LOS GATOS CREEK BRIDGE REPLACEMENT / SOUTH TERMINAL PHASE III PROJECT

Water Quality Technical Report

Santa Clara County, California

Prepared for

Peninsula Corridor Joint Powers Board
1250 San Carlos Avenue
P.O. Box 3006
San Carlos, California 94070-1306

Prepared by

HDR Engineering, Inc.
2365 Iron Point Road, Suite 300
Folsom, CA 95630

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Summary

The Peninsula Corridor Joint Powers Board (JPB) which operates the San Francisco Bay Area's Caltrain passenger rail service proposes to replace the two-track railroad bridge that crosses Los Gatos Creek, in the City of San Jose, Santa Clara County, California. The Proposed Action is needed to address the structural deficiencies and safety issues of the Caltrain Los Gatos Creek railroad bridge to be consistent with the standards of safety and reliability required for public transit, to ensure that the bridge will continue to safely carry commuter rail service well into the future, and to improve operations at nearby San Jose Diridon Station and along the Caltrain rail line.

This Water Quality Technical Report has been prepared to provide a summary of existing water resources and provides an initial evaluation of impacts of the project on water resources and provides feasible avoidance and minimization measures to reduced potential impacts to a level typically considered less than significant under the California Environmental Quality Act (CEQA). This report is useful for the preparation of the proposed project's CEQA Initial Study/Mitigated Negative Declaration and the categorical Exclusion document in compliance with the National Environmental Policy Act (NEPA).

As discussed herein, the Water Quality Technical Report determines to what extent the proposed project may potentially impact water resources which are subject to provisions of CEQA and NEPA. Based on existing conditions and characteristics of the study area (e.g., hydrology, water quality, etc.), the Water Quality Technical Report concludes that the construction of the proposed project would potentially impact: (1) beneficial uses for Los Gatos Creek (i.e., Cold Freshwater Habitat, Preservation of Rare and Endangered Species, Warm Freshwater Habitat, Wildlife Habitat, and Water Contact Recreation); (2) stormwater runoff and drainage; (3) surface water quality; and (4) groundwater quality. However, implementation of the recommended avoidance and minimization measures would reduce the potential impacts to a less than significant level.

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Table of Contents

List of Figures

List of Tables

List of Abbreviations and Acronyms

µg/kg	Microgram per Kilogram
ACE	Altamont Corridor Express
Basin Plan	San Francisco Bay Regional Water Quality Control Board's Water Quality Control Plan
BASMAA	Bay Area Stormwater Management Agencies Association
BMP(s)	Best Management Practice(s)
CASQA	California Storm Water Quality Association
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	Cubic Feet per Second
CWA	Clean Water Act
cy	Cubic Yard
ESL	Environmental Screening Limit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
JPB	Peninsula Corridor Joint Powers Board
mg/kg	Milligram per Kilogram
MS4	Municipal Separate Storm Water Sewer System
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OHWM	Ordinary High Water Mark

OSH	Orchard Supply Hardware
PCBs	Polychlorinated Biphenyls
QA/QC	Quality Assurance/Quality Control
ROW	Right-of-way
RWQCB	Regional Water Quality Control Board
SCVURPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD	Santa Clara Valley Water District
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TMDL	Total Maximum Daily Load
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VOCs	Volatile Organic Compounds

1.0 Introduction

The Peninsula Corridor Joint Powers Board (JPB) proposes to replace a structurally deficient railroad bridge at post mile 47.5 of the Caltrain corridor over Los Gatos Creek in San Jose, California. **Figure 1-1** identifies the location of the proposed project. The objectives of this Water Quality Technical Report are to describe the creek, including the existing water resources, to determine potential impacts of the project on water resources, and to identify feasible mitigation measures to address any potential impacts.

1.1 Project Location

As shown in **Figure 1-2**, the proposed project area, generally bounded by Caltrain's San Jose Diridon Station to the north, Interstate 280 (I-280) to the south, Sunol Street to the west, and Royal Avenue on the east, occupies the width of the right-of-way (ROW) owned by JPB and extends a distance of approximately 0.4 mile.

Two tracks, Main Tracks 1 and 2 (MT1 and MT2), run parallel through the entire project area. MT1 is owned by the Union Pacific Railroad (UPRR) and used primarily for freight service and MT2 is owned by the JPB and used primarily for Caltrain service. Both tracks connect with San Jose Diridon Station Tracks 1 through 9 immediately south of the Park Avenue Overpass. From the Park Avenue Overpass, the double-track alignment continues southward for approximately 800 feet before passing beneath the West San Carlos Avenue vehicular bridge. Immediately south of the West San Carlos Avenue vehicular bridge, the two tracks turn in a southeasterly direction and extend approximately 200 feet across the Los Gatos Creek railroad bridge. The JPB owns and maintains the Los Gatos Creek railroad bridge. Both tracks continue southeast for approximately 500 feet before crossing Auzerais Avenue at grade. South of Auzerais Avenue, the double-track alignment continues for approximately 400 feet before reaching the project area's southern boundary immediately north of the I-280 overpass. Beyond I-280, the alignment continues south to Caltrain's Gilroy Station.

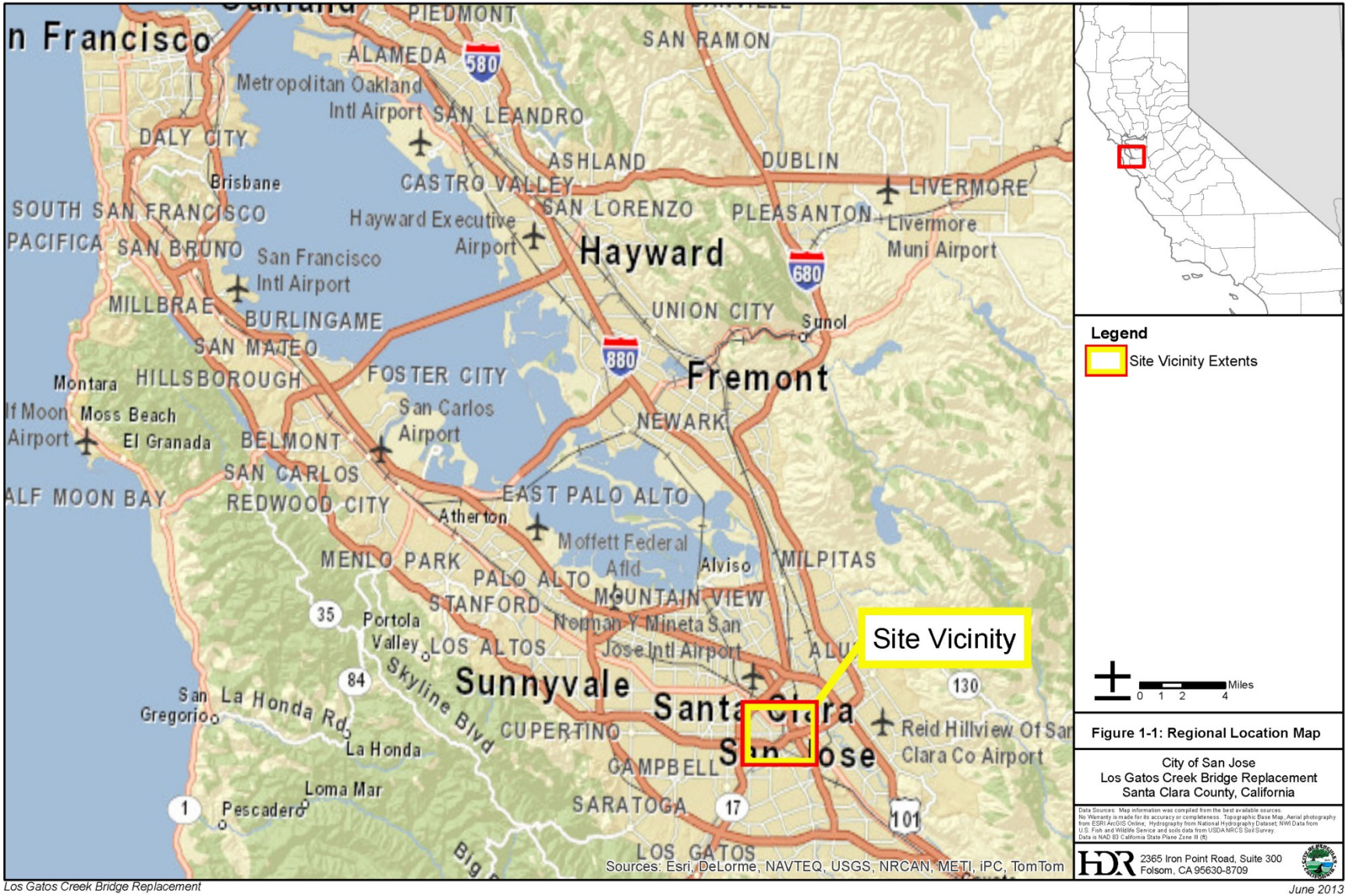
1.2 Purpose and Need of Proposed Project

The proposed project is needed to address the structural deficiencies and safety issues of the Caltrain Los Gatos Creek railroad bridge to be consistent with the standards of safety and reliability required for public transit, to ensure that the bridge will continue to safely carry commuter rail service well into the future. The project proposes to construct a third track to preserve rail service during the construction period. Following completion of construction, the third track would be retained to improve operations at nearby San Jose Diridon Station and along the Caltrain rail line. These project needs are discussed below.

1.2.1 Existing Safety Concerns

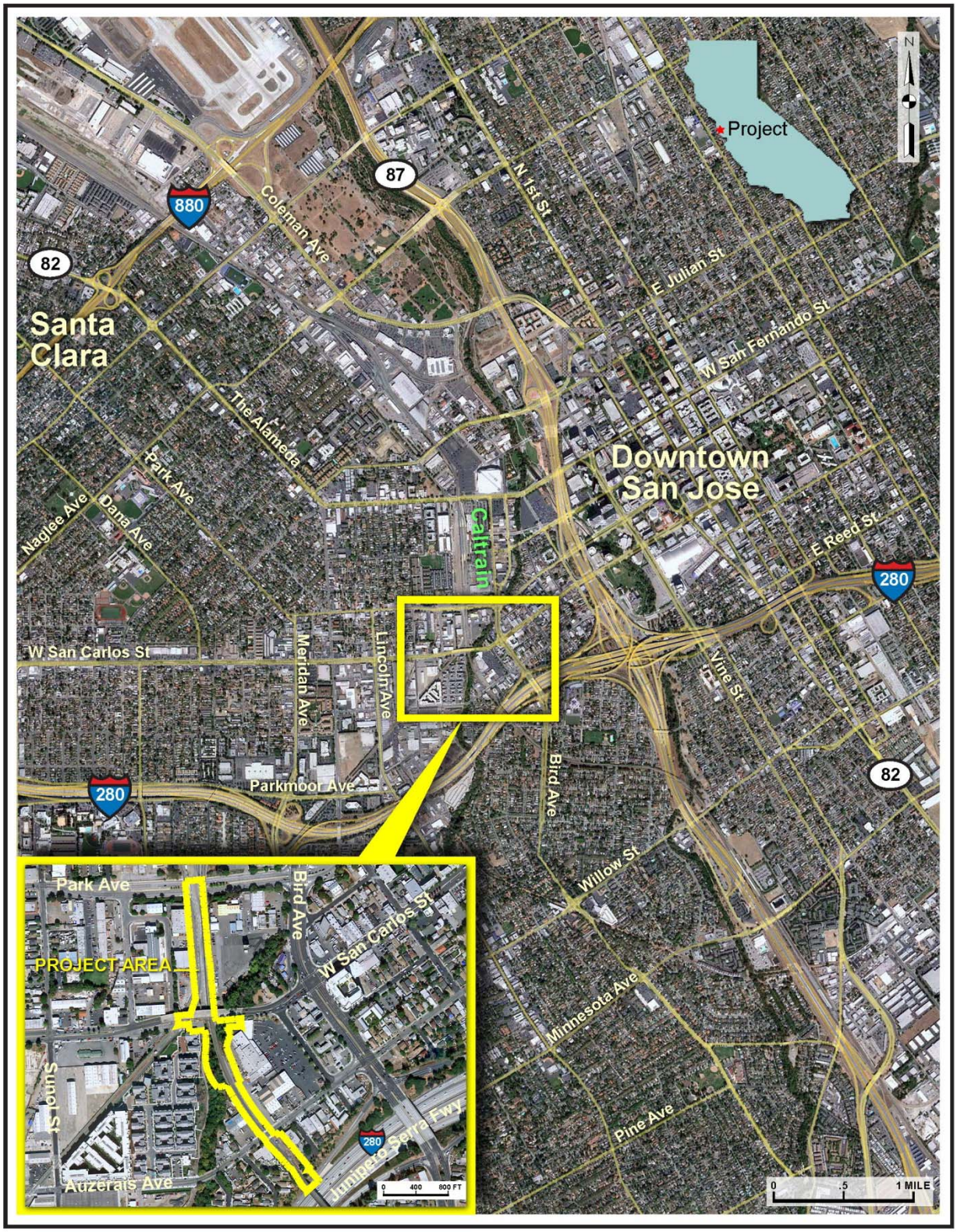
The existing Los Gatos Creek Bridge measures 174 feet in length and 35 feet in width and is approximately 100 years old. The bridge is made up of two bridge types, steel girders on concrete piers and timber trestle on wooden pile bents (piers). There are a combined nine piers and bents in the creek including the abutments. Second-hand steel girders (now much older than 100 years) were used during the original construction of the bridge and contribute an additional risk for the structural failure of the bridge.

Figure 1-1 Regional Location of the Proposed Action



Los Gatos Creek Bridge Replacement *June 2013*

Figure 1-2 Project Location Map



The existing bridge was inspected in 2005 and 2012 as part of the on-going JPB Bridge Program and many elements were found to not meet current load requirements. Although the steel spans are in good condition, the southerly timber trestle approach spans have been damaged by fire and have experienced moderate section loss. The bridge was evaluated per current industry requirements for the inspected condition and was found to rate below the current and projected service loads, as well as the JPB design criteria for live load capacity (Cooper E80) for new bridges. The bridge was also analyzed for seismic capacity and found to be vulnerable during significant magnitude earthquakes. **Figure 1-3** shows two photographs from the most recent bridge inspection in 2012 which highlight the deteriorating conditions of the bridge from the charring and rotting of the south bridge cap.

Figure 1-3 Deteriorating Conditions of Los Gatos Creek Bridge

The bridge has reached and exceeded the 75-year useful life for which it was designed. Due to its increasing age, the compromised condition of the southerly trestle approach spans, failure of some bridge elements to meet current and projected service loads, and vulnerability in the event of a significant earthquake, the Los Gatos Creek Bridge needs to be replaced with a new structure.

1.2.2 Need for a Tail Track

Caltrain currently operates 46 northbound and 46 southbound trains per weekday (for a total of 92 trains per weekday). Thirty-four of these trains originate and terminate at Tamien Station, located approximately 1.3 miles south of the Los Gatos Creek Bridge. All Caltrain service to Tamien Station and further south utilizes only one of the two tracks through the project area, MT2.

The San Jose Diridon Station has recently completed an expansion program that included four new platform faces with extended platform lengths. The expansion allows for more trains to serve the San Jose Diridon Station and more passengers to access the Caltrain trains.

In addition to Caltrain, Altamont Corridor Express (ACE), Capitol Corridor, and Amtrak also serve Diridon Station. ACE currently operates three weekday trains to San Jose during the morning peak period and three weekday trains departing from San Jose in the evening peak period. Capitol Corridor operates seven weekday trains originating and departing from San Jose Diridon Station (for a total of 14 trains per weekday). Amtrak Long Distance currently operates the Coast Starlight which serves San Jose Diridon Station with two trains per day (one

northbound and one southbound). While ACE and Capitol Corridor trains terminate passenger service at Diridon Station, one Capitol Corridor train and three ACE trains use Tamien Station and the Tamien yard for layovers. These trains utilize MT1 through the project area from San Jose Diridon Station to Tamien Station. However, since MT1 is owned by UPRR, freight service has priority use for the track.

Currently, the two tracks are sufficient to provide service through this rail corridor. However, several trains a day pass through the project area just to access the layover area at Tamien Station. There is no siding along this stretch of the Caltrain corridor; therefore non-revenue, non-passenger trains are traveling the full length between Diridon and Tamien Stations just to turn around. Moreover, other trains that terminate at San Jose Diridon Station have limited rail yard space to efficiently maneuver and change directions. A tail track extending south from San Jose Diridon Station would improve operations at San Jose Diridon Station and would be able to accommodate the trains otherwise laying over and changing direction at Tamien Station.

In addition, if there is a delay in one of the rail services, or if a train breaks down, the lack of any siding along this alignment creates a delay along the entire route. The tail track in the project area would also serve as a temporary, emergency layover area for a passenger train.

1.2.3 Purpose of the Proposed Project

The purpose of the proposed project is to replace the structurally deficient Los Gatos Creek railroad bridge and provide a tail track south of San Jose Diridon Station in order to:

- Ensure safe rail travel for Caltrain passengers and other users of the Los Gatos Creek railroad bridge;
- Improve operations at the San Jose Diridon Station and provide an efficient way for trains to change directions; and,
- Minimize system-wide delays by providing a temporary, emergency layover area.

Without the proposed project, the replacement of the Los Gatos Creek railroad bridge would not be completed and the bridge would present an increasing safety hazard to all users. In addition, operations at nearby San Jose Diridon Station would not be improved and system-wide delays would be likely to occur.

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2.0 Project Description

The proposed project consists of replacing the existing Los Gatos Creek Bridge while maintaining rail services across the bridge. The new bridge will consist of a two-track alignment over Los Gatos Creek (also referred to as a stream in this report) with the addition of a tail track extending south from San Jose Diridon Station. The addition of the tail track comprises Phase III of the South Terminal Project, which includes a variety of improvements at and near the San Jose Diridon Station to improve Caltrain operations along this corridor.

2.1 Project Elements

Figure 2-1 illustrates the elements of the proposed project. The existing bridge consists of a north abutment, three piers in the creek area, and a series of timber bent segments on the south end; the new bridge would have a north abutment, two piers within the creek area, and a south abutment. The two tracks that currently utilize this bridge are MT1 (owned by UPRR and on the east side of the bridge) and MT2 (owned by the JPB**).** The new bridge would be wider than the existing bridge, with the expansion occurring on the west side to accommodate the tail track to improve operations at the San Jose Diridon Station just to the north of the project area.

The tail track and several temporary tracks, known as shoofly tracks, will be used to reroute trains around the area under construction in order to maintain active rail service across the bridge at all times. The ultimate alignments of MT1 and MT2 over the new bridge would be generally unaltered from their current configuration.

