidance to resources. Interpretive signage will share information about historic, ecological and other sites of interest. City will continue to host a Tourism web page and work with Team San Jose and others to promote San Jose Trails to visitors.
13	Design for seniors and the physically challenged.	The trail and associated amenities will be planned to accommodate all users and abilities.
14	Barriers between bikes and cars would be nice (guard rails, bollards, etc.) (1)	Alignment of the proposed trail will include some method of seperation to protect and buffer all users from vehicular traffic. These methods may include (but not be limited to) one or a combination of the following: verticle curbs, guardrails, protective railings, landscape strips, and fencing. In instances the trail runs parallel with roadways, such buffer space will be at least 3ft wide. Method of seperation and width will be determined by adjacent vehicular speeds.

COMMUNITY MEETING 1 : COMMENT SUMMARY

When: September 21, 2015 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT **(#)** indicates number of community members who wrote that they agreed with the comment	RESPONSE
C. Opportunities and Constraints Board 1		
1	There is a homeless camp under the Highway 87 overpass that needs to be removed.	Issue referred to City's Park Concerns hotline: Park.Concerns@sanjoseca.gov
2	Street re-grading is needed along Mackey Ave. Currently floods across entire street during moderate storms. Does not drain over poor grading and lack of storm drains.	Issue referred to City's Department of Transportation.
3	Can PG&E pole mounted lines be placed underground along Mackey Ave? Trees under existing lines have been badly topped. PG&E has a program for funding this work for properties adjacent to recreation areas.	Issue referred to City's Department of Transportation.
D. Opportunities and Constraints Board 2		
1	City needs to charge the Goodwill for clean up for area behind Goodwill (at Kell Way and Old Almaden Rd) where people have access to.	Issue referred to City's Department of Planning, Building and Code Enforcement.
2	Provide a safe, inviting entry to the trail at Chynoweth and the Perc Pond	Concurrent with Master Plan, City is preparing a Chynoweth Avenue Pedestrian Bridge Feasibility Study that will identify a preferred and feasible alignment, with gateway features, and linkage to the trail.
3	Stop Almaden Ranch from placing a 240 sq. ft. sign at the corner of Sanchez by Hwy 85	It is recommended the commentor contact the City's Planning Department and Council office for a response.
E. Overall Trail Alignment Plan Board 1		
1	Need curb cuts to trail at Virginia St	Issue referred to City's Department of Parks Recreation and Neighborhood Services
2	Need white plank fence to indicate trail ends	Comment has been noted. Signage will be included to alert trail users of presence of autos and street crossings.
3	Access trails should be side-spur trails	Comment has been noted. Wayfinding for such spur connections will have clear and intuitive signage and/or markings.
4	Good to see undercrossing at Virginia	Under-crossing will be referenced in Master Plan (previously included as part of Reach 6 master plan)
5	Need access from the new Guadalupe River Trail to the existing Hwy 87 Bikeway.	The planning team will reevaluate the current Reach 6 master plan for connection improvements.
6	Add a new signal and bike signal at Willow and Lelong	Comment has been noted. City DOT will be notified of the issue.
7	Spiral rather than hair-pin zig-zag for crossing at the access point to the Hwy 87 Bikeway at Willow Street.	See response to Issue E5.
8	Safety bicycle barrier, especially in high traffic	See response to Issue B14.
9	Need gateway to VTA Caltrain Station	Planning team will coordinate with DOT regarding viability for a connection. If none, Guadalupe River Trail Master Plan will include wayfinding signage to alert trail users.
10	[response to 9] Agree with access near freeway ramps	See response to Issue E9.
11	Add flashing yellow beacons at Willow Glen Way Crossing	Planning team will coordinate with DOT regarding its plans for crossing alerts.
12	What will clean-up cost be after a 5, 10, 20, and 50 year event? I've seen several	The City has an on-going operations and maintenance budget that is reevaluated on an annual basis and adjusted accordingly.
13	Lighting at night, or secured	Regulatory requirements restrict lighting along the trail. Where the trail interfaces with roadways, spillover from street lights illuminate the trail.
14	Shade every 1/4 mile or so is nice.	Comment has been noted. Shading methods will be called for where appropriate and allowable.
15	Off street! Natural setting!	The trail will be aligned away from streets as site and property constraints allow.
16	Install bike signals at all proposed at-grade crossings at all existing signals	Planning team will coordinate with DOT regarding its plans for bike signals/loop detectors.
F. Overall Trail Alignment Plan Board 2		
1	Look at work going on to restore LA River in terms of habitat, riparian and access San Jose should aim high!	
2	Visibility and safety when trail is between roadways?	The trail will be aligned in such a way to strike a balance between visibility and separation. In areas where the trail will not be visible from a road directly adjacent (such as the segment along the Almaden Expressway), views will be available from roadways across the river corridor.
3	Trees with tight canopies	Proposed Landscape will have tight canopies and provide shade
4	I like the connections	Comment noted.
5	Old Almaden behind Goodwill-City needs to charge GW for cleanup of under bridge and river bed; homeless people have access to items left at Goodwill. Goodwill needs a tall brick fence to secure items.	See response to Issue D1.
6	Trash in this area is generated from Goodwill. Come take pictures.	See response to Issue D1.

COMMUNITY MEETING 1 : COMMENT SUMMARY

When: September 21, 2015 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT **(#)** indicates number of community members who wrote that they agreed with the comment	RESPONSE
7	Reduce lighting	Comment has been noted. Lighting is not proposed in this planning project. See response to Issue E13.
8	Needs quick landscape improvements	Comment has been noted. The planning team will explore opportunities for the landscape rehabilition in areas where existing landscape has been impacted by the bypass channel and where such landscape improvements are allowed.
9	Want access from Hillsdale to trail	While the pedestrian overcrossing provides a through connection for trail users, a spur trail connection will be provided to provide direct access to Hillsdale Avenue.
10	Explore interim conditions	Among the factors of phasing will be trail segment constructability and the impacts of the future flood control improvements.
11	Have wayfinding to keep people on the main trail at Thousand Oaks Park access point?	Standard wayfind and markings will be placed to navigate users properly.
12	Love this connection [to Thousand Oaks Park]	Comment noted.
13	How does this plan affect FEMA flood maps for Willow Glen near Bird and Minn Re: Ross Creek	Question will be coordinated with the US Army Corp of Engineers prior to the next public workshop.
14	Interim trail alignments?	See response to Issue F10. It is the intent that upon completion of this Master Plan process in 2016, segments will be identified for funding pursuits and prioritiezed for implementation.
15	Glad to see crossing to VTA Station	Comment noted.
16	Check Chynoweth/Thornwood roadway extension plans in the San Jose General Plan 2040. How does this relate to the trail near Chynoweth?	With the latest update of the City's General Plan, the extension of Chynoweth Ave across the perc pond to Cherry Avenue has been abandoned.

COMMUNITY MEETING 2 : COMMENT SUMMARY

When: December 1, 2015 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT	RESPONSE
CONNECTIONS		
1	Is there a signal at Lelong St and Willow Street?	The master plan will identify an at-grade crossing at the intersection of Lelong Street and Willow Street. At future date, during design of the trail, San Jose Department of Transportation (DOT) will evaluate and recommend crossing improvements.
2	How will the connections to the existing 87 Bikeway work at Willow Street?	A connection to the 87 Bikeway will be provided at Willow Street via a pedestrian bridge. Directional sigange will guide trail users to the parallel Highway 87 Bikeway system until future installation of the pedestrian bridge.
3	Will the 87 Bikeway remain?	Yes, the Guadalupe River Trail and 87 Bikeway are intended to complement each other. Additionally, the Master Plan will assign a signage system to alert users to seasonal conditions affecting access along the Guadalupe River Trail.
4	Will the fences be moved? Will residents along Tonino Drive (between Branham Lane and Chynoweth Avenue) still be able to access the river? Clarify location.	The Master Plan will not call for any modifications, removals, or replacements of existing fences. However, the Santa Clara Valley Water District (SCVWD) does have a policy of restricting fenceline access to the river from private properties due to difficulty in securing the site for maintenance operations. City policy is to comply with District requirements.
TRAIL ALIGNMENT		
5	Will bikes share the road with cars at McClellan Road?	No, the Master Plan intends McClellan Road will be converted into a one-way street. The additional area within the City's right of way will be converted into a separated Class I paved path.
6	Between Branham Lane and Chynoweth Avenue, the area between the top of bank and property line is very restrictive. How is the trail proposed to be constructed within this constraint?	A retaining wall will be constructed to provide adequate space for the trail in this location. This side is preferred because of undercrossing access and not needing modifation to existing bridge. This is SCVWD's preferred alignment for river maintenance as well.
7	Can the spur trail be on the west bank side of the river? (South of Branham Lane)	See response to Item No. 6.
8	How will the trail look like along Almaden Road?	The trail will be a separated Class I paved path. As part of the City's Vision Zero plan, developed and to be implemented by DOT, this segment of Almaden Road has been identified to be reconfiguered with narrower lanes and overall road width. The additional room will be utilized to provide landscaped buffer space between the road and paved trail as well as the paved trail and bypass channel wall.
AMENITIES		
9	Can there be more parking along the trail?	On-street parking exists near the several trail gateway nodes along this segment. With the completion of this last 5 miles of trail, parking will be accomodated by the many Guadalupe River Trail access/gateway nodes with similar available on-street parking.
10	Will the access to West Virginia Street be improved by ramps and widening of the existing sidewalk.	This area is outside the limits of this Master Plan; however, the team will evaluate the issue and provide coordination with DOT.
SCHEDULE, FUNDING & PROCESS		
11	What is the timeline?	Currently this is in a master planning phase. Part of this process is the development of anticipated phasing of the various reaches. Implementation of these reaches will depend on available funding, public prioritization, Council directive, and the bypass channel schedule.
12	When will the property owners who own property in the river along Creek Drive be notified about construction?	The City has little information regarding the US Army Corp of Engineers (USACE) outreach efforts for the USACE/SCVWD bypass channel project other than the USACE has not signed a contract with SCVWD at this time. After careful consideration the City has determined the USACE is best source for information. For the Guadalupe River Trail project(s), all owners and residents within 500ft were notified of this current master planning project. Additionally, the City provides updates via Twitter regarding trails and installs signage on and near the site for construction alerts.

COMMUNITY MEETING 2 : COMMENT SUMMARY

When: December 1, 2015 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT	RESPONSE
13	Concerns with timeline/funding/phasing	Phasing will be either North to South or South to North. There will be no dead end segments to prevent an attractive nuisance situation. Phasing and funding will be identified as part of this process and included in the master plan document. Funding is highly competitive; however, the City has recently been very successful in securing funding for other trail related projects due to a track record of implementation and well developed trail master plans. Staff gave general ideas of phases at workshop 2. The master plan will provide detailed a phasing strategy.
14	Timeline of Capitol Expressway to Branham Lane trail section?	There is currently no funding to design and construct the trail. Staff works with the City Council to consider budget recommendations and well-aligned grant opportunities. With the uncertainty of funding, staff can guess that work on the trail may occur over the next 5 to 7 years but this is subject to funding. Additionally, the City pursues funding actively.
15	What is the scope of a master plan?	Environmental documentation, the identification of constraints and opportunities, funding source(s) identification, aesthetics and amenities, layout and alignment development, and phasing. The physical scope of the master plan (ie the physical limits) is from W. Virgina Street in the north to Chynoweth Avenue in the south. (http://www.sanjoseca.gov/index.aspx?NID=4779)
16	Is there funding for the Chynoweth Bridge?	Currently, there is funding to complete a feasibility study which will be referenced as part of this master plan.
17	How can there be a trail in Reach 11 if Army Corp hasn't finished their design?	The City Council may consider trail imporovements if flood control improvements are signficantly delayed. At this time, the planning team has insufficient data to determine if a short-term trail is a cost-efficient recommendation. Staff will continue to work with SCVWD and USACE over time to pursue opportunities if the implementation of the flood control project is delayed.
18	Where, when, and how will the Army Corp project along Almaden Road. affect the residents living along the river?	See response to Issue No. 12.
SAFETY & SECURITY		
19	Can you elaborate on lighting and graffiti prevention along the trail?	Lighting of riparian corridors is not possible due to impacts to the riparian environment. As an example, lighting can negatively impact migration of sensitive species. The City has been successful in working with regulatory agencies to include lighting at under-crossings. The City is working with USACE and SCVWD to have a highly-textured surface added to walls and other structures to discourage tagging and vandalism. The City has an Anti-Graffiti program that can respond to reports of tagging.
20	Will there be regular policing?	The City has a team of Rangers that are responsible for the oversight of trails and park space. At time of construction, the City Council will be provided with a budget recommendations for $2,200/mile to support further hiring of Rangers. The City typically budgets $14,050/mile for regular maintenance of the trail, which brings more staff to the site on a regular basis.
Issues 21 through 24 are from resident survey card submitted to the team after the community meeting		
21	"The maintenance trail that is below the actual trail along Almaden Road will be a crime magnet."	The Lower Guadalupe River Trail has a similar condition: a lower maintenance road with an uneven gravel surface that appears to be seldom used and an upper paved trail that draws recreational users and more "eyes on the trail" to report issues of concern. It can be expected that this segment of Guadalupe River Trail will have the same result. City's team of Rangers will monitor the corridor for issues that may occur due to use of the lower maintenance road.
22	"The 4'-6" guardrail is an inadequate height and the maintenance path is too accessible, leading to homeless encampments along the segment near Almaden Road."	A 4'-6" rail height is recommended per the State of California Highway Design Manual to support public safety. Signage will discourage use of the District's lower maintenance road. The paved trail will be a preferred surface for travel. See resonse to Issue No. 21 for additional comment.
23	"The Maintenance path along Almaden Road attract homeless. Especially if it is open to the public."	From local and national examples, the City anticipates that a formal trail open to the public will help to discourage some of the negative conditions occuring presently in the unmonitored riparian corridor.

COMMUNITY MEETING 2 : COMMENT SUMMARY

When: December 1, 2015 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT	RESPONSE
24	The wall along Almaden Road will attract graffiti. Is there a way to have vegetation grow through the wall.	The USACE's design for the wall includes a heavily textured surface which may discourage tagging. The project does not include plantings or irrigation to support the growth of vines or other plants that might cover the wall.
OPERATIONS		
25	What will the operations be when the trail is flooded?	Signage will be placed to deter use during storm events and where appropriate, detour users to the 87 Bikeway as an alternate route.
26	Will the City enhance the 87 Bikeway (ie new pavement, weed removal, improved connection to Curtner Avenue)?	The GRT Master Plan does not define enhancements to the Highway 87 Bikeway. At this time, there are no plans for further improvements to this bikeway. The community can report maintenance concerns to park.concerns@sanjoseca.gov

COMMUNITY MEETING 3 : COMMENT SUMMARY

When: January 20 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT	RESPONSE
COMMENTS		
1	How will you prevent homeless people from moving back into the river?	The City has a team of Park Rangers that are responsible for the oversight of trails and park space. At the time of construction, the City Council will be provided with a budget recommendation for $2,200/mile to support further hiring of Rangers. The City typically budgets $14,050/mile for regular maintenance of the trail, which brings more staff to the site on a regular basis. Additionally, based on history with other trails within the City, the homeless are less likely to move back when the trail has frequent trail users serving as stakeholders.
2	Why not build an undercrossing under Alma Avenue since they are already building a bridge?	Coordination regarding such a crossing under Alma Avenue was discussed with the Army Corps of Engineers (USACE). It was determined not feasible due to low bridge clearance and high flood levels. Alignment of the trail to the at-grade signalized crossing provides a controlled means for crossing the roadway.
3	Is there a basin at Lelong Street?	The USACE is adding a revegetation area at the southwest corner of Lelong St and Willow St. This revegetation area differs from a basin in that it will be flooded only at the 5 year flood level. A basin is designed to receive water annually or year round.
4	Will this trail be on the new budget?	This master plan will be completed in December 2016. Staff will make budget propsals to the City Council as part of the regular budget process, for reaches of the trail system that align well with scheduled/funded flood control work. Full development of the trail is expected to take multiple years.
5	Why pay so much for a Willow St signature bridge if it will be blocked from view by the other bridges?	Because the bridge will serve the active transportation community, signature features will likely serve and be intended for the enjoyment of those users. While the focus of aesthetic features will be for pedestrians and bicyclists, there will also be elements designed for the benefit of drivers.
6	Why not plant on the USACE/SCVWD crib wall?	The riparian corridor is very sensitive area. Regulatory requirements are very strict as to what kind of species can be within the corridor. Over time, it is expected native plant species will naturally populate the voids and spaces of the crib walls. Plant material that may adhere to the flood wall (ivy, myrtle, etc) and are not native to the riparian corridor are not permitted as per regulatory requirements.
7	Is there a plan to connect the 87 Bikeway across Curtner Street?	In a later phase of development of Communications Hill, it is anticipated the developer will build the trail and route it through the signalized intersection of Curtner Avenue and the 87 off- and on-ramps.
8	Why is the trail labeled interim between Branham and Chynoweth	The USACE has been planning a large channel through this area. The conceptual plans from the 1990s show a channel coming up to the back of residential fences to prevent the regular flooding of Ross Creek. The USACE has not started design and it will be a few years until their study of the alignment. Santa Clara Valley Water District (SCVWD) has reviewed alignments on both sides of Guadalupe River and stated their preference is for the current "interim" alignment because it is unclear when and what will be implemented by USACE.
9	Can there be a mural on the crib wall?	The proposed crib wall is composed of concrete blocks. These blocks have large voids and are stacked. The nature of the block design is a natural inhibitor of graffiti. The trail alignment will follow the top of the crib wall, so there will be no areas for public viewing of murals or other amenities even if they were possible
10	Are there two undercrossings at Almaden Expressway?	Yes the trail runs along the east bank. This has one undercrossing under SB Almaden Expy and another under NB Almaden Expy to continuously follow the east bank.
11	How steep will the ramps be?	All ramps are maximum 5%. We have coordinated with the USACE regarding ramp slopes. If any locations are not ADA and/or are below the flood level alternative ADA compliant dry routes will be identified.
12	Will there be lighting along the trail?	There will be no continuous lighting along the trail. Lighting affects the migratory patterns of the fish and other wildlife. There will only be lighting at the undercrossing locations where feasible.
13	VTA is working on widening Lelong Street.	We will coordinate with VTA staff to have a thorough understanding of both projects. We will ensure that our priorities will coincide with theirs.
14	How can you make McClellan Road a one way?	McClellan Road currently functions as a one way street due to access/egress constraints at Willow Street. Reconfiguring curb alignments of the road will allow better utilization of the corridor for a trail and gateway node.
15	Will the bridge on the Three Creeks Trail be part of this project?	This master plan acknowledges the existing railway bridge over the current river channel, but it is not a component of this master plan. Future planning and devleopment of the Three Creeks Trail will consider re-use of this bridge.
16	What is the timeline for the bridge at Three Creeks Trail?	There is currently no timeline for Three Creeks Trail development over the Guadalupe River. The City continues to seek resorurces to further extend this trail system. The Three Creeks Trail is not part of this master plan, but is referenced for context.
17	Describe the trail in Reach 12	Reach 12 extends along the top of the east bank of Guadalupe River from Branham Ln to Chynoweth Ave. It will consist of a 12ft asphalt trail, with a concrete retaining wall at one location. It will tie into a new Chynoweth Pedestrian Bridge, the terminus of Chynoweth Avenue, and the existing Guadalupe River Trail to the south.
18	Will there be restoration along the river and levee between Willow Street and Alma Avenue?	The flood control project by USACE includes the implementation of some mitigation measures throughout the project, including along the levee between Willow St and Alma Ave.

