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ADDENDUM TO THE BASE LINE BRIDGE REPLACEMENT PROJECT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

BASE LINE BRIDGE REPLACEMENT PROJECT

CITY OF HIGHLAND

SAN BERNARDINO COUNTY, CALIFORNIA

Submitted to:

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LSA

March 2025

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LIST OF ABBREVIATIONS AND ACRONYMS

2018 IS/MND	2018 Initial Study/Mitigated Negative Declaration
2018 Project	Base Line Bridge Replacement Project
ACM	asbestos-containing materials
ADL	aerially deposited lead
APE	Area of Potential Effects
BA	Biological Assessment
BMP	Best Management Practice
BSA	Biological Study Area
Caltrans	California Department of Transportation
CESA	California Endangered Species Act
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
City	City of Highland
CORRACTS	RCRA Corrective Action Sites List
CWA	Clean Water Act
dBA	A-weighted decibels
EIR	Environmental Impact Report
EVWD	East Valley Water District
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GHG	greenhouse gas

HPSR	Historic Property Survey Report
IS	Initial Study
ISA	Initial Site Assessment
LBP	lead-based paint
LID	low-impact development
L_{max}	maximum instantaneous noise level
LOS	level of service
LQG	RCRA-Large Quantity Generator
MBTA	Migratory Bird Treaty Act
MMRP	Mitigation Monitoring and Reporting Plan
MND	Mitigated Negative Declaration
mph	miles per hour
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
NES	Natural Environmental Study
NFRAP	No Further Remedial Action Planned
NonGen	RCRA-Non-Generator
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
NSR	Noise Study Report
proposed project	Base Line Bridge Replacement Project
PS&E	Plans, Specifications, and Estimates
RCRA	Resource Conservation and Recovery Act

RWQCB	Regional Water Quality Control Board
SBAIC	San Bernardino Archaeological Information Center
SBCFCD	San Bernardino County Flood Control District
SBIA	San Bernardino International Airport
SBKR	San Bernardino kangaroo rat
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SoCalGas	Southern California Gas Company
SQG	RCRA-Small Quantity Generator
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
TSDF	Treatment, Storage, and Disposal Facilities
USACE	United States Army Corps of Engineers
WQMP	Water Quality Management Plan

1.0 PROJECT INFORMATION

Project Title:	Base Line Bridge Replacement Project
Bridge No.:	54C0035
Project Location:	The project is in Highland, on the Base Line roadway at City Creek, 0.4 mile east of State Route (SR) 210 between Boulder Avenue and Yarnell Road.
Name of Applicant:	City of Highland
Lead Agency:	City of Highland
Address:	27215 Base Line Street Highland, CA 92346
Assessor's Parcel Number(s):	120053101, 120050101, 120054101, 120050102, 120114101, 120113106, 1200-501-03
General Plan Designations:	Major Highway
Zoning:	N/A
Prepared by:	LSA 1500 Iowa Avenue, Suite 200 Riverside, CA 92507

2.0 APPROVED PROJECT (2018 IS/MND)

2.1 INTRODUCTION

In February 2018, an Initial Study/Mitigated Negative Declaration (2018 IS/MND) for the proposed Base Line Bridge Replacement Project (2018 Project) was prepared and subsequently adopted by the City of Highland (City) on March 23, 2018. The information listed in Section 2.0 is from the approved 2018 IS/MND sections that have been incorporated in this document, to document what was environmentally cleared at that time. In Section 3.0, Updated Project Details (2025), these sections are modified to accurately identify project elements and design changes in the project, which is approaching the 100 percent design Plans, Specifications, and Estimates (PS&E) in 2025.

2.1.1 Project Purpose

The purpose of the project is to replace the existing bridge and eliminate the low-water crossing over City Creek, replacing it with a raised bridge with adequate clearance for the creek to flow underneath and to maintain safe access through the project area on a roadway that meets adopted City standards.

2.1.2 Project Need

Upstream of Base Line Bridge, during normal flow conditions, flows are contained within “piled-up” channel side slopes and pass under the existing bridge. During major flood events, breaches have been observed at multiple locations in the “piled-up” channel side slopes. As a result of these breaches, flows are diverted to the low-water crossing, where the existing box culvert is inadequate to convey such large flows. Consequently, the water flows overtop the Base Line roadway, thus creating a need to replace the existing structure with a raised bridge with adequate clearance for the creek to flow underneath. Major storm events that occurred in December 2010 resulted in significant flows within City Creek, causing the overtopping of a number of roadways and culverts within Highland.

2.1.3 Description of Work

The City, in cooperation with the California Department of Transportation (Caltrans), District 8, and the Federal Highway Administration (FHWA), proposes a replacement bridge for the Base Line Bridge (State Bridge Number 54C0035) located on the Base Line roadway over City Creek, approximately 0.4 mile east of SR-210. The proposed replacement bridge will accommodate four lanes of vehicular traffic with dedicated space for pedestrians and bicyclists in accordance with current federal, State, and applicable local geometric standards. The proposed project will include four 12-foot lanes, a 16-foot median, two 8-foot shoulders, and two dedicated 5-foot pedestrian corridors separated from vehicle lanes by a concrete barrier along the length of the bridge. The new bridge will measure approximately 95.5 feet wide and 600 feet long and replace the existing 72-foot-wide and 42-foot-long bridge. Both the northern and southern edges of the proposed bridge deck will extend past their current locations to accommodate standard shoulders and the pedestrian corridors. Compared to existing conditions, the replacement bridge profile will be raised to accommodate current roadway design standards and will allow additional horizontal clearance for water flows to pass beneath Base Line Bridge. The project also includes the construction of street

improvements, including utility construction, pavement widening, curbs, gutters, sidewalks, and street lighting and the relocation of utilities as needed.

2.1.4 Project Design Considerations

In developing the project, both roadway and bridge design were taken into consideration. The vertical profile of the roadway and bridge has been designed for a design speed of 55 miles per hour (mph) (45 mph posted speed). The bridge will provide a minimum freeboard of 2.5 feet over the maximum water surface elevation and a minimum vertical clearance of 14 feet over the creek bed.

The following are the major considerations in setting the roadway/bridge profile:

- Minimum freeboard requirements of Federal Emergency Management Agency (FEMA) and San Bernardino County Flood Control District (SBCFCD);
- Maintain a design speed of 55 mph (posted speed 45 mph);
- Proximity to nearby driveways to commercial/retail centers; and
- Replacement of the existing low-water crossing with a new bridge structure.

Taking into consideration the above, a road profile was developed that eliminates the low-water crossing, matches existing street elevations at the retail center driveways, and provides the required freeboard clearances and necessary sight distance for the design speed. The change from a low-water crossing to an all-weather road resulted in raising the road profile to a maximum of 6 feet above existing grade, particularly on the east side of the existing bridge. The majority of the road profile realignment occurs east of the proposed bridge due to several conditions and constraints, including:

- Close proximity of existing driveways immediately west of the bridge;
- Critical channel water surface elevations and freeboard requirements;
- An existing low-water crossing about 500 feet east of the bridge structure; and
- Elevation of existing road grades east of the low-water crossing.

Horizontally, the Base Line Bridge roadway across the SBCFCD right-of-way of City Creek is improved with curb and gutter and sidewalk and is striped for four travel lanes. The current cross-section with a 60-foot curb-to-curb width does not meet the City's Major Highway standard of 80 feet curb-to-curb. The Major Highway cross-section will include four travel lanes, a raised median, bicycle lanes, and sidewalks. The roadway will not add any travel lanes and, therefore, is not a capacity-enhancing improvement. The improvements will provide some improvement in the traffic flow by eliminating horizontal lane transitions for motorists traveling through the various road cross-sections.

2.1.5 City Multi-Use Trail Master Plan

The City's Multi-Use Trail Master Plan shows a community, multi-use trail along the City Creek. A trail crossing that will provide tie-in to a future trail network has been incorporated into the project underneath the bridge. The trail will have sufficient width and vertical clearance to accommodate bicyclists, pedestrians, and equestrian riders.

2.1.6 Project Construction

The construction of the bridge and road widening will include the following.

2.1.6.1 Construction Staging

The current plan for staging during construction is to close the south half of the existing roadway to traffic and construct the south half of the new bridge first. Once the first half of the new bridge is constructed, traffic will be moved to the new construction and the north half of the existing bridge will be removed and replaced. Staging will be located outside the roadway footprint; however, the staging areas will be located within the Biological Study Area (BSA) for the project.