The limits of the tail track are from approximately 300 feet north of West San Carlos Street to 300 feet south of Auzerais Avenue, where it ties back into MT2 before the alignment crosses over I-280, the southern limit of the project area. Due to spacing requirements between adjacent tracks, minor ROW acquisitions from two parcels on the west side of the tracks would be required. Rock slope and scour protection (riprap) would be installed on the north bank of the creek.

Caltrain operates, and is required to operate, rail service on two tracks across the Los Gatos Creek Bridge at all times. In order to maintain continuous rail operations on both tracks, the construction of the replacement span must take place in three sections. Before work can start on any section, the channel flow must be diverted via a pipe and out of the way of the work. Only after the channel is diverted can the first section be constructed. Piles, piers, superstructure, and finally the track itself will be constructed only after the channel diversion is complete. However, during the winter months, when no work is taking place in the channel, the channel shall be returned to its original condition. Therefore, in order to construct the new piers and bridge superstructure, Los Gatos Creek would be realigned via a diversion channel or pipe three separate times during construction.

Proposed staging and laydown areas have been identified on the west side of the existing bridge. A portion of the staging area lies on private property and temporary construction easements would be needed for this area. The project will also require temporary easements for construction access and a permanent easement for the placement of riprap. The bridge replacement will also require the relocation of a 12-inch sanitary sewer line adjacent to West San Carlos Bridge. The new sewer line will be installed by directional drill and the old line will be abandoned in place.

Figure 2-1 Los Gatos Creek Bridge Replacement / South Terminal Phase III Project Site Plan

2.2 Project Construction

Replacement of the Los Gatos Creek railroad bridge is estimated to require approximately 24 months of construction. Construction of the project will consist of constructing new piers, replacing both deck plates of the bridge and mainline tracks, and completing associated signal work. Included with the bridge are retaining walls associated with the abutments. Construction of the bridge will require equipment and manpower within the creek channel and within the creek banks in five phases of construction. Two of which are conducted in the creek. Vegetation along the banks will be removed to facilitate construction. Vegetation removal will be kept to the minimum footprint necessary. Creek banks will be re-vegetated after construction with native riparian species appropriate for the region.

2.2.1 Construction Staging

The project's construction staging has been designed so that all work in the stream bed will be completed in the summer period (June 15th to October 15th) to minimize impacts to the creek and associated wildlife. The June 15th though October 15th construction period has been determined by salmonid migration and spawning periods that occur outside of this window. The construction stages and major work elements are outlined in **Table 2-1** and illustrated in **Figures 2-2A** through **2-2F.**

2.2.2 Temporary Creek Diversion

During the in-channel work periods, construction within the creek will require a temporary diversion channel to minimize the potential for erosion, sediment loss, scour, turbidity, and water contamination from construction debris. The contractor will design and construct the temporary diversion channel consisting of upstream and downstream cofferdams to divert flow from the stream bed to a storm drain pipe via pumping or gravity flow (**Figure 2-3)**. Creek flows will be contained within the storm drain pipe as it travels through or around the construction area to a downstream location. Temporary fill used to construct the cofferdams will be kept to the minimum footprint necessary. Upon completion of construction, all temporary fills associated with the temporary diversion, including sandbags, sheet metal piling, and/or rock will be removed and the area restored to pre-construction conditions.

Construction of the project will require two years to install all of the steel piles, complete the deck and track work, and complete the signal work. For the period between October 15, 2014 and June 15, 2015, the channel will be realigned, all construction equipment will be removed from the creek, and the temporary creek diversion will be removed to allow fish to migrate through the work area. During this period no work will occur within the creek. This will also allow for greater creek flow during the period when peak flows tend to occur.

Work within the creek will include construction of the new bridge and associated substructure, rock slope protection, and removal of the existing bridge. For construction of the bridge and associated substructure, temporary access ramps will be graded to allow equipment access to the creek bottom. One ramp is proposed to be located on the southeast side of the bridge and one on the northwest side. Temporary fill will most likely be placed within the creek to construct the temporary ramps. Shoring and/or temporary retaining walls may be required to stabilize slopes for the approaches of the access roads. After the ramps are no longer needed, the impacted areas will be graded and restored to pre-construction conditions.

Construction equipment will likely include excavators, bull dozers, backhoe loaders, drills, cranes, concrete mixers, and pile driving equipment. Additional equipment may include water trucks and specialized track equipment to be staged and operated on the tracks.

Table 2-1 Construction Stage Work Elements

Construction Stage	Time period for Work	Construction Work Elements
1 – Initial out-of-creek construction	Project Start to June 15 (two to six months)	o Relocate fence by staging area o Relocate overhead and underground utilities as required o Construct north end of tail track up to bridge approach area o Install shoring and grade temporary access ramp/pathways o Construct southwest wingwall for abutment 4
2 - Season 1 in-creek construction	June 16 to October 14	o Temporarily realign channel flow o Add tie-backs and shoring as needed o Grade temporary access pathways into creek area o Construct temporary creek diversion, new sanitary sewer line under the creek, and piers 2 and 3 for new tail track bridge o Install precast abutments and southwest wingwall caps and remove tie-backs o Adjust shoring and remove access ramps o Restore channel flow
3 - Winter out-of-creek construction	October 15 to June 15	o Construct tail track bridge superstructure o Install tail track over new track bridge o Install new fiber optic and other electrical associated with new bridge o Cut in tail track at ends on train-free weekends and begin operations
4 - Season 2 in-creek construction	June 16 to October 14	o Remove tie-backs under MT2 track and add tie-backs and shoring for MT1 o Grade temporary access pathways into creek area o Construct temporary creek diversion o Cut timber deck and remove existing MT2 section of bridge superstructure, piers, and abutments o Construct piers, abutments, and superstructure for new MT2 bridge o Construct MT1 shoofly on approaches and across MT2 bridge o Remove existing MT1 section of bridge superstructure, piers, and abutments o Construct piers and abutments for new MT1 bridge o Grade ultimate creek channel, regrade upstream channel embankment, and place riprap o Remove access pathways from creek area and regrade downstream channel embankments o Restore channel flow
5 - Finish out-of-creek construction	October 15 to project completion	o Construct superstructure for new MT1 bridge o Construct new MT1 track on new bridge o Remove remaining access pathway segments o Remove temporary MT1 shoofly and return service to MT1 mainline track o Remove temporary tail track connection and return service to MT2 mainline track