COMMUNITY MEETING 3 : COMMENT SUMMARY

When: January 20 - 6:00 - 8:00 PM
Gardener Community Center
520 W Virginia St,
San Jose, CA 95125

ISSUE #	COMMENT	RESPONSE
19	Will there be parking at the cul-de-sacs , such as Guadalupe Avenue and Steval Place?	On-street parking is currently allowed along Guadalupe Avenue and Steval Place. The master plan does not alter that parking resource. A low key trail entrance is planned at this location for public access, but not intended to draw high use.
20	What will the deck of the bridges be made out of?	The bridge decks will be made of concrete. Wood will not be used.
21	Why does the interim trail need to be gravel?	Currently at this stage we do not have knowledge of how and when the USACE will implement their improvements. There is potential to pave the trail once we have an understanding of the USACE timeline. If it is an extended timeline, the City will consider a more permanent material. Additionally, the USACE and SCVWD develop their mainteannce roads with a mixture of earth and gravel materials.
22	Will there be impacts to the residents during construction?	Typically during construction there are some minor impacts. Residents will be notified in advance via posted construction signs for trail improvements. The USACE and SCVWD may conduct outreach to neighbors in an alternate manner.
23	What is the timeline of Reaches 7 and 8 of the USACE improvements?	It is still unclear as to when USACE construction will begin.
24	What is the timeline of Reach 12 trail between Branham Lane and Chynoweth Avenue?	City staff will propose a budget recommendation to the City Council for design and construction of the trail after approval of the master plan. This reach of the trail system has a $1.2M Reserve to support this work. The City Council makes determinations on how funds are to be expended.
25	Can there be an undercrossing at the Caltrain tracks to avoid McClellan Rd?	An under-crossing beneath the Caltrain/UPRR tracks was studied a number of years ago. It was not possible to meet minimum clearance requirements. The McLellan Road alignment sustains an off-street trail by converting existing road to separated C.lass I Bikeway
26	Can we have a bike ramp at W Virginia St?	The amp at Virginia Street is a known request. PRNS staff is working with DOT to confirm a suitable design and placement.
27	Will there be wayfinding along the trail?	The City has a trail signage standard that includes multiple types of wayfinding signage. This standard will be utilized to ensure that there is proper wayfinding along the trail. During trail design, the project will include wayfiding signage to areas of interest such as "Food, Restrooms, Parks, Historical Sites, Point of Interest, etc.
28	Will there be bike racks along the main corridors?	Bike racks along trails are not typically included because the trail serves as a mode of travel rather than a single-point destination. PRNS works with Planning and others to encourage nearly points of interest to include bike racks (shopping centers, near restrooms, at parks, etc.)
29	Will there be pervious concrete at the paved portions of the trail to retain water?	The trail surface will be mostly aspahlt concrete. Portland Cement Concrete will be used at Trail entrnaces and under-crossings. Both types of pavement are available in a permeable varient, but since the trail is developed substantially upon a non-permeable maintenance road, there is no benefit or potential for ground water recharge.
30	Can there be no palm trees at Foxworthy Avenue and Thousand Oaks Park?	Palm trees shown represent existing conditions. Palm trees are to remain. Future design work will consider existing site conditions and may enhance or alter existing landscapes. The master plan graphics are only for the community's understanding of the planning intent and does not confimr a final design approach.

MTCo No. SJ-14143

July 20, 2015

MEETING SUMMARY
for
Guadalupe River Trail Master Plan (GRTMP) and Chynoweth Bridge Feasibility Study

Subject: Technical Advisory Committee Meeting #1

Meeting Date: July 8, 2015 at 10:00 am

Location: San José City Hall

Attendees:

Santa Clara Valley Water District	James Ujah (JU)
Army Core (USACE)	Andrew Smith (AS), Jay Kinbengen (JK)
San José Water Company	François Rodigerie (FR), Casey Claborn (CC)
Fish & Wildlife	Dave Johnston (DJ)
County Roads & Airports	Dan Collen (DC)
City of San José	Jan Palajac (JP), Mike Pruitt (MP), Yves Zsutty (YZ), Manjit Banwait (MB)
Department of Transportation	Jahir Camacho (JC), John Brazil (JB)
Mark Thomas & Co (MTCo)	Erik Smith (ES), Vignesh Swaminathan (VS), Sasha Dansky (SD), Kacey Sunseri (KS)

The purpose of the meeting was to:

a) Present the overall possible alignment
b) Discuss seven "focus areas" with constrained or challenging issues
c) Receive input on issues not addressed by the current preliminary alignment and adjustments that may be necessary
d) Reach consensus on viable alignment options (with noted adjustments) for presentation at Community Workshops

The following was discussed and/or decided upon:

ITEM	ACTION
<u>Project Description</u> The purpose of the project is to develop a master plan for a Class I multi-use recreational and commuter trail along Guadalupe River between west Virginia Street and Chynoweth Avenue. The trail is intended to be a Class I Bikeway (12' wide with gravel shoulders) . Project to take advantage of the natural setting while balancing placement constraints presented by the future USACE/SCVWD flood control project, existing roadways and river crossings, and adjacent land uses and property encroachments. The master plan will define the final 5 mile gap in the overall Guadalupe River Trail system.	

MEETING SUMMARY
Guadalupe River Trail Master Plan and Chynoweth Bridge Feasibility Study
Technical Advisory Committee Meeting #1
July 8, 2015
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ITEM	ACTION
Trail Alignment Discussion To streamline the discussion, the trail alignment was broken down to "focus areas" that represent the greatest constraints and need for coordination. Plan Coordination Coordination of Concurrent Plans and Studies: To date the current alignment incorporates the following: a) GRT Reach 6 b) USACE's 65% PS&Es for Reaches 7 and 8 c) SCVWD's 65% PS&Es for Reaches 9 and 10 d) SCVWD's construction of Reach 12 e) SJDOT's 2020 Bike Plan Remaining plans to be coordinated: a) USACE's concept plans for Reaches 9, 10, and 11 b) City's Vision Zero (San José complete streets plan) c) County's Expressway Plan 2040 d) City's Riparian Policy/Guidelines/Standards Flood Mitigation The intent of the alignment is to provide as much trail above the anticipated 2yr flood level as possible. The trail alignment illustrates that level as determined by USACE Hydraulic Levels. In a discussion of the project goals, (JB) suggested a stated goal of "minimize detours for trail users (distance and elevation) and to minimize flooding impacts" be added to the list.	
Focus Area A (Willow Street/87 Undercrossing) Flood Mitigation The USACE maintenance path is below the 2 year flood level. (AS) There is no chance to get maintenance path above the 2 year event. The only alternative is stay at the top of bank along McClellan St. Transportation The top of bank alternative will follow the City's Reach 6 master plan. Trail will be aligned to the north of Willow Street, on a former roadway that is elevated above the adjacent street grade. The trail will require an at-grade crossing at Willow St/Lelong St. SJDOT has planned to install a traffic signal at Lelong St and Willow St and adding improved bicycle facilities along Lelong St. The trail is preferred to be between the river and the channel, rather than along Lelong St due to adjacency with auto traffic.	(VS) to work with DOT on options to adjust McClellan St Circulation. (JC) will provide plans. (VS) will find a suitable crossing configuration.

MEETING SUMMARY
Guadalupe River Trail Master Plan and Chynoweth Bridge Feasibility Study
Technical Advisory Committee Meeting #1
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ITEM	ACTION
Focus Area B (west Alma Avenue and Three Creeks Trail interface)	
Right of Way	
The USACE maintenance paths are typically designed to be 18′ wide for adequate passing space. (AS) states that there are challenges in achieving an 18′ maintenance path along the Elks Lodge property. The path may need to be reduced to 12′. (JB) 12′ meets Class I facility standards but lacks space for gravel shoulders. (YZ) Highest volume on Guadalupe River trail is 1,800 (source: San Jose Trail Count) and offers a 12′ wide trail, with two gravel shoulders.	(AS) to confirm width constraint.
Transportation	
The trail alignment will cross at-grade at Alma St and Lelong St. DOT is currently doing a project at that intersection and along Alma St. USACE is currently designing the bridge crossing the new channel. The trail crossing may include special paving and treatment. An under-crossing at this location is not possible due to low bridge clearance and high flood levels.	(JC) to provide plans. (AS) (MB) to confirm that bridge will not affect intersection. (VS) will find a suitable crossing configuration.
Focus Area C (Willow Glen way and SJWC Property)	
Flood Mitigation	
The USACE maintenance path is below the 2 year flood level. The current alternative is to cross grade and stay at the top of bank through the SJWC Property. (JU) The USACE hasn't signed Reach 9 yet with SCVWD yet. (AS) It is difficult to say now if there is possibility in raising the maintenance path.	
Right of Way	
(FR) The alignment is possible as long as it doesn't interfere with SJWC wells. Coordination will need to occur to not impact any other equipment. Due to right of way constraints there are two pinch points less than 3′ wide.	(FR) to provide The right contact for coordination. 7/22/15 Update: (CC) to be contact in (FR) absence.
Environmental	
A cantilever structure is proposed to hang over the channel around these pinch points. The cantilever structure changes the type of wall used in the flood control plans. (AS) it may be easier and cheaper to raise the maintenance path instead if constructing a structure. (DJ) points out that trail will need to follow the City of San Jose's riparian corridor policy.	
Transportation	
The trail alignment will travel along Almaden Road and be developed as a Class I facility, entirely off-street. DOT currently has plans to add bicycle facilities along Almaden Road.	(AS) will look into raising trail above 2 year flood level. (JC) to provide plans. (VS) will find room for path and asses access.

MEETING SUMMARY
Guadalupe River Trail Master Plan and Chynoweth Bridge Feasibility Study
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ITEM	ACTION
Focus Area D (Curtner Ave crossing)	
Transportation	
The trail alignment will travel along Almaden Road. DOT currently has plans to add bicycle facilities along Almaden Road. They are also Improving the Intersection of Curtner Ave. and Almaden Road. The top of bank trail alignment will have to cross in front of the SJWC land.	(JC) to provide plans. (VS) will find room for path and asses access.
Flood Mitigation	
The USACE maintenance path is below the 2 year flood level. The current alternative is to cross at grade and stay at the top of bank across Curtner Ave. (AS) It is difficult to say now if there is possibility in raising the maintenance path.	(AS) will look into raising trail above 2 year flood level.
Environmental	
(AS) NEPA/CEQA should be done for all reaches from 2001 concept.	
Focus Area E (Almaden Expressway from Almaden Road to Wren Drive)	
Flood Mitigation	
The current alternative is to cross at grade separated under Almaden Expy. The trail will sit on top of an existing retaining wall which is above the 10 year flood level. The trail will travel on top of the culvert and along northbound Almaden Expressway. (AS) The USACE has a maintenance path on west bank but not on the east bank. (JK) Any changes to grading or gabion walls will need a 408 permit.	(ES) to figure out gabion plan and coordinate with the Corps.
Right of Way	
The trail alignment will travel along and Almaden Expy. Grading will happen in SCRA Property. SCVWD owns area at the bottom of riparian corridor.	
Transportation	
There was a previous option of having a bridge to cross from the east bank to the west bank path. This would require a second bridge downstream. (DC) SCRA has a conceptual plan for Bicycle access on Almaden Expy	(ES) to provide a pros/cons analysis (DC) to provide concept
Focus Area F (Capitol expressway crossing between Hillsdale Ave and Thousand Oaks Park)	
Flood Mitigation	
The USACE maintenance path is below the 2 year flood level. The current alternative is to cross Capitol Expressway Auto Mall grade separated with a bridge. This bridge will span from the east bank to the west bank. Upstream, the maintenance path is also at the bottom of the channel. The current alignment avoids	(AS) to look into undercrossing restraints

MEETING SUMMARY
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ITEM	ACTION
the 2 year flood, but will have to travel along Almaden Expy. This will require grading/tree removal and requires 2 bridges. Ideally the maintenance path under Capitol Expressway Auto Mall to Thousand Oaks Park would be raised to above the 2 year elevation. If the top of bank has too many impacts and the undercrossing is below the regular flood levels, then there is not a good detour through this area. (AS) It is difficult to say now if there is possibility in raising the maintenance path since reach 11 is in a conceptual stage now. (JU) The USACE hasn't signed Reach 10 and 11 yet with SCVWD yet.	(JC) to check to see if there will be any additional striping on Foxworthy. (ES) to provide a pros/cons analysis (DC) to provide concept
Transportation The bridge will touch down next to Chard Ave. (DC) Chard Ave will need to stay open and SCRA has jurisdiction over the square ramps. (YS) The undercrossing is the most desirable, coordination will need to happen with USACE. (DC) There were plans for a new signal on Capitol Expressway Auto Mall, between Pearl Ave and the Guadalupe River (between the Ford and Mazda dealerships).	
Funding (JK) raised a concern regarding funding. (JP) states that a cost sharing agreement with the Water District is possible.	(JC) to provide plans. (VS) will assess on street trail.
<u>Focus Area G (Almaden Ranch Development and Chynoweth POC)</u>	(AS) to follow up on retaining wall.
Transportation The trail alignment will have to do a near 180 degree turn after the Branham Ln undercrossing. The trail will cross the river along the Branham Ln sidewalk. DOT has conceptual plans along Branham Ln. This is to switch the trail to the west bank since the east bank has a missing portion. (AS) The public expressed expectations that trail alignment would be along the east bank. There is potential to add retaining walls and have the trail there. The trail will connect to the Chynoweth Bridge and the existing Guadalupe river trail. The trail will also connect to the new Cherry Ave through a SCVWD staging parcel. (YS) Add a connection the Light Rail for public meeting.	(VS) to add connection to Light Rail. (JU) to confirm plans for SCVWD staging parcel
Construction (AS) the contractor does not have the encroachment permit yet for the west path. Only the east bank is under construction now. There will be a large rock pile in the SCVWD staging parcel for 10 years due to the gravel plan.	

MEETING SUMMARY
Guadalupe River Trail Master Plan and Chynoweth Bridge Feasibility Study
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ITEM	ACTION
Next Steps MTCo needs to receive plans and concepts from all agencies. Will assess all data plan for public meeting	(ES) to send TAC #2 meeting date. (VS) to manage all data.

Submitted by:

Vignesh Swaminathan
Mark Thomas & Company

cc: all attendees

MTCo No. SJ-14143

November 13, 2015

MEETING SUMMARY
for
Guadalupe River Trail Master Plan (GRTMP) and Chynoweth Bridge Feasibility Study

Subject: Technical Advisory Committee Meeting #1

Meeting Date: November 13, 2015 at 10:00 am

Location: San José City Hall Room 644

Attendees:

Santa Clara Valley Water District	Javier Valencia (JV)
San José Water Company	Casey Claborn (CC)
City of San José	Jan Palajac (JP), Mike Pruitt (MP), Yves Zsutty (YZ), Manjit Banwait (MB)
Mark Thomas & Co (MTCo)	Erik Smith (ES), Vignesh Swaminathan (VS), Bradford Silva (BS)

The purpose of the meeting was to:
a) Present the changes to the overall possible alignment
b) Discuss Three "focus areas" with constrained or challenging issues
c) Receive input on issues regarding Properties and Right of Way.

The following was discussed and/or decided upon:

ITEM	ACTION
<u>Project Description</u> The purpose of the project is to develop a master plan for a Class I multi-use recreational and commuter trail along Guadalupe River between west Virginia Street and Chynoweth Avenue. The trail is intended to be a Class I Bikeway (12' wide with gravel shoulders). Project to take advantage of the natural setting while balancing placement constraints presented by the future USACE/SCVWD flood control project, existing roadways and river crossings, and adjacent land uses and property encroachments. The master plan will define the final 5 mile gap in the overall Guadalupe River Trail system. <u>Trail Alignment Discussion</u> An overview of what steps have been taken after the TAC Meeting 1. To streamline the discussion, the focus were the changes to the trail alignment. Plan Coordination Coordination of Concurrent Plans and Studies: To date the current alignment incorporates the following:	

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ITEM	ACTION
a) GRT Reach 6 b) USACE's 65% PS&Es for Reaches 7 and 8 c) SCVWD's 65% PS&Es for Reaches 9 and 10 d) SCVWD's construction of Reach 12 e) SJDOT's 2020 Bike Plan f) USACE's concept plans for Reaches 9, 10, and 11 g) City's Vision Zero (San José complete streets plan) h) County's Expressway Plan 2040 i) City's Riparian Policy/Guidelines/Standards j) Almaden Terrace development	
<u>Reach 6 (West Virginia St to Willow St)</u> Changes The trail alignment has stayed the same from the Reach 6 master Plan. McClellan Rd is now a one way street. The POC over Willow St was realigned for alignment and to avoid property issues. The bridge has a large curve and touches down on the West side of the 87 bikeway. This is to avoid ROW issues with Join Powers Board on the East side. (YZ) The City of San Jose has a joint agreement with CalTrans and has property that should divert the bike path into this property. (YZ) call the bridge " "and use tiles to represent the Willow St community.	(JC) will provide plans. (VS) Will find a suitable crossing configuration.
<u>Reach 7 (Willow St to Three Creeks Trail)</u> Changes The Trail crosses Willow St at Lelong St and there is a need for some ped/bike Staging at the SW Corner of Lelong and Willow St. (JV) There should be no issue with giving a little room from the revegetation area for a nice node. The USACE has created a pedestrian path along the levee, between the new channel and the natural river. The trail has two alignments between Willow St and Alma St, on along the levee the other along Lelong St. (JP) Keep the levee trail unpaved and pave the Lelong St segment. We can call this area the "Lelong Loop" (JV) The Elk's Lodge is planning on demolishing and constructing a new facility. The Architect is planning on having a meeting with city planning is three weeks. There is a realignment of the channel that pushes the floodwall towards the Architect building. City Planning requires there be a 15' emergency access between the floodwall and the building. The realigned floodwall tapers towards the channel to conform to the Alma Ave/Lelong St intersection. This taper cuts off the Maintenance path before it can reach the Alma Ave Intersection. In order to have trail access	(MB) to bring up floodwall issue and intersection to the Elk's Lodge Architect.

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from the Trail crosswalk and the Maintenance path, the floodwall taper would need to be removed and the wall needs to go straight to the Alma Ave Intersection. This would require realignment of the Intersection and the Trail Crosswalk.	
Reach 8 (Three Creeks Trail to Willow Glen Way) Changes No real changes in this reach. The trail Runs along Mackey Ave and there is an at grade crossing At Willow Glen Way	
Reach 9 (Willow Glen Way to Curtner Ave) Changes The Trail needs to pass through SJWC company land. The SCVWD has staked the proposed ROW. The Trail will need to establish a new ROW at least 12′ offset from the proposed ROW. This would interfere with a well on the south west side of the property. There are 3 options at this location: • Have trail be along top of bank and relocate well to be within the SJWC property. • Cantilever Trail to hang over channel to avoid well. • Meander the trail around the well and fence off the well from public access.	(VS) to provide exhibits to (CC) showcasing the Alternatives
The trail has 2 pinch pinch-points between SJWC land and Almaden Rd. the First is at 1713 Guadalupe Ave. The SCVWD has purchased 1719 Guadalupe Ave and has designed a crib wall at the constraint. In order to fit a path Around the property a Cantilever Structure is proposed to avoid this constraint. Similar situation exists at 1752 Guadalupe Ave. These properties are within the Riparian dedicated zone. The Development of Almaden Terrace has planned on having a recreational easement through heir property but the trail would have conflicts with 1752 Guadalupe.	(VS) To provide Property info to (JV).
Reach 10 (Curtner Ave to Capitol Expy) Changes A new POC is added to connect the Trail to Koch Ave. This will provide Access to the Willow Glen South-Lincoln Glen Neighborhood. From a previous meeting, the SCWVD allowed the trail to be on the East bank in Reach 11. This changes the alignment of the POC over Capitol from crossing at an angle to	

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ITEM	ACTION
going straight across. The Undercrossing option is very low and below the 2 year WSEL. (YZ) We will program the bridge in as a future project. Incorporate a tower and flags to highlight the bridge. We will sign the trail that it may be flooded seasonally.	
<u>Reach 11 (Capitol Expy to Branham Ln)</u> Changes The trail alignment is now on the East bank. There is an existing path that canned be paved in the interim. There is an issue with the property owner of 3969 Wellington Sq. The owner owns all the way into the creek and has installed a fence within the creek. This fence cuts off the trail and there is no access. Options are to: • Take ROW from property for Riparian, flood, and trail purposes. • Get a Recreational easement to have access to Wellington Sq. and Have Class III to Thousand Oaks Park. • Create a Class III route all the way to Thousand Oaks until USACE does flood control improvements.	(VS) To provide Property info to (JV). (VS) to send pictures of property to (YZ)
<u>Reach 12 (Branham Ln to Chynoweth)</u> Changes From a previous meeting with the SCVWD has directed the trail to be along the East Bank. The Trail will be on the newly constructed Rach 12 Maintenance path. The Trail will have to pass through another SJWC lot. The SJWC has Wells that are fenced off. There is enough width to have the trail around the wells.	(VS) To provide exhibits to (CC) showcasing the interaction between the trail and the Well.
There is one segment that was not constructed or designed by the USACE. To fill the gap a retaining wall is needed to maintain a trail. This portion will be up against the fence of the residential properties. (YS) In the last meeting with this community they were told the trail would be on the West bank, to communicate with them properly we need an exhibit showing the new alignment. (YS) Extend Aerial to show Oakridge light rail station.	(VS) To provide exhibits to (YZ) showcasing the interaction between the trail and the properties.