2.1.6.2 Disposal Sites

Excavated materials will be stockpiled within the proposed staging areas, which are located north of Base Line Bridge. One staging area is on the east end of the project, east of City Creek on the northwest corner of Base Line Bridge and Yarnell Road. The second staging area is located west of City Creek and east of Highland Village Plaza. Most of the excavated materials will be placed again within the project limits as backfill. Any material that cannot be placed as backfill within the project limits will be disposed of offsite. A noxious weed station will be constructed within the roadway staging area for disposal of invasive species.

2.1.6.3 Grading

Prior to construction, clearing and grading will be required along Base Line Road, on access roads, and under the bridge. All grading will occur within the project footprint.

2.1.6.4 Construction Access

There are currently logical access routes into the creek that would be utilized to initiate each stage of construction. Once bridge removal and grading are underway, initial access locations will become unusable. The Contractor will construct temporary access to the invert of City Creek to facilitate the advanced phases of construction. These temporary access roads would be used for accessing the washes, hauling materials with dump trucks, delivering materials and equipment, and performing other activities, including the erection of precast girders and placement of reinforcing steel and concrete.

2.1.6.5 Detours

Detours are not planned for this bridge replacement project. Construction of the replacement bridge will be staged to maintain continuous access across City Creek on Base Line Bridge in order to minimize the impact on the community.

2.1.6.6 Utility Relocation

Utilities would be temporarily relocated prior to each stage of construction and permanently relocated after completion of each stage of construction. The existing utilities are assumed to be in franchise agreement with the City, and the owners will be responsible for the relocation as required by the project.

3.0 UPDATED PROJECT DETAILS (2025)

3.1 PROJECT BACKGROUND

The project is currently in the 95 percent PS&E phase, which requires design modifications and details that are necessary to continue with implementation and future construction of the project. As such, these slight modifications and design details to the sections below are described below to differentiate the new changes that have occurred through project design refinement.

3.1.1 Summary of Project Changes

Since approval of the 2018 IS/MND, there have been changes to project design and construction features. A summary of these changes is included below:

- Reduction of grading within City Creek;
- Construction of concrete slope protection at the west abutment;
- Reduction in the limits of the levee slope protection at the east and west abutments;
- Removal of the multipurpose trail;
- Addition of a pedestrian overlook on the south side of the new bridge at the location of bent 3, which spans 54 feet from pedestal to pedestal and has a radius of 30 feet at the edge of the deck; and
- Changes in construction measurements, such as:
    - Construction of a 98-foot-wide bridge instead of a 95.5-foot-wide bridge;
    - Construction of two 14-foot-wide and two 12-foot-wide traffic through lanes (one of each on both sides the bridge) instead of four 12-foot-wide traffic lanes;
    - Construction of a 12-foot-wide striped median instead of a 16-foot median; and
    - Construction of 6-foot-wide pedestrian corridors instead of 5-foot-wide raised pedestrian corridors.

Other than these listed project changes, there are no changes made to other aspects of the project scope such as the construction phasing, construction schedule, construction access, detour routes, and utility relocation.

3.1.2 Project Purpose

The purpose of the project is to replace the existing bridge and eliminate the low-water crossing over City Creek, replacing it with a raised bridge with adequate clearance for the creek to flow

underneath and to maintain safe all-weather access through the project area on a roadway that meets adopted City standards.

3.1.3 Project Need

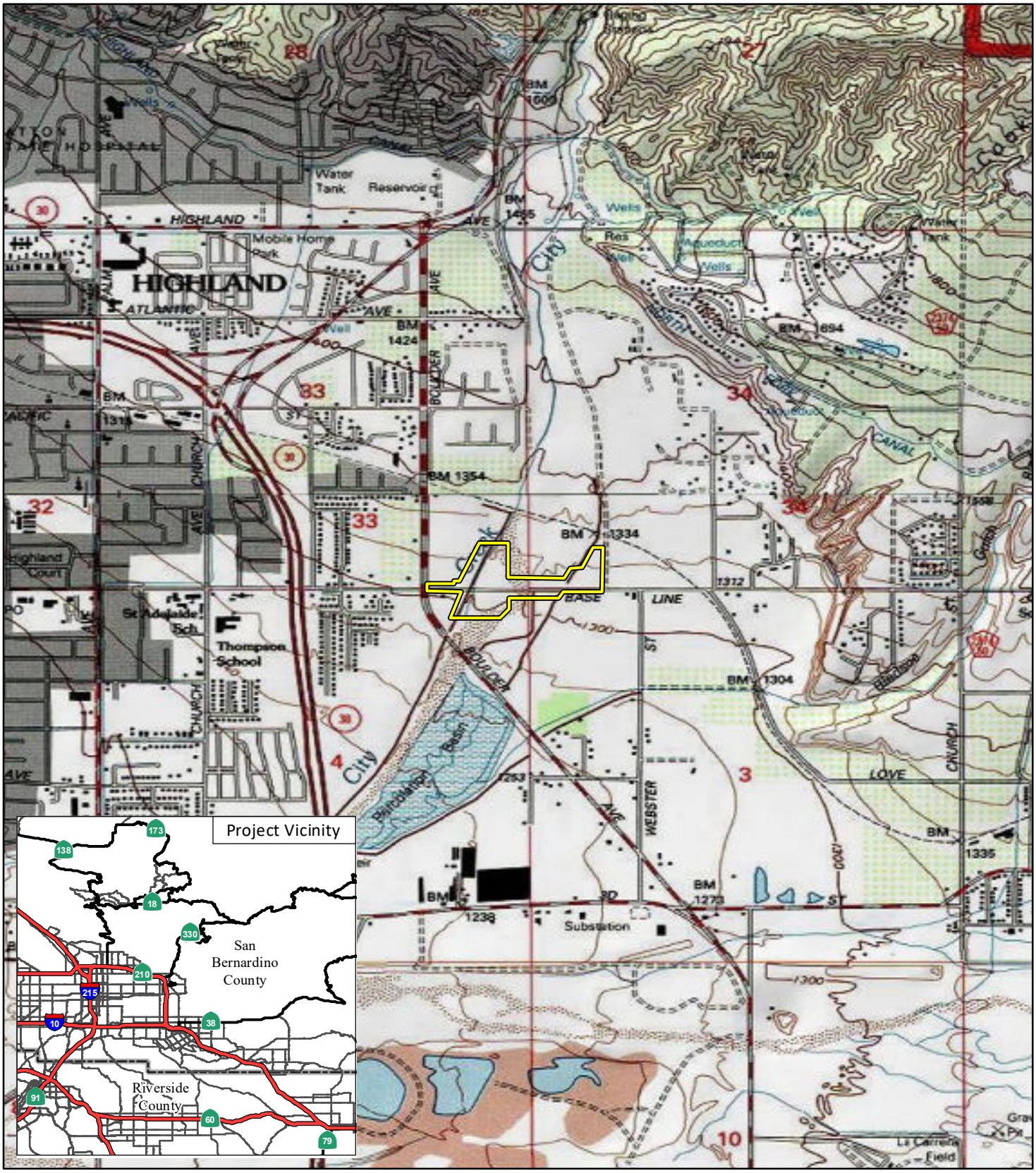
Upstream of Base Line Bridge, during normal flow conditions, flows are contained within "piled-up" channel side slopes and pass under the existing bridge. During major flood events, breaches have been observed at multiple locations in the "piled-up" channel side slopes. As a result of these breaches, flows are diverted to the low-water crossing through a secondary flow path where the existing box culvert is inadequate to convey such large flows. Consequently, the flows overtop Base Line Road, create a need to replace the existing structure with a raised bridge with adequate clearance for the creek to flow underneath. Major storm events that occurred in December 2005 and 2010 resulted in significant flows within City Creek, causing the overtopping of a number of roadways and culverts within Highland, including Base Line Bridge.

3.1.3.1 Existing Facility

Base Line Bridge is 0.4 mile east of SR-210, between Boulder Avenue and Yarnell Road, in Highland, San Bernardino County, California (see **Figure 1: Project Location & Vicinity and Figure 2: Site Location**). As constructed, the facility is 72 feet wide and 42 feet long and is a four-lane roadway over City Creek. Eastbound and westbound traffic lanes are separated by a striped center median. Six-foot sidewalks are provided on each side of the roadway. Sidewalks are not separated from vehicular traffic lanes by concrete barrier railing.