Figure 2-2A Construction Staging Plan – Initial Out-of-Creek Construction

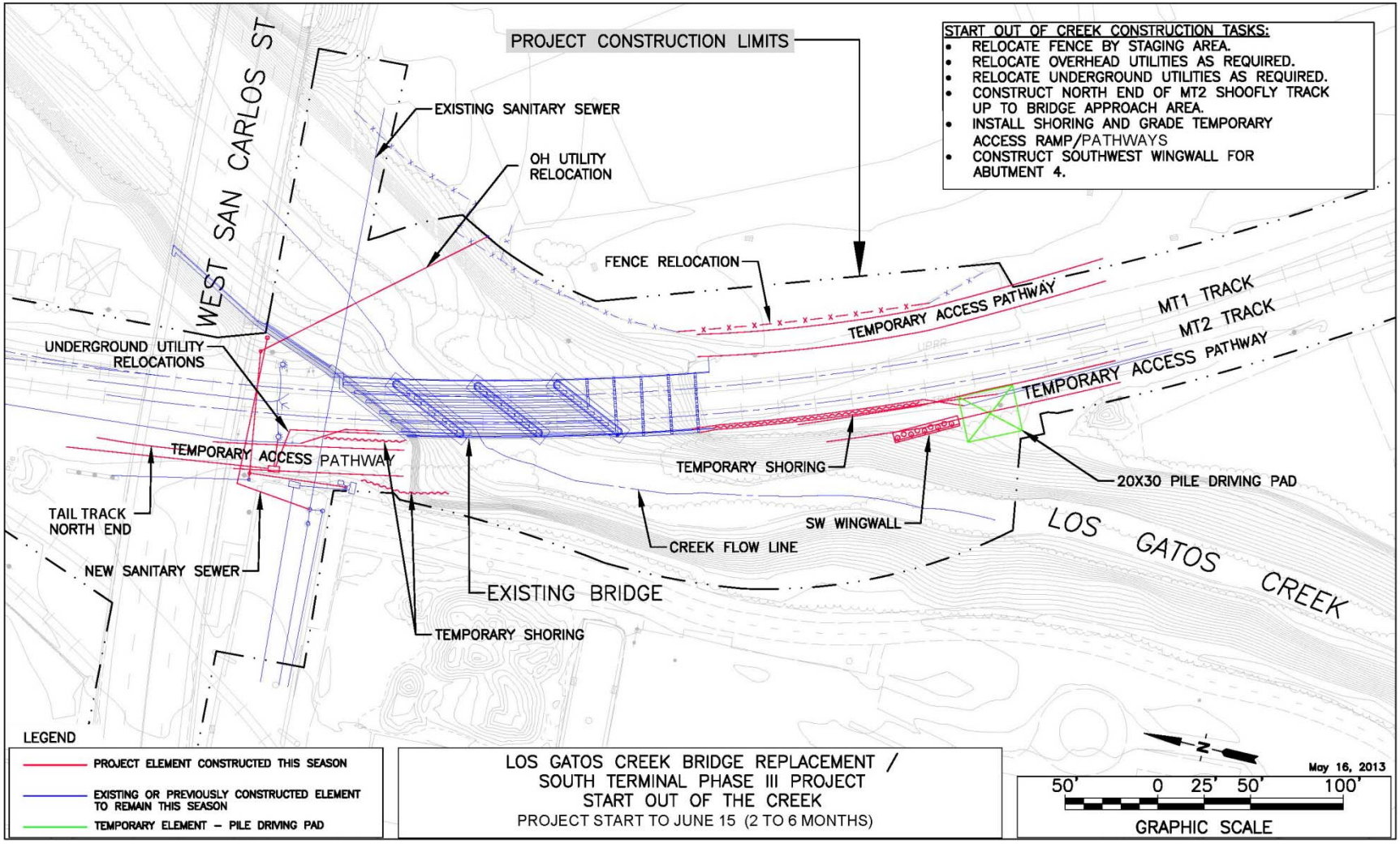


Figure 2-2B Construction Staging Plan – Season 1 In-Creek Construction

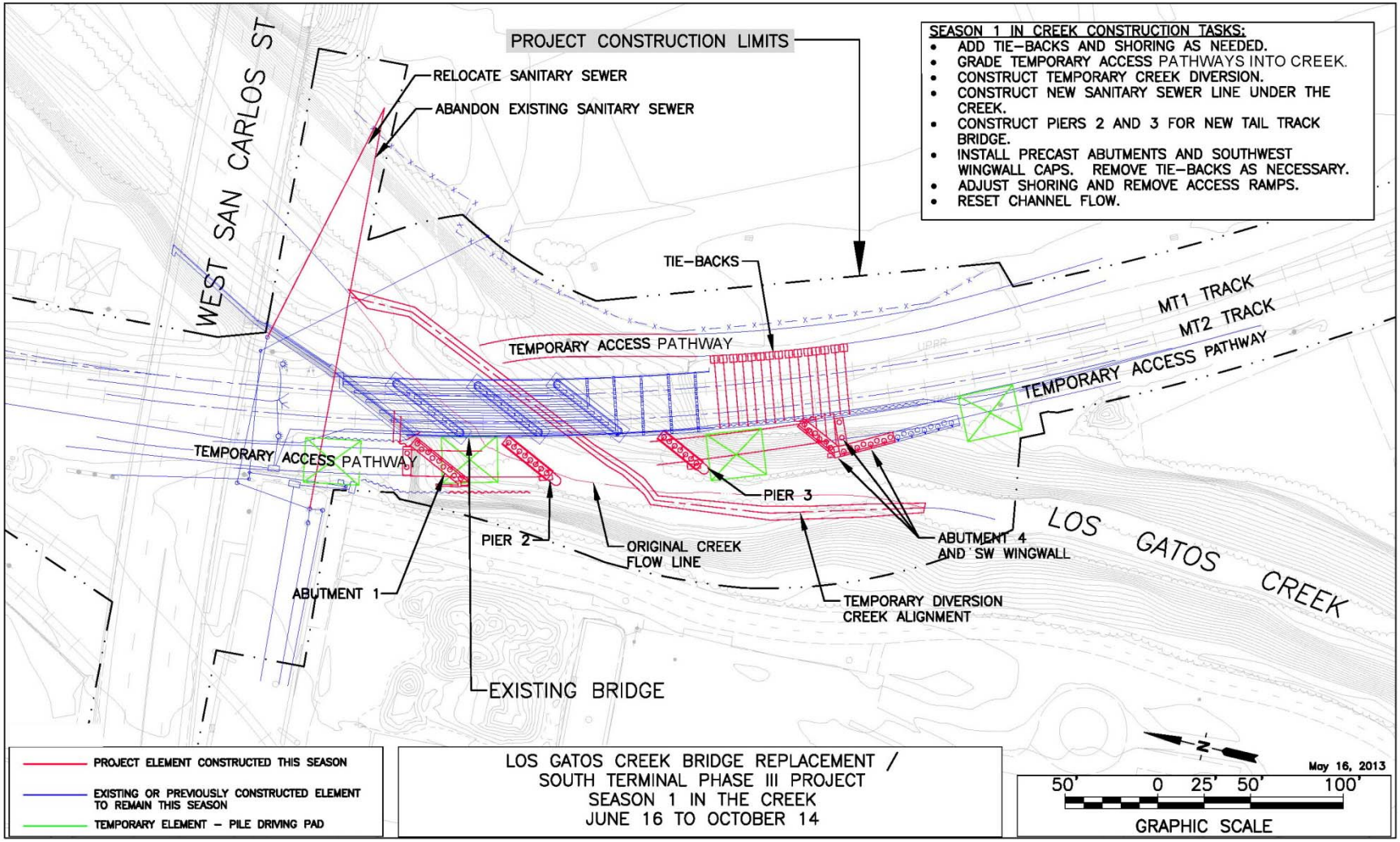


Figure 2-2C Construction Staging Plan – Winter Out-of-Creek Construction

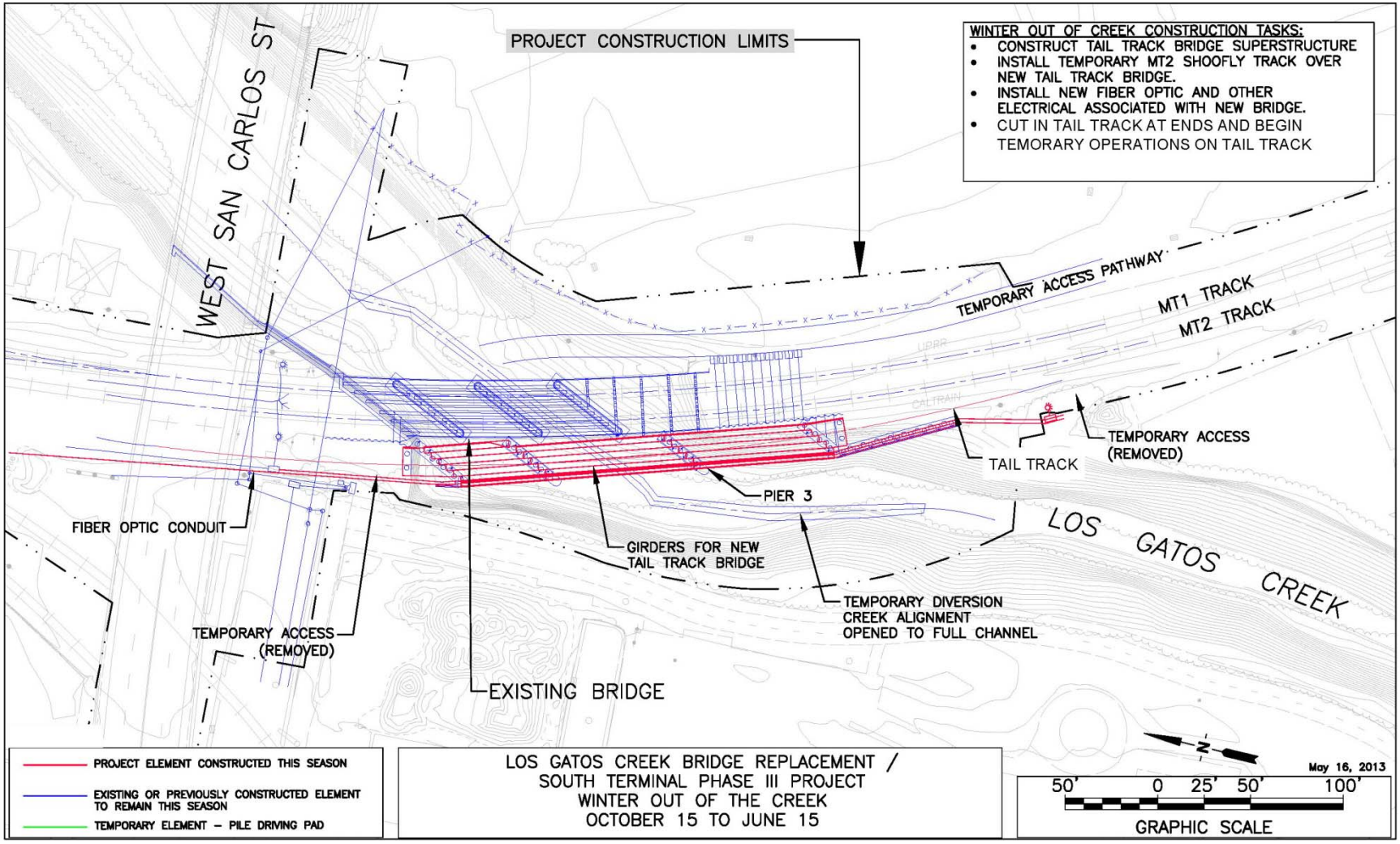


Figure 2-2D Construction Staging Plan – Season 2 In-Creek Construction Part 1

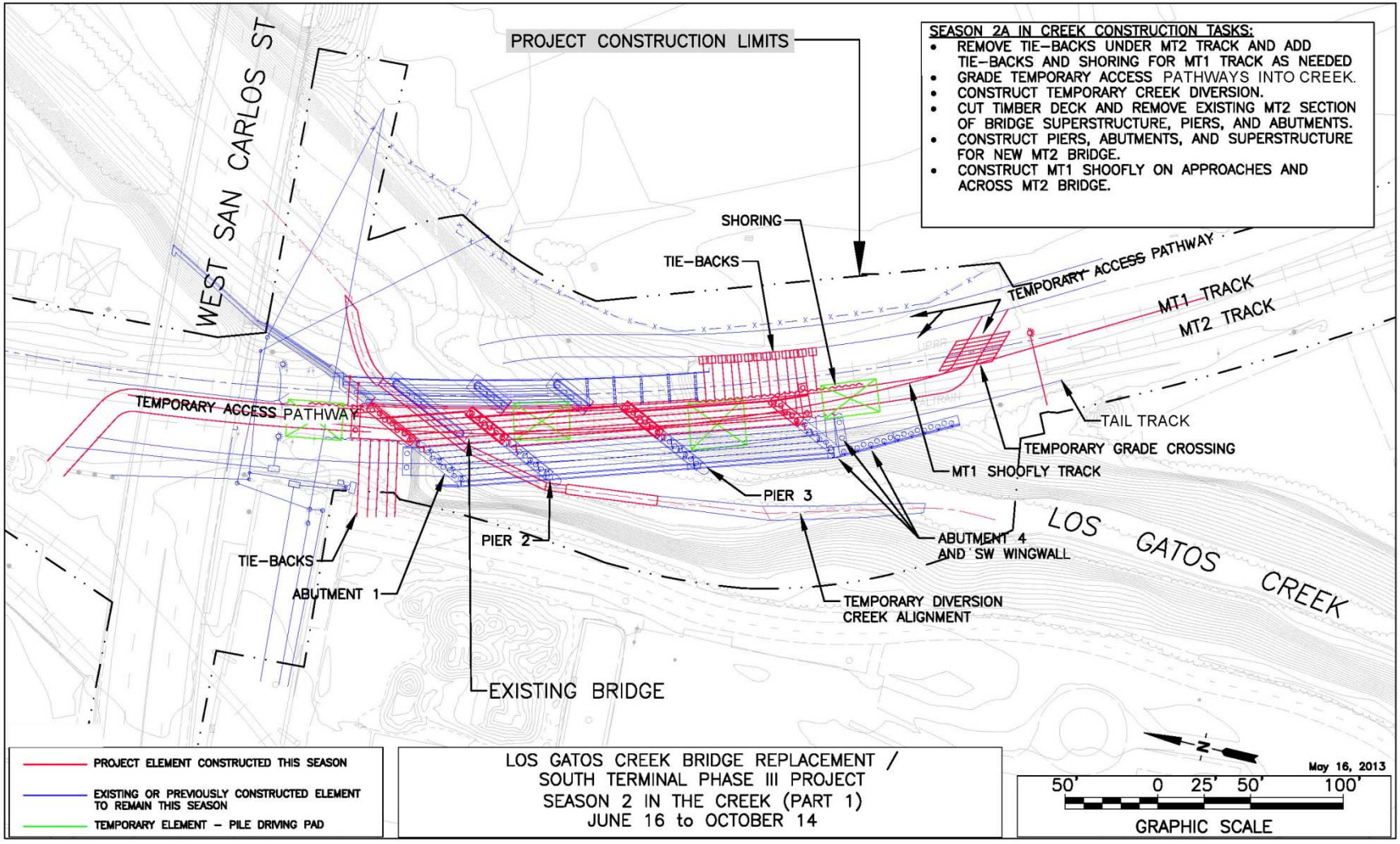


Figure 2-2E Construction Staging Plan – Season 2 In-Creek Construction Part 2

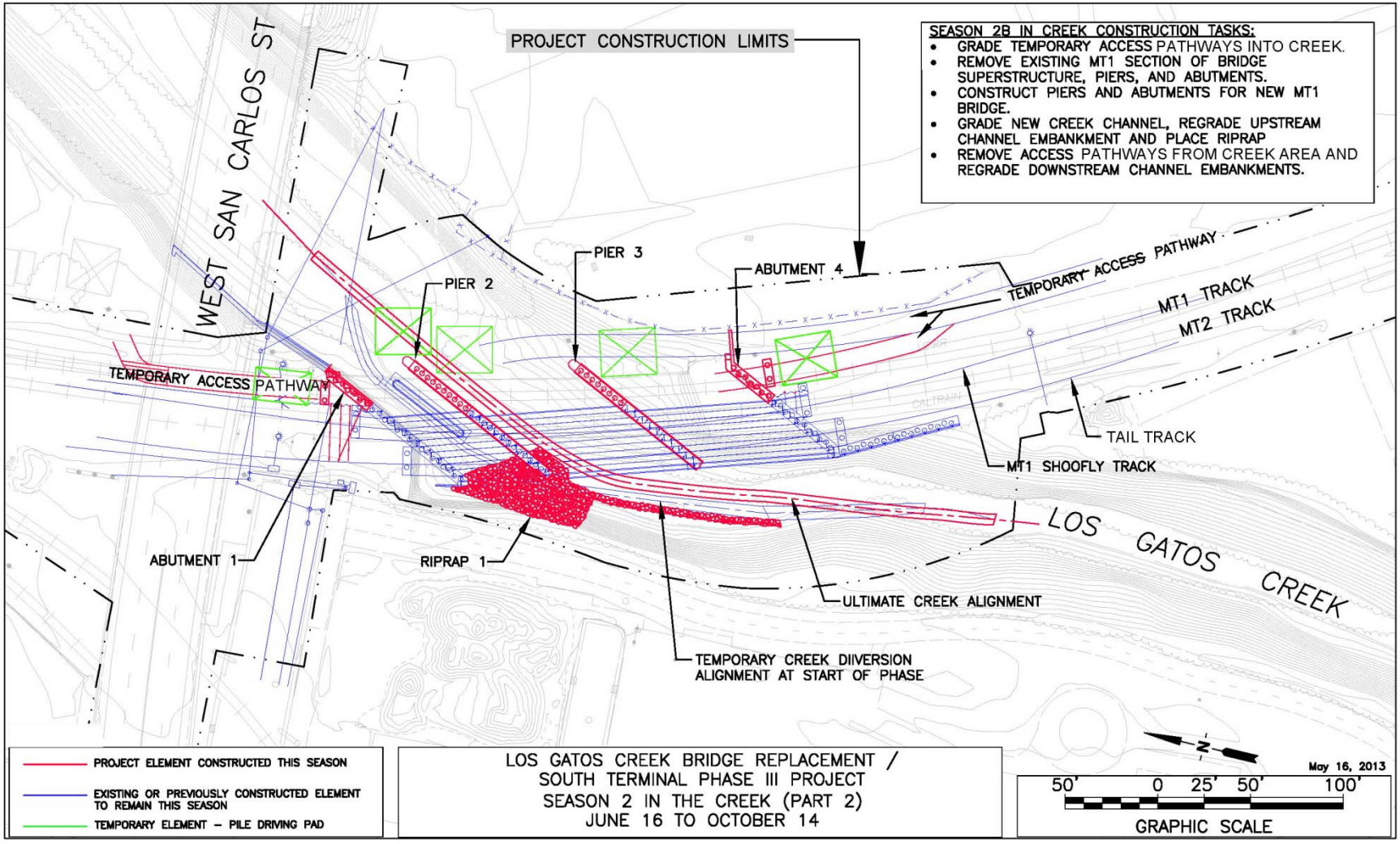


Figure 2-2F Construction Staging Plan – Finish Out-of-Creek Construction

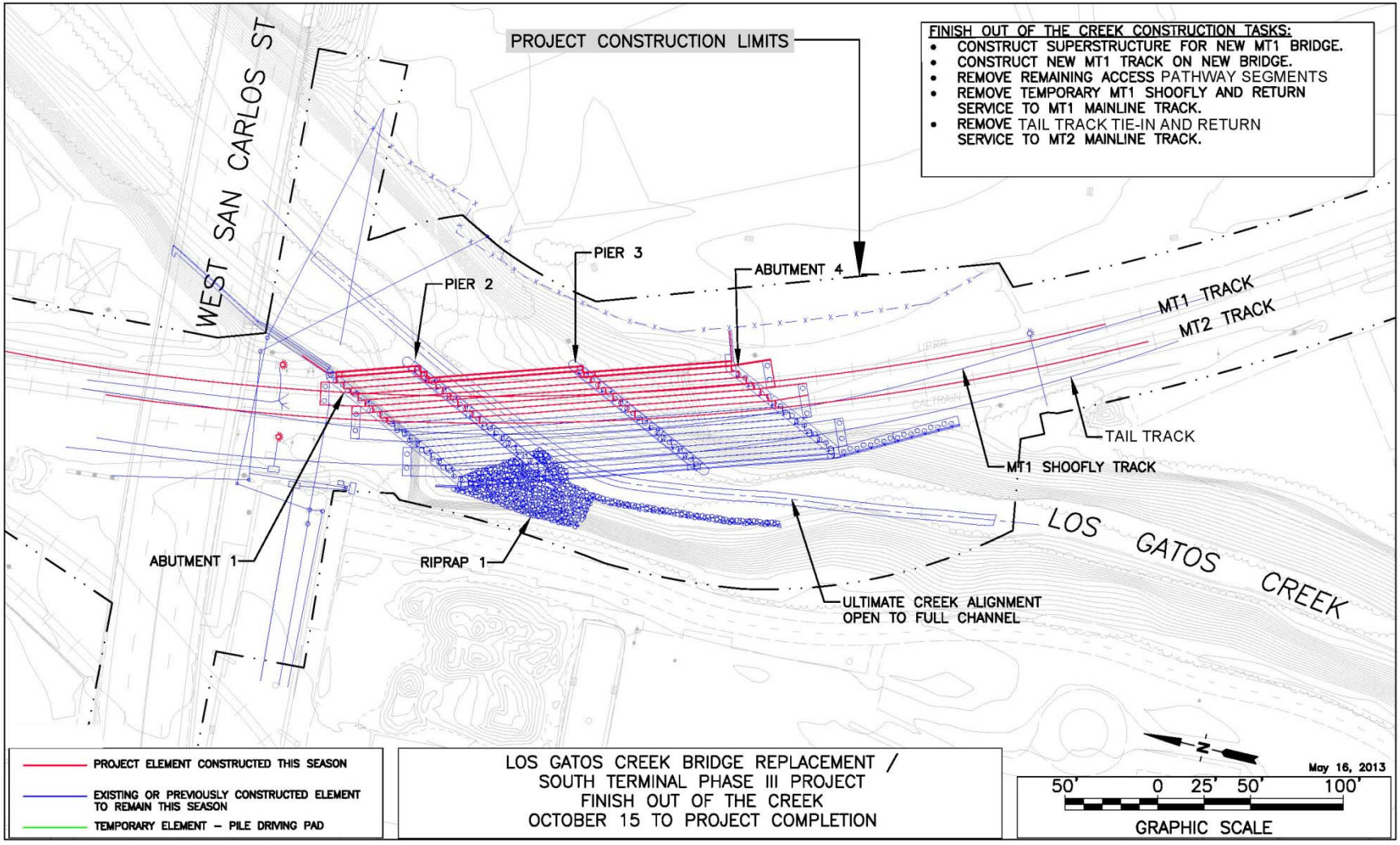
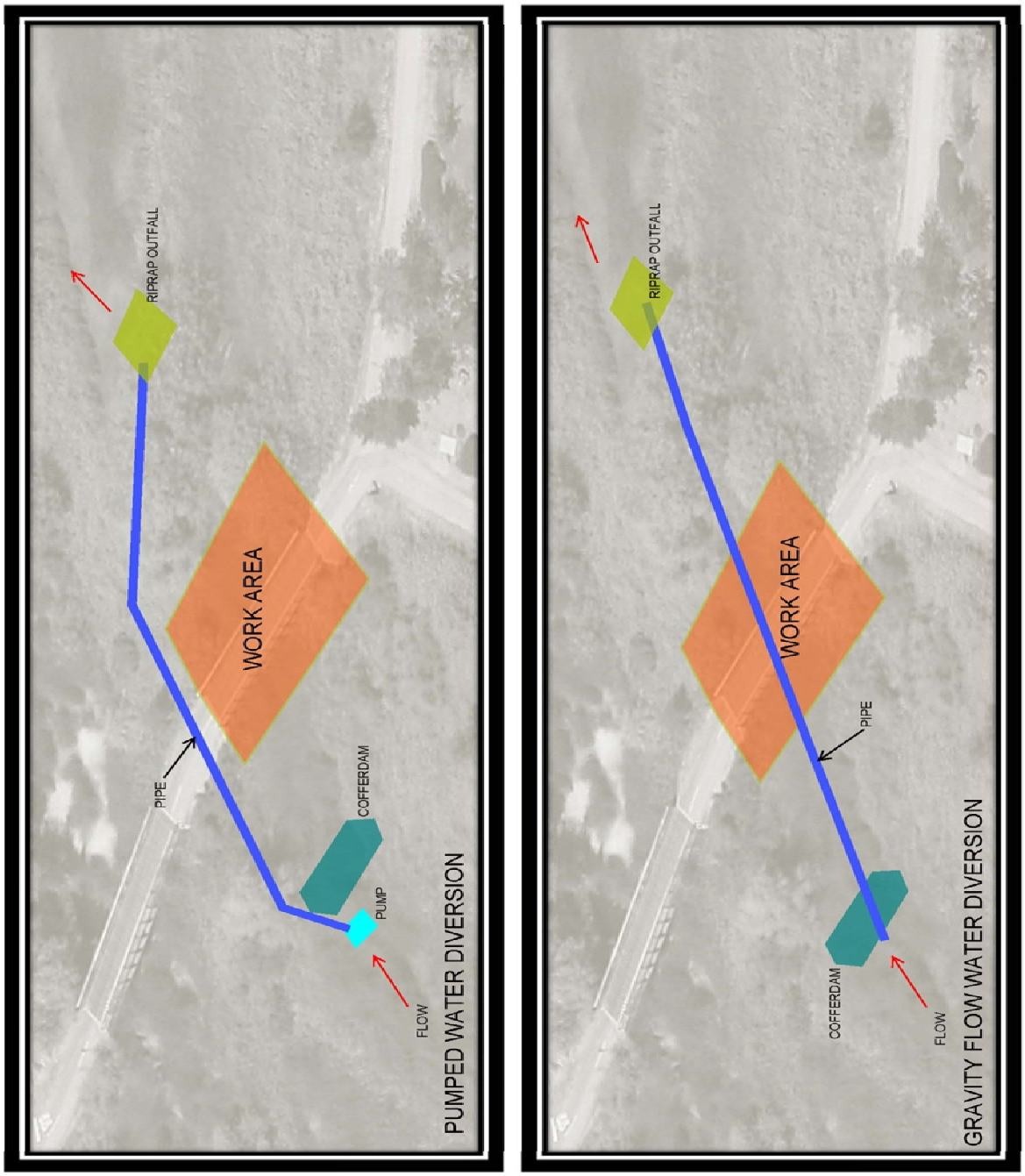


Figure 2-3 Water Diversion



Construction of the bridge will require the placement of concrete and earthen fill below the ordinary high water mark of the stream. This work may require permit approvals from the U.S. Army Corps of Engineers (USACE), the San Francisco Bay Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW). Grading will be required within the creek for the placement of temporary access ramps and to expand the creek immediately upstream and downstream of the new bridge. Additionally, concrete will be poured within the existing channel to support the bridge piers. Any material removed from the channel bottom will be replaced with suitable clean and washed gravel to replace the affected substrate.

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3.0 Existing Environment

This section describes the existing surface and groundwater resources and the associated regulatory framework for implementation of the proposed project.

3.1 Environmental Setting

The environmental setting of the proposed project area is discussed below.

3.1.1 Geology and Soils

The Los Gatos Creek Bridge site is situated in northern Santa Clara County in Santa Clara Valley south of San Francisco Bay. The site is located within the Coast Ranges geomorphic province. Northwest trending mountain ranges and intervening valleys characterize the province. Santa Clara Valley is underlain at depth by bedrock of the Mesozoic and Early Tertiary Franciscan Assemblage, consisting of a complex of sedimentary, igneous, and metamorphic rocks mixed together in a subduction zone and uplifted to their present positions. Overlying the Franciscan Assemblage are sedimentary and volcanic deposits of Tertiary age and surficial deposits including alluvium, Bay Mud, and man-placed fill. The northern Santa Clara Valley is predominately sands and gravels (alluvium) deposited from creeks, streams and rivers during relatively low sea levels interbedded with silts and clays (bay mud) deposited during high sea levels (Weese 2001 *as cited in* MACTEC 2010).

The project area is characterized by the potential for high levels of seismic activity. This is due to the proximity of the San Andreas Fault System of which several faults are in the vicinity of the project site. Active faults include the San Andreas, San Gregorio, and Monte Vista-Shannon Faults to the southwest, and the Hayward and Calaveras Faults to the northeast of the project sites. All of these faults are capable of generating severe ground shaking in the event of a strong earthquake, which is likely during the lifetime of the bridge (MACTEC 2010).

Geologic units in the vicinity of the project sites are alluvial fan, flood plain, flood basin, natural levee, and stream channel deposits, all of Holocene age. The Los Gatos Creek site is located on Holocene alluvial fan deposits and bridges Holocene stream channel deposits. The ground surface in this area has subsided 6 to 8 feet over the past century due to ground water extraction in the Santa Clara Valley (Galloway et al. 2000).

MACTEC (2010) found that the subsurface conditions at the bridge abutments consist of a 2.5 to 7 foot deep layer of fill over clayey sands, sandy clays, and poorly graded sand and gravels to the depths explored (86 feet maximum). The sands and gravels are generally medium dense to very dense in consistency. Clays are generally medium stiff to very stiff. The soils around the creek channel are predominantly sandy clay and clayey or silty sands. At the riverbed, the surficial soils have considerably less fines and are predominantly sands and gravels.

In 2008, ERM-West, Inc. performed a limited soil sampling investigation at the project site. Soil samples were collected at three locations in the creek bed and banks, and at six locations adjacent to and along the right-of-way to the north and south of the bridge. Samples were collected from 0 to 6 inches in depth.

The results were compared to the San Francisco Bay RWQCB's Environmental Screening Levels (ESLs)[1] for commercial and industrial use (ERM 2008) and are summarized below:

- No volatile organic compounds (VOCs), Polychlorinated Biphenyls (PCBs), or organochlorine pesticides were detected;
- The only detection of a semi-volatile compound was bis (2-ethylhexyl)phthalate at 1 microgram per kilogram (µg/kg) in one sample;
- Total petroleum hydrocarbons (TPH) as diesel was non-detect in all samples;
- TPH as gasoline was below the environmental screening limit (ESL) in all samples;
- TPH as motor oil exceeded the ESL in seven of the nine samples, with LG-7 and LG-8 greater than 1,000 milligrams per kilogram (mg/kg);
- The arsenic ESL was also exceeded in five of the nine samples; however the detected levels are considered within the background levels for the San Francisco Bay Area;
- The chromium ESL was exceeded in only one sample; however the detected level is considered within the background range for the San Francisco Bay Area; and
- Lead was below the ESL in all samples.