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ITEM	ACTION
Next Steps MTCo will make changes to alignment and prepare amenities for public meeting number 2.	(VS) To make changes and prepare for next meeting.

Submitted by:

Vignesh Swaminathan
Mark Thomas & Company

cc: all attendees

MTCo No. SJ-14143 City of San Jose Trail Program

RECORD OF MEETING MINUTES
FOR
CITY OF SAN JOSE
GUADALUPE RIVER TRAIL MASTER PLAN
(West Virginia Street to Chynoweth Avenue)

SUBJECT: Guadalupe River Trail Master Plan

MEETING DATE: March 23, 2015 at 10:30 AM

LOCATION: SCVWD

Chris Mastrodicasa (CSJ-DPW)
Morgan Loatfi (CSJ-DPW)
Yves Zsutty (CSJ-PRNS)
Tala Fatolahzadeh (CSJ-DPW)
Husam Aburabi (MTCo)
Michael Fisher (MTCo)
Vignesh Swaminathan (MTCo)
Lotina Nishijima (SCVWD)
Colleen Haggerty (SCVWD)
Ngoc Nguyen (SCVWD)
Andrew Smith (USACE)
Neil Hedgecock, (USACE)

ISSUES	NEXT ACTION
THE FOLLOWING ISSUES WERE DISCUSSED AND ACTIONS NOTED:	
I. INTRODUCTIONS Introductions were made. **General** 1. Preliminary design for the trail segment between Virginia St and Willow Rd has been completed. 2. There is Trail crossing opportunity underneath the railroad at highway 87 3. Reach 10B-This reach is constructed. 4. Reach 12 scheduled for construction 5. Yves said that the City would like the trail to be dry (outside the 10 flood plain) throughout the year if possible. 6. Connect MP alignment to the 3 creek trail project 7. Neil at the USACE said they have completed portion of reach 10 and construction of reach 12 will start this summer and	**Meeting to occur to discuss potential changes to USACE/consultant designed bridges (Yves/CSJ DOT/Lotina/Andrew to attend)** **MTCo to meet with CSJ to discuss impacts prior** **USACE to provide:** • **Topo for reaches 7 & 8** • **Georeferenced files for reach 10 & 11**

ISSUES	NEXT ACTION
now the USACE designing Reach 7 and 8. The USACE is in the planning stage for Reach 11. 8. Ngoc at SCVWD said, based on federal funding available, they anticipate construction for Reach 7 and 8 to be in 2016. The design for reaches 9 to 11 will begin depending on available federal funding. Currently the design focus will be on reaches 7 and 8. 9. Neil (USACE) stated that Reach 12 design is complete and is close to the start of construction. However, there is a potential change to the path alignment that depends on the development at Almaden Ranch (could still be on the east or west side of the River). 10. Ngoc said that SCVWD is working with the City to encourage the developer to grant an access easement to have a continuous top of bank maintenance road (in reach 12). 11. The purpose of leaving a berm between the bypass channel and the river is to save the existing riparian trees. 12. In general, the preference is to stay on the east side of the river. 13. Yves- said more undercrossing, ok with having below 10 year flood. Would rather to have the trail be straight than have multiple ramps, shifts, etc. Try to keep it dry. 14. Andrew (USACE) to provide updated plans and profile. MTCo to use this info to confirm how trail alignment will tie into access ramps, and for ADA compliance. All maintenance path sections (trail segments) should be paved by 2022. **Location by Location** 1. **Caltrain to Willow St-** There will no longer be a Culvert under Caltrain tracks. This will be an open channel with a bridge. The maintenance path will be an undercrossing at Willow. 2. **Willow St to Alma St-** Path may be at bottom of channel, or on top of west bank. 3. **Alma to three creeks trail-** Can either use path at bottom of channel or 15' room at top of east bank. Three creeks trail now is an open channel and not a box culvert. Three creeks trail may have new bridge. Will need 408 permit 4. **Three Creeks Trail to willow glen way-** potential to use bottom of channel or path alongside the Mackey Ave 5. **Willow Glen Way to Almaden Rd-** Have to use bottom of channel due to constraints with SJWC land 6. **Almaden Rd Malone Rd -**Potential to stay to bottom of	• **WSE for 2, 5, 10 & 100 yr events** • **Reach 11 info (2002 plans that include entire stretch of River from reach 6 to 12).**

ISSUES	NEXT ACTION
channel or to be at grade along Almaden Rd. 7. **Malone Rd to Curtner**-Potential to stay to bottom of channel or to be at grade along Almaden Rd. 8. **Curtner to Almaden Expy**-Have to keep on top of bank 9. **Almaden Expy**-Multiple options in terms of alignment, include overcrossing and undercrossing 10. **Almaden Expy to Foxworthy Rd-**keep on Path built in reach 10B. Option to stay at top bank or in the channel. Will need connection to Park. 11. **Foxworthy Rd to Capitol Expy-** Option to stay at top bank or in the channel. 12. **Capitol Expy to Branham Ln-**Channel is too big, there will be no room at top of bank, and the Path will be in the River. Will need to build access ramps to new 1000 oaks trail. This segment will be different from initial plans for reach 11. 13. **Branham Ln to Chynoweth-** Path could be on east or west side. May need to find a point to cross.	

MTCo No. SJ-14143

October 23, 2015

MEETING SUMMARY
for
Guadalupe River Trail Master Plan and Chynoweth Bridge Feasibility Study

Subject: Review of proposed trail alignment and issues

Meeting Date: October 20, 2015 at 2:00 pm

Location: SCVWD Administration Building
Room B232, 5750 Almaden Expressway, San Jose, CA 95118

Attendees:

Santa Clara Valley Water District	Colleen Haggerty (CH), Sue Tippets (ST)
City of San Jose	Yves Zsutty (YZ), Jan Palajac (JP)
Mark Thomas & Co	Erik Smith (ES), Vignesh Swaminathan (VS)

Meeting was a review session, the following was discussed:

ISSUES	ACTION
Overall Concept	
• The current trail alignment behind Atlas School of Dance on the west bank near Branham Ln has property conflicts. The District's preference would is to have the trail on the east bank. This would require adding retaining walls to close a gap in the Reach 12 trail, and an encroachment into SJWC ROW.	(VS) To change alignment to East Bank. Check capacity and grades.
• To maintain access control of site during maintenance operations, the District does not allow personal access gates in backyard fences of homes adjacent to District property.	
• The 2yr flood level shown under Capitol Expressway bridge cross section appears high. There should be plenty of capacity under the bridge to gain 10' of clearance.	(VS) To check flood level at that location. (Amendment: the 2 year Flood Level is at 150' Elevation where the top of bank is at 160' Elevation. There is inadequate clearance to have a dray underpass.)
• Keep trail on the East bank between Capitol Expy and Thousand Oaks Park. Due to the extended schedule for implementation of the USACE improvements in this area,it would be preferable and prudent to reuse and upgrade the maintenance path on east bank as a multi-use path.	(VS) To change Alignment to East Bank. Check Property lines, and SCWVD Riparian Easement.
• At cantilever between Willow glen Way and Almaden Rd, check property lines and understand easement to verify need for cantilever.	(VS) to check plans for 1812 Almaden Development. Look for Easements and clear width.

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ISSUES	ACTION
• (CH) and (ST) to review trail alignment plan and provide additional comments if necessary.	

Submitted by:

Vignesh Swaminathan
Mark Thomas & Company

cc: all attendees

GUADALUPE RIVER TRAIL MASTER PLAN GEOTECHNICAL MEMORANDUM

PREPARED FOR:

City of San Jose

PREPARED BY:

PARIKH Consultants, Inc.
2630 Qume Drive, Suite A, San Jose, CA 95131

February 2017

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State of California and City of San Jose Zones and Associated Regulations

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Plate No. 1A - Project Vicinity Map

Plate No. 1B - Project Location Map

Plate No. 2 - Geologic Map

Plate No. 3 - Bedrock Elevation Contour Map

Plate No. 4 - Quaternary Deposits Map

Plate No. 5 - Soil Survey Map

Plate No. 6 - Depth to Groundwater Map

Plate No. 7 - Fault Map

Plate No. 8 - Peak Ground Acceleration Map

Plate No. 9 - Seismic Hazard Zone Map

Plate No. 10A - Liquefaction Susceptibility Map (Frames)

Plate No. 10B - Liquefaction Susceptibility Map North-1

Plate No. 10C - Liquefaction Susceptibility Map North-2

Plate No. 10D - Liquefaction Susceptibility Map South-1

Plate No. 10E - Liquefaction Susceptibility Map South-2

Plate No. 11 - Landslide Inventory Map

Plate No. 12 - Relative Slope Stability Map

Plate No. 13 - Site Identification of Liquefaction-Induced Damage

Chapter 1
Project

1.1 Project Background and Purpose

Based on the "Guadalupe River Trail Downtown to South San Jose Virginia Street to Chynoweth Avenue Draft Master Plan" dated November 8, 2016 (Draft Master Plan), the project is generally described in the following sections.

1.1.1 Background

The City of San Jose (City) has one of the nation's largest urban trail network with over 58 miles of trails open to the public.

The Guadalupe River Trail (GRT) is a partially developed regional trail. In the north, a 9-mile long paved reach commences at Gold Street in the Alviso Neighborhood in the north and along the San Francisco Bay and extends to the Virginia Street in Downtown San Jose in the south. In the south, a 2.4-mile paved reach in South San Jose extends from Chynoweth Avenue in the north to Gleman Road in the south. The trail is then linked directly to Lake Almaden and Los Alamitos Creek Trails.

City commissioned the master plan in 2015 to provide the background and analysis necessary to proceed with the design of the trail in reaches or in it's entirely as funding is available. The adopted master plan will serve as a vehicle for acquiring funding for design and construction of the trail and associated amenities and will establish a clear plan and definition for a trail project for the final 4.9 miles gap of the Guadalupe River Trail from Virginia Street in the north to Chynoweth Avenue in the south.

1.1.2 Purpose

The purpose of the implementation of the master plan is to:

a) Provide a continuous connection from the foothills of Almaden Valley in the south to the salt ponds of Alviso, along South San Jose, Willow Glen, Downtown, and North San Jose.

b) Increase the resident's opportunity to interface with the natural corridor.

c) Be consistent with the principles and commitments outlined in the various City's plans.

1.2 Project Description

City is preparing a 4.5 miles multi-use recreational and commuter trail master plan within and along Guadalupe River from Virginia Street in the north to Chynoweth Avenue in the south. The trail will generally follow the existing and planned maintenance roads associated with the "Guadalupe River Flood Protection Project" currently being implemented by the Santa Clara Valley Water District (SCVWD) and US Army Corp of Engineers (USACE). The project vicinity and its location is shown on Plate No. 1A, Project Vicinity Map, and Plate No. 1B, Project Location Map.

Proposed Trail Corridor

a) Expected to range in width from 10 feet to 16 feet. Majority of the trail would be a 16-foot wide (12 feet paved with 2 feet wide compacted base rock shoulders on either side) Class 1 trail. The 10-foot wide paved trail will be without any shoulder.

b) Portions of the trail that would be below the 10-year flood water elevation (primarily at road undercrossing) would also lack shoulders.

c) The trail is located within properties owned by the City, Caltrans, SCVWD, San Jose Water Company (SJWC), and private parties.

d) Removal of structures is not anticipated though some SJWC equipment may need to be relocated. Acquisition is not expected to be required.

Proposed Reaches

The general description of the anticipated trail reaches (from the north to the south) is summarized in Table 1 below:

TABLE 1 – SUMMARY OF REACH INFORMATION

Reach Location	Approx. Length (ft)	Along	Trail Description	Proposed Structure
Virginia Street to Willow Street	1,050	Virginia Street and Willow Street	12 ft wide paved trail with 2 ft wide gravel shoulders	New pedestrian bridge across SCVWD/USACE bypass channel
Willow Street to West Alma Ave.	2,825	Western side of Lelong Street	12 ft wide paved trail with 2 ft wide gravel shoulders	N/A
West Alma Ave. to Three Creeks	1,075	Western side of Lelong Street	12 ft wide paved trail	New pedestrian bridge across SCVWD/USACE

Trail				bypass channel
Three Creeks Trail to Willow Glen Way	1,500	Western edge of Mackey Avenue	12 ft wide paved trail with 2 ft wide gravel shoulders	N/A
Willow Glen Way to Almaden Road	1,400	West edge of SJWC well site property	12 ft wide paved trail with 2 ft wide gravel shoulders	Two cantilevered concrete trail deck over SCVWD/USACE bypass channel at private property pinch points
Almaden Road to Curtner Avenue.	3,225	Almaden Road	12 ft wide paved trail with 2 ft wide gravel shoulders	N/A
Curtner Avenue to Almaden Expressway	1,150	Western edge of Almaden Road	12 ft wide paved trail with 2 ft wide gravel shoulders	N/A
Almaden Expressway to Foxworthy Avenue	5,700	River side of the northbound leg of Almaden.	12 ft wide paved trail with 2 ft wide gravel shoulders	a) A retaining wall on the west side of Almaden Expressway Northbound b) Pedestrian bridge across river to Kock Lane/Almaden Expressway intersection c) Underpass at Southbound Almaden Expressway d) Underpass at Foxworthy Ave
Foxworthy Ave. to Steval Place	2,375	Along Almaden Road and Chard Drive	12 ft wide paved trail with 2 ft wide gravel shoulders	Underpass at Capitol Expressway
Steval Place to Thousand Oaks Park	2,530	Along Almaden Expressway	12 ft wide paved trail with 2 ft wide gravel shoulders	N/A
Thousand Oaks Park to Branham Lane	2,000	Along Almaden Expressway	12 ft wide paved trail with 2 ft wide gravel shoulders	Undercrossing at Branham Lane
Branham Lane to Chynoweth Ave.	5,100	Along Tonino Drive	12 ft wide paved trail with 2 ft wide gravel shoulders	A retaining wall for a portion of the trail along the east bank of the Guadalupe River

Trail Overcrossings

The draft master plan proposes the following two pedestrian overcrossings:

Willow Calle Bridge

a) Located between the Caltrans' grade separation and Highway 87.
b) Approximately 200 feet span across Willow Street connecting the Guadalupe River Trail to the Highway 87 Bikeway.

Capitol Gateway Crossing

a) Located between approximately Foxworthy Avenue and Chard Drive.
b) Approximately 260 feet span across Capitol Expressway.
c) "Open" construction ramp from trail to the bridge.

Chapter 2
Previous Studies Conducted

2.1 Previous Studies Conducted

The "Guadalupe River Trail Downtown to South San Jose Virginia Street to Chynoweth Avenue Draft Master Plan" prepared by Mark Thomas & Company, Inc. dated October 18, 2016 for City (Draft Master Plan) was referred in the preparation of this geotechnical memorandum.

Chapter 3
Environmental and Regulatory Setting

3.1 Geology and Seismicity

This section describes the regional and local geology along the Guadalupe River Trail and the susceptibility of subsurface soils to seismically induced hazards. The project includes the 4.5-mile trail Virginia Street to Chynoweth Avenue. Regional and local geologic faults and past and probable future seismic activity are addressed.

3.1.1 Methodology for Identifying Existing Conditions

To evaluate the geologic conditions that exist in the area of the proposed Guadalupe River Trail project, published geologic maps and the draft master plan were reviewed.

The following descriptions of the nature and extent of geologic hazards, seismic conditions and liquefaction potential along the Guadalupe River Trail are based upon maps and reports published by the United States Geological Survey and the California Geological Survey.

3.1.2 Geology and Soils

The proposed Guadalupe River Trail project is located in the Santa Clara Valley, which extends southeastward from San Francisco Bay and is one of many northwest/southeast-trending valleys situated between mountain ranges within the Coast Ranges Geomorphic Province of Northern California. The Santa Clara Valley is an alluvium-filled basin located between the Santa Cruz Mountains to the southwest and the Diablo Range to the northeast. The valley is covered by alluvial fan, levee, and active stream channel deposits with marine estuary deposits located along the Bay margins. These unconsolidated deposits vary in thickness and cover Tertiary through Cretaceous age bedrock. The general geology of the Guadalupe River Trail is shown on the “Geologic Map”, Plate No. 2.

The Guadalupe River Trail is located in an area of the valley where the ground surface is very level and there are no large steep slopes.

The map developed from Witter, R.C.; Knudsen K.L.; Sowers, J.M.; Wentworth, C.M.; Koehler, R.D.; and Randolph, C.E.; 2006; “Map of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Region, California”; U.S.

Geological Survey Open File Report 2006-1037 describe the extent of the various quaternary deposits beneath the Guadalupe River Trail project. According to this map, the proposed Guadalupe River Trail project is underlain by a variety of alluvial deposits identified as (map symbol):

Historic Artificial Channel Deposits (ac),
Holocene age Stream Channel Deposits (Qhc)
Holocene age alluvial fan deposits (Qf & Qhf),
Holocene age fine-grained alluvial fan deposits (Qhff), and
Holocene alluvial fan levee deposits (Qhl).

Fine-grained Holocene alluvial fan deposits (Qhff) occur on the flatter distal portions of fans and consist primarily of silt and clay-rich sediments with interbedded layers of coarser sand and occasional gravel. The Holocene alluvial fan levee deposits (Qhl) consist of silt, sand, and clay. Artificial fill may be present over any of the Holocene age deposits along the Guadalupe River Trail project. Areas within the Guadalupe River Trail project with other soil conditions (such as expansive or compressible soils) will be identified by detailed geotechnical investigation during the design phase.

The bedrock buried at great depth beneath the Guadalupe River Trail project is presumed to be the Franciscan Complex of Upper Jurassic to Cretaceous age. The Franciscan Complex bedrock is overlain by thick deposits (from 0 feet at the southern end of the project to nearly 900 feet beneath the northern end of the project) of Tertiary marine/non-marine sediments and Pleistocene to Recent deposits. The bedrock elevation contour of the Guadalupe River Trail is shown on the “Bedrock Elevation Contour Map”, Plate No. 3. Therefore, the Franciscan Complex bedrock is typically at much lower elevation (greater depth) than will be encountered during the construction of the Guadalupe River Trail project.

Based on the Map of Quaternary Deposits in the San Francisco Bay Region by Witter et al. (2006), the quaternary deposit of the Guadalupe River Trail is shown on the “Quaternary Deposits Map”, Plate No. 4.

3.1.2.1 Erosion and Sedimentation

The project area was evaluated based on “Soil Survey Map of Santa Clara County”, by National Cooperative Soil Survey, Natural Resources Conservation Service, USDA and Web Soil Survey, URL: http://websoilsurvey.nrcs.usda.gov. Based on the “Soil Survey Map”, Plate Nos. 5, the following table summarizes data provided by the “United States Department of Agriculture, Natural Resources Conservation Service”.