Base Line Bridge is carried over the main flow channel of City Creek on a single-span precast concrete-voided slab bridge 42 feet in length and 75 feet in width and conveys runoff from precipitation events under the Base Line roadway. Between the bridge on the west levee and the culvert to the east, the Base Line roadway is nearly at grade with City Creek. During storm events with high flows, a secondary flow path develops upstream of Base Line Bridge and flows across the high terrace area east of the main flow channel. A 4- by 8-foot box culvert is located where the secondary flow path intersects Base Line Bridge. High storm flows generally carry large amounts of debris downstream, which can block the culvert and cause stormwater to flow over the top of the Base Line roadway.

As City Creek flows out of San Bernardino National Forest, hydrological flows are channelized by levees, which originate at Highland Avenue and extend downstream to the channel's confluence with the Santa Ana River. With the construction of the Base Line Bridge across the channel, hydrological flows have become further confined to a narrow strip of City Creek adjacent to the west levee. This has led to aggradation during moderate- and large-scale precipitation events, resulting in the deposition of large amounts of aggregate material that has accumulated adjacent to the northern, upstream edge of Base Line roadway . In the absence of aggregate not being removed between events, subsequent large-scale flood events have resulted in water and aggregate overtopping the existing roadway, creating a public safety hazard and impeding natural fluvial processes.



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FIGURE 1

Base Line Bridge Replacement Project

Project Location

SOURCE: USGS 7.5' Quad - *Harrison Mtn* (1988) and *Redlands* (1988), CA

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LEGEND

Project Area

0 100 200

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SOURCE: Google (2024); AECOM (2025)

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FIGURE 2

Base Line Bridge Replacement Project

Site Location

08-SBd-0-HIGH
EA 08-925035

3.1.4 Description of Work

The City, in cooperation with Caltrans District 8 and the FHWA, proposes a replacement bridge for the Base Line Bridge (State Bridge Number 54C0035) on the Base Line roadway over City Creek, 0.4 mile east of SR-210. The proposed replacement bridge would accommodate four lanes of vehicular traffic, with dedicated space for pedestrians and bicyclists in accordance with current federal, State, and applicable local geometric standards. The proposed project would include two 14-foot-wide and two 12-foot-wide traffic through lanes (one of each on both sides of the bridge), a 12-foot-wide striped median, two 8-foot shoulders that double as Class II bike lanes, and two dedicated 6-foot pedestrian corridors separated from vehicle lanes by a concrete barrier along the length of the bridge. The proposed striped median would become a left-turn lane as it approaches the Highland Village Plaza intersection to the west and the Yarnell Road intersection to the east. The new bridge would measure 98 feet wide and 600 feet long and replace the existing 72-foot-wide and 42-foot-long bridge. The 98-foot bridge width comprises the following widths:

- Two 1-foot outside barriers;
- Two 6-foot sidewalks;
- Two 2-foot interior barriers;
- Two 8-foot shoulders (Class II bike lanes);
- Two 14-foot-wide traffic lanes, two 12-foot-wide traffic lanes, and one 12-foot-wide striped median.

In addition to the 98-foot typical width of the bridge, there is a pedestrian overlook that extends beyond the typical width of the bridge, and is described as follows:

- Pedestrian overlook on the south side of the new bridge at the location of bent 3, which spans 54 feet from pedestal to pedestal and has a radius of 30 feet at the edge of the deck. The overlook would extend a maximum of 10 feet from the typical edge of the bridge deck.

Both the northern and southern edges of the proposed bridge deck would extend past their current locations to accommodate standard shoulders and the pedestrian corridors. Compared to existing conditions, the replacement bridge profile would be raised to accommodate current roadway design standards and will allow vertical clearance for water flows to pass beneath Base Line Bridge. The project also includes the construction of street improvements, including pavement widening, curbs, gutters, sidewalks, street lighting, and the relocation of utilities as needed.

3.1.5 Project Design Considerations

In developing the preferred project, both roadway and bridge design were taken into consideration. The vertical profile of the roadway and bridge has been designed for a design speed of 55 mph (45 mph posted speed). The bridge will provide a minimum freeboard of 2.5 feet over the maximum water surface elevation and a minimum vertical clearance of 12 feet over the creek bed.

The following are the major considerations in setting the roadway/bridge profile:

- Design flow volume and minimum freeboard requirements of the FHWA and SBCFCD;
- Maintain a design speed of 55 mph (posted speed of 45 mph);
- Maintain access to nearby driveways to commercial/retail centers; and
- Replacement of the existing bridge and low-water crossing with a new bridge structure.

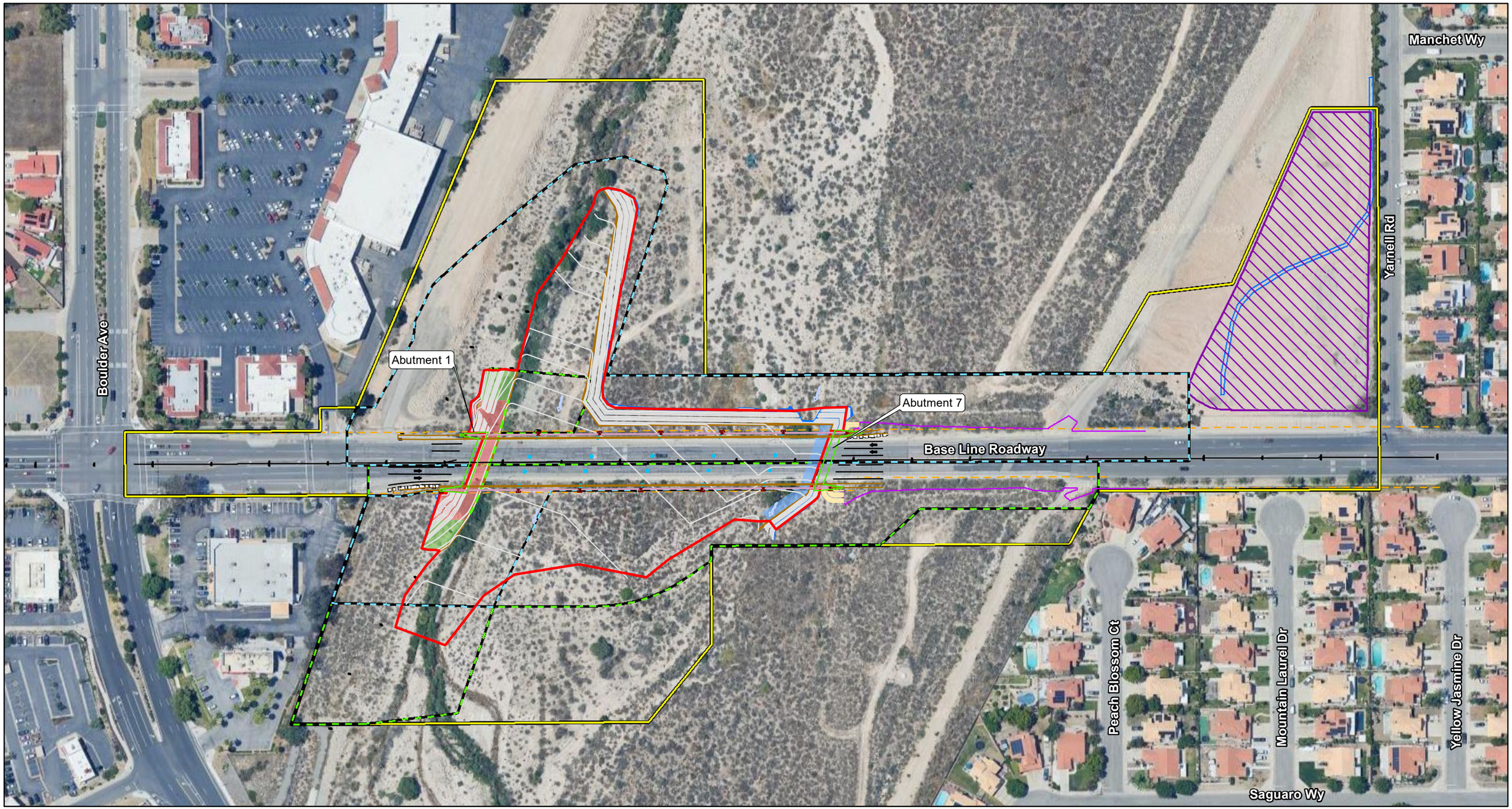
Taking into consideration the above, a road profile was developed that eliminates the existing bridge and low-water crossing, matches existing street elevations at the retail center driveways, provides the required freeboard clearances, and provides the necessary sight distances for the design speed. The change from a low-water crossing to an all-weather road resulted in raising the road profile to a maximum of 6 feet above existing grade, particularly on the east end of the existing bridge. The majority of the road profile realignment would be on the east end of the proposed bridge due to several conditions and constraints, including:

- Critical channel water surface elevations and freeboard requirements;

- Existing secondary flow path intersecting Base Line Bridge about 500 feet east of the existing bridge structure; and

- The existing roadway profile east of the secondary flow path.