3.1.2 Creek Overview and History

The project area is located within the Guadalupe River Hydrologic Unit Code (HUC) 1805000303, Hydrologic Sub-area 205.40. The Calwater Watershed ID is 20540050.

Los Gatos Creek starts at Loma Prieta, south of San Jose, approximately 10 miles south of the junction of Highways 85 and 87. From a height near 3,500 feet, Los Gatos Creek travels northwesterly for approximately 4 miles through Lake Elsman, then another 4 miles to join with Hendrys Creek and Moody Gulch at Lexington Reservoir. Los Gatos Creek then heads northeasterly for approximately 3.5 miles, following Highway 17, to Vasona Reservoir. The creek continues traveling northeasterly along Highway 17 for about 4 miles, past Los Gatos Creek Park, then crosses South Bacon Avenue where it enters San Jose (Schaaf & Wheeler 2009). Los Gatos Creek can be divided into two main sections; a headwater portion and a lower portion. Within the headwater portion, the creek occasionally flows over bedrock through the Santa Cruz Mountains, tightly constrained in a narrow valley. The creek flows northwest through the San Andreas fault zone, until its course turns north and enters Lexington Reservoir. The lower portion of Los Gatos Creek flows north-northeast across the Santa Clara Valley over alluvial sediments on its way to joining the Guadalupe River and finally flowing out over bay muds to the southern end of San Francisco Bay (Balance Hydrologics 2009).

This lower gradient portion of Los Gatos Creek is 12.8 miles long and flows through the urban and suburban communities of Los Gatos, Campbell, and San Jose. Much of this lower watershed

[1] ESLs are intended to help expedite the identification of potential environmental concerns at sites where contamination has been identified, and expedite the evaluation regarding the need for possible cleanup of these properties. Risks to human health and the environment can be considered to be insignificant at sites where concentrations of chemicals of concern do not exceed the respective ESLs. The presence of chemicals at concentrations above the ESLs does not necessarily indicate that a significant risk exists at the site. It does generally indicate that additional investigation and evaluation of potential environmental concerns is warranted.

area is residential or commercial development with the percentage of impervious area (e.g.; paved areas) greater than 40 percent for much of the watershed (Santa Clara Valley Water District (SCVWD) 2006 *as cited in* Balance Hydrologics 2009). Channel modification is extensive and pervasive, with 31 percent of the creek below Lenihan Dam having been hardened (SCVWD 2006 *as cited in* Balance Hydrologics 2009). Prior to western settlement in the early 19th century, Los Gatos Creek had a braided plan form and a wide floodplain for the first several miles after leaving its mountainous canyon. As the creek became less steep, the pattern of flow transitioned to a more broadly meandering plan form before joining the Guadalupe River about one-quarter mile downstream of the rail bridge in what was then a hydrologically diffuse willow swamp. Channel straightening, incision and other types of modification had begun by the late 19th century as the area urbanized, with the fastest growth during the 1960s, but continuing to increase through the 1990s (SCVWD 2006 *as cited in* Balance Hydrologics 2009).

Some of the significant history of the manipulation of the creek includes substantial gravel mining in 1877 (SCVWD 2006 *as cited in* Balance Hydrologics 2009). By 1888, the lowest thousand feet of Los Gatos Creek (which corresponds to the project area) had been straightened and its width had been doubled to provide flood protection; the channel dimensions were reported as 66 feet average width and 13.5 feet of depth (SCVWD 2006 *as cited in* Balance Hydrologics 2009). The current channel is approximately 20 feet deep, so this suggests incision since 1888, in addition to possible incision from gravel mining prior to 1888 (Balance Hydrologics 2009).

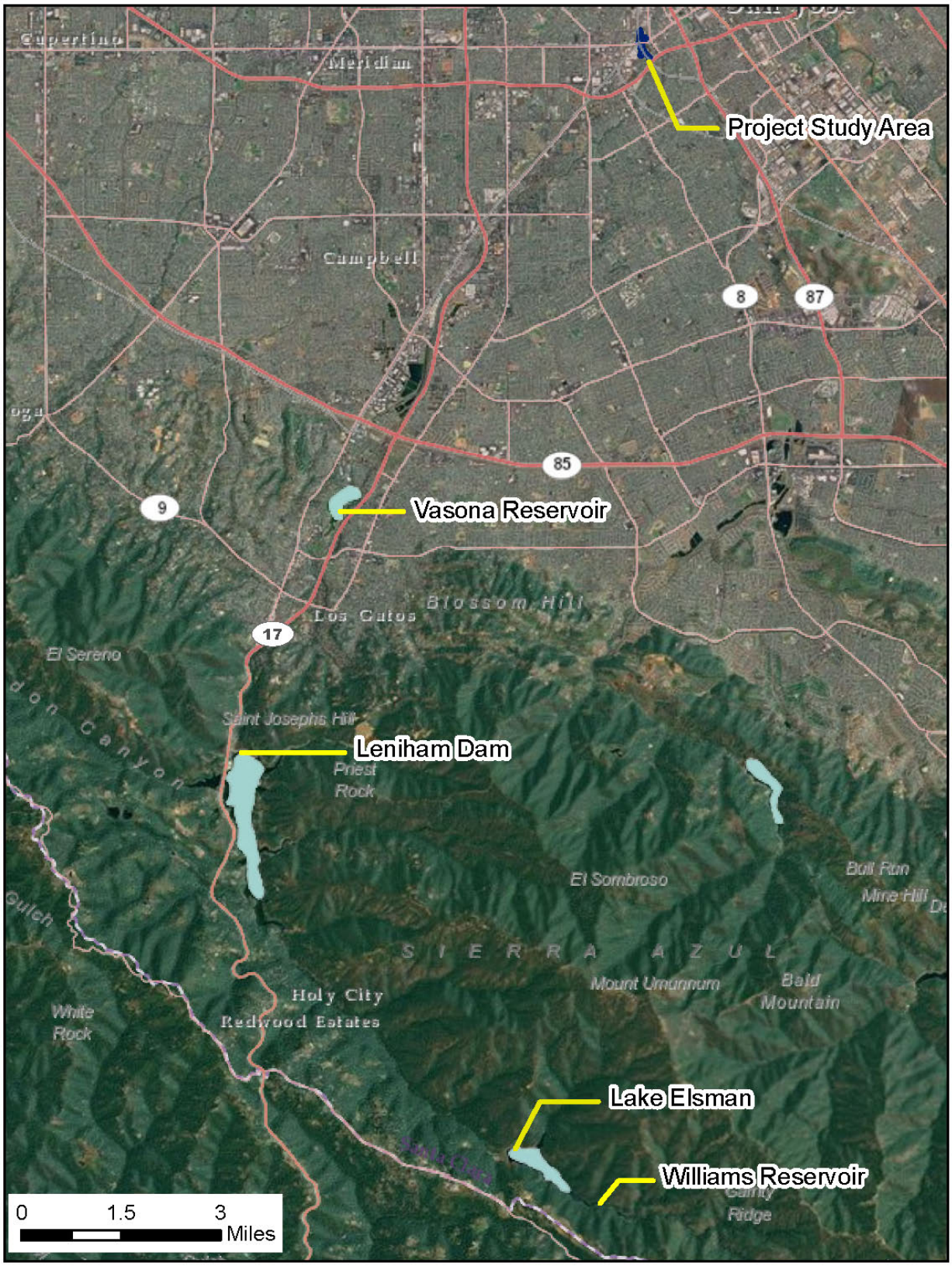
There is an old channel of Los Gatos Creek between Vasona Reservoir and the project site, just east of the current channel. This channel is mentioned in historic records (SCVWD 2006 *as cited in* Balance Hydrologics 2009) and is still detectable in aerial photographs despite residential development. The street that runs along this former creek bed is named Dry Creek Road; relict meander geometry can be observed in the curvature of this street.

3.1.3 Hydrology and Water Quality

Flow regulation by dams plays a significant part in the hydrology of Los Gatos Creek. There are three major dams within the Guadalupe watershed (see **Figure 3-1**). The largest of these is Lenihan Dam (formerly known as Lexington Dam), which impounds up to 20,000 acre-feet in Lexington Reservoir where Los Gatos Creek exits the Santa Cruz Mountains 20 miles upstream of the project site (Balance Hydrologics 2009). Upstream of Lexington Reservoir is Lake Elsman, owned by the San Jose Water Works company, with an original capacity of 6,200 acre-feet, now largely sedimented.[2] Immediately upstream of Lake Elsman, and also owned by the San Jose Water Works company, is Williams Reservoir, with an original capacity of about 160 acre feet, now largely sedimented (Ritter and Brown 1971 *as cited in* Balance Hydrologics 2009). Vasona Reservoir, 3.5 miles downstream from Lenihan Dam, is a 400-acre-foot forebay regulating managed recharged through the bed of Los Gatos Creek. Low flows downstream of the recharge facilities are strongly affected by operations at Vasona Reservoir (Balance Hydrologics 2009).

[2] Part of the runoff is diverted from Lake Elsman by the San Jose Water Works to their Montevina Filter Plant. Maximum production of the plant was 16,000 acre feet per year in 1988 (Iwatsubo et al. 1988 *as cited in* Balance Hydrologics), equivalent to and average diversion of 22 cfs when operating at the rated maximum.

Figure 3-1 Guadalupe Watershed Dams



The hydrology of the creek is greatly affected by the reservoirs upstream of the project site. In general, the dams have reduced high flows (greater than 65 cfs) and increased low flows (less than 65 cfs). Los Gatos Creek at the rail bridge is now classified as a perennial stream, but this appears to be largely due to reservoir releases over the dry season; prior to 1995, this section of Los Gatos Creek was often dry (Balance Hydrologics 2009).

Recent late-summer base flows typically range between 1.5 and 3 cfs; prior to 1996 summer base flows were typically either very low or dry, although peak flows from the estimated two-year recurrence storm was approximately 1,300 cfs at the bridge (Balance Hydrologics 2009). The watershed area upstream of the bridge is 50.8 square miles, 13.9 square miles of which is downstream from Lexington Reservoir. Los Gatos Creek channel width varies from about 60 to 100 feet near the bridge and its bottom elevation is about 80 feet.

The most relevant stream flow information for the project site is the SCVWD stream gauge on Los Gatos Creek at Lincoln Avenue (approximately 0.85 miles upstream from the project site). **Table 3-1** and **Figure 3-2** show peak flow in Los Gatos Creek at Lincoln Avenue for the period of 1995 to 2012. A change in baseflow regime occurred during 1995-97 period, when this creek reach became perennial (baseflows of 1.5 to 3 cfs) rather than intermittent (dry during the summer). Peak flows are influenced by storm events, reservoir releases and urban-runoff contributions. The peak flows in 2003 and 2006 were the result of large storms on lower Los Gatos Creek.

Water temperature in Los Gatos Creek is influenced by hydrology and water quality. The SCVWD has been collecting summer water temperature from Los Gatos Creek near Santa Clara Street (downstream of the project site). **Table 3-2** and **Figure 3-3** show average summer water temperature data for the years 2009 to 2012.

Table 3-1 Peak Flow in Los Gatos Creek at Lincoln Avenue (1995 to 2012)

Water Year	1995	1996	1997	1998	1999	2000	2001	2002	2003
Peak Flow (cfs)	4,980	2,360	2,060	2,160	439	881	424	752	1,920
Water Year	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Peak Flow (cfs)	927	381	1,700	140	779	315	1,130	1,220	251

Figure 3-2 Peak Flow in Los Gatos Creek, 1995-2012

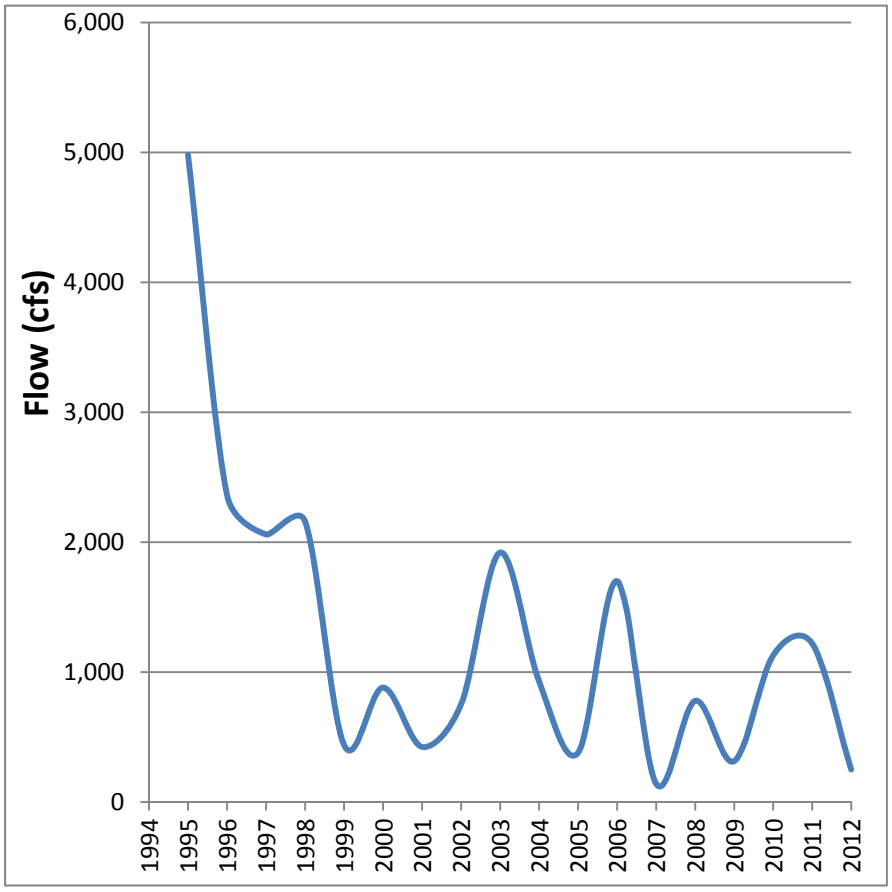
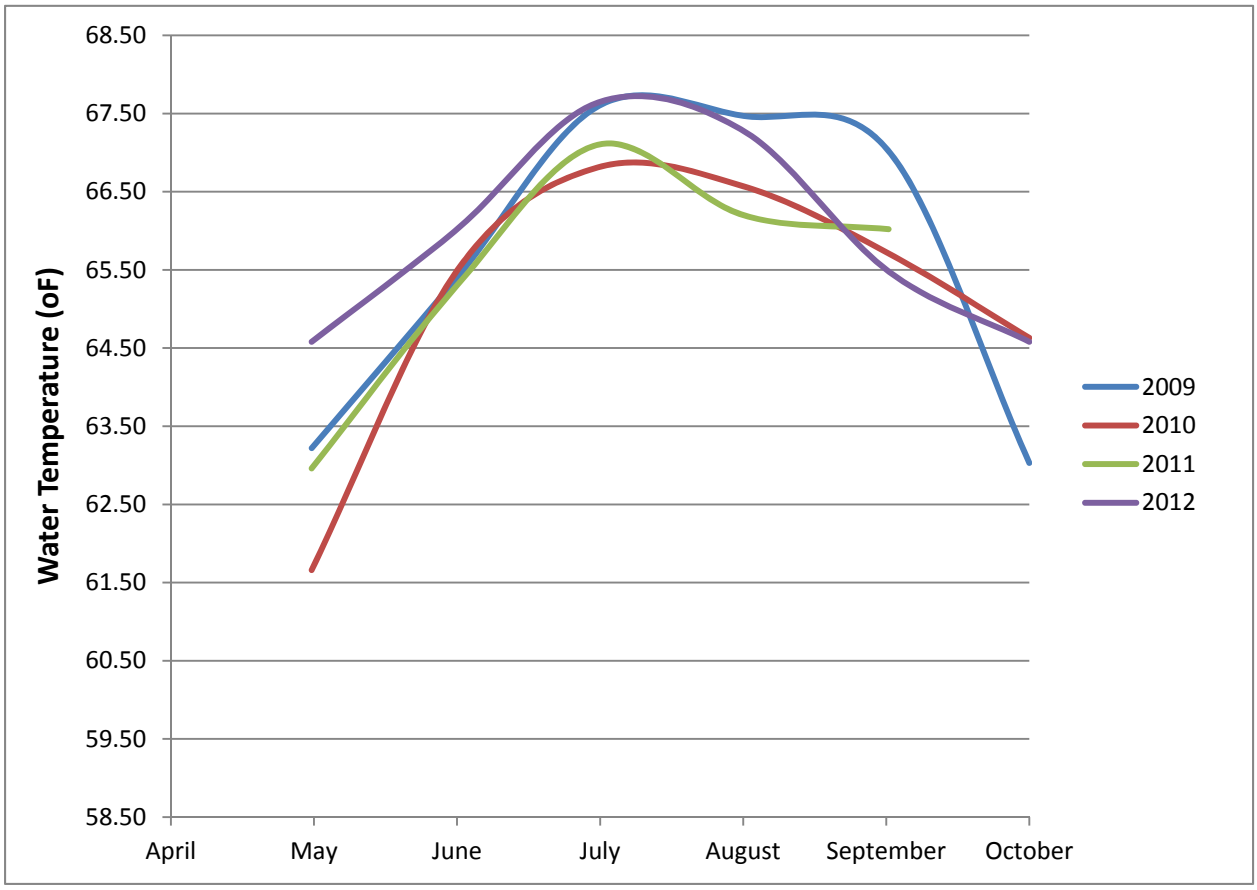


Table 3-2 Average Water Temperature (^{o}F) in Los Gatos Creek near Santa Clara Street (2009 and 2012)

Year	May	June	July	August	September	October
2009	63.22	65.4	67.59	67.47	67.02	63.03
2010	61.66	65.49	66.81	66.57	65.71	64.63
2011	62.96	65.3	67.10	66.2	66.02	
2012	64.58	66.02	67.64	67.28	65.48	64.58

Figure 3-3 Average Water Temperature in Los Gatos Creek, 2009-2012

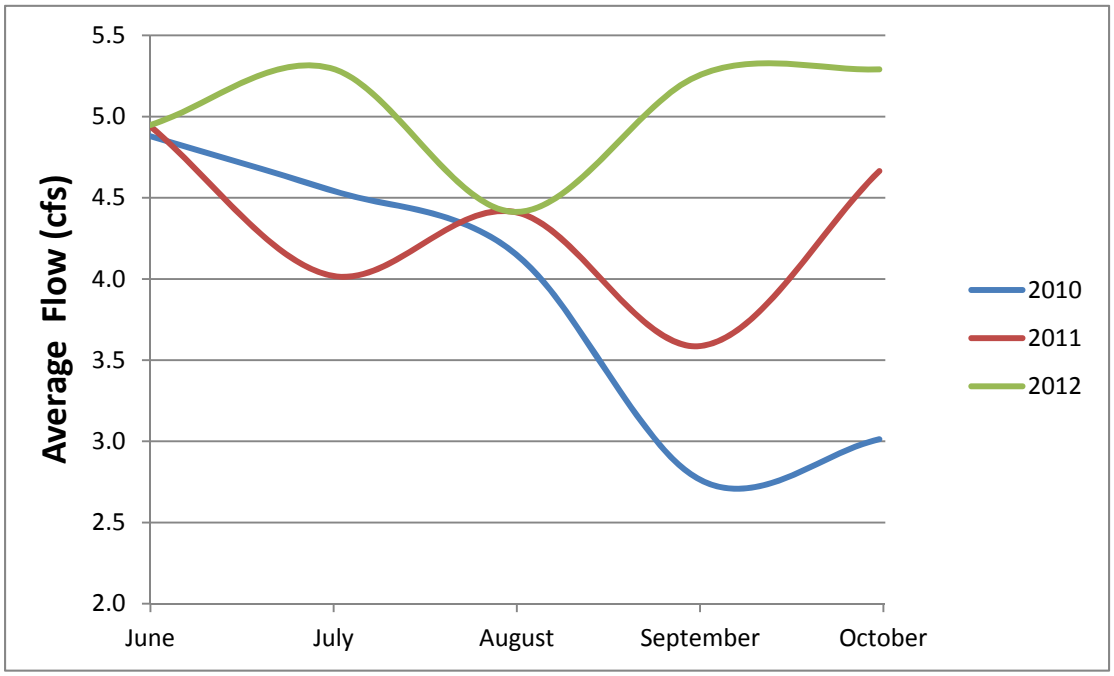


Average flows within Los Gatos Creek for the period where in-stream construction will occur were obtained from the Santa Clara Valley Water District's online stream gauge information page at http://alert.valleywater.org/sgi.php. Average flows are near 5 cfs for these months, which are manageable for construction of the stream diversion pipe. **Table 3-3** and **Figure 3-4** show the average flows for the months from June to October.