TABLE 2 - SUMMARY OF SOIL UNITS

Map Unit Symbol	Map Unit Name	Slope (%)	Erosion Hazard (Road, Trail)
130	Urban land-Still complex	0 to 2	Not Rated
131	Urban land-Elpaloalto complex	0 to 2	Not Rated
165	Urban land-Campbell complex	0 to 2	Not Rated
170	Urban land-Landelspark complex	0 to 2	Not Rated
175	Urban land-Botella complex	0 to 2	Not Rated
W	Water	0	Not Rated

Note: Only the predominant map units along the alignment are shown.

Based on the "Soil Survey Map", the area along Guadalupe River trail has not been rated for erosion hazard; therefor onsite investigation is recommended to evaluate the erosion tendency of the project and define a suitable erosion mitigation plan.

"Best Management Practices" (such as temporary silt fence, temporary ESA fence, fiber rolls, check dams, temporary soil stabilizer, temporary erosion control, temporary construction entrances/exits, temporary construction road, temporary concrete washouts, temporary stockpile covers, temporary creek diversion and temporary drain inlet protection) may be used to minimize soil erosion impacts of the Guadalupe River Trail project. The existing vegetated surfaces will be preserved or re-landscaped with plants, soils, mulch or blankets. Normal maintenance of surface drainage and slope maintenance is important and should be incorporated in the project plans. Landscaping should be planned to protect any new slopes and should be in accordance with the "Caltrans Erosion Control Standard Specification (Sec. 21)" and "Caltrans Best Management Practices". These details should be developed during the PS&E phase.

3.1.2.2 Subsurface Soil Conditions

Based on the geo-tracker, the following is the brief descriptions of the subsurface soil conditions at different locations along the Guadalupe River Trail:

TABLE 3 – SUMMARY OF SUBSURAFCE SOIL CONDITIONS

Address	Boring (Approx. Depth in feet)	Subsurface Soil Condition	Approximate Groundwater Depth (ft)
385 Willow Street	Two borings (21') and one boring	Thick beds of fat and lean clay and elastic silt to the depth of 37' below	Not encountered

	(45’)	grade. Well-graded gravel with sand (GW) and poorly graded sand (SP) were encountered between 37’ and 46’ below grade.	during drilling.
Willow Street and Lelong Avenue	Five monitoring wells (50’-57’) and 10 soil borings (3’ – 41.5’)	Lean/fat clay, underlain by poorly-graded sand and well-graded sand.	Between 22’ and 39’ during drilling.
545 West Alma Avenue	Ten soil borings (20’ – 61’) and fifteen monitoring wells (30’ – 70’).	Soft to stiff lean clay and/or loose to medium dense sand, underlain by stiff to very stiff lean clay and/or medium dense to very dense sand/gravel. Very soft to medium stiff clay was encountered in Borings SB-3 through SB-6 to the boring depth of 20 feet.	Between 51’ and 60’ during drilling.
1735 Almaden Avenue	Borings EB-1 and EB-2 (36’)	Medium stiff to stiff silty clay, underlain by stiff to very stiff silty clay with intermittent layers of dense gravelly clayey sand.	Not encountered during drilling.
2302 Almaden Avenue	Borings SB-1 through SB-3 and BH-D (45’)	Silty sand, underlain by silt, underlain by gravelly/sandy silt.	Not encountered during drilling.
3150 Almaden Expressway	Borings B-4 through B-8 (20.5’ – 35’) and Monitoring wells MW1 through MW3 (35’)	Silt with intermittent layer of clayey/silty gravel and sand/clay, underlain by silty clay/clay. Fill with sandy gravel underlain by silty clay was encountered in Boring B-6. Clay with intermittent layer of sand, gravel and silt was encountered in Borings B-7 and B-8	31’ in all the borings during drilling.
1124 Braham Lane	Boring B-10, Borings B-12 through B-23 (28’ – 40’) and Monitoring wells MW-1 through MW-7 (28’ – 65’)	Stiff sandy silt/sandy lean clay or silty sand, underlain by interbedded layers of loose to medium dense silty/clayey gravel and/or stiff sandy silt and/or gravelly/sandy lean clay, underlain by well-graded/poorly-graded sand.	24.5’ to 25.5’ during drilling.

The location of the above addresses are shown in the "Geo Tracker Site Map", Plate No. A-1 and the relevant boring logs at each address location are included in Appendix A.

Contour of groundwater depth with the Guadalupe River Trail overlaid is shown on the "Depth to Groundwater Map", Plate No. 6.

3.1.3 Seismicity

The project is located in a seismically active part of northern California. The Guadalupe River Trail lies between the active Monte Vista-Shannon Fault to the west and the active Hayward Fault to the east. The Silver Creek Fault is located just east of the trail and has unknown activity. The trail is located within one of the most seismically active regions in the world. On-going relative motion of the Pacific and North American tectonic plates is accommodated by displacement (both episodic rupture and relatively continuous creep) along a number of faults.

Maximum moment magnitudes (M_{max}) of some of the closest faults in the area are based on the 2012 ARS Online Report (Caltrans ARS online (v2.3.08)). These maximum moment magnitudes represent the largest earthquake that each fault is capable of generating and are related to the seismic moment.

The major faults in the vicinity, their distances to the proposed trail, fault types and the maximum credible earthquake (MCE) magnitudes associated with each fault are summarized in the Table 4 below. These maximum credible earthquake magnitudes represent the largest earthquakes that could occur on the given fault based on the current understanding of the regional tectonic structure.

TABLE 4-EARTHQUAKE DATA

Fault (Fault ID)	Maximum Moment Magnitude of Fault, M_{Max}	Fault Type	Site-to-Fault Distance, R_{rup}* (km)
Silver Creek (148)	6.9	Strike Slip	3.0
Hayward (Southern extension)(149)	6.7	Strike Slip	10.0
Calaveras (Central) 2011 CFM (151)	6.9	Strike Slip	14.3
Cascade fault (153)	6.7	Reverse	1.8
Monte Vista-Shannon (154)	6.4	Reverse	2.4
San Andreas (Santa Cruz Mts) 2011 CFM (158)	8.0	Strike Slip	14.8

*Closest distance (km) to the fault rupture plane is based on the shortest distance from the fault at any point along the Guadalupe River Trail.

The Hayward and San Andreas faults have the highest slip rates and are the most active of all the faults in the Bay Area. The relative location of the faults in the

vicinity of the Guadalupe River Trail are shown on the "Fault Map", Plate No. 7. Based on the fault map, the Hayward Fault is the closest known active fault to the Guadalupe River Trail project and was the source of an 1868 Magnitude 7 Earthquake. The San Andreas Fault, the longest active fault in California, was the source of the San Francisco 1906 Magnitude 7.9 Earthquake and the 1989 magnitude 7.1 (Loma Prieta) Earthquake and passes within 16.9 kilometers southwest the SVRT Corridor. The Calaveras Fault, a main component of the San Andreas Fault System, produced earthquakes of magnitude 5.9 in 1979 and 6.2 in 1984.

The Silver Creek Fault has been mapped through the San Jose area based upon seismic refraction profiling, gravity data, and interferometric synthetic aperture radar (InSAR) data. Currently, there is no direct evidence that proves the fault is a potential source of future earthquakes. However, a sag in the upper 300 meters (~1000 feet) of alluvial sediments directly above a Silver Creek Fault in the Franciscan bedrock at a depth of over 1000 feet below the ground surface suggests ground surface deformation may have occurred during the Holocene (Wentworth et al; 2010).

Table 5 provides a listing of the some of the major faults in the region along with information on their location and past and probable future seismic activity, including 2002 data from the Working Group on California Earthquake Probabilities.

TABLE 5 – FAULTS IN THE VICINITY OF THE GUADALUPE RIVER TRAIL

Fault/Thrusts	Location and Description	Seismic Activity
Hayward Fault	Closest active fault to the corridor. Extends 100 km from the area of Mount Misery in San Jose to Point Pinole on San Pablo Bay.	Last major earthquake occurred in October 1868 and had a Richter magnitude of 7. Capable of generating a maximum credible earthquake (MCE) of moment magnitude (Mw) 7.1 (Working Group on California Earthquake Probabilities [WGCEP], 2002).
Hayward Southeast Extension	Sequence of southwest–verging, reverse faults, located in the restraining left-step between the Calaveras and Hayward Fault	Capable of creating a MCE of Mw 6.7, with a recurrence interval of 292 years (WGCEP, 2002).
Calaveras Fault	Main component of the San Andreas system, branching off the main San Andreas Fault south of Hollister, extending northwards for approximately 120 km and ending in the area of Danville.	Generated a number of moderate-size earthquakes in historic time, including the 1979 local magnitude (ML) 5.9 Coyote Lake and 1984 ML 6.2 Morgan Hill events. WGCEP (2002) suggests that the probability of one earthquake with mean magnitude from M 5.8 o M 6.9 occurring in 2002-2031 is 59 percent.
San Andreas Fault	Extends from the Gulf of California, Mexico, to Point Delgado on the Mendocino Coast in Northern California, a total distance of 1,200 km.	Largest active fault in California, responsible for the largest earthquake in California, the 1906 Mw 7.9 San Francisco earthquake. Assigned a recurrence interval of 378 years to a Mw 7.9 1906-type event (WGCEP, 2002).
Silver Creek Fault	Generally a north-northwest trending oblique-reverse-slip fault that externs over a distance of about 50 to 70 km, sub-parallel to and west of the Hayward and Calaveras fault zone (Fenton and Hitchcock, 2001). Southern reach is exposed while northern reach is buried beneath undisturbed Quaternary Sediments. (Geomatrix, 2004; HMM/Bechtel, 2005).	Maximum magnitude distribution for the faults is in the range of 6.3 to 6.9 (HMM/Bechtel, 2005). The potential for fault rupture to occur along northern reach is undetermined. (Wentworth et al., 2010)

3.2 Regulatory Setting

Much of California is seismically active. There are several State regulations that work together to identify seismic hazard zones and establish guidelines for site development and building in different seismic hazard zones. Additionally, the General Plan of the City contains seismic safety policies. The sections describe the State and City zones and associated regulations are included in Appendix B.

Chapter 4
Operational and Construction Impacts

4.1 Operational Impacts

Potential seismic hazards may arise from three sources: surface fault rupture, ground shaking and liquefaction as described in the following sections.

4.1.1 Surface Fault Rupture

Where the plane of an active fault intersects the ground surface there is a potential for future fault rupture to displace man-made structures that straddle the fault trace. The magnitude and sense of displacement will be a function of the length of the fault involved in the release of seismically accumulated strain and other local factors.

There are no known active faults crossing the proposed Guadalupe River Trail project and it is not located within an “Earthquake Fault Zone” as defined and mapped under the “Alquist-Priolo Earthquake Fault Zoning Act”. Therefore, geologic investigation of potential surface fault rupture is not required under the provisions of the act and there are no impacts associates with surface fault rupture on the Guadalupe River Trail project.

4.1.2 Ground Shaking

Of the many active faults within the region, the San Andreas, Hayward, and Calaveras faults have the greatest potential to release earthquakes that will produce strong ground shaking at the Guadalupe River Trail project. Other active or potentially active faults in the region may produce significant ground shaking at the project. Therefore, the potential for strong ground shaking to impact the project improvements is considered moderate to high. Therefore, strong ground shaking will eventually subject the proposed Guadalupe River Trail project to strong seismic accelerations.

The strength of the ground shaking at a given location can be measured in terms of its percentage of acceleration due to earth’s gravity (expressed as “g”). Strong earthquake ground shaking can cause slopes to fail, initiate liquefaction with related ground deformation, and damage man-made structures that were not designed and constructed to resist or accommodate the strong motions.

The United States Geological Survey has estimated Bedrock Peak Ground Accelerations (PGAs) with 2% probability of exceedance in 50 years (return period of about 2475 years) at sites throughout the United States and published a map (by Peterson, M.D. et al; 2015; Documentation for the 2014 update of the United States national seismic hazard maps: U.S. Geological Survey Open-File Report 2014–1091, pp. 243) showing them. "Peak Ground Acceleration Map", Plate No. 8 shows the Guadalupe River Trail overlaid on the 2014 USGS Bedrock Peak Ground Accelerations (PGA) contours with a return period of 2475 years.

The PGA contours shown on the peak ground acceleration map run essentially parallel with the surface traces of the San Andreas and Hayward faults and the estimated PGA decreases with distance away from the causative faults. In the Santa Clara Valley, PGAs range between 0.55g and 0.575g along the Guadalupe River Trail. The estimated PGA range is just to indicate the level of intensity only and not for any design purpose. More accurate methods (such as the design spectrum by Caltrans "Acceleration Response Spectrum (ARS) Online" web tool etc.) should be used to obtain the peak ground acceleration for design.

Consequently, unless mitigation measures are employed, structures could be damaged or destroyed and people could be harmed during a major seismic event originating on any of the nearby faults. All structures associated with the Guadalupe River Trail project should be designed in accordance with current seismic design standards as found in the California Building Code and/or regulatory agency. These seismic design standards would minimize the potential exposure of people to harm from geologic or seismic hazards to an insignificant level.

4.1.3 Liquefaction

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to temporarily and essentially total loss of shear strength under the reversing, cyclic shear stresses due to strong ground shaking, causing them to liquefy. Submerged, cohesionless sands and silts of low to medium relative density are the type of soils which usually are susceptible to liquefaction. Factors known to influence liquefaction include soil type, relative density, and grain size, as well as depth to groundwater, age of soil, and the intensity and duration of ground shaking. Soils most susceptible to liquefaction are Holocene age, loose, coarse-grained poorly graded sands and low plasticity silts situated below the water table. Clays are generally not susceptible to liquefaction, although some low-plasticity (LL<35) with high moisture content (w% > 0.9 LL) clays are vulnerable to significant strength loss under minor strains.

Liquefaction can causes structures built on or above liquefiable soils to

experience bearing capacity failure and collapse. Flow failure, lateral spreading, differential settlement, loss of bearing capacity, ground fissures and sand boils are evidence of generation of excess pore pressure and liquefaction. Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks resting upon the liquefied layer can be transported downslope or in the direction of a free face by seismic and gravitational forces.

With reference to the "Seismic Hazard Zone Map", Plate No. 9, Guadalupe River Trail project is located entirely within a State "Zone of Required Investigation of Potential Liquefaction" delineated by the State Geologist on two "Seismic Hazard Zone" maps (San Jose East Quadrangle, released in January 2001; and San Jose West Quadrangle, released in February 2002). Therefore, site-specific evaluations of the potential for ground deformation to occur as a result of liquefaction must be conducted. If analysis determines that liquefaction is likely to occur and result in ground deformation, appropriate mitigation measures must be recommended and incorporated into design of the Guadalupe River Trail project.

The U. S. Geological Survey (USGS) published "Maps of Quaternary Deposits and Liquefaction Susceptibility of the Central San Francisco Bay Region" (Knudsen et al.; 2000 and Witter et al.; 2006) that show the distribution of various susceptibilities to liquefaction. "Liquefaction Susceptibility Map", Plate Nos. 10A through 10E, show different liquefaction susceptibilities with the proposed Guadalupe River Trail project overlaid. Based on the maps, the liquefaction potential along the existing Guadalupe River is labeled as "High" to "Very High".

4.1.3.1 Surface Damage/Manifestation of Liquefaction

The potential for liquefaction-induced ground surface deformation to occur depends on the thickness of the liquefiable layer relative to the thickness of the overlying non-liquefiable material. Ishihara (1985) suggests, based on empirical observations from a number of Japanese earthquakes, that surface manifestation of liquefaction will not be significant if: (1) the site is relatively level, (2) the edges of the sand bodies are constrained so that lateral spreading towards a free-face is prevented, and (3) the ratio of the thickness of the non-liquefiable surface crust to the thickness of the liquefied underlying layer is greater than the boundary criteria provided (Ishihara, 1985). "Site Identification of Liquefaction-Induced Damage" by Ishihara is included in Plate No. 13.

As the ground surface along the Guadalupe River Trail project is relatively

flat, and is typically not adjacent to large open cuts or free-faces, the potential for flow slide failures or lateral spreads is considered to be very low. However, there are some places where the Guadalupe River Trial project are proposed relatively close to steep creek banks where the potential for lateral spreading may be high if liquefiable layers are present within the depth that the bank is high.

In locations susceptible to liquefaction, the primary liquefaction hazard would be seismically induced settlement and temporary increase in lateral earth pressures on below-grade structures. Although a soil layer may or may not fully liquefy during an earthquake, it could still experience settlement.

During a strong earthquake, an underground structure that is buoyant (total weight less than the weight of the displaced soil and water) and located in saturated liquefiable soil deposits may be susceptible to buoyant uplift. If the soil liquefies fully, a buoyant structure could float upward toward the ground surface. A partly liquefied soil deposit would retain some of its initial shear strength and resist the uplift to some degree. The tendency for upward displacement of buried structures would also depend upon the density and thickness of the overlying soil. The increased pore pressure that is responsible for liquefaction could cause water and soil to migrate into the void beneath an uplifting structure thereby increasing the upward force. Deformation of the ground surface, buildings, and utilities located above an uplifted structure could be significant. However, it is our understanding that the proposed Guadalupe River Trail project does not include construction of underground structures.

4.1.4 Earthquake-Induced Landslides and Slope Instability

Landslides occur when shear stress in a soil or rock mass exceeds their shear strength. Shear stresses can be increased by adding to the weight of soil or rock mass through saturation or loading. Shear strength can be reduced by erosion or by grading at the toe of a slide mass. Slope failure can be caused by an increase in shear stress or a decrease in shear strength. Zones of low shear strength often are associated with the presence of expansive clay soils and weak bedrock units.

The Guadalupe River Trail project is located on nearly flat terrain, and is not identified on any California Geological Survey Seismic Hazard Zone maps as being potentially susceptible to earthquake-induced landslides. Therefore, this potential hazard is considered very low and no measures will be necessary to

mitigate it. The "Landslide Inventory Map", Plate No. 11 shows any record of the previous landslide and the "Relative Slope Stability Map", Plate No. 12 shows the unstable slope in the vicinity of the Guadalupe River Trail project.

4.1.5 Expansive Soil

Expansive soils will shrink and swell as a result of change in moisture contents. This can cause heaving and cracking of slab-on-grade, pavements, and structures founded on shallow foundations. The extent and expansive nature of soils beneath the proposed Guadalupe River Trail project will be determined during design phase geotechnical investigations and the mitigation measures necessary to mitigate the impacts of any expansive soils on the improvements will be recommended in the resulting reports.

4.2 Construction Impacts

4.2.1 Construction Considerations

The following sections discuss construction consideration in which the construction requires temporary excavation and shoring.

Prospective contractors for the project must evaluate construction-related issues on the basis of their own knowledge and experience in the local area, on the basis of similar projects in other localities, or on the basis of field investigation on the site performed by them, taking into account their own proposed construction methods and procedures. In addition, construction activities related to excavation and lateral earth support must conform to safety requirements of Occupational Safety and Health Administration (OSHA) and other applicable municipal and State regulatory agencies.

A safe working distance from underground and overhead utilities should be provided during construction work. If this is not possible, the utility lines may need to be cleared from the site before the start of construction work.

Temporary Excavation

The slope height, inclination, and temporary excavation depths should not exceed those specified in local, state, or federal safety regulations.

Strength softening, sloughing and erosion could be expected for the bare surficial soil materials if the temporary slopes are exposed to weather and rain for an extended period of time. Stiff clays exposed from the excavation also tend to develop soil creep due to seasonal change in moisture content resulting in

sloughing. Therefore, adequate surface protection should be provided to protect the slope surface from erosion, excessive drying and/or saturation during construction.

All temporary excavations should be closely monitored during excavation to detect any evidence of instability, soil creep, settlements, etc. Appropriate mitigation measures and a comprehensive monitoring plan should be implemented to correct such situations that may cause or lead to future damage to facilities, utilities and other improvements.