Horizontally, the Base Line roadway across the SBCFCD right-of-way of City Creek is improved with curb and gutter and sidewalk and is striped for four travel lanes. The current cross-section with a 60-foot curb-to-curb width does not meet the City's Major Highway standard of 80 feet curb-to-curb. The Major Highway cross-section would include four travel lanes, a striped median, Class II bike lanes, barriers to separate pedestrians from vehicular traffic, and sidewalks. The roadway would not add any travel lanes and, therefore, would not be a capacity-enhancing improvement. The improvements would provide some improvement in the traffic flow by eliminating horizontal lane transitions for motorists traveling through the various road cross-sections (see **Figure 3: Proposed Bridge Design**). The above design considerations of the proposed project have remained unchanged from the 2018 IS/MND.



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LEGEND

- Biological Study Area

Project Details

- Staging Area Fencing (Duration of Project)
- Phase 1 Fencing
- Phase 2 Fencing
- Potential Staging Area
- Right of Way
- Drainage
- Centerline Station Markers
- Road Centerline
- Bridge Columns
- Abutment
- Concrete Barrier
- Direction of Flow
- Guard Rail
- Light Pole & Pilaster/Pedestal
- Metal Barrier
- Striping
- Cut-off Wall
- Channel Grading
- Channel Grading
- Roadside Grading
- Roadside Fill
- Top of Slope
- Toe of Slope
- Riprap
- Riprap (Concreted)
- Slope Protection (Concreted)

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SOURCE: Google (2024); AECOM (2025)

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FIGURE 3

Base Line Bridge Replacement Project

Project Details

08-SBd-0-HIGH
EA 08-925035

3.1.6 City Multi-Use Trail Master Plan

The City's Multi-Use Trail Master Plan shows a proposed multi-use trail along City Creek, at the west side of Base Line Bridge, with a planned major trail node connection near Boulder Avenue, approximately 700 feet southwest of the project. The Multi-Use Trail Master Plan shows the proposed trail extending south along City Creek from the planned major trail node, intersecting with the proposed planned Streater Avenue trail connection and undercrossing SR-210, eventually connecting to another planned major trail node connection near the Santa Ana River Trail. The planned major trail node near Boulder Avenue would also extend the proposed multi-use trail to the east and head south along the east edge of City Creek to connect to another planned trail node connection adjacent to Boulder Avenue and south of Cherokee Rose Drive.

The previously approved 2018 IS/MND acknowledged and analyzed the City's Multi-Use Trail Master Plan and states that the bridge replacement project would "accommodate the future extension of a multifunction trail (pedestrian, cycle, and equestrian use) for possible future connection with the Santa Ana River Trail." However, the precise footprint of the "tie-in" planned to be provided for the future trail was not detailed in the original project figures or calculations referenced in the approved technical documentation.

Consistent with the 2018 IS/MND and the City's Multi-Use Trail Master Plan, the proposed project would accommodate a future trail connection. The proposed future trail connection, as detailed in the updated project plans would provide a "horizontal bench" in the cast-in-place concrete slope paving, to be placed at the western bridge abutment.

3.1.7 Project Construction

The construction of the bridge and road widening will include the following.

3.1.7.1 Construction Staging

The first phase of construction would close the southern half of the existing roadway to traffic and construct the corresponding half of the new bridge. The proposed staging area would be at the east end of the project, east of City Creek, on the northwest corner of the Base Line roadway and Yarnell Road. Once the first phase is constructed, traffic would be moved to the southern half of the new bridge and the northern half would be removed and replaced. No changes to construction staging are proposed as a result of the proposed project.

3.1.7.2 Disposal Sites

Excavated materials would be stockpiled within the proposed staging area north of the Base Line roadway. Any material that cannot be placed as backfill within the project limits will be disposed of off site. A noxious weed station would be constructed within the staging area for disposal of invasive species. No changes to disposal sites are proposed as a result of the proposed project.

3.1.7.3 Grading

Prior to construction, clearing and will be required along the roadway, on access roads, and under the bridge. All grading will take place within the project footprint. Concrete rock slope protection

would be placed at abutment 7, located at the east end of the new bridge. Concrete slope protection will also be constructed at abutment 1, located at the west end of the new bridge. Rock slope protection will be placed at the upstream and downstream ends of the concrete slope protection.

3.1.7.4 Construction Access

There are currently logical access routes into the creek that would be utilized to initiate each stage of construction. Once bridge removal and grading are underway, initial access locations will become unusable. The Contractor will construct temporary access to the invert of City Creek to facilitate the advanced phases of construction. These temporary access roads would be used for accessing the washes, hauling materials with dump trucks, delivering materials and equipment, and performing other activities, including the erection of precast girders and the placement of reinforcing steel and concrete. No changes to construction access are proposed as a result of the proposed project.

3.1.7.5 Detours

Detours are not planned for this bridge replacement project. Construction of the replacement bridge will be staged to maintain continuous access across City Creek on Base Line Bridge to minimize the impact on the community.

3.1.7.6 Utility Relocation

The existing utilities are in franchise agreement with the City, and the owners would be responsible for their relocation as required by the project. The project would cause temporary relocations for Southern California Edison (SCE) and East Valley Water District (EVWD). Both SCE and EVWD would be permanently relocated after phase one of construction. AT&T, Frontier Communications, and Charter/Spectrum will be relocated prior to the beginning of phase two of construction. As part of the project, Southern California Gas Company (SoCalGas) would de-energize their gas line prior to the beginning of phase two of construction and would be permanently relocated near the end of phase two of construction, once the bridge work is complete.

3.1.7.7 Construction Schedule

Construction is expected to take place between November 2025 and June 2028. Construction would take place year-round and is anticipated to be 31 months in duration. Construction duration within the river channel is anticipated to be 29 months, and it is anticipated that there would be a total of 22 construction workers on site daily during construction.

4.0 ENVIRONMENTAL ANALYSIS

4.1 ANALYSIS OF POTENTIAL ENVIRONMENTAL EFFECTS

This Addendum evaluates the potential for the proposed project to result in new significant environmental effects or a substantial increase in the severity of significant environmental effects previously identified in the approved 2018 IS/MND. The environmental analysis provided in this section describes the information that was considered in evaluating the thresholds contained in Appendix G of the *State California Environmental Quality Act (CEQA) Guidelines.* The information used in this evaluation includes the approved 2018 IS/MND, the proposed project description, the Updated Mitigation Monitoring and Reporting Plan (MMRP) (Appendix A), the 2018 IS/MND Natural Environmental Study (NES) (Appendix B), the Amended Biological Assessment (BA) (Appendix B-1), the Updated Jurisdictional Delineation Report (Appendix B-2), the 2018 IS/MND Historic Property Survey Report (HPSR) (Appendix C), the 2018 IS/MND Initial Site Assessment (ISA) (Appendix D), the 2018 IS/MND Water Quality Study (Appendix E) and 2018 IS/MND Noise Study Report (NSR) (Appendix F).

The following analysis is used to: (1) compare the environmental impacts of the proposed project with impacts expected to result from development of the approved project and evaluated in the 2018 IS/MND; (2) identify whether the proposed project would result in new or more severe significant environmental impacts; and (3) identify if there have been substantial changes with respect to the circumstances under which the proposed project would be undertaken since the 2018 IS/MND was adopted that would result in new or more severe significant environmental effects.

Mitigation measures are measures that would minimize, avoid, or eliminate a significant impact. The analysis contained herein evaluates each topic to identify whether additional mitigation measures beyond those identified in the 2018 IS/MND would be warranted. As discussed for each topic in the following analysis, no new mitigation measures would be required, except for the topic of biological resources, which would require the addition of Conservation Measures CM-1 through CM-25 Conservation, to reduce potential effects of the proposed project on biological resources.

This analysis confirms that the proposed project is within the scope of the 2018 IS/MND, that the project would cause no new or more severe significant effects.