Table 3-3 Average Water Flows (cfs) Los Gatos Creek near Santa Clara Street (2010 and 2012)

Year	June	July	August	September	October
2010	4.9	4.5	4.2	2.8	3.0
2011	4.9	4.0	4.4	3.6	4.4
2012	4.9	5.3	4.4	5.3	5.3

Figure 3-4 Average Flows (cfs) in Los Gatos Creek, 2010-2012



A 19-mile segment of Los Gatos Creek is listed as impaired and having an approved total maximum daily load (TMDL) for diazinon (USEPA 2007). The sources of the diazinon in the project area are urban runoff and storm sewers. Diazinon, an organophosphorus insecticide, is readily transported as a free substance dissolved in water, and does not readily adsorb to soil particles. The half-life of diazinon ranges from approximately 70 hours to 12 weeks in surface water and 10 to 200 days in soil (ASTR 2006).

GANDA (2008) found trash and homeless camp debris along Los Gatos Creek within the project site. Previously the Guadalupe-Coyote Resource Conservation District (2005) petitioned the City of San Jose, SCVWD, and California Department of Fish and Wildlife (CDFW) to remove and prevent the continuous presence of homeless encampments along creeks in San Jose that results in substantial pollution of the creeks. The homeless discard shopping carts, furniture, hypodermic needles, car parts, clothing, personal hygiene products and other wastes directly into the creeks. They also use the creeks as their toilets and showers. On October 28, 2010, HDR staff noted that there were still homeless camped along Los Gatos Creek within the project site.

Beneficial Uses

Beneficial uses of water are defined in the San Francisco Bay Basin Plan as those uses necessary for the survival or well-being of humans, plants, and wildlife (SFBRWQCB 2007). The beneficial uses listed for Los Gatos Creek are Municipal and Domestic Supply (MUN), Freshwater Replenishment (FRSH), Groundwater Recharge (GWR), Cold Freshwater Habitat (COLD), Preservation of Rare and Endangered Species (RARE), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), and Water Contact Recreation (REC-1). Potential beneficial uses identified for Los Gatos Creek include Fish Migration (MIGR), Fish Spawning (SPWN), and Noncontact Water Recreation (REC-2).

3.1.5 Groundwater

The project area is within the Santa Clara Valley Groundwater Basin, Santa Clara Subbasin (DWR 2004). The Santa Clara Subbasin occupies a structural trough parallel to the northwest trending Coast Ranges. The Diablo Range bounds the basin on the west and the Santa Cruz Mountains form the basin boundary on the east. It extends from the northern border of Santa Clara County to the groundwater divide near the town of Morgan Hill. The dominant geohydrologic feature is a large inland valley (Fio and Leighton 1995 as cited in DWR 2004). The valley is drained to the north by tributaries, including Coyote Creek, the Guadalupe River, and Los Gatos Creek, to the San Francisco Bay.

The water bearing formations of the Santa Clara Subbasin include Pliocene to Holocene age continental deposits of unconsolidated to semi-consolidated gravel, sand, silt and clay. Two members form this group, the Santa Clara Formation of Plio-Pleistocene age and the younger alluvium of Pleistocene to Holocene age (DWR 1975).

The Santa Clara Formation rests uncomfortably on impermeable rocks that mark the bottom of the groundwater subbasin. The formation is exposed only on the west and east sides of the Santa Clara Valley. Where exposed, it is composed of poorly sorted deposits ranging in grain size from boulders to silt. Well logs indicate that permeability increases from west to east and that in the central part of the valley permeability and grain size decrease with depth (DWR 1975).

The Pleistocene to Holocene alluvium is the most important water bearing unit in the Santa Clara Subbasin. The permeability of the valley alluvium is generally high and principally all large production wells derive their water from it (DWR 1975). Comprised generally of unconsolidated gravel, sand, silt, and clay it is deposited principally as series of convergent alluvial fans. It becomes progressively finer-grained at the central portions of the valley. A confined zone is created in the northern portion of the subbasin where overlain by a clay layer of low permeability. The southern portion of the subbasin is generally unconfined and contains no thick clay layers (SCVWD 2001).

Historically, since the early 1900s through the mid-1960s, water level declines from groundwater pumpage have induced subsidence in the Santa Clara Subbasin and caused degradation of the aquifer adjacent to the bay from saltwater intrusion. Prior to importation of surface water via the Hetch Hetchy Aqueduct, the South Bay Aqueduct, and the introduction of an artificial recharge program, water levels declined more than 200 feet in the Santa Clara Valley (Poland and Ireland 1988 as cited in DWR 2004). Groundwater levels have generally increased since 1965 as a result of increases in recharge and decreases in pumpage (Fio and Leighton 1995 as cited in DWR 2004).

The groundwater in the major producing aquifers within the basin is generally of a bicarbonate type, with sodium and calcium the principal cations (DWR 1975). Although hard, the water is of good to excellent mineral composition and suitable for most uses. Drinking water standards are met at public supply wells without the use of treatment methods (SCVWD 2001 as cited in DWR 2004).

The historical high ground water in the area has been also reported to be about 25 feet below the ground surface (California Geologic Survey 2002).

3.1.6 Flooding

The Federal Emergency Management Agency (FEMA) has mapped flood hazard areas throughout San Jose and has designated the areas on Flood Insurance Rate Maps (FIRMs). The project site is located on FIRM Map 06085C0234H (**Figure 3-5**).

Figure 3.5 FIRM for the Los Gatos Creek Bridge Replacement Project Site

Los Gatos Creek is designated as flood hazard Zone A, defined as an area inundated by 100-year flooding, for which no base flood elevations have been established. The surrounding area, including the bridge itself, is located in Zone D, defined as an area of undetermined but possible flood hazards. Downstream of the bridge, at the convergence of the Guadalupe River, the area is located in flood hazard Zone X, defined as an area that is determined to be outside the 100-year floodplain, but within the 500-year floodplain.

3.1.7 Stormwater

Storm drainage facilities in the project area are owned and maintained by the City of San Jose. The SCVWD has jurisdiction over Los Gatos Creek. Existing stormwater drainage facilities in the project area include the following pipes that outfall directly to Los Gatos Creek:

- 18-inch outfall to Los Gatos Creek at Auzerais Street from the east
- 33-inch outfall to Los Gatos Creek at West San Carlos Street on the west bank
- 18-inch outfall to Los Gatos Creek at West San Carlos Street on the east bank

The nearest storm drain pump station to the project site is located at Park Avenue at Los Gatos Creek. Discharges from these outfalls are covered under the municipal separate storm sewer systems (MS4) permit (NPDES Permit No. CAS029718) to discharge stormwater to South San Francisco Bay.

With respect to stormwater quality, new developments must also comply with the municipal regional stormwater National Pollutant Discharge Elimination (NPDES) permit (CAS029718) with the San Francisco Bay RWQCB. The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) has published a guide titled, C.3 Stormwater Handbook to assist developers in meeting the requirements of discharges. Additionally, the City of San Jose has ordinances and policies to address the management of urban runoff.

3.1.8 Waters of the United States Including Wetlands

HDR conducted a delineation of wetlands and other waters of the U.S. occurring within the Project study area. Los Gatos Creek is the only Water of the U.S. within the study area. No wetland features were detected within the project area outside of the ordinary high water mark (OHWM) of Los Gatos Creek. **Appendix A** contains the jurisdictional delineation report.

3.1.9 Biological Resources

HDR biologists conducted a biological resources reconnaissance survey of the project site on October 28, 2010. Terrestrial habitat within the project area includes urban/suburban and willow riparian forest and scrub. Urban/suburban areas include railroad tracks and the gravel track ROW, roadways, parking lots, building fronts, the San Jose municipal multi-use trail along the left bank of Los Gatos Creek, and landscaped areas along building fronts. These areas are either barren of vegetation or contain horticultural species in narrow landscape strips such as around buildings and along the multi-use trail. Urban/suburban areas provide little to no habitat value for wildlife.

Willow riparian forest and scrub habitat types occur along the margins of Los Gatos Creek. The dominant tree species occurring within the project area include shining willow (*Salix lasiandra*), red willow (*Salix laevigata*), Fremont cottonwood (*Populus fremontii*), tree of heaven (*Ailanthus*

altissima), black locust (*Robinia psuedoacacia*), box elder (*Acer negundo*), and California black walnut (*Juglans californica* var. *hindsii*). Understory vegetation within this community was dominated by Himalayan blackberry (*Rubus armeniacus*) and California blackberry (*Rubus ursinus*) in patches as well as a variety of non-native grasses and forbs.

HDR biologists observed a variety of non-native vertebrate and invertebrate species in Los Gatos Creek during the reconnaissance survey including mosquitofish (*Gambusia affinis*), crayfish, minnows (Cyprinidae), and sunfish (*Lepomis* sp.). Native fish species known to occur in Los Gatos Creek include Sacramento sucker (*Catostomus occidentalis*), California roach (*Lavinia symmetricus*), prickly sculpin (*Cottus asper*), and Pacific lamprey (*Lampetra tridentate*) (J. Nishijima pers. comm.). The project area also supports introduced species, including largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), goldfish (*Carassius auratus*), carp (*Cyprinus carpio*), mosquitofish brown bullhead (*Ictalurus nebulosus*), and pumpkinseed (*Lepomis gibbosus*) (J. Nishijima pers. comm.).

The following special-status species are known to occur or have the potential to occur within the project area: Central Valley fall-late fall-run Chinook salmon (*Oncorhynchus tshawytscha*), Central California Coast steelhead (*Oncorhynchus mykiss*), western pond turtle (*Actinemys marmorata*), pallid bat (*Antrozous pallidus*), California red-legged frog (*Rana draytonii*), hoary bat (*Lasiurus cinereus*), Cooper's hawk (*Accipiter cooperi*), and other nesting raptors and other migratory birds.

3.2 Regulatory Setting

A variety of federal, state, regional and local agencies have jurisdiction over the proposed project area. Important agencies and statutory authorities relevant to water quality and flooding are outlined below. HDR will coordinate with all appropriate state, federal, and local agencies, as necessary, to ensure that the proposed construction meets the water quality requirements regulated by each of these agencies.

3.2.1 Federal Regulations

Clean Water Act of 1977 (33 USC 1251 et seq.)

The Clean Water Act (CWA) established the basic structure for regulating discharges of pollutants into the waters of the U.S. and gave the U.S. Environmental Protection Agency (USEPA) the authority to implement pollution control programs, such as setting wastewater standards for industry. The CWA sets water quality standards for all contaminants in surface waters. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The major sections of the CWA that apply to the activities potentially occurring as part of the proposed project include dredging and discharge activities (Sections 401 and 404) and the NPDES (Section 402).

Section 303(d). In June 2007, USEPA Region IX issued the final 2006 CWA Section 303(d) list of water quality limited ("impaired") segments requiring TMDLs (USEPA 2007). Los Gatos Creek, along 19 miles of the creek including the proposed project area, is listed as impaired and having an approved TMDL for diazinon.

Section 401. Under Section 401 of the CWA, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain state Water Quality Certification that the proposed activity will comply with state water quality standards. The project may need a Section 401 water quality certification, issued by the San Francisco Bay RWQCB, for project work permitted under the Section 404 process.

Section 402. Section 402 of the CWA authorizes the NPDES permit program. Stormwater discharges associated with construction activities are regulated under the Construction Activities General Stormwater Permit, adopted by the state in September 2, 2009 (Order No. 2009-09-DWQ, NPDES Permit No. CAS000002). Under this permit, owners of land where a construction activity occurs that disturbs more than one acre of land must submit a Notice of Intent (NOI), develop a Storm Water Pollution Prevention Plan (SWPPP), conduct monitoring and inspections, retain records of the monitoring, report incidences of non-compliance, and submit annual compliance reports.

The 1987 amendments to the CWA recognized the need to address nonpoint source stormwater runoff pollution and expanded the NPDES program to operators of MS4s, construction projects, and industrial facilities. The SCVURPP is an association of 13 cities and towns in Santa Clara Valley, Santa Clara County, and the SCVWD that share a common MS4 permit (NPDES Permit No. CAS029718) to discharge stormwater to South San Francisco Bay.

Section 404. Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into Waters of the U.S., including wetlands. Activities in Waters of the U.S. that are regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. Under Section 404, any person or public agency proposing to locate a structure, excavate, or discharge dredged or fill material into Waters of the U.S. or to transport dredged material for the purpose of dumping it into ocean waters must obtain a permit from the USACE. The USACE has jurisdiction over all Waters of the U.S. including, but not limited to, perennial and intermittent streams (and creeks), lakes, ponds, as well as wetlands in marshes, wet meadows, and side hill seeps.

Federal Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were enacted to decrease the need for large, publicly funded flood control structures and disaster relief by restricting development in floodplains; thereby addressing the increasing costs associated with flood-related disaster relief. Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood communities that comply with FEMA regulations limiting development on floodplains. FEMA issues FIRMs for communities participating in the NFIP. FIRMs delineate flood hazard zones in the community.

Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation and economics. It generally requires federal agencies construction, permitting, or funding a project in a floodplain to:

- Avoid incompatible floodplain development;

- Be consistent with the standards and criteria of the NFIP; and
- Restores and preserve natural and beneficial floodplain values.

3.2.2 State Regulations

Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.)

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) defines water quality objectives for California as the limits or levels of water constituents that are established for reasonable protection of beneficial uses. The Porter-Cologne Act assigns primary responsibility for the protection and enhancement of water quality to the State Water Resources Control Board (SWRCB) and the nine regional water quality control boards. The SWRCB's primary role is to provide state-level coordination of the water quality program through the establishment of state-wide policies and plans for the implementation of state and federal laws and regulations.

The Porter-Cologne Act requires RWQCBs to establish water quality objectives, while acknowledging that water quality may be changed to some degree without unreasonably affecting beneficial uses. Per federal regulations, beneficial uses, together with the corresponding water quality objectives, are defined as standards. The regional plans form the regulatory references for meeting state and federal requirements for water quality control. Changes in water quality are only allowed if the change is consistent with the maximum beneficial use of the State, does not unreasonably affect the present or anticipated beneficial uses, and does not result in water quality less than that prescribed in the water quality control plans.

California Toxics Rule

The USEPA has developed water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to inland surface waters, enclosed bays, and estuaries in the State of California. This rule was developed to address a gap in California's water quality standards that was created when the state's water quality control plans containing water quality criteria for priority toxic pollutants were overturned in 1994. The established numerical standards were deemed necessary to protect human health and the environment. The rule includes ambient aquatic life criteria for 23 priority toxic pollutants, ambient human health criteria for 57 priority toxics, and a compliance schedule.

California Fish and Game Code Section 1602

Under this section of the Fish and Game Code, state agencies are required to notify the CDFW prior to any project that would divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream, or lake. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications and bid documents for the project. Streambed Alteration Agreements include strict measures to protect water quality and fish and wildlife habitat, and to mitigate unavoidable habitat losses, including loss of riparian vegetation.

3.2.3 Regional and Local Regulations

San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay RWQCB conducts planning, permitting, and enforcement activities. The San Francisco Bay RWQCB regulates water quality in the San Francisco Bay (the Bay) area in accordance with its Water Quality Control Plan (Basin Plan). The Basin Plan describes the water quality control measures that contribute to the protection of the beneficial uses of the Bay watershed and identifies beneficial uses for each segment of the Bay and its tributaries, water quality objectives for the reasonable protection of the uses, and an implementation plan for achieving these objectives.

Santa Clara Valley Urban Runoff Pollution Prevention Program

The SCVURPPP or Program is an association of 13 cities and towns in Santa Clara Valley, the County of Santa Clara, and the SCVWD that share a common National Pollutant Discharge Elimination System (NPDES) permit (CAS029718) to discharge stormwater to South San Francisco Bay. Member agencies include Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale, the County of Santa Clara, and SCVWD. Total population within the Program area is approximately 1.7 million people. The Program incorporates regulatory, monitoring and outreach measures aimed at reducing pollution in urban runoff to the "maximum extent practicable" to improve the water quality of South San Francisco Bay and the streams of Santa Clara Valley.

Comprehensive Water Resources Management Plan

The SCVWD was created by an act of the California Legislature, and operates as a State of California Special District, with jurisdiction throughout Santa Clara County. The SCVWD's Comprehensive Water Resources Management Plan outlines the key water resource issues facing Santa Clara County and provides a framework for understanding SCVWD policies related to water supply, natural flood protection and water resources stewardship. This dynamic, online resource provides a tool to help users to better coordinate their efforts with those of the SCVWD and allow them to be better informed about water resources related issues (SCVWD 2010).