Excavation bottom instability may occur as a result of bottom heave, piping, or blow-out. Bottom heave is typical for excavations in soft clays. In granular soils, bottom heave is normally not a problem. However, piping may be a concern if the force of the upward flow of water exceeds the buoyant weight of the soil at the excavation bottom. “Blow-out” is another mode of failure where a pervious sand layer is located below the clay layer at excavation bottom and is not drained in advance. “Blow-out” occurs when hydrostatic pressures at the base of the clay layer exceed the shear strength and weight of the clay plug. Based on the geology and available boring data as discussed in Section 3.1.2.2 “Subsurface Soil Conditions”, soft to medium stiff clay and loose to medium dense sand/gravel may be encountered along the Guadalupe River Trail project.

Shoring

The shoring system should be designed to be relatively rigid and with as many supports or struts as necessary to prevent excessive straining and deformation of the supported soils. This is also important with regard to existing asphalt concrete pavement of the nearby streets where tension cracking may develop, even under minor strains and protection and movement of the existing utilities. Due to the presence of pocket/lenses/layers of loose to medium dense sand that may be encountered under groundwater, there is a potential that raveling/flowing ground could occur before the sidewall supports are installed. In which case, continuous steel sheeting should be used. Continuous interlocking sheet pile is also recommended for relatively deep excavations below the groundwater level with concern of trench bottom stability.

The sheeting should be driven to a sufficient depth below the excavation to prevent trench bottom instability (bottom heave, piping and blow out). The required depth should be determined by the contractor/shoring designer. The type of driving equipment (vibratory or impact hammers) employed for sheet pile installation should be chosen and verified for drivability by the shoring contractor. “Unconventional” method of driving such as banging with backhoe bucket is not recommended.

Horizontal struts should be placed against both sides of the sheeting at regular depths as the walls are exposed in order to maintain continuous stability of the excavation. Bracing should also be installed as soon as practical against the continuous sidewall support. Failure to provide such struts/bracings in a timely manner may result in lateral creep, which may cause damage to existing facilities. Removal of sheeting should be carried out in a manner that does not adversely affect any existing utilities and/or any other improvements.

When using braced and sheeted trenches, the inward lateral deflection, which occurs as the excavation progresses, must be considered. Local experience with similar subsurface soil conditions, as well as published data, indicates that settlement of the ground surface adjacent to the shoring is commonly on the order of 0.25% to 0.5% of the trench depth. Lateral movement of the same order of the magnitude should also be anticipated. This assumes good workmanship and the preloading of struts by onward jacking against the excavation sides to reduce lateral movement.

For cut and cover construction, surface settlement diminishes in magnitude with distance away from the shoring. Typically, the “zone of influence” of the maximum settlement has been found to extend a distance of about 0.7 times the excavation depth away from the shoring and then diminishes in magnitude gradually to zero at a horizontal distance of about 2 to 2.5 times the depth.

If existing utility lines are located within the potential zone of influence, they could experience distress as a result of the movement. If settlement estimated above cannot be tolerated, then clear distance can be increased by relocating the existing utilities or mitigation measures should be planned.

Surface settlements and ground movements may cause damage to structures, facilities, and utilities. However, the occurrence of settlement does not necessarily result in damage. Depending on the predicted degree of adverse effect, probability of exceedance, structural sensitivity to movement, ground treatment measures, strengthening of structures, and underpinning of structures can be considered on a case-by-case basis prior to cut and cover construction. Mitigation can be implemented to reduce the magnitude and likelihood of surface settlements and ground movements, physical damage, or adverse functional effects. Proposed mitigation measures for construction settlement should be referred to Section 5.1.3 below.

4.2.2 Flooding

The potential for localized flooding at the construction site for the Guadalupe River Trail project should be reviewed. The review should also include a

determination of which portions of the Guadalupe River Trail fall below the 100-year plain elevation. The mitigation to minimize potential flooding should be referred to Section 5.1.5.

4.2.3 Noise and Vibration

Construction of the Guadalupe River Trail project has the potential to generate high level of noise and vibration that may adversely affect nearby residential, commercial, and institutional land uses. In addition, some construction activities, such as the pile driving for the pedestrian overcrossings, retaining walls and sheet piling for the shoring, may generate vibration levels that could damage nearby structures. In order to determine the potential noise and vibration effects during construction, an analysis of construction period effects from noise and vibration is recommended for the Guadalupe River Trail project during subsequent design phases.

Chapter 5
Mitigation Measures

5.1 Mitigation Measures

5.1.1 Mitigation for Liquefaction Hazard

The following mitigation measures should be considered to minimize the potential impact due to the liquefaction:

a) Use of pile foundations is a cost-effective mitigation measure for the seismic liquefaction hazard. The pedestrian overcrossing should be supported on piles. Downdrag due to potential post-liquefaction settlement may have to be considered in the pile capacity analysis.

b) Use of pile foundations also provides ground densification.

c) For shallow foundation of the design structures (such as retaining walls) along the Guadalupe River Trail and pavement and parking lot, the following may be required:

- Additional reinforcement, construction joints, and grade beams.
- Subgrade improvements (utilizing geotextile fabric and engineered fill), etc. to accommodate potential ground settlements.
- Parking lots and pavements may require over-excavation and backfilled with Caltrans “Subgrade Enhancement Geotextile” and aggregate base and/or maintenance work should pavement damage occur due to differential settlements.

d) In-situ treatment/densification with vibro-replacement stone columns; load transfer to underlying bearing layers, which are non-liquefiable with soil/cement columns.

e) Over-excavation method via removal and replacement with compacted engineered fill.

f) Methods considered to eliminate or minimize the effects of seismic liquefaction include, but are not limited to, dynamic compaction, vibro-compaction, surcharging, and/or compaction grouting.

The exact methodology (ies) to be used will be determined during subsequent design phases.

5.1.2 Mitigation for Expansive Soil

Damage to structure due to volume changes associated with expansive soils can be reduced by:

a) Deepening the foundations to below the zone of moisture fluctuation with deep foundations.

b) Using mat foundations which are designed to resist the deflections associated with the expansive soil.

c) All perimeter footings should have a depth of a minimum 24 inches below the lowest adjacent grade to reduce the impact due to the uplift pressure in expansive soils.

d) Any expansive soil in the upper 18 inches of the building pads be lime treated or replaced with low to non-expansive soil with a Plasticity Index of 12 or less.

e) Use of moisture barrier to minimize the variation of change in the moisture content within the expansive soil.

5.1.3 Mitigation for Construction Settlement

The following mitigation measures may have to be implemented during construction to minimize the potential impact due to settlement.

a) Monitoring points should be mounted on select structures within the settlement trough along the Guadalupe River Trail alignment and within the limit of influence around the cut and cover excavations to monitor any effects of settlement. It is our understanding that the Guadalupe River Trail project does not involve the construction of major embankments.

b) A pre-construction condition survey should be conducted of utilities deemed to be potentially at risk due to surface settlement or ground movement. Major utilities deemed to be at risk should be monitored during construction. Coordination with utility providers should be conducted prior to installation of utility monitoring points. The maximum allowable settlement (threshold) values, if any (such as for different types of utilities and different sensitivity) should be checked with the utility owners. These threshold values should be included in the project specifications. If these threshold values occur during construction, they may require the contractor to take precautionary measures and modify his operations to prevent further movements, settlement or damages.

c) The option of post construction repair is based on the probability of damage,

predicted degree of damage, sensitivity of the structure or facility, and cost and ease of repair. If repair is not feasible, compensation may be necessary.

With implementation of design requirements and mitigation measures, the likelihood of damage due to surface settlements and ground movements is considered low. However, additional studies of potential settlements and ground movements should be conducted if found necessary during the design phases.

5.1.4 Mitigation for Excavation Bottom Stability or Disturbance

In order to prevent the excavation bottom from bottom heave, piping or blow-out, the mitigation measures such as dewatering and/or installing deep sheeting should be considered.

a) Construction dewatering.

- All dewatering schemes proposed by the Contractor should be submitted to the Engineer prior to implementation. However, developing and implementing an effective dewatering program should be the Contractor's responsibility.
- A properly designed and constructed dewatering operation is recommended irrespective of the construction method used.
- The Contractor should install a dewatering system that will maintain the groundwater level at a minimum of 3 feet below the bottom of the excavation at all times.
- All dewatering systems should be properly designed to prevent pumping soil fines with the discharge water.

b) Installing deep sheeting. The sheet pile may also function as a cut-off to prevent sand boiling at the bottom of excavation due to excessive hydrostatic pressure within the cohesionless soils.

c) Based on the boring data, cohesionless soils at the bottom of excavation may be encountered. Deeper shoring may be required to penetrate through the aquifer to prevent the occurrence of the sand boiling condition. Deep Soil Mixing may have to be considered under this condition if drivability of the shoring sheet pile through the dense to very dense sand at depths is a geotechnical concern due to the vibration and/or noise impact on the surrounding environment.

The clays and saturated sands at the bottom of excavation are sensitive to disturbance. If these deposits are sufficiently disturbed due to construction activities at the bottom of the excavation, they could become soft and loose. Also, soft and loose, saturated native soil deposits may be encountered at the excavation bottom. In such cases, working conditions at the bottom of the excavation may become difficult; equipment used at the bottom of excavation may lose mobility etc. The disturbance of sensitive deposits or mitigating existing soft/loose ground conditions at the excavation subgrade may be minimized by constructing a working platform at the bottom of the excavation by

a) Over-excavate 18 inches below the native subgrade.

b) Place a stabilizing geotextile fabric or a geogrid at the bottom of the over-excavation.

c) Backfill the over-excavation with Class 2 Aggregate Base or “Structural Backfill” or other bridging material; and

d) Overlap the ends of the geotextile fabric on top of the bridging material for a minimum distance of 2 feet.

5.1.5 Mitigation for Flooding

The following can be considered as the mitigation measures to minimize the risk of flooding at the construction site:

a) Foundation drainage should provide removal of any water that may otherwise tend to flow under the structure.

b) It is recommended that at least 12 inches of soil be placed and compacted on the outside of the grade beam and slope sloped away from the foundation of the structure at right angle to the grade beam to provide for rapid removal of surface water runoff.

Chapter 6
References

6.1 Printed References

a) Helly, E.J., Graymer, R.W., Phelps, G.A., Showalter, P.K., and Wentworth, C.M., 1994, Quaternary geology of Santa Clara Valley, Santa Clara, Alameda, and San Mateo Counties, California: a digital database: U.S. Geological Survey, Open-File Report OF-94-231, scale 1:50,000.

b) Wentworth, C.M., Jachens, R.C., Williams, R.A., Tinsley, J.C., and Hanson, R.T.; 2015; Physical subdivision and description of the water-bearing sediments of the Santa Clara Valley, California: U.S. Geological Survey Scientific Investigations Report 2015-5017, 73 p., 2 plates, http://dx.doi.org/10.3133/sir20155017.

c) Witter, R.C.; Knudsen K.L.; Sowers, J.M.; Wentworth, C.M.; Koehler, R.D.; and Randolph, C.E., Brooks, S.K., and Gans, K.D., 2006; Map of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Region, California"; U.S. Geological Survey, Open File Report OF-2006-1037, scale 1:200,000.

d) "Soil Survey Map of Santa Clara County", by National Cooperative Soil Survey, Natural Resources Conservation Service, USDA and Web Soil Survey, URL: http://websoilsurvey.nrcs.usda.gov.

e) Peterson, M.D. et al; 2015; Documentation for the 2014 update of the United States national seismic hazard maps: U.S. Geological Survey Open-File Report 2014–1091, pp. 243.

f) California Division of Mines and Geology staff, 2000, Seismic Hazard Evaluation of the San Jose East 7.5-minute quadrangle, Santa Clara County, California: California Division of Mines and Geology, Open-File Report 2000-010, scale 1:24,000.

g) California Division of Mines and Geology staff, 2002, Seismic Hazard Evaluation of the San Jose West 7.5-minute quadrangle, Santa Clara County, California: California Division of Mines and Geology, Seismic Hazard Zone Report 058, scale 1:24,000.

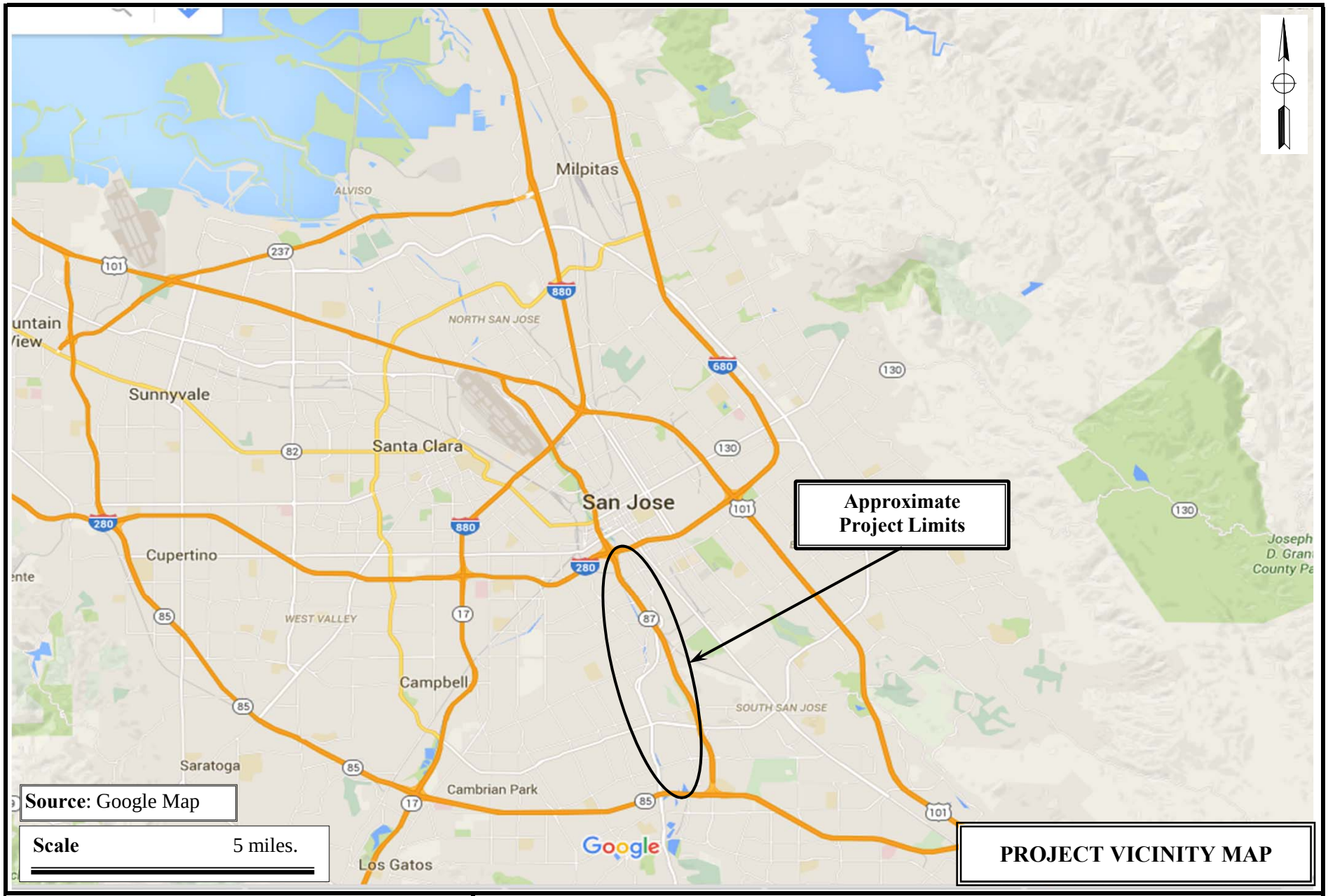
h) Caltrans ARS online (v2.3.06), URL: http://dap3.dot.ca.gov/ARS_Online/.

i) California Geological Survey Staff, 2001, Official Seismic Hazard Zone Map, San Jose East quadrangle, California Geological Survey, scale 1:24,000.

j) California Geological Survey Staff, 2002, Official Seismic Hazard Zone Map, San Jose West quadrangle, California Geological Survey, scale 1:24,000.

k) California Geological Survey: Landslide Inventory Maps of the Following quadrangles: San Jose West (M.O. Wiegers, 2011), San Jose East (M.O. Wiegers, 2011).

l) Nilsen, T.H.; Wright, R.H.; Vlasic, T.C.; and Spangle, W.E.; 1979; Relative slope stability and land-use planning in the San Francisco Bay region, California; USGS Professional Paper 944; Plate 3. [https://pubs.usgs.gov/pp/0944/plate-3.pdf].



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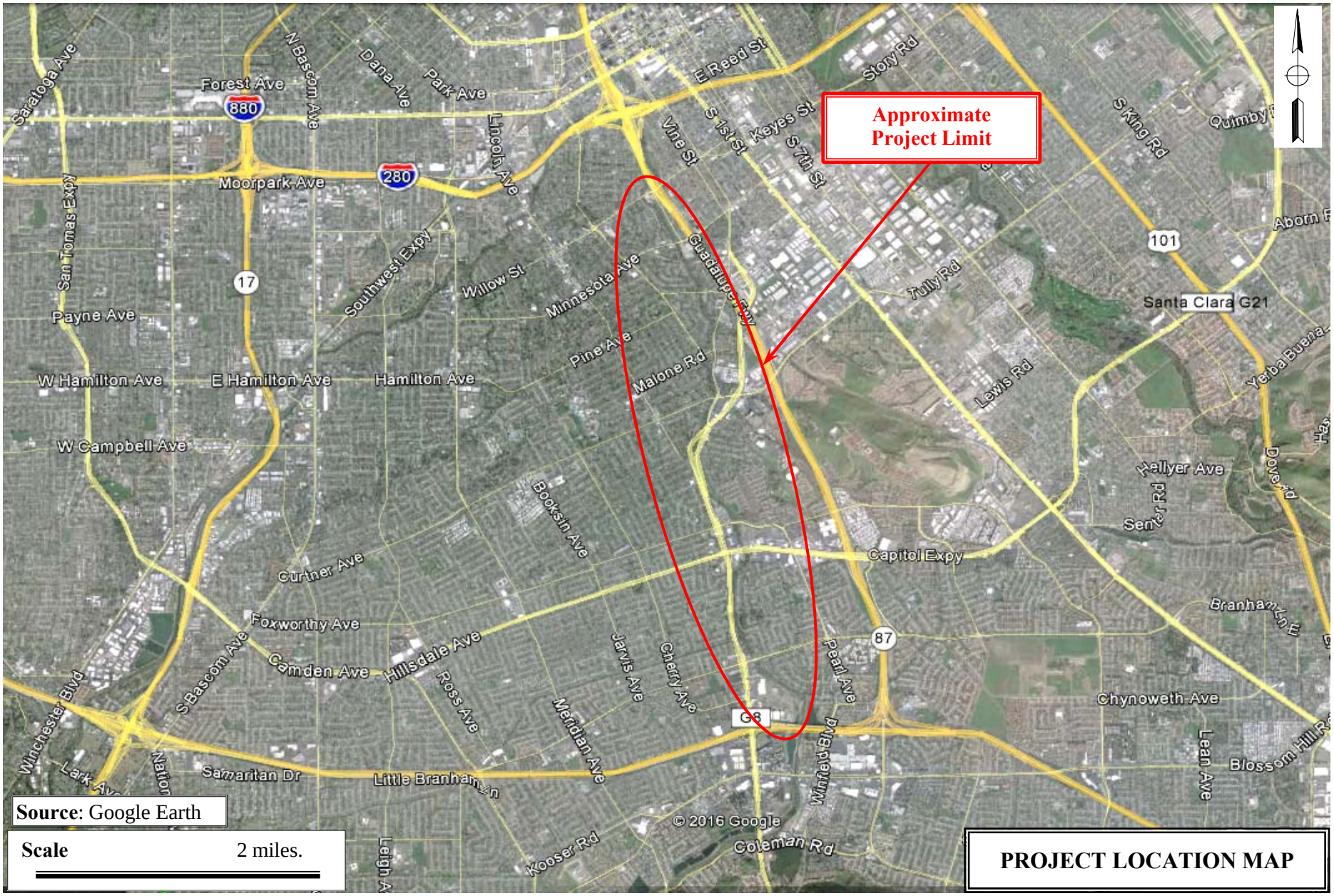
GUADALUPE RIVER TRAIL PRELIMINARY STUDY
SAN JOSE, CALIFORNIA