The following discussion has been undertaken pursuant to the provisions of CEQA Guidelines, Sections 15162 and 15164, to provide the City with the factual basis for determining whether any changes in the project, any changes in circumstance, or any new information since the 2018 IS/MND was adopted requires additional environmental review.

4.1.1.1 Aesthetics

Section 1 of the 2018 IS/MND analyzed the visual conditions of the project area. The 2018 IS/MND identified less than significant impacts associated with aesthetics and visual resources. Similar to the approved project, the proposed project would not substantially impact a scenic vista, nor would it substantially damage scenic resources within a State scenic highway. The proposed project would not involve the construction of any new structures or modify existing structures where publicly

available scenic vistas may exist. The proposed project, like the approved project, would involve the replacement of the existing bridge and eliminate the low-water crossing over City Creek. While the proposed project would involve the addition of a pedestrian overlook on the south side of the new bridge spanning 54 feet from pedestal to pedestal, this addition would not substantially alter or damage visual resources. The bridge design of the proposed project would be similar to the approved project and would not create new impacts to the visual conditions within the project site. Similar to the approved project, the proposed project would include construction of street improvements, including pavement widening, curbs, gutters, sidewalks, and street lighting and the relocation of utilities as needed. All lighting would be required to comply with applicable City standards, as described in the 2018 IS/MND, related to the installation and operation of lighting features. Therefore, the proposed project would have a less than significant impact related to visual character, similar to the approved project. Therefore, implementation of the proposed project would not result in impacts associated with light or glare that would adversely affect daytime or nighttime views in the project area,

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts on visual resources, nor would it result in new significant impacts. With adherence to applicable regulatory requirements, there would be no new or substantially more severe significant impacts related to aesthetics. ***No new impacts or increase in the severity of impacts related to aesthetics would occur, and no additional mitigation measures are required.***

4.1.1.1 Agricultural Resources

Section 2 of the 2018 IS/MND analyzed potential impacts to agriculture and forestry resources in the project area. The 2018 IS/MND identified no impacts associated with agriculture and forestry resources.

Similar to the approved project, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (farmland) to non-agricultural use; conflict with existing zoning for agricultural use or a Williamson Act contract; or conflict with existing zoning for forest land, timberland, or timberland zoned Timberland Production. Implementation of the proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to nonforest use. Therefore, the proposed project would not adversely affect agricultural or forestry resources.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts on agriculture and forestry resources, nor would it result in new significant impacts. ***No new impacts or increase in the severity of impacts related to agricultural resources would occur, and no additional mitigation measures are required.***

4.1.1.2 Air Quality

Section 3 of the 2018 IS/MND analyzed potential air quality impacts associated with implementation of the approved project. The 2018 IS/MND determined that air quality impacts, including conflicts

with applicable air quality plans, cumulatively considerable net increases of criteria pollutants, exposure of sensitive receptors to pollutants, and creation of objectionable odors, would result in either no impact or less than significant impacts. However, the 2018 IS/MND identified that the development of the approved project would result in a less than significant impact with mitigation incorporated associated with the violation of an air quality standard from short-term construction emissions.

The 2018 IS/MND indicated that construction emissions associated with the approved project would contribute to air pollutant emissions on a short-term basis. As such, **Mitigation Measures AIR-01 through AIR-05** were prescribed by the 2018 IS/MND to reduce short-term air quality impacts to a less than significant level. Additionally, the 2018 IS/MND required adherence to South Coast Air Quality Management District (SCAQMD) Rule 403 to reduce the amount of particulate matter in the atmosphere resulting from man-made fugitive dust sources. No long-term operational impacts were identified. Similar to the approved project, the proposed project would not conflict with or obstruct implementation of the applicable air quality plan, violate air quality standards, or result in a cumulatively considerable net increase in any criteria pollutant. Construction of the proposed project would utilize similar construction techniques identified in the 2018 IS/MND; therefore, no additional impacts or increase in the severity of air quality impacts would occur with implementation of the proposed project. Adherence to **SCAQMD Rule 403** and implementation of **Mitigation Measures AIR-01 through AIR-05,** identified in the 2018 IS/MND, would ensure that impacts related to air quality would be reduced to less than significant levels. ***No new impacts or increase in the severity of impacts related to air quality would occur, and no additional mitigation measures are required.***

4.1.1.3 Biological Resources

Section 4 of the 2018 IS/MND analyzed potential impacts on biological resources with implementation of the approved project. The 2018 IS/MND determined that all impacts would be reduced to less than significant levels with the incorporation of mitigation. The discussion of biological resources within the project site and vicinity included in the 2018 IS/MND was based on the NES (included as Appendix B). The NES included discussions from the BAs, rare plant survey, coastal California gnatcatcher survey, and San Bernardino kangaroo rat (SBKR) survey of the project site and the BSA. Biological surveys and field assessments were conducted at the project site during the following periods:

- **Rare Plant Focused Survey:** May, June, and July 2009, and April and June 2016
- **Coastal California Gnatcatcher Focused Survey:** March, April, and May 2009, and April through June 2016
- **Burrowing Owl Habitat Assessment:** April 2016
- **SBKR Focused Trapping Survey:** July 2009 (across multiple dates)
- **Bat Daytime Habitat Assessment:** January 2017

- **Jurisdictional Delineation:** June 2016

The 2018 IS/MND identified areas of potential impact, including potential effects on special-status species, sensitive natural communities, and wetland areas of the project site. Impacts to migratory movements of wildlife species and potential conflicts to tree ordinances or Habitat Conservation Plans were identified as less than significant.

Based on the survey results and literature review described in Appendix B, the 2018 IS/MND identified a total of 76 special-status species, natural communities, and critical habitats that potentially occur or are known to occur in the project area. Of these, 18 species are either State or federally listed as endangered or threatened. However, only five species were determined to have potentially suitable habitat within the previously defined BSA, including the Santa Ana sucker (*Catostomus santaanae*), least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher *(Polioptila californica californica*), SBKR (*Dipodomys merriami parvus*), Santa Ana speckled dace (*Rhinichthys osculus*), and coast horned lizard (*Phrynosoma blainvillii*).

As such, the 2018 IS/MND assessed the potential impacts of the approved project on these species and their habitats, detailing both temporary and permanent effects and prescribed **Mitigation Measures BIO-01 through BIO-12** to ensure potential impacts on special-status species would be reduced to less than significant.

Although the proposed project would be located within the same area as the approved project and would be subject to similar biological conditions, the proposed project would create additional impacts to SBKR due to the modified design. As stated in the 2018 IS/MND, that project may "take" individual SBKR and identified 0.09 acre of permanent impacts and 7.82 acres of temporary impacts to SBKR federally designated critical habitat within the BSA. Additionally, the 2018 IS/MND noted that the widening of Base Line Bridge and the spanning of City Creek would provide an additional 0.70 acre of permanent benefit to SBKR habitat through enhanced connectivity between upstream and downstream habitats, based on the previous design. As described above, the approved project prescribed **Mitigation Measures BIO-03 through BIO-05** to reduce potential impacts to SBKR to a less than significant level.

The proposed design modifications under the proposed project would increase both permanent and temporary impacts to the SBKR compared to the approved project. Under the proposed project, concrete slope protection will be placed at abutment 1, and rock slope protection will be placed at the upstream and downstream limits of the concrete slope protection, which was not included as a permanent impact under the approved project. Additionally, the temporary impacts have been adjusted to account for the entire exclusionary fencing limits. As such, the proposed project has identified 0.49 acre of permanent impacts and 15.95 acres of temporary impacts to the SBKR federally designated critical habitat within the BSA. Following construction, the 15.95 acres of temporary impacts would be restored. Additionally, following approval of the 2018 IS/MND, an amendment to the BA (Appendix B-1) was prepared for the proposed project to address the revised impacts within the project study area and provide additional measures for the SBKR following its listing status update as endangered under the California Endangered Species Act (CESA) in February, 2022. According to the BA amendment, the changes to the project design and construction features that were not previously mentioned in the 2018 IS/MND would require the provision of additional

conservation measures, **Conservation Measures CM-1 through CM-25,** which would include but are not limited to incorporation of a restoration specialist for habitat restoration and protection activities for SBKR, dust control measures during construction for visibility for SBKR monitoring by the designated biologist, prohibition of erosion control materials that are potentially harmful to SBKR, a measure to cover SBKR species injury from construction activities, and a measure to notify CDFW of any SBKR mortality from construction activities. Additionally, other new measures include a phased SBKR relocation program that incorporates fencing and trapping within the project area, restoration of temporary impact areas to SBKR habitat to preconstruction conditions, and a compensatory mitigation measure for permanent impact areas to SBKR habitat. Furthermore, several of the existing conservation measures have been amended to reflect updated standards after consultation with CDFW. **Mitigation Measure BIO-4 and BIO-5,** as previously identified in the 2018 IS/MND have been updated and amended. As such, **Mitigation Measure BIO-4** which included a preconstruction SBKR fencing plan has been amended and replaced with **Conservation Measures CM-17 and CM-18** to include CDFW's ITP SBKR protection guidelines. In addition, **Mitigation Measure BIO-5** which included a range of measures that involved SBKR protection, construction equipment inspection, construction staging, waste control, temporary impact area recontouring, and lighting installation have now been amended and replaced with **Conservation Measures CM-7, CM-11, CM-12, CM-13, and CM-20 through CM-24** to reflect CDFW's updated ITP SBKR protection guidelines. As such, with the inclusion of **Conservation Measures CM-1 through CM-25,** the proposed project would not increase the severity of impacts related to SBKR.