Blueprint for a Clean Bay

The Blueprint for a Clean Bay is an introductory guide to stormwater quality control on construction sites. It contains several principles and techniques that can be used to help prevent stormwater pollution. The Bay Area Stormwater Management Agencies Association (BASMAA) and the City of San Jose have developed these guidelines as a resource for all general contractors, home builders, and subcontractors working on construction sites.

City of San Jose General Plan (Envision San Jose 2040)

The following goals and policies from the City of San Jose General Plan are applicable to the proposed project:

> Goal ER-8 – Stormwater: Minimize the adverse effects on ground and surface water quality and protect property and natural resources from stormwater runoff generated in the City of San José.

Goal ER-9 – Water Resources: Protect water resources because they are vital to the ecological and economic health of the region and its residents.

Goal EC-5 – Flooding Hazards: Protect the community from flooding and inundation and preserve the natural attributes of local floodplains and floodways.

4.0 Environmental Consequences

This section evaluates the effects to the environment from the Los Gatos Creek Bridge Replacement Project.

4.1 Evaluation Criteria

The proposed project would be considered to have a substantial impact on water quality if it would affect the overall amount of runoff, the amount of discharge into natural surface drainages, or the existing pattern of natural surface drainage in the project area. The proposed project also would be considered to affect water quality if it contributed to the exceedance of any adopted water quality standard or conflicted with the objectives, plans, goals, or policies, or implementation of the San Francisco Bay RWQCB's Basin Plan (SFBRWQCB 2007) or other Federal or local regulations.

4.2 Potential Impacts

The beneficial uses listed for Los Gatos Creek that could potentially be impacted by construction of this bridge include Cold Freshwater Habitat (COLD), Preservation of Rare and Endangered Species (RARE), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC-1), Fish Migration (MIGR), and Fish Spawning (SPWN)[3].

The following impacts could occur as a result of construction activities:

4.2.1 Stormwater Runoff and Drainage

The introduction of any new impervious surfaces would increase runoff by incrementally reducing the amount of natural soil surfaces available for infiltration of rainfall and runoff. As a result, additional runoff could potentially be generated during storm events. Additional runoff can contribute to the flood potential of natural stream channels; accelerate soil erosion and stream channel scour; and increase the transport of pollutants to waterways.

4.2.2 Surface Water Quality

Construction activities can impair water quality temporarily through the discharge into receiving waters of disturbed and eroded soil, petroleum products, and miscellaneous wastes. Soil and associated contaminants that enter stream channels can increase turbidity, stimulate algal growth, increase sedimentation in aquatic habitats, and introduce compounds that are toxic to aquatic organisms. Construction materials (e.g., fuels, oils, paints, and concrete) are potentially harmful to fish and other aquatic life if released into the environment. The extent of potential environmental effects depends on the tendency for erosion of soil types encountered, types of construction practices, extent of disturbed area, duration of construction activities, timing of precipitation, proximity to receiving water bodies, and sensitivity of those water bodies to contaminants of concern.

There are many sediment disturbing activities scheduled to occur such as, grading operations, placement of the in-channel piles (e.g., vibrating, jetting, jacking or drilling the posts into place),

[3] The NMFS and USFWS Biological Assessment (HDR 2013) includes an analysis of project impacts on listed species.

the construction of the bridge superstructure, placement of temporary trestles, and removal of the existing bridge infrastructure.

Two water quality impairments typically associated with soil disturbance include increased turbidity and decreased dissolved oxygen of surrounding water bodies. Depending on the quantity of the sediments and their chemical characteristics, contaminants within the sediments could be released. Also, debris could enter receiving water from construction activities.

Erosion and siltation in the drainage area also could be increased during construction of the proposed project due to construction activities that would directly disturb soils and surface drainage courses adjacent to the existing roadways that drain to Los Gatos Creek. Construction will occur on the banks of the creek and within the creek.

Finally, smelter slag, which is commonly used as bed material for railroad tracks, could be released during construction. However, it has not been verified that smelter slag exists along the alignment. Smelter slag contains high amount of oxidized and environmentally available heavy metals. If discharged into Los Gatos Creek, contaminants may exceed Basin Plan objectives (SFBRWQCB 2007).

4.2.3 Groundwater Quality

Piles supporting Los Gatos Bridge will penetrate the ground below the groundwater table. Soil drilling required for foundation construction of these structures could impact the groundwater quality by allowing migration of surface water contaminants into the groundwater aquifer located below the bridge. To protect groundwater from risks associated with pile driving, all pile driving activities will only occur during the dry season (i.e., from June 15th to October 15th) and by temporarily diverting the creek

During construction a sanitary sewer line adjacent to West San Carlos Bridge will be relocated. The new sewer line will be installed by directional drill. During drilling hydrofractureing could occur, and as a result, inadvertent returns of drilling mud (frac-out) could enter the creek or groundwater through a fissure or crack in the soils.

In addition, as noted above for surface water quality, accidental spills of construction-related substances such as oils, fuels, and concrete also can contaminate groundwater.

4.2.4 Construction Site Dewatering

During construction, dewatering discharge could adversely impact surface water quality if the effluent is rich in sediment or contaminated with chemicals. Extracted groundwater may contain pollutants which may be a result of the decomposition of organic materials (e.g., hydrogen sulfide), leaking underground storage tanks and fuel lines, surface spills, sewage, past use of liquid waste impoundments, or the potential presence of nutrients (phosphorous and nitrogen compounds). If construction-related dewatering discharge is encountered, the project will be subject to the General Waste Discharge Requirements for: Discharge or Reuse of Extracted Brackish Groundwater and Reverse Osmosis Concentrate Resulting from Treatment of Groundwater by Reverse Osmosis and Discharge or Reuse of Extracted and Treated Groundwater Resulting from Structural Dewatering (Order No. R2-2007-0033, NPDES No. CAG912004) or any subsequent permit/ order at the time of construction.

5.0 Mitigation Measures

This section identifies the recommended avoidance, minimization, and mitigation measures to reduce potential project impacts to less than significant levels.

5.1 Best Management Practices

The proposed project will include standard Best Management Practices (BMPs) consistent with the Municipal NPDES and the Blueprint for a Clean Bay (BASMAA 2004).

Construction practices in compliance with permit requirements will minimize soil and wind erosion during construction of the Los Gatos Bridge Replacement Project. As a result, onsite stormwater will be controlled, and soil erosion will be minimized. Proper implementation of design and construction standards will minimize negative impacts to Los Gatos Creek.

5.2 Recommended Mitigation Measures

The following mitigation measures are proposed to mitigate the environmental consequences listed in Chapter 4 *Environmental Consequences*.

5.2.1 Stormwater Runoff and Drainage

The existing bridge is about 174 feet long and 35 feet wide and has eight spans. The new bridge will be approximately 200 feet long and 55 feet wide. This will result in an increase of approximately 0.11 acres of impermeable surface associated with the larger bridge. The increase in runoff associated with the larger bridge is not considered significant to warrant treatment or retention of runoff.

The temporary access road to the bridge would introduce a limited amount of new impervious surface to the project area of potential effect, although there would not be an appreciable change in the direction or routing of stormwater drainage compared to existing conditions. This would be a temporary effect, and once construction is complete, the road will be removed and the area revegetated with native vegetation.

5.2.2 Surface Water Quality

Under the Statewide General Construction NPDES Permit, the JPB must submit an NOI to the SWRCB prior to commencement of construction activities. In addition, a SWPPP must be prepared and implemented at the project site, and revised as necessary as administrative or physical conditions change.

The SWPPP will include BMPs that address source reduction and provide measures and controls necessary to mitigate potential pollutant sources. The SWPPP will be available to the public under Section 308(b) of the CWA and will be made available to SWRCB upon request. Required elements of the SWPPP include:

- A site description addressing the elements and characteristics specific to the site;
- Descriptions of BMPs for erosion and sediment controls, such as:
    - protecting existing storm drain inlets;
    - stabilizing disturbed areas;
    - other erosion and sediment controls;
- BMPs for construction waste handling and disposal, such as:
    - proper stockpiling and disposal of demolition debris, concrete, and soil;
    - proper management of construction materials;
    - waste management and aggressive litter control;
- Implementation of approved local plans;
- Proposed post-construction controls, including a description of local post-construction erosion and sediment control requirements; and
- Non-storm water management.

During the in-channel work window (June 15th to October 15th), construction within the stream channel will require a temporary diversion pipe to minimize the potential for erosion, sediment loss, scour, turbidity, and contamination from construction debris. The contractor will design and construct the temporary diversion pipe consisting of upstream and downstream cofferdams to divert flow from the stream bed to a storm drain pipe via pumping or gravity flow (see **Figure 2-3)**. Creek flows will be contained within the storm drain pipe as it travels through or around the construction area to a downstream location. Temporary fill used to construct the cofferdams will be kept to the minimum footprint necessary. Upon completion of construction, all temporary fills associated with the temporary diversion, including sandbags, sheet metal piling, and/or rock will be removed and the area restored to pre-construction condition.

5.2.3 Ground Water Quality

To protect groundwater from risks associated with pile driving, all pile driving activities will only occur during the dry season (i.e., from June 15th to October 15th) and by temporarily diverting the creek. Any spill or surface contaminants will be clean up and removed prior to reaching any surface water.

A frac-out plan will be prepared prior to drilling of the sewer pipeline. The boring plan should include:

- A sketch of the construction site, including equipment staging areas, approximate location of drill entry and exit points (structural shafts), and the approximate location of access roads in relation to the surrounding area;
- Proposed depth of bore and statement of streambed condition (subsurface strata and percent of gravel and cobble) that support the depth of the bore;
- Approximate length of bores (50-foot increments);
- Type and size of boring equipment to be used;

- Estimated time to complete bore;
- List of lubricants and tunneling additives to be used;
- Name of applicant's agents and cell phone numbers;
- Frac-out prevention and clean-up plans should include:
    - Name(s) and phone numbers of biological monitor(s), third-party monitors, and crew supervisor(s);
    - Site-specific resources of concern (if applicable, include factors such as possible presence of sensitive species);
    - Monitoring protocols (include biological monitoring and frac-out monitoring);
    - Containment and clean-up plan (include staging location of vacuum trucks and equipment, equipment list, necessary hose lengths, special measures needed for steep topography, etc. at each location).

If a frac-out occurs, the contractor will begin containment and clean up measures immediately. Any sediment, including natural substrate, that enters the channel in a frac-out situation would be contained to the greatest extent possible and removed from the channel as part of the clean-up procedure.

5.2.4 Construction Site Dewatering

The permit governs dewatering operations and prohibits the discharge of sediment-laden effluent and/or contaminated effluent (e.g. oil and grease) into receiving waterbodies. Current projects requiring this NPDES permit must apply to obtain authorization to discharge under the Statewide General NPDES Permit for Construction Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002), and any other applicable permit at the time of design and/or construction. After obtaining the dewatering permit, the San Francisco Bay RWQCB must be notified at least 60 days prior to the discharge of any dewatering effluents.

All effluents from dewatering operations must be tested in a USEPA-certified laboratory for trace pollutants and approved by the San Francisco Bay RWQCB before being discharged into receiving waters. Sediment is the primary pollutant of concern in most dewatering operations. However, discharges must also be tested for oil and grease, metals, total suspended solids (TSS), etc. If the discharge effluent is not visibly clear, then sediment control BMPs such as Baker Tanks, must be employed to treat the effluent prior to discharge. The specific discharge requirements, limits, and amounts are determined by the permit and may vary for individual projects.

5.2.5 Operational Phase

Although no long-term impacts to water quality are anticipated, the proposed project would implement various BMPs to ensure that long-term water quality is protected, in accordance with NPDES requirements. Treatment BMPs may include:

- Biofiltration: vegetated swales and strips;
- Infiltration basins;
- Detention devices;

- Traction sand traps;
- Dry weather flow diversion.

6.0 List of Preparers

HDR Engineering, Inc.

Lance Jones, P.E., Water Resources Specialist

David Jabbour, P.E., QA/QC

Catherine LaFata, AICP, Project Manager

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Appendix A Jurisdictional Delineation of Waters of the United States

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LOS GATOS CREEK BRIDGE REPLACEMENT / SOUTH TERMINAL PHASE III PROJECT

Jurisdictional Delineation of Waters of the United States

Santa Clara County, California

Prepared for

Peninsula Corridor Joint Powers Board

1250 San Carlos Avenue

P.O. Box 3006

San Carlos, California 94070-1306

Prepared by

HDR Engineering, Inc.

2379 Gateway Oaks Drive, Suite 200

Sacramento, California 95833

August 2013

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Contact: Todd Wong

August 2013

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Summary

The Peninsula Corridor Joint Powers Board (JPB) which operates the San Francisco Bay Area's Caltrain passenger rail service proposes to replace the two-track railroad bridge that crosses Los Gatos Creek, in the City of San Jose, Santa Clara County, California. The proposed project is needed to address the structural deficiencies and safety issues of the Caltrain Los Gatos Creek railroad bridge to be consistent with the standards of safety and reliability required for public transit, to ensure that the bridge will continue to safely carry commuter rail service well into the future, and to improve operations at nearby San Jose Diridon Station and along the Caltrain rail line.

This Jurisdictional Delineation of Waters of the U.S. has been prepared to identify wetlands and other waters of the U.S. within the project study area to comply with federal and state regulations. Any person, firm, or agency planning to alter or work in "~~waters~~ Waters of the U.S.," including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. The California Department of Fish and Wildlife (CDFW) requires notification prior to commencement, and possibly a Streambed Alteration Agreement (SAA) pursuant to California Fish and Game Code 1600-1616, if a proposed project would result in the alteration or degradation of a stream, river, or lake in California. In addition, the Regional Water Quality Control Board (RWQCB) may require State Water Quality Certification (CWA Section 401 permit) or a Waste Discharge Requirement (WDR) before other permits are issued.

HDR Engineering, Inc. conducted a delineation of wetlands and other waters of the U.S. occurring within the Los Gatos Creek Bridge Replacement Project study area. All areas were assessed to the degree necessary to determine the presence or absence of jurisdictional waters of the U.S. in the study area. The total project site consists of 4.42 acres and the study area consists of 8.71 acres. Potentially jurisdictional waters of the U.S. occupy a total of 0.87 acres within the study area. No wetland features were detected within the study area. The results of this delineation are preliminary until verified by the USACE.

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Table of Contents

List of Figures

List of Tables

JURISDICTIONAL DELINEATION OF WATERS OF THE UNITED STATES FOR THE LOS GATOS CREEK BRIDGE REPLACEMENT /SOUTH TERMINAL PHASE III PROJECT

Project/ Applicant:	Peninsula Corridor Joint Powers Board
Legal Description:	Un-sectionalized portion of Township 7S, Range 1E, San Jose West 7.5' USGS quadrangle, City of San Jose, Santa Clara County, CA.
Project Type:	Bridge replacement
Fieldwork By:	Stephen Stringer, M.S. and LaTisha Saare, M.S.
Site Visit:	October 28, 2010
Initial Report Date:	November 2010
Revised Report Date:	July 2013
Final Report Date:	August 2013

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1.0 Introduction

On behalf of the Peninsula Corridor Joint Powers Board (JPB), HDR Engineering Inc. (HDR) has prepared this Jurisdictional Delineation of Waters of the U.S. (Delineation) for the Los Gatos Creek Bridge Replacement Project (project). The purpose of the Delineation is to identify potential wetlands and other waters of the U.S. in the project site. The results of the Delineation are preliminary until verified by the U.S. Army Corps of Engineers (USACE).

1.1 Project Location

The Peninsula Corridor Joint Powers Board (JPB) which operates the San Francisco Bay Area's Caltrain passenger rail service proposes to replace the two-track railroad bridge that crosses Los Gatos Creek, in the City of San Jose, Santa Clara County, California (see **Figure 1-1)**. As shown in **Figure 1-2**, the proposed project area, generally bounded by Caltrain's San Jose Diridon Station to the north, Interstate 280 (I-280) to the south, Sunol Street to the west, and Royal Avenue on the east, occupies the width of the right-of-way (ROW) owned by JPB and extends a distance of approximately 0.4 mile.

Two tracks, Main Tracks 1 and 2 (MT1 and MT2), run parallel through the entire project area. MT1 is owned by the Union Pacific Railroad (UPRR) for freight service and MT2 is owned by the JPB for Caltrain service. Both tracks connect with San Jose Diridon Station Tracks 1 through 9 immediately south of the Park Avenue Overpass. From the Park Avenue Overpass, the double-track alignment continues southward past the West San Carlos Street Overpass and extends approximately 200 feet across the Los Gatos Creek railroad bridge. The JPB owns and maintains the Los Gatos Creek railroad bridge. Both tracks continue southeast, crossing Auzerais Avenue at grade before reaching the project area's southern boundary immediately north of the I-280 overpass.