JOB NO.: 2015-104-PGR	PLATE NO.: 1A



PROJECT LOCATION MAP

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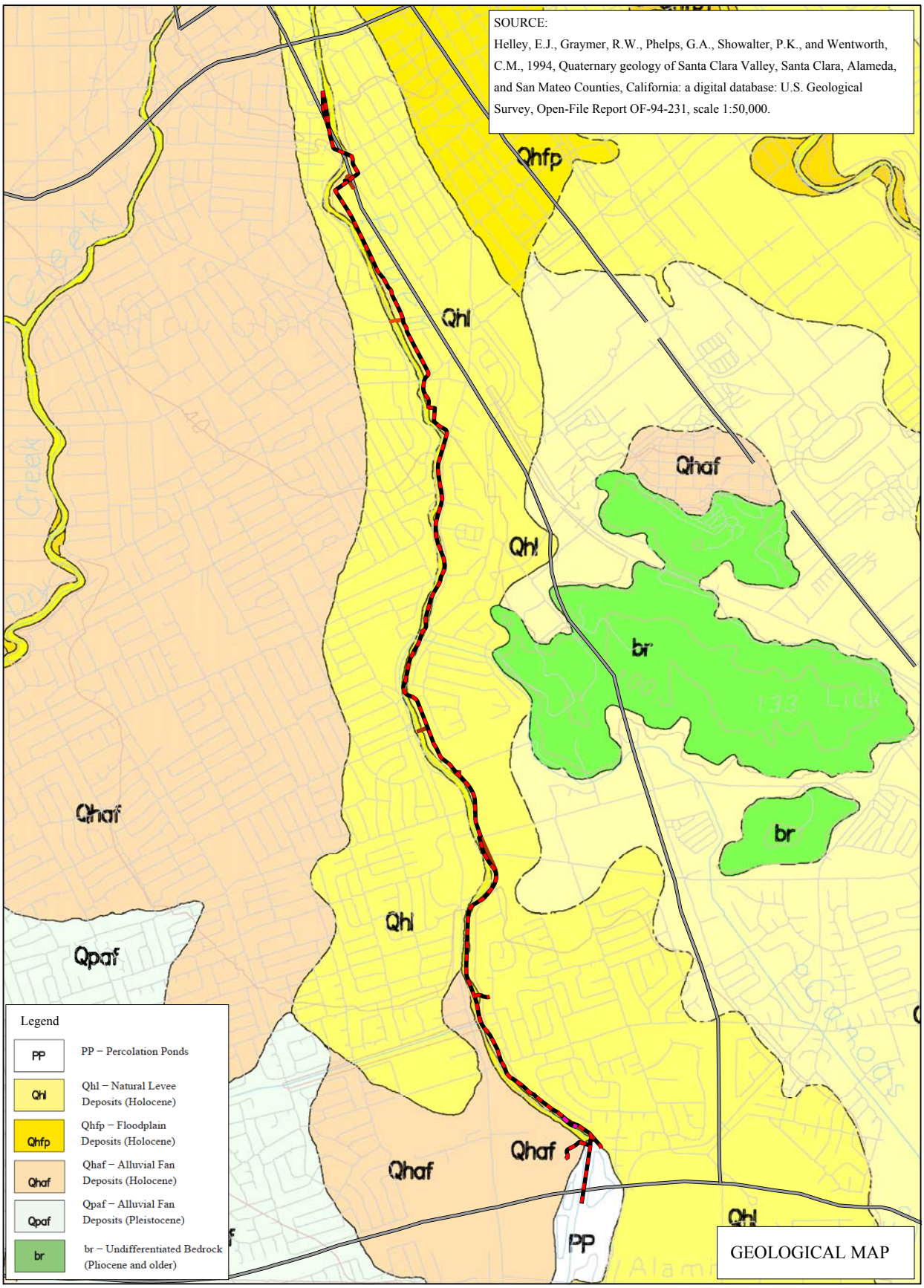
JOB NO.: 2015-104-PGR	PLATE NO.: 1B



N

0 1,000 2,000 4,000 6,000 8,000 10,000 Feet

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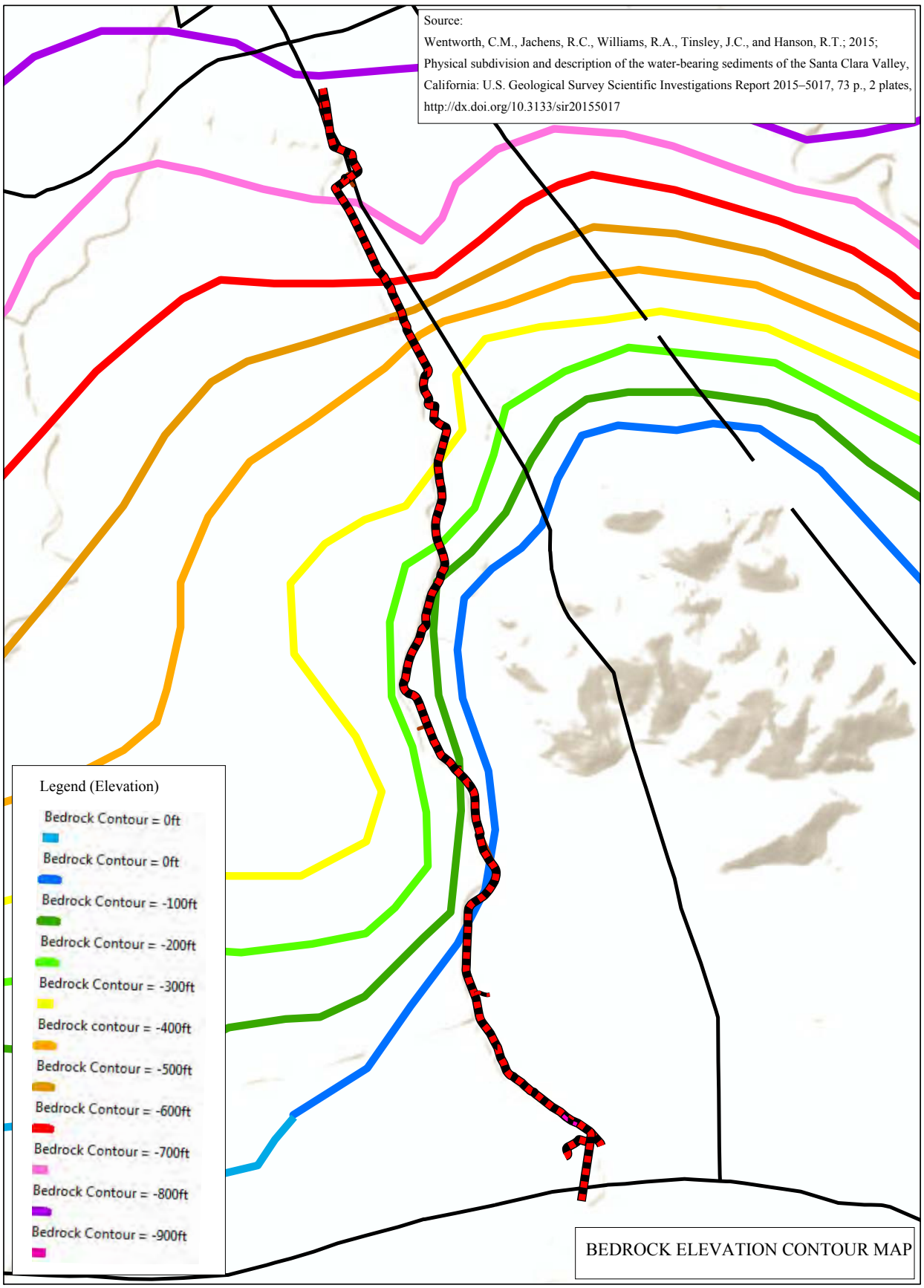
JOB NO.: 2015-104-PGR | PLATE NO.:2



N

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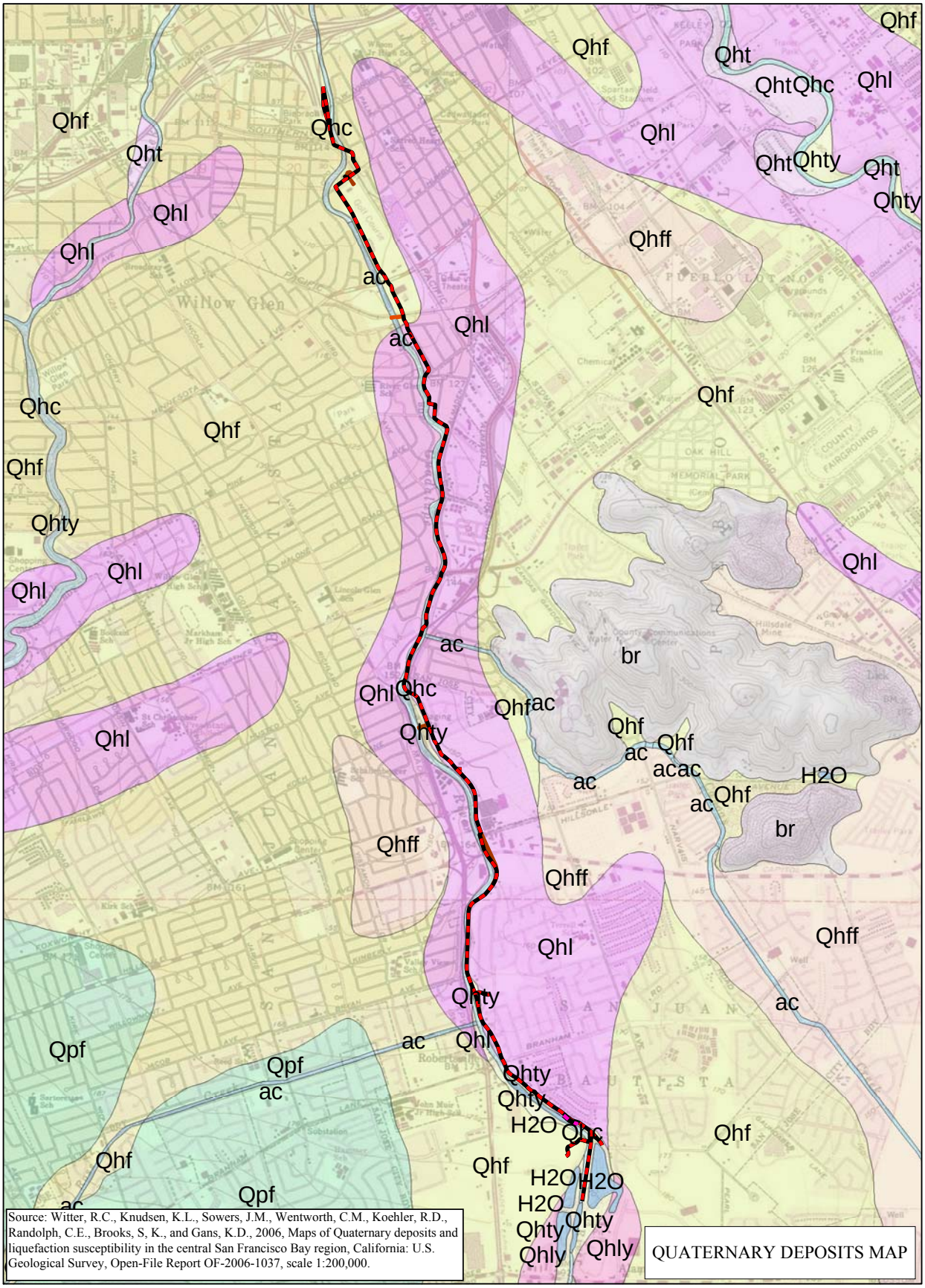
JOB NO.: 2015-104-PGR	PLATE NO.: 3



Source: Witter, R.C., Knudsen, K.L., Sowers, J.M., Wentworth, C.M., Koehler, R.D., Randolph, C.E., Brooks, S, K., and Gans, K.D., 2006, Maps of Quaternary deposits and liquefaction susceptibility in the central San Francisco Bay region, California: U.S. Geological Survey, Open-File Report OF-2006-1037, scale 1:200,000.

N

0 1,000 2,000 4,000 6,000 8,000 10,000 Feet

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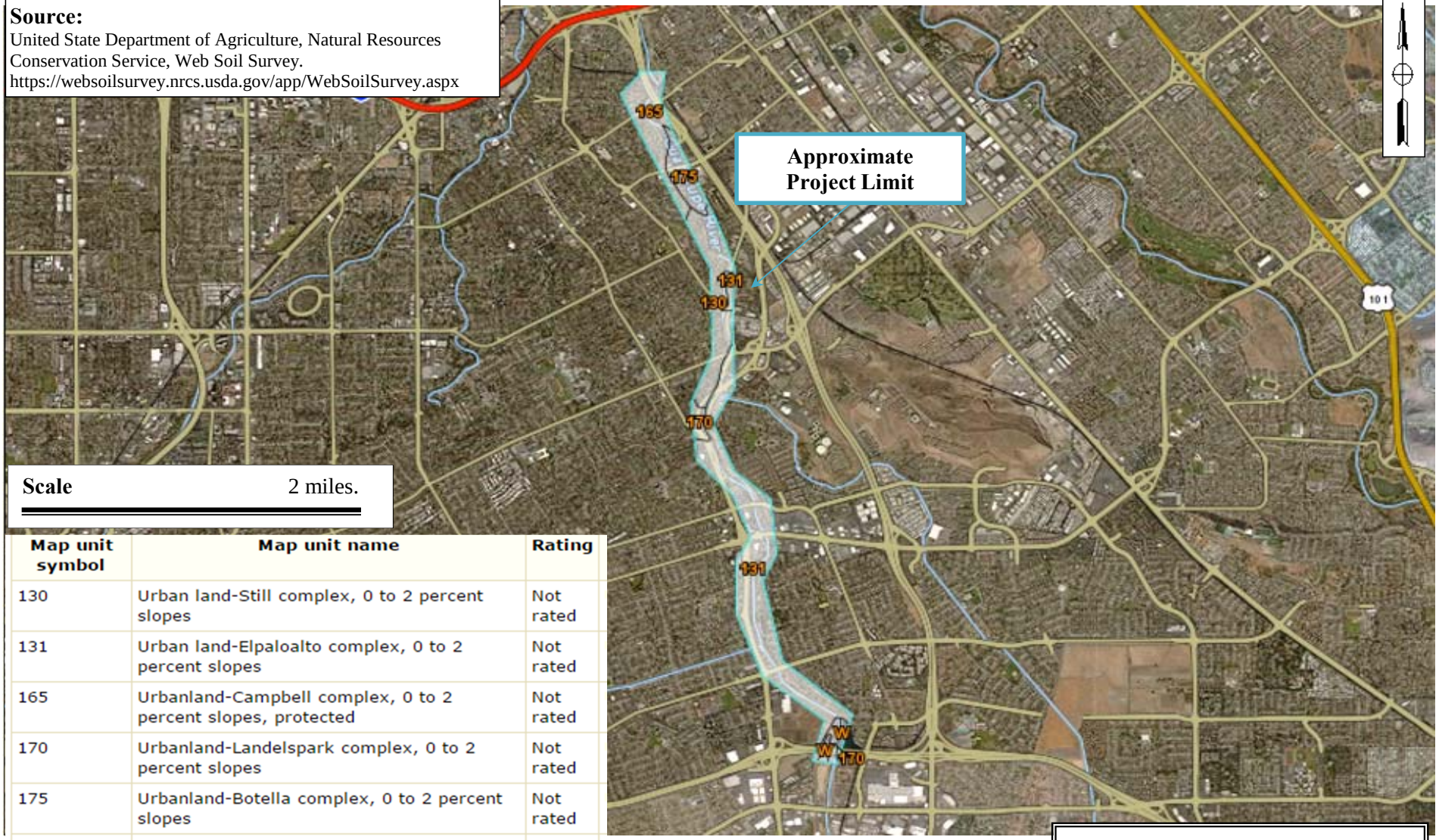
JOB NO.: 2015-104-PGR | PLATE NO.:4

Source:
United State Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey.
https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx



Scale 2 miles.

Map unit symbol	Map unit name	Rating
130	Urban land-Still complex, 0 to 2 percent slopes	Not rated
131	Urban land-Elpaloalto complex, 0 to 2 percent slopes	Not rated
165	Urbanland-Campbell complex, 0 to 2 percent slopes, protected	Not rated
170	Urbanland-Landelspark complex, 0 to 2 percent slopes	Not rated
175	Urbanland-Botella complex, 0 to 2 percent slopes	Not rated
W	Water	Not rated

SOIL SURVEY MAP

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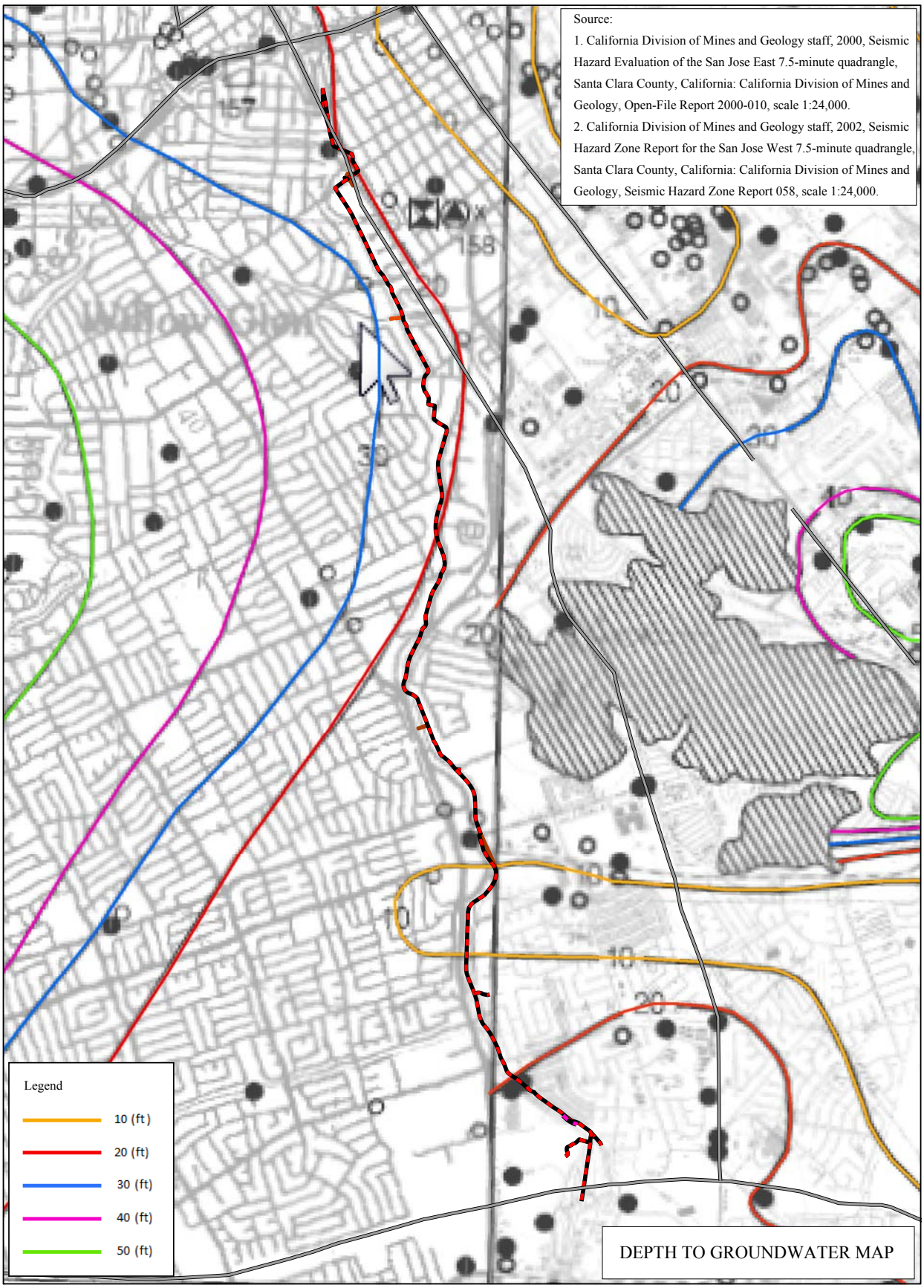
JOB NO.: 2015-104-PGR | **PLATE NO.: 5**