As described in the 2018 IS/MND, the approved project would result in 6.42 acres of temporary impacts and 0.03 acre of permanent impacts to nonwetland waters, and 0.77 acre of temporary impacts to wetland waters under United States Army Corps of Engineers (USACE) jurisdiction within City Creek. As such, the 2018 IS/MND required the following agency authorizations: a Clean Water Act (CWA) Section 404 permit authorization from the USACE, a CWA Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a Fish and Game Code Section 1602 Streambed Alteration Agreement from the CDFW. The 2018 IS/MND also prescribed **Mitigation Measure BIO-13** to reduce impacts to federally protected wetlands to less than significant.

Under the proposed project, the modified design would increase the temporary and permanent impacts to jurisdictional waters as detailed in the Jurisdictional Delineation Report for the proposed project in Appendix B-2. According to the Jurisdictional Delineation Report, City Creek comprises 8.49 acres of nonwetland waters, 9.47 acres of streambed (bank to bank), and 1.37 acres of riparian habitat, which would be subject to the regulatory authority of the CDFW. As such, the proposed project would result in 4.95 acres of temporary impacts and 0.39 acre of permanent impacts to nonwetland waters of City Creek; 6.05 acres of temporary impacts and 0.30 acre of permanent impacts to CDFW streambed resources; and 0.99 acre of temporary impacts and 0.10 acre of permanent impacts to CDFW riparian resources. In accordance with State and federal requirements, impacts to waters of the United States/State resulting from implementation of the proposed project would require appropriate permits from the USACE, RWQCB, and CDFW. Similar to the approved project, the revised project would be required to implement **Mitigation Measure BIO-13**, which would ensure impacts to jurisdictional waters/wetlands would be less than significant.

Additionally, the 2018 IS/MND identified potential project-related impacts to nesting raptors, special-status birds, and other migratory bird species during the bird breeding season. The 2018 IS/MND prescribed **Mitigation Measures BIO-14 through BIO-17** to reduce potential impacts to raptors, special-status bird species, and other nesting birds protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. Similar to the approved project, the proposed project would be required to implement **Mitigation Measures BIO-14 through BIO 17** to ensure that potential impacts to raptors, special-status bird species, and other nesting birds would be reduced to less than significant. While the approved project would include design modifications to the bridge, removal of the multipurpose trail and replacement with a dirt bench, and addition of a pedestrian overlook, these changes would not create additional impacts than what was previously analyzed in the 2018 IS/MND, and the previously prescribed mitigation measures would be applied to the proposed project to reduce potential impacts to less than significant.

In addition, similar to the approved project, the revised project would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan, as the project site is not within the limits of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

As such, implementation of **Mitigation Measures BIO-1, BIO- 2, BIO-3, and BIO-6 through BIO-17,** as identified in the 2018 IS/MND, would remain applicable to the revised project and would ensure that impacts to all biological resources would be reduced to less than, significant levels. ***No new impacts or increase in the severity of impacts related to biological resources would occur. With the addition of Conservation Measures CM-1 through CM-25 impacts to the SBKR would be reduced to a less than significant level.***

4.1.1.4 Cultural Resources

Section 5 of the 2018 IS/MND analyzed potential impacts on cultural resources with implementation of the approved project. The 2018 IS/MND determined that all impacts associated with cultural resources would be reduced to less than significant levels with the incorporation of mitigation.

The discussion of cultural and historic resources in the 2018 IS/MND was based on the Supplemental HPSR in Appendix C. The 2018 IS/MND indicated that Base Line Bridge (36-015497) is a documented historic resource. Twenty additional historic and archaeological sites were also documented within the 1-mile radius of the Area of Potential Effects (APE). According to the 2018 IS/MND, the sites included a prehistoric milling feature; a prehistoric isolate; a painted rock; two archaeological sites; a historic district; nine historic buildings; three historic agricultural complexes; and two water conveyance systems. Of these documented resources within the 1-mile radius, one resource is a National Register of Historic Places (NRHP) Historic District (Boulder Park) and two are California Points of Historic Interest. None of the other resources were listed in any of the registers, directories, or historic property databases at the San Bernardino Archaeological Information Center (SBAIC). No other archaeological resources were identified within or adjacent to the APE by the records search, the survey, or the Native American consultation.

Similar to the approved project, no archaeological resources will be affected by the proposed project, as the proposed project would be located in the same area as the approved project. Implementation of the proposed project would not impact any known or previously identified cultural or historical resource. However, the 2018 IS/MND identified the possibility that unidentified cultural materials or human remains may exist on the site and could be impacted as a result of ground-disturbing activities, and prescribed **Mitigation Measures CUL-1 and CUL-2.** Similar to the approved project, the proposed project has the potential to encounter cultural deposits during construction activities. As such, the proposed project would also be required to implement **Mitigation Measures CUL-1 and CUL-2** identified in the 2018 IS/MND, which would ensure that the impacts to cultural resources would be reduced to a less than significant level.

Implementation of **Mitigation Measures CUL-1 and CUL-2,** as identified in the 2018 IS/MND, which required following proper protocols if unrecorded cultural resources or human remains are encountered, would ensure that the impacts to cultural resources would be reduced to a less than significant level. ***No new impacts or increase in severity of impacts related to cultural resources would occur, and no additional mitigation measures are required.***

4.1.1.5 Geology and Soils

Section 6 of the 2018 IS/MND analyzed potential impacts associated with geological, seismic, and soil conditions within the project area. The 2018 IS/MND determined either no impacts or less than significant impacts associated with geology and soils with implementation of the approved project.

Construction of the revised project would occur in the same vicinity as the approved project and would be subject to similar geological and soil conditions. As such, impacts related to geology and soils would be similar to the project and less than significant.

Similar to the approved project, the proposed project would require the excavation and movement of on-site soils, which could contribute to runoff or erosion issues. Because the proposed project would result in the disturbance of more than 1 acre, the proposed project would be required to comply with the National Pollutant Discharge Elimination System (NPDES) permit issued by the RWQCB, which requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) that identifies Best Management Practices (BMPs) to limit soil erosion during project construction. Additionally, the proposed project would be required to adhere to City design and engineering standards in relation to the soils underlying the proposed project site, as identified in the 2018 IS/MND.

Based on the information in the 2018 IS/MND, the proposed project would not substantially increase the severity of the previously identified geologic impacts, nor would it result in new significant impacts. Adherence to the NPDES permit and applicable City design and engineering standards would ensure that impacts related to geology and soils would be less than significant. ***No new impacts or increase in the severity of impacts related to geology and soils would occur, and no additional mitigation measures are required.***

4.1.1.6 Greenhouse Gas Emissions

Section 7 of the 2018 IS/MND analyzed potential impacts relating to greenhouse gas (GHG) emissions with implementation of the project. The 2018 IS/MND identified either no impacts or less than significant impacts associated with GHG emissions.

Similar to the approved project, construction of the proposed project would result in short-term emissions and would cease upon completion of the proposed project. Additionally, the proposed project would not add lanes to Base Line Bridge and would not generate additional vehicle trips, consistent with the 2018 IS/MND. Therefore, the proposed project would not generate substantial GHG emissions that would have a significant effect on the environment. Similar to the approved project, the project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified GHG impacts, nor would it result in new significant impacts. With adherence to applicable regulatory requirements there would be no new or substantially more severe significant impacts related to GHG emissions. ***No new impacts or increase in the severity of impacts related to GHG emissions would occur, and no additional mitigation measures are required.***

4.1.1.7 Hazards and Hazardous Materials

Section 8 of the 2018 IS/MND analyzed potential impacts associated with hazards and hazardous materials. The 2018 IS/MND determined that all impacts associated with hazards and hazardous materials would result in either less than significant impacts or less than significant impacts with mitigation incorporated. The discussion of hazards and hazardous materials in the 2018 IS/MND was based on the ISA in Appendix D.