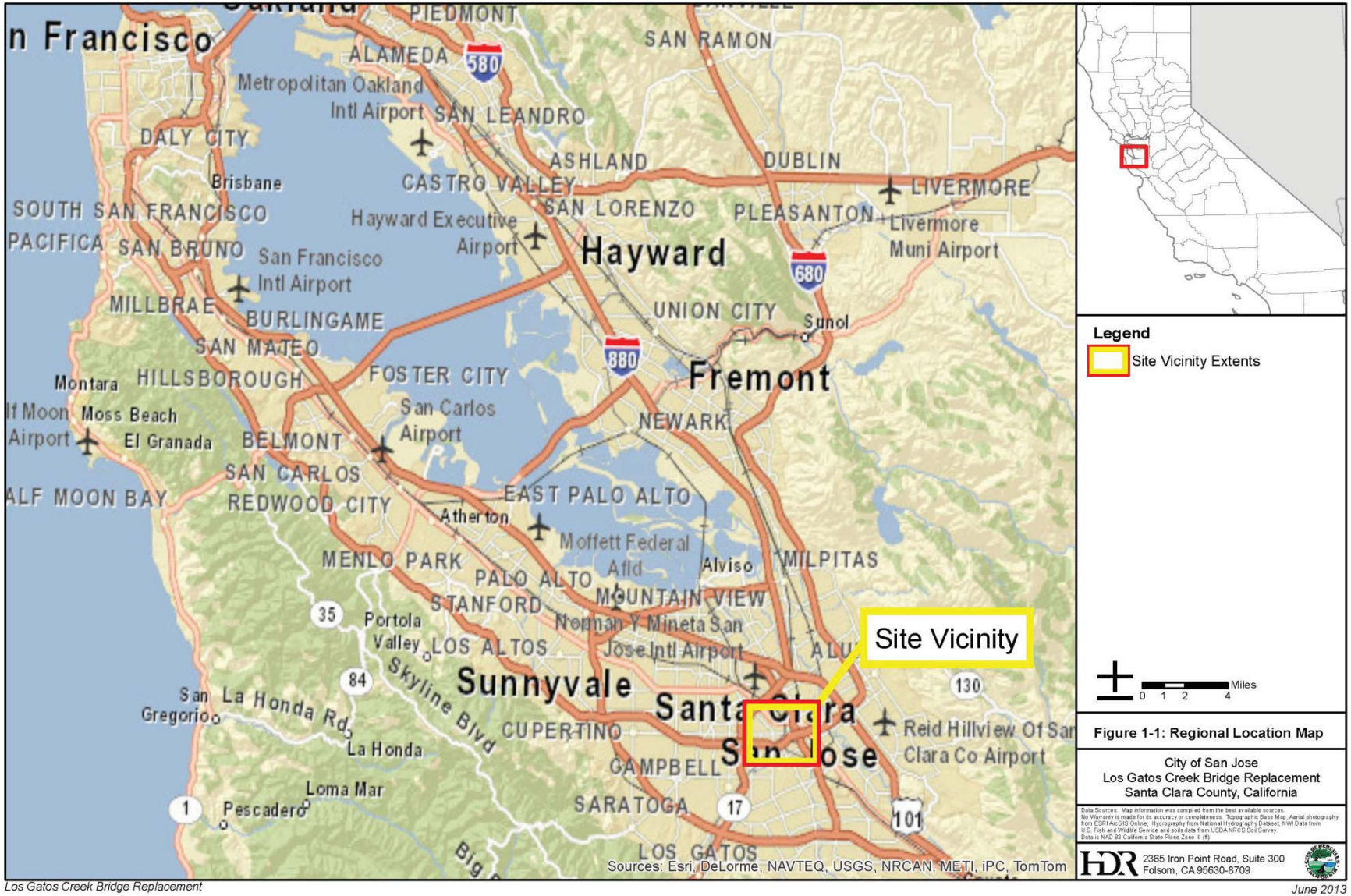
1.2 Purpose and Need of Proposed Action

The proposed project is needed to address the structural deficiencies and safety issues of the Caltrain Los Gatos Creek railroad bridge to be consistent with the standards of safety and reliability required for public transit, to ensure that the bridge will continue to safely carry commuter rail service well into the future, and to improve operations at nearby San Jose Diridon Station and along the Caltrain rail line.

1.3 Project Description

The proposed project consists of replacing the existing Los Gatos Creek Bridge while maintaining rail services across the bridge. The new bridge will consist of a two-track alignment over Los Gatos Creek with the addition of a tail track extending south from San Jose Diridon Station. The addition of the tail track comprises Phase III of the South Terminal Project, which includes a variety of improvements at and near the San Jose Diridon Station to improve Caltrain operations along this corridor. **Figure 1-3** illustrates the elements of the proposed project.

Figure 1-1. Regional Location of the Proposed Action



Los Gatos Creek Bridge Replacement *June 2013*

Figure 1-2 Project Location Map

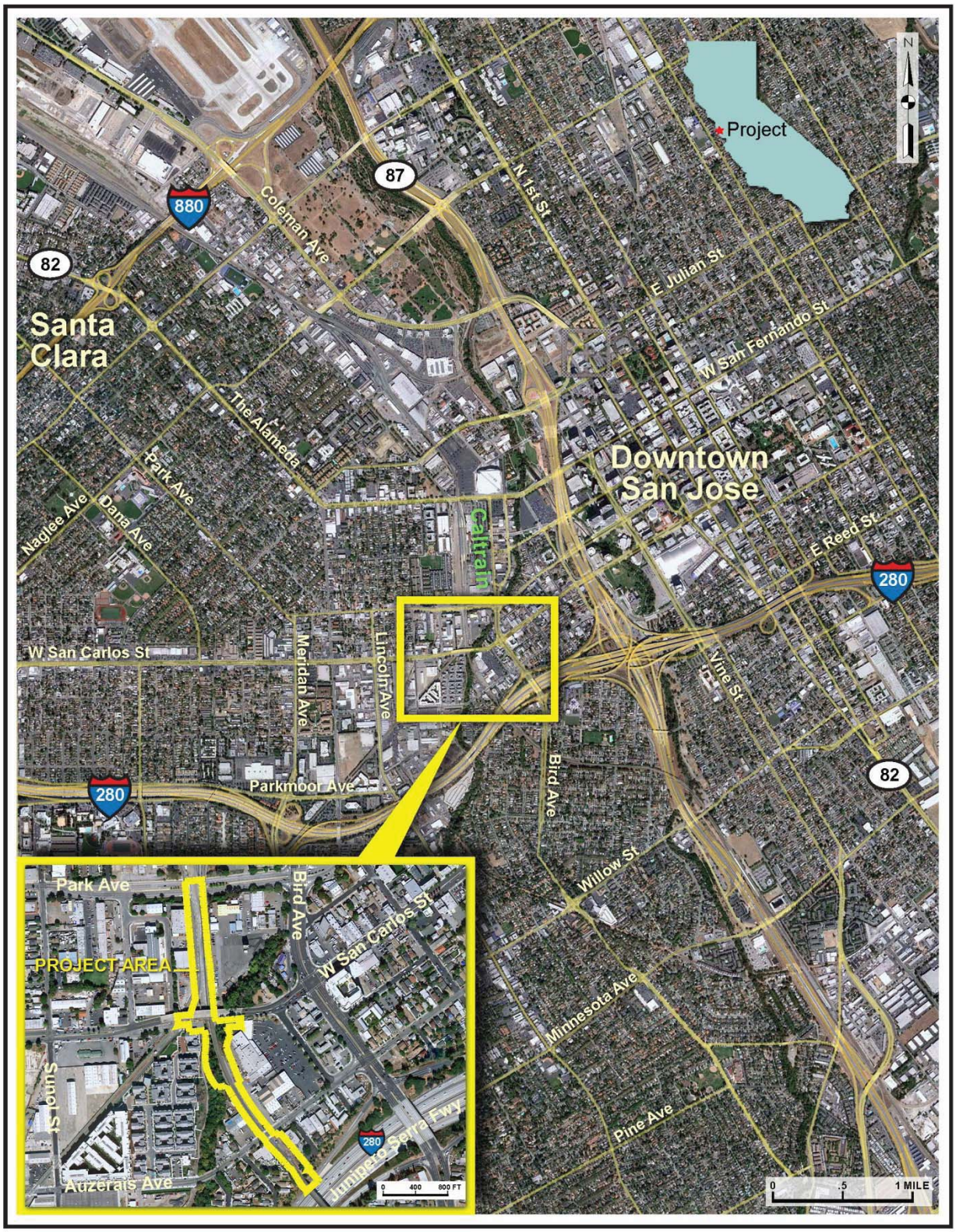


Figure 1-3. Los Gatos Creek Bridge Replacement / South Terminal Phase III Project Site Plan

1.4 Contact Information

Project Applicant and Owner
Peninsula Corridor Joint Powers Board 1250 San Carlos Avenue, P.O. Box 3006 San Carlos, California 94070-1306 Hilda Lafebre, Project Manager Phone: 650-622-7842

1.5 Driving Directions to Project Site

Directions to the project site are provided to assist USACE staff for field verification.

From San Francisco, take Highway 101 south for approximately 43 miles. Then take State Route 87 south for approximately 3.6 miles. Exit at Park Avenue (Exit 6a toward CA 82/San Carlos Street). Proceed straight to Delmas Avenue. Turn right onto West San Carlos Street. The project site begins approximately where West San Carlos Street crosses the railroad tracks. It extends from just north of where the railroad tracks cross West San Carlos Street to just before crossing Interstate 280, along the tracks.

1.6 Regulatory Setting

The discharge (temporary or permanent) of dredged or fill material into Waters of the United States (U.S.), including wetlands, typically requires prior authorization from the USACE, pursuant to Section 404 of the Clean Water Act (CWA; 33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. The applicable CWA and other state and local regulations are described below.

1.6.1 Waters of the U.S.

Section 404 of the Clean Water Act

The objective of the CWA is to maintain and restore the chemical, physical, and biological integrity of the Waters of the U.S. (33 CFR Part 328 Section 328.4). Waters of the U.S. are those areas regulated by Section 404 of the CWA, which gives the U.S. Environmental Protection Agency (EPA) and the USACE regulatory and permitting authority regarding discharge of dredged or fill material into navigable waters of the United States. Waters of the U.S. include: (1) waters used for commerce and subject to tides; (2) interstate waters and wetlands; (3) "other waters" such as intrastate lakes, rivers, streams, and wetlands; (4) impoundments of waters; (5) tributaries of waters; (6) territorial seas; and (7) wetlands adjacent to waters.

Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a

prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

"Other waters of the U.S." refer to unvegetated waterways and other water bodies, such as drainages, creeks, rivers, and lakes with an ordinary high water mark (OHWM). Jurisdiction in non-tidal areas extends to the OHWM, which is defined as:

> *"...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas".*
>
> CFR 328.3 (e) [51 FR 41250, Nov. 13, 1986, as amended at 58 FR 45036, Aug. 25, 1993]

Section 404 (b)(1) compliance must be demonstrated before a Section 404 permit can be issued for the discharge of dredged or fill material in Waters of the U.S. Guidelines for a Section 404(b)(1) analysis were developed by the EPA in conjunction with USACE (40 CFR Parts 230). The Guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Significant Nexus of Tributaries

On June 5, 2007, the USACE and the EPA issued joint guidance on implementing the June 19, 2006 U.S. Supreme Court opinions resulting from the Rapanos v. United States and Carabell v. United States (Rapanos) cases (USACE 2007). EPA and the USACE jointly reviewed the 66,047 public comments on the Rapanos Guidance and released a revised version of the Guidance on December 2, 2008 (USACE 2008a). The revised Guidance states that the agencies will assert jurisdiction over (1) traditional navigable waters (TNW)[1], (2) wetlands adjacent to TNW, (3) non-navigable tributaries of TNW that are relatively permanent where the tributaries typically flow year around or have continuous flow at least seasonally (e.g., typically three months), and (4) wetlands that abut such tributaries. A "significant nexus" determination will be made for non-navigable tributaries that are not relatively permanent and their adjacent wetlands. Such features that are determined to have a "significant nexus" to a TNW will also be subject to CWA jurisdiction. A significant nexus requires that there be "more than an insubstantial or speculative effect on the chemical, physical, and/or biological integrity of a TNW" (USACE 2008). The revised Guidance states that swales or erosional features and ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water will generally not be subject to CWA jurisdiction.

[1] A water body qualifies as a "navigable water of the United States" if it meets any of the tests set forth in 33 C.F.R. Part 329 (e.g., the water body is (a) subject to the ebb and flow of the tide, and/or (b) the water body is presently used, or has been used in the past, or may be susceptible for use (with or without reasonable improvements) to transport interstate or foreign commerce). The USACE districts have made determinations in the past regarding whether particular water bodies qualify as "navigable waters of the United States" for purposes of asserting jurisdiction under Sections 9 and 10 of the Rivers and Harbors Act of 1899 (33 USC Sections 401 and 403).

Isolated Areas Excluded from Section 404 Jurisdiction

Some wetlands and waters may also be considered outside of USACE jurisdiction as a result of the Supreme Court's decision in Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers (531 U.S. 159 [2001]). Isolated wetlands and waters are those areas that do not have a surface or groundwater connection to, and are not adjacent to a navigable "Waters of the U.S.," and do not otherwise exhibit an interstate commerce connection.

Fish and Wildlife Coordination Act

Under the Fish and Wildlife Coordination Act (16 U.S.C. 661-666), project proponents are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the appropriate state wildlife agency (in this case, CDFW) for any federal project where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. These agencies prepare reports and recommendations that document project effects on wildlife and identify measures that may be adopted to prevent loss or damage to wildlife resources. The term "wildlife" includes both animals and plants. Provisions of the Fish and Wildlife Coordination Act are implemented through the National Environmental Policy Act (NEPA) process and Section 404 permit process.

Executive Order 11990 for Protection of Wetlands

Executive Order 11990 for the Protection of Wetlands (May 24, 1977) establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On federally funded projects, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific "Wetlands Only Practicable Alternative Finding" in the final environmental document. An additional requirement is to provide early public involvement in projects affecting wetlands. The Federal Highway Administration (FHWA) provides technical assistance in meeting these criteria (FHWA Technical Advisory 6640.8A) and reviews environmental documents for compliance.

1.6.2 Waters of the State

Porter-Cologne Water Quality Control Act and Section 401 of the Clean Water Act

Waters of the State are regulated by the Regional Water Quality Control Board (RWQCB) under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to Waters of the U.S. must obtain a state certification administered by the RWQCB that the discharge complies with other provisions of CWA. The RWQCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters that may not be regulated by other programs, such as Section 404 of the CWA. Projects that require a Section 404 CWA permit, or fall under other federal

jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Section 401 Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the State, the RWQCB has the option to regulate such activities under its State authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

Sections 1600-1616 of the California Fish and Game Code

Streams, lakes, and riparian vegetation that provide habitat for fish and other wildlife species are subject to jurisdiction by the CDFW under Sections 1600-1616 of the California Fish and Game Code. These sections regulate any activity that may (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement (SAA) that becomes part of the plans, specifications and estimates documents for the project.

The term "stream," which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Stream-dependent riparian habitat is defined in the California Fish and Game Code (Section 2785) as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." Removal of stream-dependent riparian vegetation may also require a SAA from CDFW.

2.0 Environmental Setting

The proposed project (replacement of Los Gatos Creek Bridge) lies within Santa Clara County, California, approximately two miles west of downtown San Jose. The reach of Los Gatos Creek in the project area is tightly constricted by urbanization on both banks. The creek and railroad tracks crossing the Los Gatos Creek Bridge are situated between an Orchard Supply Hardware (OSH) retail store and the former site of the Del Monte cannery which is currently a re-development property recently constructed as a residential townhome community. Specifically, the site is located in an un-sectionalized portion of Township 7 South, Range 1 East, as depicted on the San Jose West U.S. Geological Survey (USGS) 7.5' topographic quadrangle (quad).

2.1 Existing Field Conditions

The weather during the October 28, 2010 field survey was moderate and mostly sunny with a high of 79 degrees Fahrenheit (ºF) and a low of 53ºF (Western Regional Climate Center 2010, revisited 2013). The average rainfall for the City of San Jose is approximately 15 inches per year and the average rainfall for the month of October is 0.87 inches. San Jose received approximately 0.23 inches in the month of October 2010 (Western Regional Climate Center 2010, revisited 2013).

2.2 Interstate or Foreign Commerce Connection

There is no known interstate or foreign commerce conducted within Los Gatos Creek, however Los Gatos Creek flows into the Guadalupe River, which flows into Alviso Slough, and then into the San Francisco Bay. The San Francisco Bay is used for shipping activities. In addition, Los Gatos Creek may be used for recreational fishing. Los Gatos Creek is not used for interstate or foreign commerce, is not traditionally navigable water, and is not subject to the ebb and flow of the tide. Therefore, it is not subject to Section 10 of the Rivers and Harbors Act.

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3.0 Delineation Methodology

This section identifies the methodology used to conduct the jurisdictional delineation of Waters of the U.S., including data sources and fieldwork procedures.

3.1 Preliminary Data Gathering

Prior to conducting fieldwork for the delineation the following information sources were reviewed:

- USGS "San Jose West, California" 7.5-minute topographic quadrangle;
- Aerial photography of the project area downloaded from ESRI ArcGIS Online in November 2010;
- Natural Resources Conservation Service's web soil survey for Santa Clara Area, California, Western Part (NRCS 2010a, NRCS 2010b, NRCS 2013a and NRCS 2013b); and
- The USFWS' Wetland Online Mapper (USFWS 2010, USFWS 2013).

3.2 Delineation Boundaries

The fieldwork for the delineation included the area within the project site boundary shown on **Figure 3-1,** which is an estimate of the area that could potentially be directly impacted during construction of the proposed project based on preliminary project design, and an approximately 350-foot segment of Los Gatos Creek up and downstream of the preliminary project site boundary. The additional area was included in order to provide a buffer to account for any potential project design changes that could affect the creek. For the purposes of this delineation report, the entire area assessed during the delineation fieldwork, which includes the preliminary project site boundary plus the approximately 350-foot segment of Los Gatos Creek up and downstream of the project site, is comprehensively referred to as the "study area." All areas within the study area are included in the delineation.

3.3 Procedures for the Delineation of Jurisdictional Waters of the U.S.

Fieldwork for the delineation was conducted by HDR biologists Stephen Stringer and LaTisha Saare on October 28, 2010. Field conditions and jurisdictional boundaries were reassessed in December 2012 and March 2013 by HDR biologist Jeannette Owen. Standard tools utilized to conduct the delineation included the 1987 *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2)* (USACE 2008). USACE regulations were used to determine the presence of jurisdictional Waters of the U.S. other than wetlands.

Figure 3-1. Project Study Area

Los Gatos Creek Bridge Replacement *November 2010*

In order for an area to qualify as a wetland, it must meet a three-parameter test and contain:

(a) a predominance of hydrophytic vegetation,

(b) hydric soil, and

(c) wetland hydrology.

Wetland boundaries are considered to be a line across which the vegetation, soil, and hydrologic characteristics began/ ceased to meet wetland criteria. Hydrophytic vegetation indicators include prevalence of hydrophytic vegetation (majority of dominant plant species that are facultative or obligate wetland plants as listed in the National Wetland Plant List (Lichvar and Kartesz 2012) and morphological or physiological adaptations to saturated soil conditions. Hydric soil indicators include organic soils (histosols), mineral soils saturated and rich in organics (histic epipedon), sulfidic odor, low dissolved oxygen concentration (aquic moisture regime) and reducing conditions, gleyed and/ or low chroma soils, soils listed on national, state, or local hydric soils lists, and iron and manganese concretions. Wetland hydrology indicators include visual observations of inundation or soil saturation, watermarks and water-stained leaves, drift lines, sediment deposits, and drainage patterns.

The entire study area was assessed in such a manner as to view all areas to the degree necessary to determine the presence or absence of jurisdictional features. Plant nomenclature follows *The Jepson Manual; Higher Plants of California* (Hickman 1993). Plant species identified within the study area were assigned a wetland status according to the National Wetland Plant List (Lichvar and Kartesz 2012). Waters of the U.S. were classified according to the Cowardin system of classification of wetlands and deepwater habitats of the United States (Cowardin et al. 1979).

Potential waters of the U.S. occurring in the study area were mapped in the field using a Trimble GeoXT® sub-meter accurate global positioning system (GPS). These data were exported into ArcMap9.3.1® and used to produce the jurisdictional delineation map including the calculation of lengths and widths of channels and acreages of wetland features in the study area.