N

0 1,000 2,000 4,000 6,000 8,000 10,000 Feet

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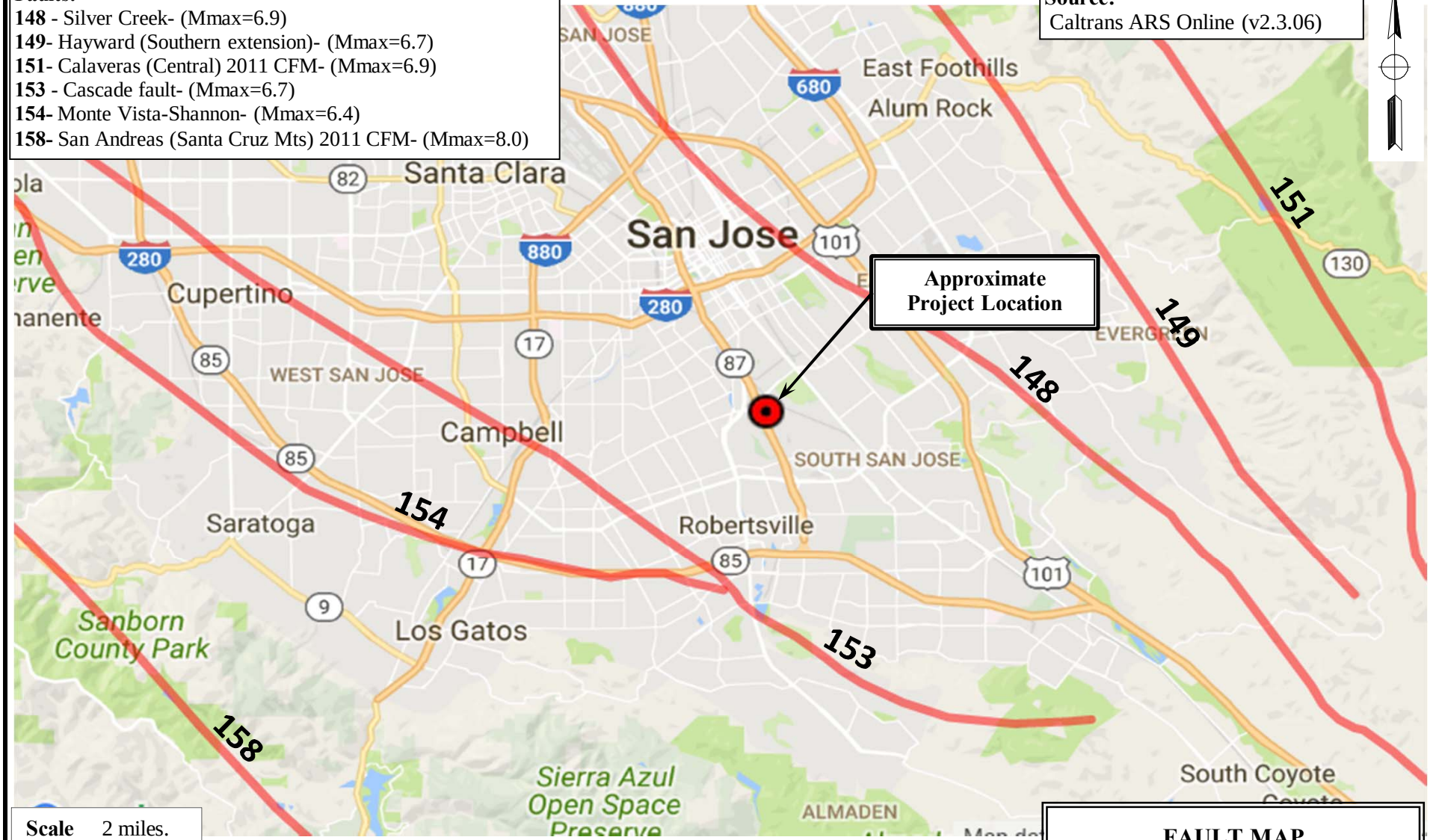
JOB NO.: 2015-104-PGR | PLATE NO.:6

Faults:
148 - Silver Creek- (Mmax=6.9)
149- Hayward (Southern extension)- (Mmax=6.7)
151- Calaveras (Central) 2011 CFM- (Mmax=6.9)
153 - Cascade fault- (Mmax=6.7)
154- Monte Vista-Shannon- (Mmax=6.4)
158- San Andreas (Santa Cruz Mts) 2011 CFM- (Mmax=8.0)

Source:
Caltrans ARS Online (v2.3.06)



Scale 2 miles.

FAULT MAP

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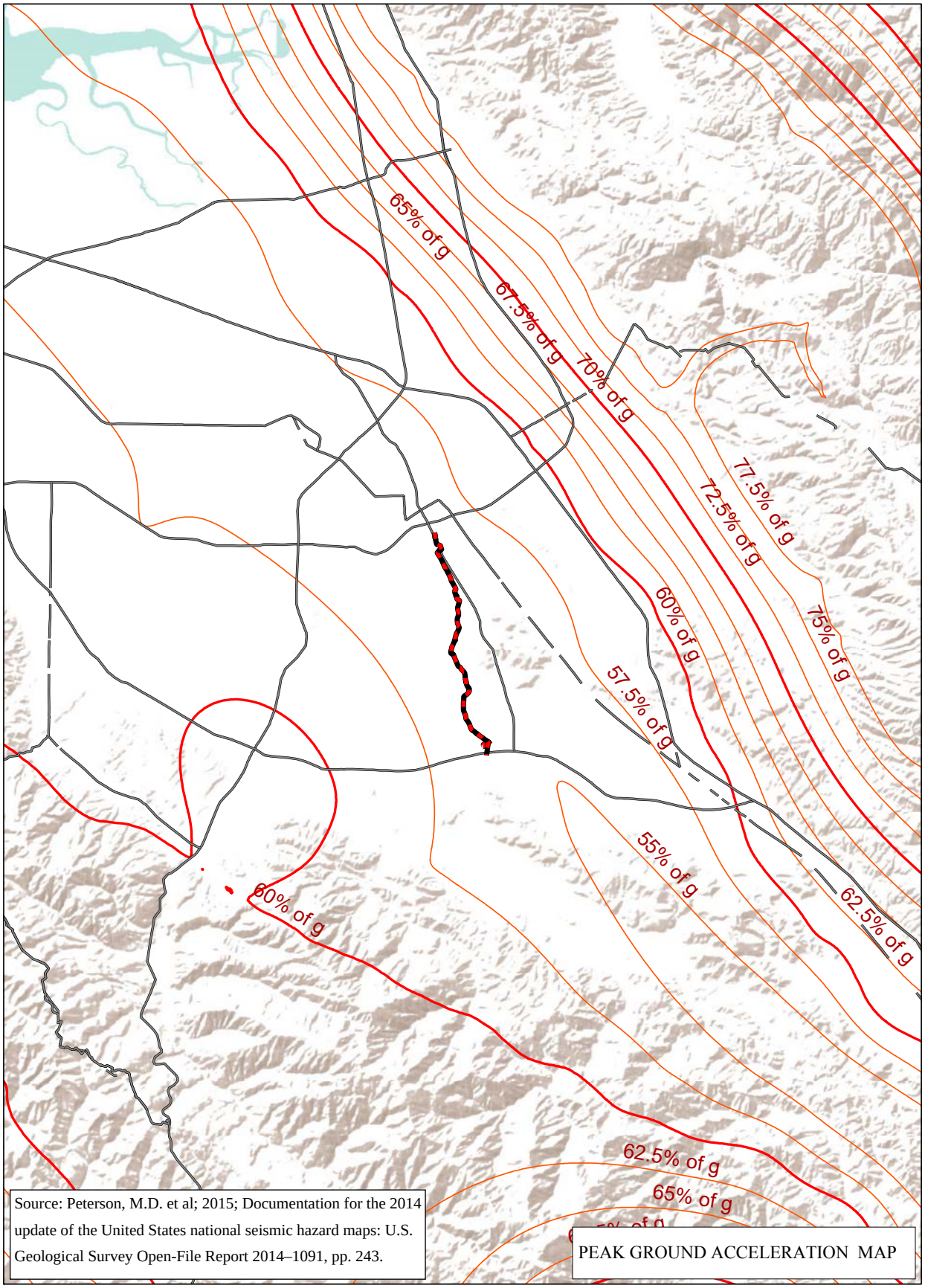
JOB NO.: 2015-104-PGR

PLATE NO.: 7



Source: Peterson, M.D. et al; 2015; Documentation for the 2014 update of the United States national seismic hazard maps: U.S. Geological Survey Open-File Report 2014–1091, pp. 243.

PEAK GROUND ACCELERATION MAP

N

0 5,000 10,000 20,000 30,000 40,000 50,000 Feet

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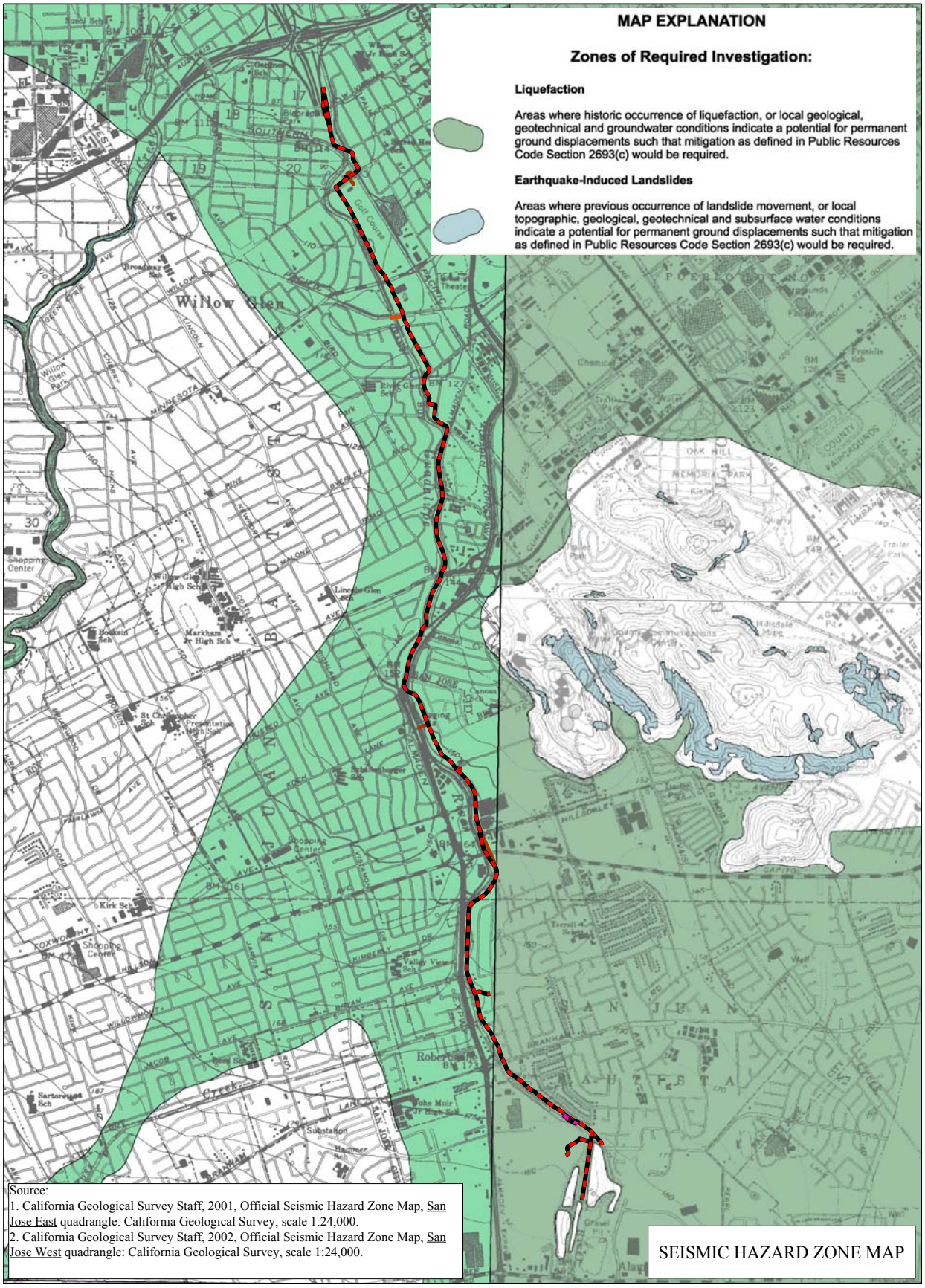
JOB NO.: 2015-104-PGR	PLATE NO.:8



N

0 1,000 2,000 4,000 6,000 8,000 10,000 Feet

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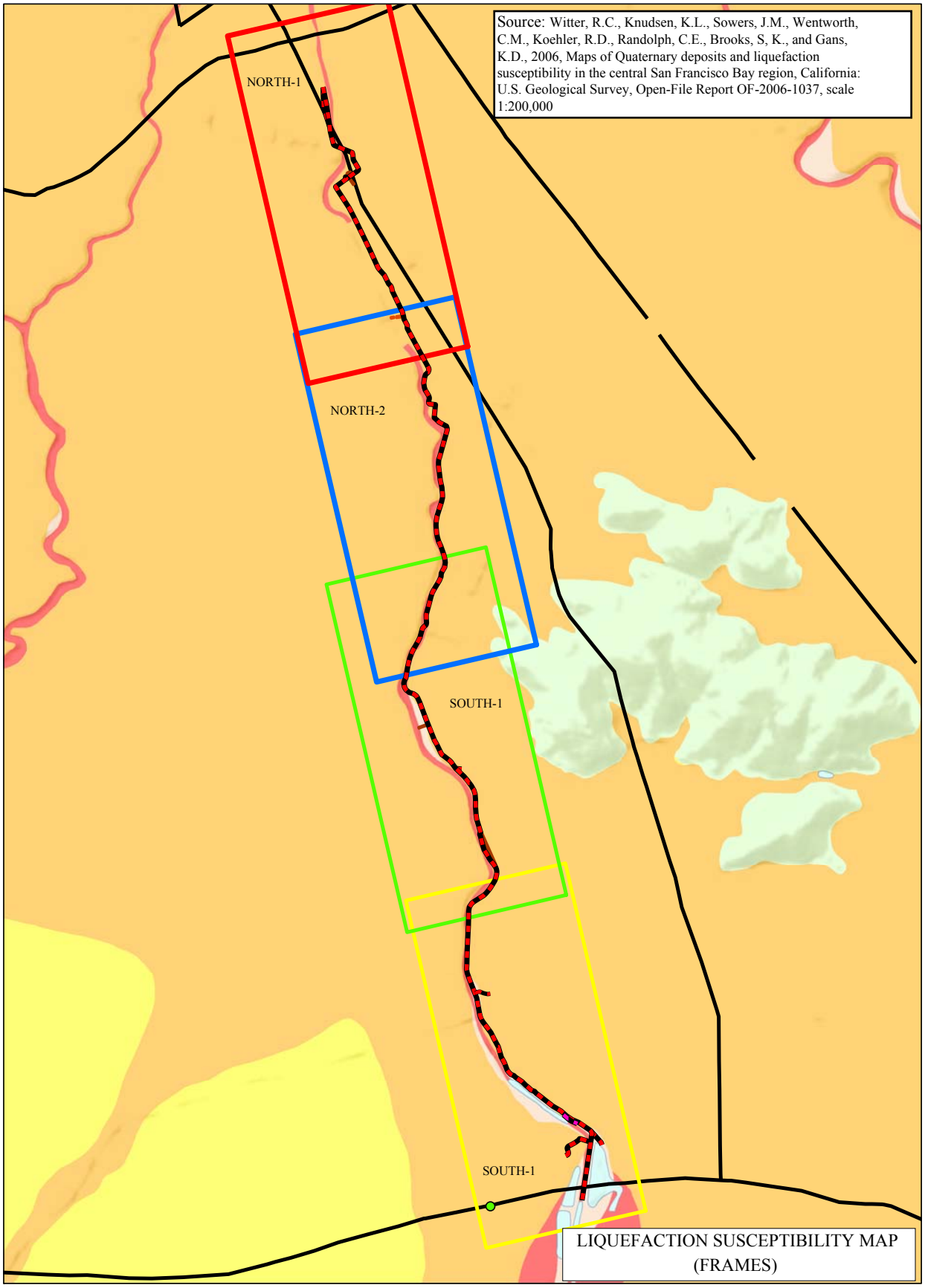
JOB NO.: 2015-104-PGR	PLATE NO.:9



N

0 1,000 2,000 4,000 6,000 8,000 10,000 Feet

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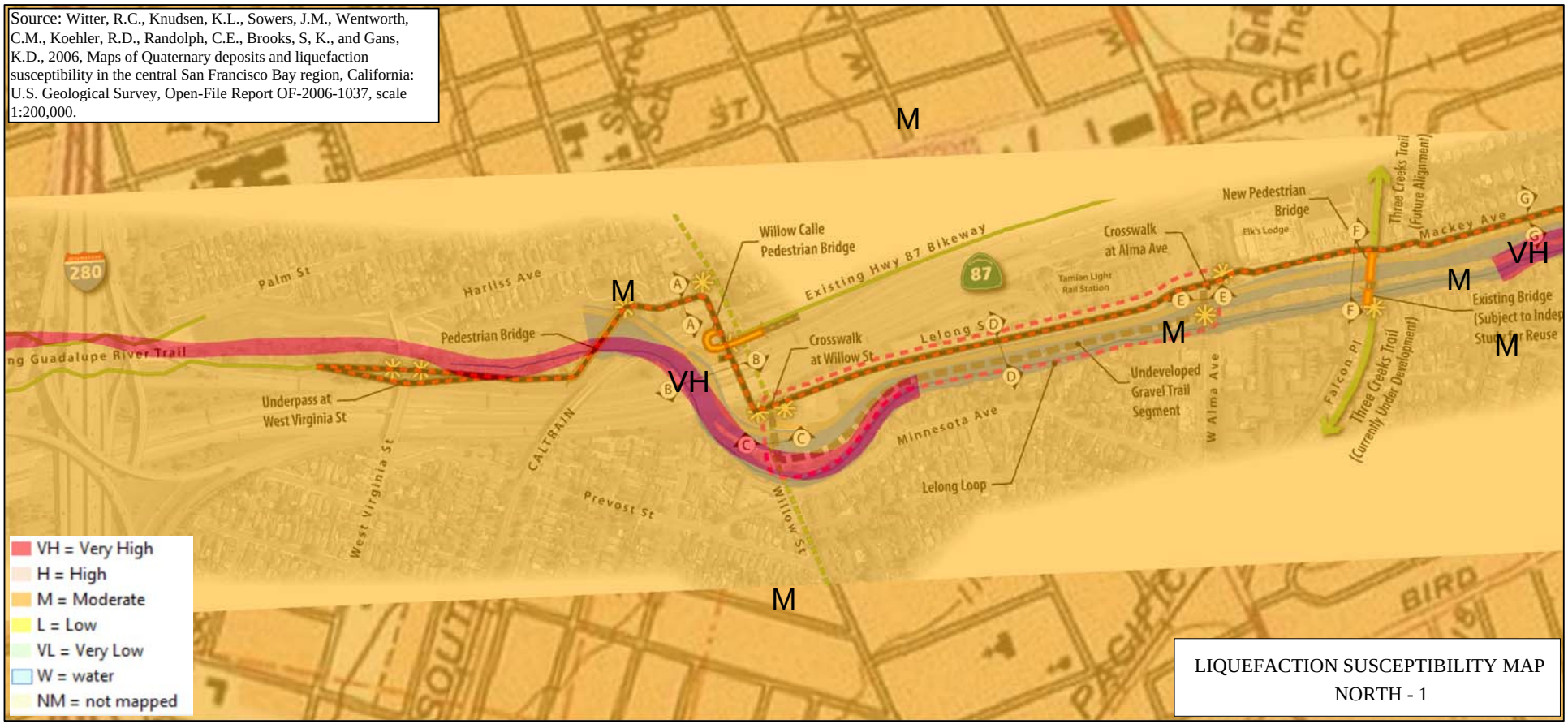
JOB NO.: 2015-104-PGR	PLATE NO.:10A