Similar to the approved project, the revised project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

The 2018 IS/MND identified that the demolition of the existing bridge and construction of the new bridge could release a nominal quantity of various hazardous materials and fluids consisting of fuels, lubricants, and other materials typically associated with construction activities. The approved project also found that soils adjacent to paved areas may contain aerially deposited lead (ADL) from past vehicle exhaust, the bearing pads and hinge and joint seal materials within existing bridge and existing utility pipelines within the right-of-way may contain asbestos-containing materials (ACM), and the existing graffiti and/or bridge coatings may contain lead-based paint (LBP) or other heavy metals. As such, the 2018 IS/SMND prescribed **Mitigation Measures HAZ-01 through HAZ-3,** which would reduce the potential impact associated with the routine transport, use, storage, or disposal of hazardous materials to a less than significant level. Similar to the approved project, the proposed project would implement **Mitigation Measures HAZ-01 through HAZ-3** to ensure that potential impact associated with the routine transport, use, storage, or disposal of hazardous materials would

be reduced to a less than significant level. Additionally, the proposed project would be required to adhere to all applicable laws and regulations, consistent with the 2018 IS/MND.

As referenced in the ISA, the project site was not identified as listed in hazardous databases pursuant to Government Code Section 65962.5 and was not reported on any National Priorities List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); or CERCLIS/No Further Remedial Action Planned (NFRAP) site within a 1-mile search radius of the project site. Additionally, no Resource Conservation and Recovery Act (RCRA) Corrective Action Sites List (CORRACTS) or RCRA-TSDF facilities were listed within the respective 1-mile and 0.5-mile search radii of the project site. The approved project, however, did identify four sites, as detailed below:

- One RCRA-Large Quantity Generator (LQG): CVS Pharmacy, 7241 Boulder Avenue;
- One RCRA-Small Quantity Generator (SQG): McCleaners, located at 7221 Boulder Avenue;
- One RCRA-Conditionally Exempt Small Quantity Generator (CESQG): Walgreens Pharmacy, 27915 Base Line Street; and
- One RCRA-Non-Generator (NonGen): ARCO No. 59, 27727 Base Line Street.

The approved project site and surrounding listed sites are not anticipated to affect the approved project site. As the proposed project would be located in the same area as the approved project, the surrounding sites would be the same as approved project.

Similar to the approved project, the proposed project would consist of the replacement of the existing Base Line Bridge (State Bridge Number 54C0035) and the construction of street improvements, including utility construction, pavement widening, curbs, gutters, sidewalks, and street lighting, as well as the relocation of utilities as needed. Any hazardous material utilized during construction of the proposed project would be used, stored, and/or transported pursuant to State and federal regulations, consistent with the approved project. Further, one school is located within 0.25 mile of the project site, the Immanuel Baptist Day School, located at 28355 Base Line Street, approximately 0.24 mile east of the project site. As the proposed project would be located in the same area as the approved project, the proposed project would not emit hazardous emissions or handle hazardous materials within 0.25 mile of an existing or proposed school. San Bernardino International Airport (SBIA) is approximately 1.5 miles southwest of the project site, and Redlands Municipal Airport, a general aviation airport, is approximately 3.2 miles southeast of the project site. The project site is just outside the SBIA Influence Area, and a small portion of Highland lies within the area designated as an Area of Special Compatibility Concern; however, it is approximately 2 miles south of the project site.[1] Therefore, there would be no impact related to airport safety hazards.

[1] City of Highland. 2006. General Plan Safety Element, Figure 6-7: "SBIA Influence Area/Redlands Municipal Airport Compatibility Plan." March.

According to the 2018 IS/MND, the project site is not located within a Fire Hazard Area or within an area susceptible to wildfires. Therefore, the project would not expose persons or property to increased risk from wildland fires, similar to the approved project.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts associated with hazards and hazardous materials, nor would it result in new significant impacts. With adherence to applicable regulatory requirements, there would be no new or substantially more severe significant impacts related to hazards and hazardous materials. ***No new impacts or increase in the severity of impacts related to hazards and hazardous materials would occur, and no additional mitigation measures are required.***

4.1.1.8 Hydrology and Water Quality

Section 9 of the 2018 IS/MND analyzed potential impacts on hydrology and water quality with implementation of the project. The 2018 IS/MND determined that all impacts associated with hydrology and water quality would result in either less than significant impacts or less than significant impacts with mitigation incorporated. The discussion of hydrology and water quality in the 2018 IS/MND was based on the Water Quality Assessment Report in Appendix E.

The project site is underlain by the Bunker Hill subbasin of the Upper Santa Ana Valley Groundwater Basin[1] and is within the service boundaries of EVWD. Similar to the approved project, the proposed project would replace an existing bridge and would include utility construction, pavement widening, curbs, gutters, sidewalks, and street lighting, as well as the relocation of utilities as needed. Like the approved project, the proposed project would require work within the creek/channel at Base Line Bridge. During construction of the proposed project, 20 acres of soil would be disturbed, resulting in an increased potential for soil erosion and sedimentation. Additionally, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked during construction activities and could become entrained in stormwater and impact runoff quality. Similar to the approved project, the proposed project would be required to adhere to the source control BMPs, site design BMPs, and low-impact development (LID) BMPs, which would target pollutants of concern from the operation of transportation facilities. In addition to the BMPs, the proposed project would implement **Mitigation Measures WQ-01 through WQ-04**, which would include the preparation of a SWPPP to address all construction-related activities, equipment, and materials that may affect water quality; compliance with the provisions of the General Waste Discharge Requirements for Discharges to Surface Water that Pose an Insignificant Threat to Water Quality; adherence to the San Bernardino County Municipal Separate Storm Sewer System (MS4) Permit and Waste Discharge Requirements for the SBCFCD, including the implementation of LID, site design, and source control BMPs as specified in the project-specific Water Quality Management Plan (WQMP); and obtaining the Section 401 Water Quality Certification from the Santa Ana RWQCB, the CWA Section 404 Nationwide Permit from the USACE, and the California Fish and Game Code

[1] California Department of Water Resources (DWR). *California's Groundwater Bulletin 118. Upper Santa Ana Valley - Bunker Hill*. Website: B118 Basin Boundary Description 2003 - 8_002_06 (accessed January 8, 2024).

Section 1602 Streambed Alteration Agreement for impacts to CDFW riparian streambed to reduce water quality impacts to less than significant levels, consistent with the 2018 IS/MND.

Similar to the 2018 IS/MND, the proposed project site is within an area identified as a 100-year floodplain. Although the proposed project would be within the 100-year floodplain, the proposed structure would be designed to withstand floodwaters. The nearest dam to the project site is Seven Oaks Dam, located approximately 5 miles east of the project site. The proposed bridge is within the dam inundation area for the Seven Oaks Dam; however, the Seven Oaks Dam has been engineered and constructed to withstand the projected maximum accelerations that could be produced at the site by seismic events on the known fault. As such, a seismically induced failure of the dam is unlikely, due to its ability to withstand seismic events. The proposed project would be designed and constructed to allow anticipated flood flows through unrestricted, consistent with the approved project. As the proposed project would be located in the same area as the approved project, impacts associated with risk of inundation due to tsunami or seiche would be less than significant.

Implementation of **Measures WQ-01 through WQ-04,** as identified in the 2018 IS/MND, would remain applicable to the proposed project and would ensure that impacts associated with hydrology and water quality would be reduced to less than significant levels. ***No new impacts or increase in the severity of impacts related to hydrology and water quality would occur, and no additional mitigation measures are required.***

4.1.1.9 Land Use and Planning

Section 10 of the 2018 IS/MND analyzed potential impacts associated with land use and planning with implementation of the approved project and identified no impacts. The proposed project would be implemented in the same vicinity as the approved project and would be subject to the same land use plans discussed in the 2018 IS/MND.