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4.0 Results

The results of the field survey and delineation of waters of the U.S., including wetlands, in described below.

4.1 Non-Wetland Plant Communities/Habitat Types in the Study Area

Two types of non-wetland habitat occur within the study area: urban/suburban and willow riparian forest and scrub, as described below. Aquatic habitats are discussed in **Section 4.5**.

4.1.1 Description of Urban/suburban

Urban/suburban areas include railroad tracks and the gravel track right-of-way (ROW), roadways, parking lots, building fronts, the San Jose municipal multi-use trail along the left bank of Los Gatos Creek, and landscaped areas along building fronts. Urban/suburban areas within the study area are either barren of vegetation or contain horticultural species in narrow landscape strips such as around buildings and along the multi-use trail. Urban/suburban areas provide little to no habitat value for wildlife.

4.1.2 Description of Willow Riparian Forest and Scrub

The remainder of the terrestrial habitat within the study area consists of willow riparian forest and scrub. Willow riparian forest and scrub habitats are natural communities and equivalent to sensitive natural communities as defined by CDFW. Willow riparian forest and scrub habitat types occur along the margins of active channels on intermittent and perennial streams. The dominant tree species occurring within this habitat in the study area include shining willow (*Salix lasiandra*), red willow (*Salix laevigata*), Fremont cottonwood (*Populus fremontii*), tree of heaven (*Ailanthus altissima*), black locust (*Robinia psuedoacacia*), box elder (*Acer negundo*), and California black walnut (*Juglans californica* var. *hindsii*). Understory vegetation within this community was dominated by Himalayan blackberry (*Rubus armeniacus*) and California blackberry (*Rubus ursinus*) in patches as well as a variety of non-native grasses and forbs.

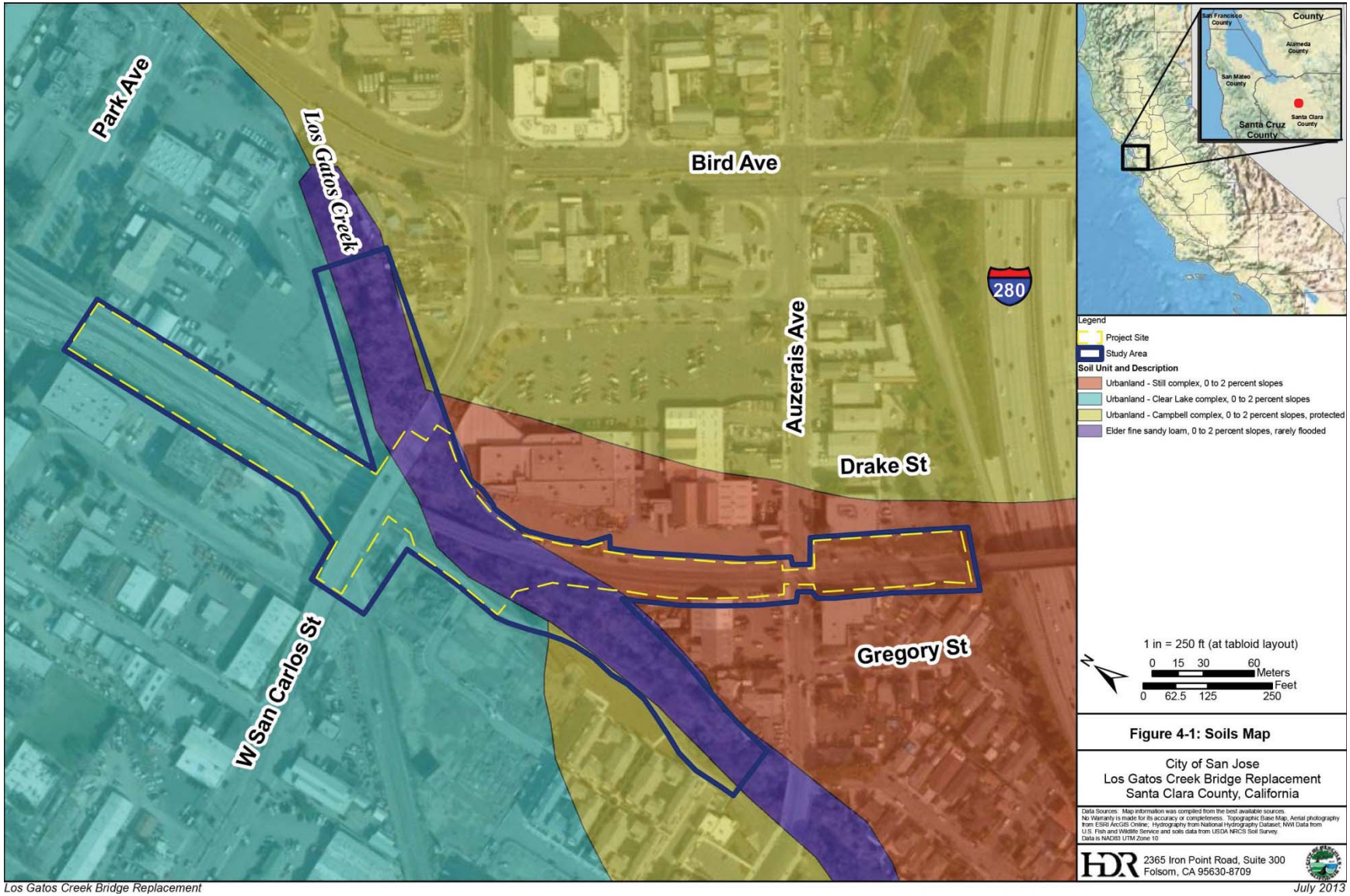
4.2 Soil Types

A soil map of the study area is shown on **Figure 4-1.** Soil descriptions are included below for soil types within the study area. Soil descriptions were modified from NRCS Santa Clara Area, California, Western Part (CA641), Soil Maps, Version July 27, 2010, and revised April 2013. The hydric soils list for the Santa Clara Area, California, Western Part has not yet been updated and is not currently available.

Soil Unit 130 – Urbanland-Still Complex, 0 to 2 percent slopes

Urbanland-still complex soils are Still soils within an urban setting. Urban soils are found in watersheds that provide drinking water, food, waste utilization, and natural resources to communities. Urban soils also are located within cities in park areas, recreation areas, community gardens, green belts, lawns, septic absorption fields, sediment basins and other uses. Soils within urban settings may contain fill soils due to development.

Figure 1-1. Soils Map



Los Gatos Creek Bridge Replacement *July 2013*

Still soils are found in flood plains and alluvial fans at elevations between 600 and 2,000 feet above mean sea level (amsl). Still soils are deep, well drained soils that formed in alluvial material from sedimentary rocks. A typical profile for Still soils is dark grayish brown clay loam from 0 to 25 inches in depth, grayish brown clay loam from 25 to 34 inches in depth, dark grayish brown clay loam from 34 to 53 inches in depth, and brown clay loam from 53 to 60 inches in depth. Still soils have slow to medium runoff and moderately slow permeability.

Soil Unit 160 – Urbanland-Clear Lake Complex, 0 to 2 percent slopes

Urbanland-Clear Lake soils are Clear Lake soils within an urban setting. Soils within urban settings may contain fill soils due to development. Clear Lake soils are found in basins and swales of drainage ways at elevations between 25 and 2,000 feet amsl. Clear Lake soils are very deep, poorly drained soils that formed in fine textured alluvium derived from sandstone and shale. A typical profile of Clear Lake soil is dark grey clay from 0 to 19 inches in depth, dark grey clay with concretions from 19 to 45 inches, and grayish brown clay with light yellowish brown masses of iron accumulations from 45 to 60 inches. The typical water table depth is between 4 and 10 feet in late summer and may be very near the surface during winter months. Clear Lake soils have negligible to high runoff and slow to very slow permeability.

Soil Unit 165 – Urbanland-Campbell Complex, 0 to 2 percent slopes, protected

Urbanland-campbell complex soils are Campbell soils within an urban setting. Soils within urban settings may contain fill soils due to development. Campbell soils are found on floodplains and alluvial fans at elevations between 10 to 400 feet amsl. Campbell soils are very deep, moderately well drained soils formed in alluvium derived from mixed rock sources. A typical profile of Campbell soils is brown silt loam from 0 to 24 inches, grayish brown silty clay loam from 24 to 38 inches, dark grayish brown silty clay loam from 38 to 51 inches, and 50 percent dark grayish brown and 50 percent gray silty clay from 51 to 71 inches. Campbell soils have slow runoff and moderately slow to slow permeability.

Soil Unit 171 – Elder Fine Sandy Loam, 0 to 2 percent slopes, rarely flooded

Elder soils are found on alluvial fans and in flood plains at elevations between 20 and 1,500 feet amsl. Elder soils are very deep and deep, well drained soils that formed in alluvial material derived from mixed rock sources. A typical profile of Elder soil is dark gray fine sandy loam from 0 to 8 inches in depth, dark gray sandy loam from 8 to 23 inches in depth, gray sandy loam from 23 to 35 inches in depth, and light brownish gray fine sandy loam from 35 to 72 inches. Elder soils have negligible to low runoff and moderately rapid permeability.

4.3 Hydrology

Los Gatos Creek flows in a generally south to north direction through the study area. Los Gatos Creek originates in the hills south of the City of San Jose then flows through three impoundments (Lake Elsman, Lexington Reservoir, and Vasona Reservoir) prior to entering the study area. After exiting the study area, Los Gatos Creek flows into the Guadalupe River less than 3,000 feet downstream of the study area. The Guadalupe River flows into Alviso Slough, which enters the southern portion of San Francisco Bay.

The segment of Los Gatos Creek in the study area receives hydrologic input from upstream lakes, reservoirs, and creeks, as well as urban and surface runoff. Los Gatos Creek also receives water from other reservoirs through a pumping system designed as part of the Santa Clara Valley Water District's groundwater recharge system (ICF Jones and Stokes 2009). Flows within Los Gatos Creek are regulated by releases from upstream reservoirs and pumping systems. Los Gatos Creek at the rail bridge, is a perennial stream, but this appears to be largely due to reservoir releases over the dry season; prior to 1995, this section of Los Gatos Creek was often dry (Balance Hydrologics 2009). Recent late-summer baseflows typically range between 1.5 and 3 cubic feet per second (cfs); prior to 1996 summer baseflows were typically either very low or dry, although peak flows from the estimated 2-year recurrence storm is approximately 1,300 cfs at the bridge (Balance Hydrologics 2009). Over the course of the site visit on October 28, 2010, the creek depth fluctuated several inches with a noticeable swift decrease in flow in the afternoon hours.

4.4 USFWS Wetland Online Mapper

The USFWS Wetlands Online Mapper was used to determine if there are any wetlands or other waters known to occur on the study area. No wetlands are shown by the Wetlands Online Mapper within the study area. Since Los Gatos Creek is a linear feature within the study area, it was not marked as a feature on the Online Mapper.

4.5 Waters of the U.S. Within the Study Area

Los Gatos Creek is the only potential Water of the U.S. within the study area. No wetland features were detected outside of the OHWM of Los Gatos Creek within the study area. Below is a brief description of Los Gatos Creek. A delineation map is included as **Figure 4-2**. Representative photographs of Los Gatos Creek are included as **Appendix A**.

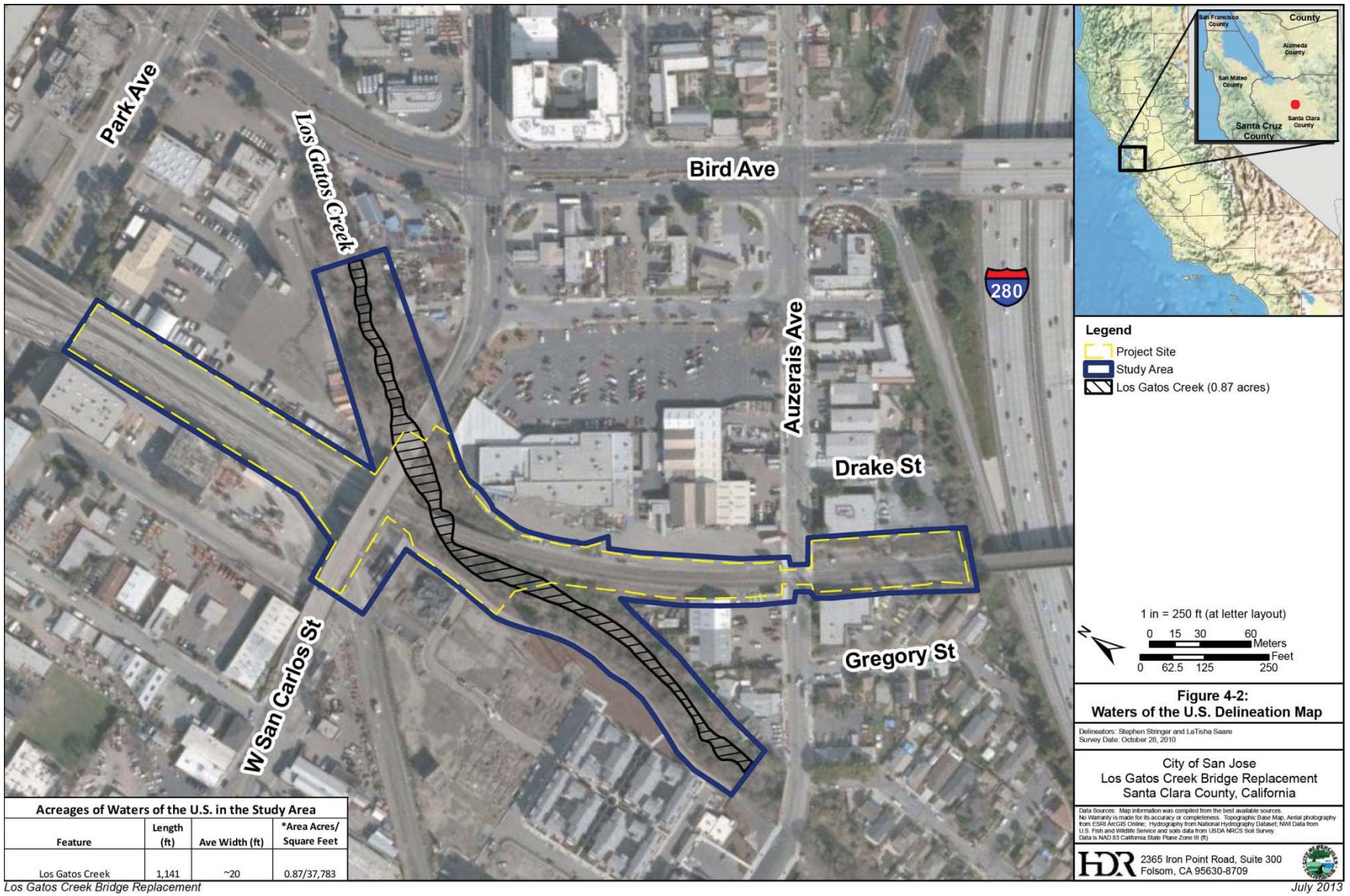
4.5.1 Los Gatos Creek

Los Gatos Creek is channelized and confined by levees through the study area, consisting of a series of runs connected by riffles with no well developed pools. The banks of the creek are steep and covered in places with dense patches of Himalayan and native blackberry. On October 28, 2010 during the reconnaissance survey, Los Gatos Creek ranged in depth from less than six inches in riffles such as downstream of the West San Carlos Street Bridge to greater than 3 feet in depth in a series of runs near the upstream end of the study area. Similar conditions existed at the site during the 2012 and 2013 site visits. A variety of non-native vertebrate and invertebrate species were observed in Los Gatos Creek during the reconnaissance survey including mosquitofish (*Gambusia affinis*), crayfish (unknown species), minnows (Cyprinidae), and sunfish (*Lepomis* sp.). **Table 4-1** is a summary of the acreage of Waters of the U.S. in the study area.

Table 4-1. Acreage of Waters of the U.S. in the Study Area

Feature	Length (ft)	Average Width (ft)	Area (Acres/Square Feet)
Los Gatos Creek	1,141	20	0.87 acres/ 37,783 square feet

Figure 4.2. Waters of the U.S. Delineation Map



Acreages of Waters of the U.S. in the Study Area

Feature	Length (ft)	Ave Width (ft)	*Area Acres/ Square Feet
Los Gatos Creek	1,141	~20	0.87/37,783

Los Gatos Creek Bridge Replacement *July 2013*

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5.0 Conclusion

HDR has conducted a delineation of wetlands and other waters of the U.S. occurring within the Los Gatos Creek Bridge Replacement Project study area. All areas were assessed to the degree necessary to determine the presence or absence of jurisdictional Waters of the U.S. in the study area. Potentially jurisdictional Waters of the U.S. occupy a total of 0.87 acres within the study area. No wetland features were detected within the study area. The results of this delineation are preliminary until verified by the USACE.

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Appendix A: Site Photographs

Photo 1. View of the Caltrain Bridge over Los Gatos Creek that is proposed for replacement.

Photo 2. View of the Caltrain Bridge from ground level looking upstream (south).

Photo 3. Close up view of Los Gatos Creek under the Caltrain Bridge.

Photo 4. View of Los Gatos Creek looking downstream (north) from the vicinity of the West San Carlos Street Bridge.

Photo 5. View of Los Gatos Creek under the West San Carlos Street Bridge looking upstream (south).

Photo 6. View of Los Gatos Creek upstream of the Caltrain Bridge.

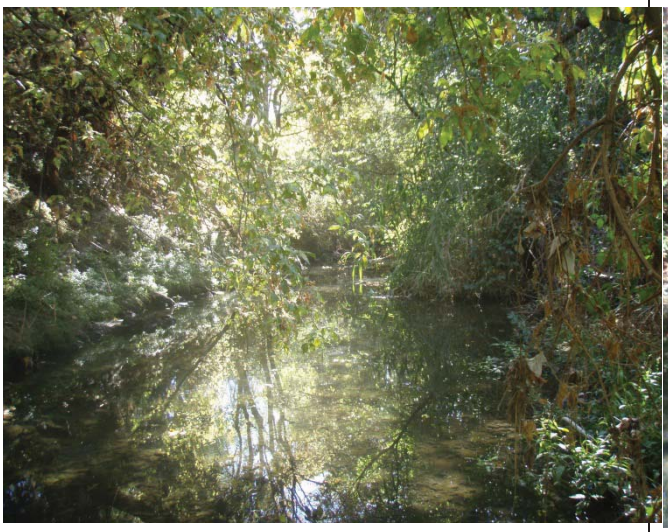

Photo 7. View of Los Gatos Creek upstream of the Caltrain Bridge.

Photo 8. View of Los Gatos Creek upstream of the Caltrain Bridge.