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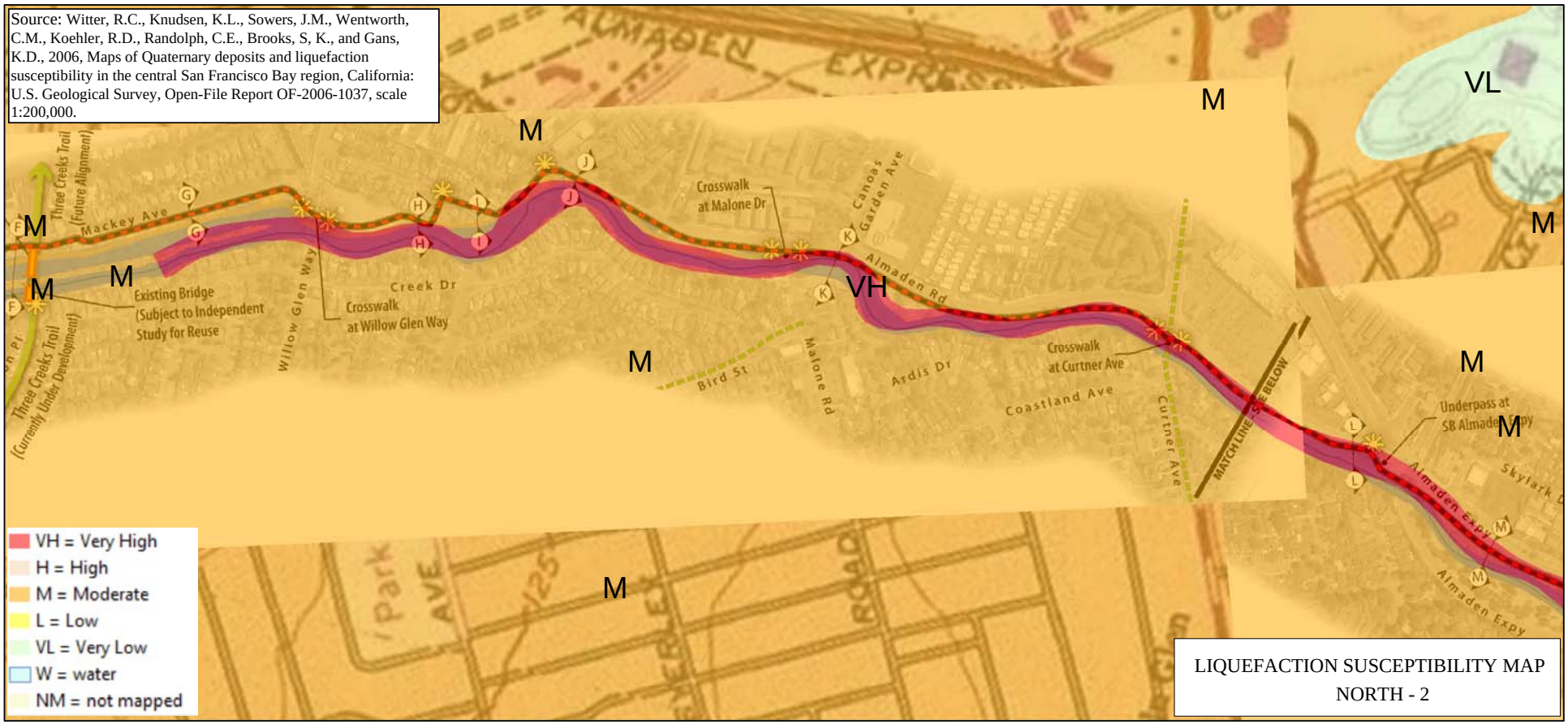
	JOB NO.: 2015-104-PGR	PLATE NO.:10B



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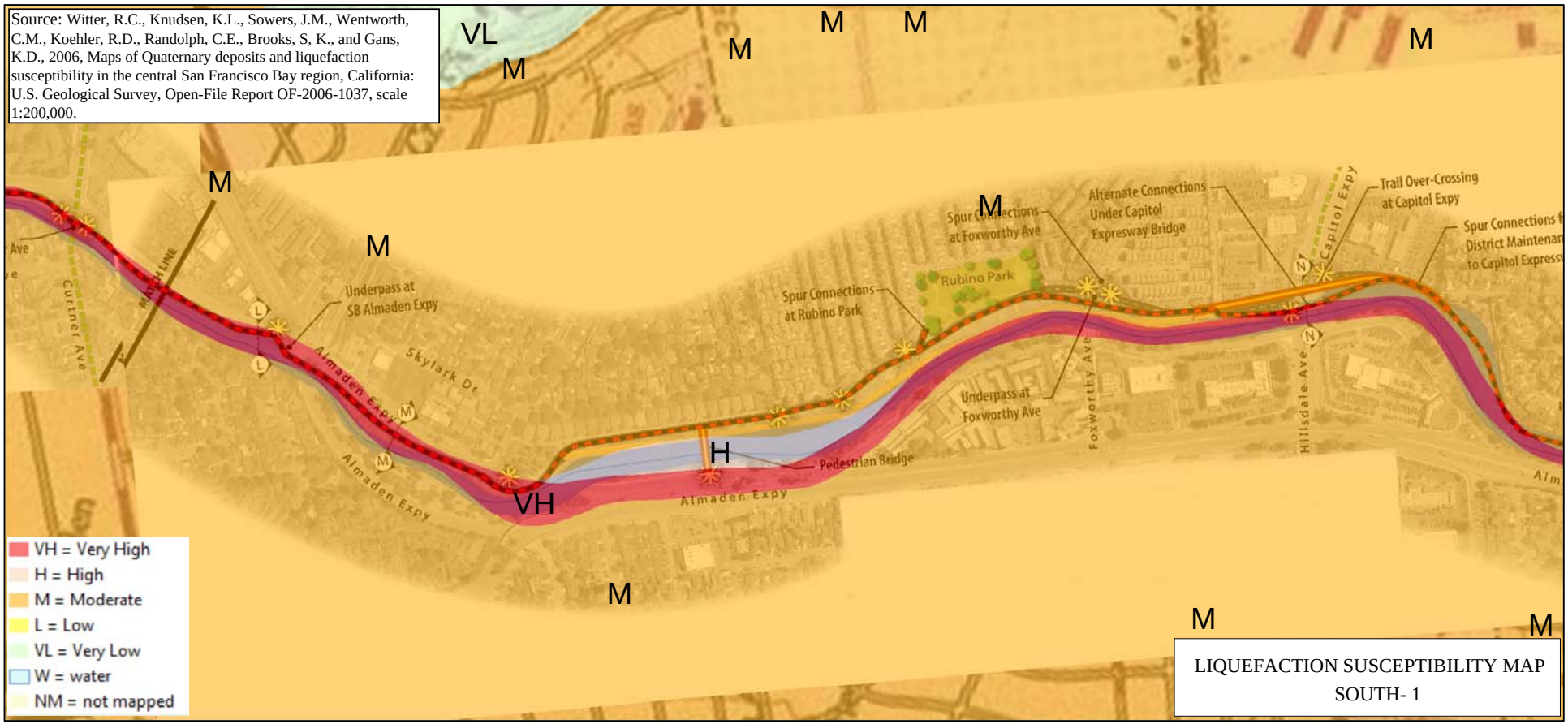

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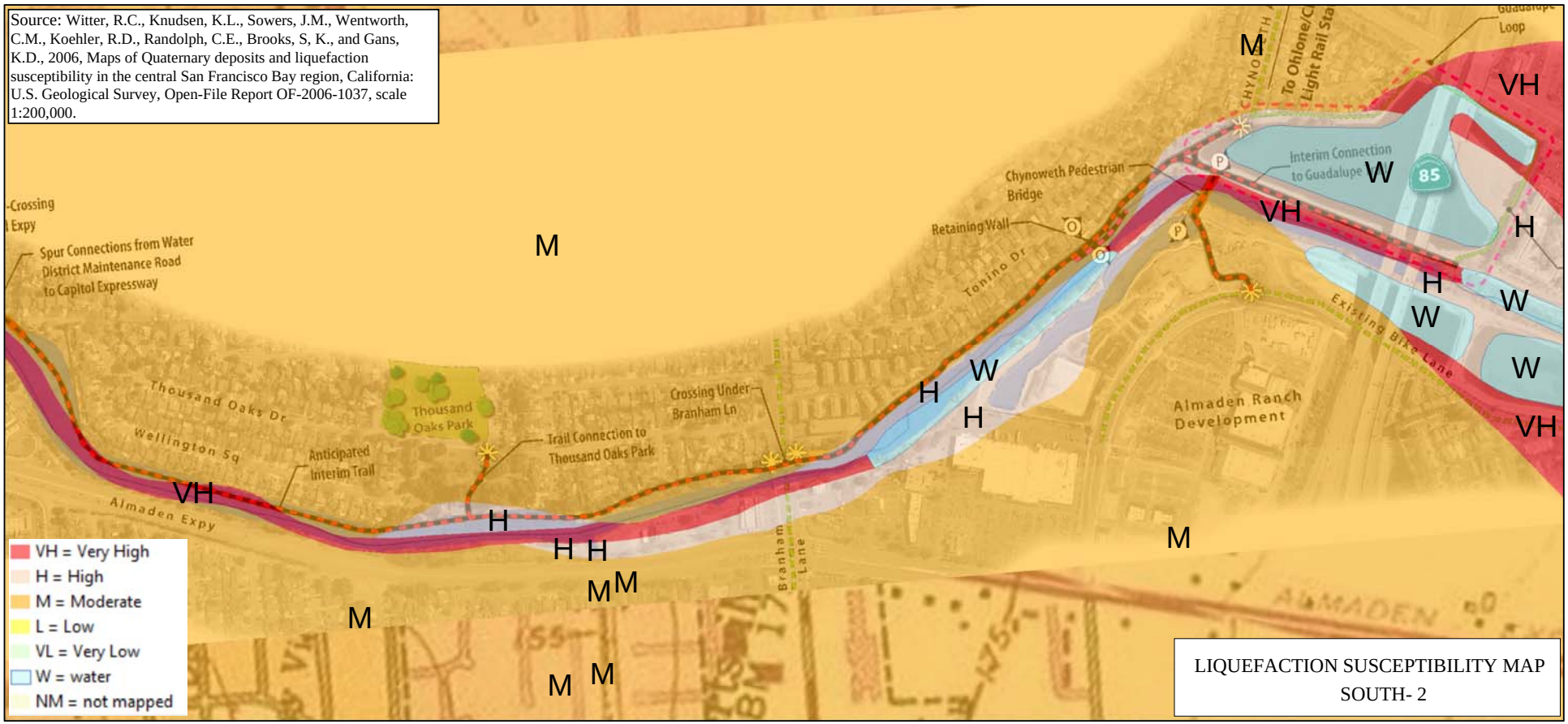

N

0 250 500 1,000 1,500 2,000 Feet

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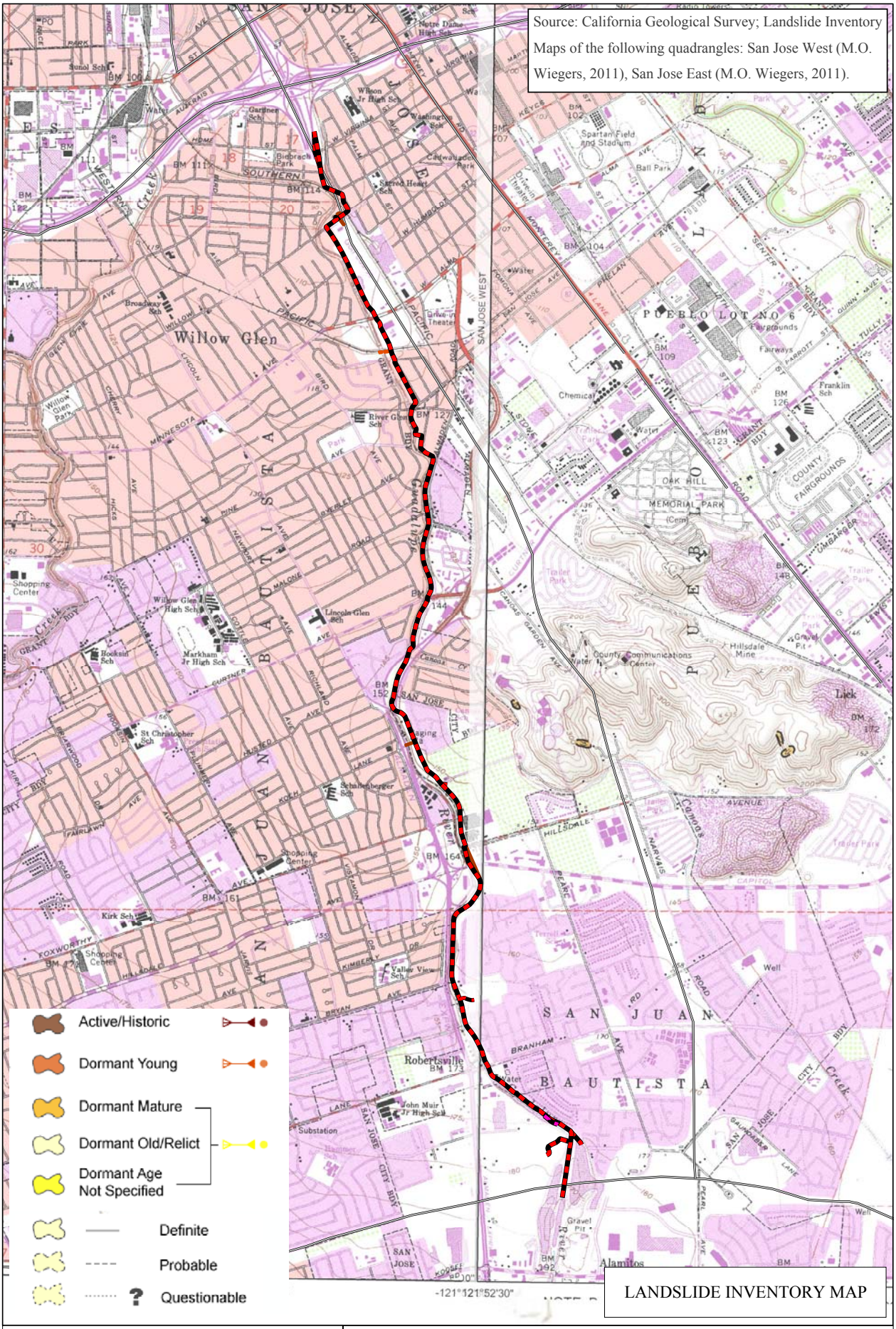
	JOB NO.: 2015-104-PGR	PLATE NO.:10E



LANDSLIDE INVENTORY MAP

N

0 500 1,000 2,000 3,000 4,000 5,000

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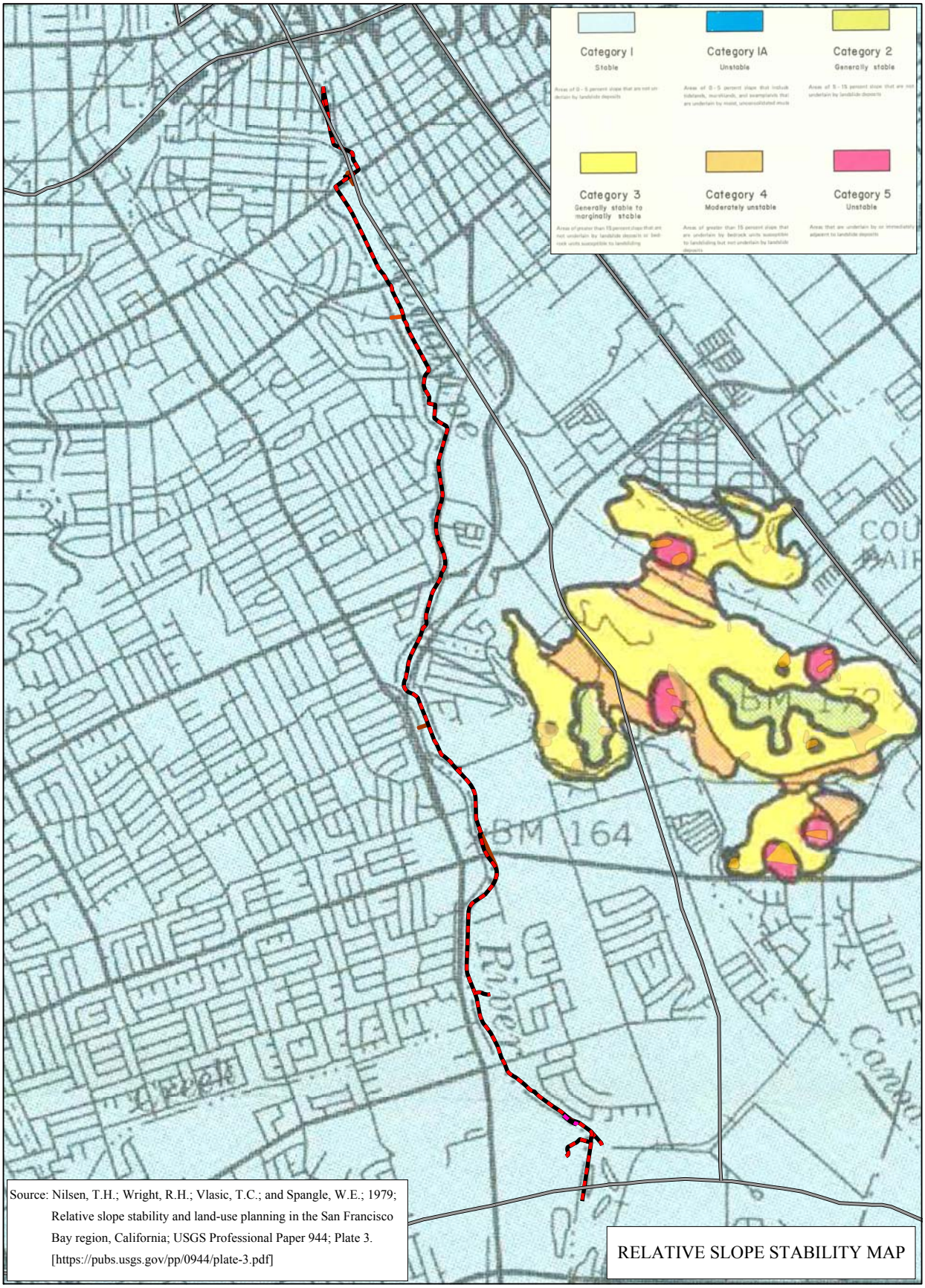
JOB NO.: 2015-104-PGR	PLATE NO.: 11



Source: Nilsen, T.H.; Wright, R.H.; Vlasic, T.C.; and Spangle, W.E.; 1979; Relative slope stability and land-use planning in the San Francisco Bay region, California; USGS Professional Paper 944; Plate 3. [https://pubs.usgs.gov/pp/0944/plate-3.pdf]

RELATIVE SLOPE STABILITY MAP

N

0 1,000 2,000 4,000 6,000 8,000 10,000 Feet

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JOB NO.: 2015-104-PGR	PLATE NO.: 12