Similar to the approved project, the proposed project would not physically divide an established community as it would consist of the replacement of an existing bridge with a new four-lane bridge in an area that has been developed with commercial and residential uses. Additionally, the proposed project would not conflict with applicable land use plan and regulations that govern the site, or with any applicable habitat conservation plan or natural community conservation plan.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified land use and planning impacts, nor would it result in new significant impacts. With adherence to applicable regulatory requirements, there would be no new or substantially more severe significant impacts related to land use and planning. ***No new impacts or increase in the severity of impacts related to land use and planning would occur, and no additional mitigation measures are required.***

4.1.1.10 Mineral Resources

Section 11 of the 2018 IS/MND analyzed potential impacts on mineral resources with implementation of the approved project and identified no impacts. The 2018 IS/MND identified that the approved project is located within Mineral Resource Zone (MRZ) 2 per the City of Highland General Plan Conservation and Open Space Element (2006). Similar to the approved project, the

proposed project would not significantly alter the creek bed, and implementation of the proposed project would not significantly affect the availability of mineral resources in the project area. As the proposed project would be located in the same area as the approved project, the proposed project would not result in the loss of availability of a known mineral resource of value to the region or residents of the State, or the loss of availability of a locally important mineral resource recovery site, similar to the approved project.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts on mineral resources, nor would it result in new significant impacts. There would be no new or substantially more severe significant impacts related to mineral resources. ***No new impacts or increase in the severity of impacts related to mineral resources would occur, and no additional mitigation measures are required.***

4.1.1.11 Noise

Section 12 of the 2018 IS/MND analyzed potential noise impacts associated with implementation of the approved project, as further detailed in the 2018 IS/MND NSR (Appendix F). The 2018 IS/MND determined that implementation of the approved project would result in less than significant impacts associated with temporary or permanent increase in ambient noise levels or vibration at the project site.

Similar to the approved project, construction of the proposed project would result in a temporary increase in ambient noise levels and ground-borne vibration in the project area. The closest sensitive receptors are residences located approximately 50 feet from the project construction area. These sensitive receptors may be subject to short-term noise reaching up to 86 A-weighted decibels (dBA) maximum instantaneous noise level (L_{max}) generated by construction activities occurring on the project site. However, noise generated during the construction phase is temporary and would cease once construction has been completed. Because the proposed project would be located on the same site as the approved project, implementation of the proposed project would result in similar construction noise impacts as the approved project and would be required to comply with Caltrans Standard Specifications and Caltrans regulations to minimize construction noise impacts on land uses adjacent to the proposed project, as well as Chapter 15.48.020 of the City Municipal Code. Additionally, the Contractor shall equip all internal combustion engines with the manufacturer-recommended muffler and shall not operate any internal combustion engine on the job site without its appropriate muffler.

The 2018 IS/MND determined that long-term operational noise impacts of the approved project would not result in a perceptible increase in traffic noise levels at receptors in the project vicinity outside the range of typical human hearing. As the proposed project would be similar to the approved project, impacts associated with operational noise would be less than significant.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts on noise, nor would it result in new significant impacts. There would be no new or substantially more severe

significant impacts related to noise. ***No new impacts or increase in the severity of impacts related to noise would occur, and no additional mitigation measures are required.***

4.1.1.12 Population and Housing

Section 13 of the 2018 IS/MND analyzed potential impacts associated with population and housing and identified no impacts with implementation of the approved project. Similar to the approved project, the proposed project would result in the replacement of Base Line Bridge and the construction of street improvements, including pavement widening, curbs, gutters, sidewalks, and street lighting, as well as the relocation of utilities as needed. No new residential uses would result from implementation of the proposed project, and no utility infrastructure would be required to serve the proposed project. Therefore, the proposed project would not directly or indirectly induce population growth. In addition, the project site is a bridge replacement project and does not contain any residential uses. Therefore, similar to the approved project, the proposed project would not displace existing people or housing, necessitating the construction of replacement housing elsewhere.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts associated with population and housing, nor would it result in new significant impacts ***No new impacts or increase in the severity of impacts related to population and housing would occur, and no additional mitigation measures are required.***

4.1.1.13 Public Services

Section 14 of the 2018 IS/MND analyzed potential impacts on public services from implementation of the project and identified no impacts. Similar to the approved project, the proposed project would not result in the need for additional or altered fire or police protection services and would not increase demand for school services, new park facilities, or other public facilities or services in the vicinity of the project site. Similar to the approved project, the proposed project is a bridge replacement project and would not include a residential component. Therefore, the demand for fire and police protection services would not increase with the development of the proposed project. In addition, the proposed replacement bridge would construct curbs, gutters, sidewalks, and street lighting along the proposed bridge. While the approved project planned to construct a multifunction trail (pedestrian, bicycle, and equestrian use) for possible future connection with the Santa Ana River Trail, the proposed project would create a notch in the abutment of the bridge to allow for future trail construction. The improvements to the proposed project would lead to a reduction in impacts and would not result in adverse physical impacts as they would occur within an urbanized area of Highland and are anticipated in the City's General Plan. Because the proposed project would not include housing or employment creation facilities and would not result in population growth, the proposed project would not increase demand for school services, new park facilities, or other public facilities or services in the vicinity of the project site.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts associated with public services, nor would it result in new significant impacts. ***No new impacts or increase in the***

severity of impacts related to public services, would occur and no additional mitigation measures are required.

4.1.1.14 Recreation

Section 15 of the 2018 IS/MND analyzed potential impacts on recreation with implementation of the project and identified either no impacts or less than significant impacts. The approved project included the replacement of the existing bridge, construction of bridge improvements, and accommodation of a future extension of a multifunctional trail (pedestrian, bicycle, and equestrian use) for possible future connection with the Santa Ana River Trail. As previously analyzed in the approved project, the future accommodation of a multifunctional trail would not have an adverse physical effect of the environment due to the urban and disturbed nature of the project area. Similar to the approved project, the proposed project would replace the existing bridge; include the construction of street improvements, such as pavement widening, curbs, gutters, sidewalks, and street lighting; and create a notch in the abutment of the bridge to allow for future trail construction. The proposed project would not constitute an expansion of recreational facilities, consistent with the approved project. Therefore, the proposed project is not expected to result in impacts to existing trail systems or any recreational resources.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts associated with recreation, nor would it result in new significant impacts. ***No new impacts or increase in the severity of impacts related to recreation would occur and no additional mitigation measures are required.***

4.1.1.15 Transportation

Section 16 of the 2018 IS/MND analyzed potential transportation impacts from implementation of the project and identified less than significant impacts. Similar to the approved project, the proposed project would replace the existing bridge to accommodate four lanes of vehicular traffic, with dedicated space for pedestrians and bicyclists in accordance with current federal, State, and applicable local geometric standards. The proposed project would include two 14-foot-wide and two 12-foot-wide traffic through lanes (one of each on both sides of the bridge), a 12-foot-wide striped median, two 8-foot shoulders that double as Class III bike lanes, and two dedicated 6-foot pedestrian corridors separated from vehicle lanes by a concrete barrier along the length of the bridge. The new bridge will measure approximately 98 feet wide by 600 feet long and replace the existing 72-foot-wide by 42-foot-long bridge. The vertical profile of the roadway and bridge has been designed for a design speed of 55 mph (45 mph posted speed). The bridge will provide a minimum freeboard of 2.5 feet over the maximum water surface elevation and a minimum vertical clearance of 14 feet over the creek bed. The roadway will not add any travel lanes and, therefore, is not a capacity-enhancing improvement. Similar to the approved project, the proposed project would not cause an increase in operational traffic that would cause the existing segment to operate below the City's level of service (LOS) standard of E.

Additionally, similar to the approved project, the proposed project would not cause any changes to air traffic volumes or air traffic patterns, would not include any sharp curves or dangerous intersections, and would not create a substantial increase in hazards due to a design feature. As indicated in the 2018 IS/MND, the proposed project would be required to be approved by the City's

fire and police departments prior to the issuance of construction permits during construction activities, as the proposed project may temporarily restrict vehicular traffic. The proposed project would also be required to comply with adopted policies, plans, or programs supporting alternative transportation, consistent with the approved project.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts associated with transportation, nor would it result in new significant impacts. With adherence to applicable regulatory requirements, there would be no new or substantially more severe significant impacts related to transportation. ***No new impacts or increase in the severity of impacts related to transportation would occur, and no additional mitigation measures are required.***

4.1.1.16 Tribal Cultural Resources

Section 17 of the 2018 IS/MND analyzed potential impacts on tribal cultural resources from implementation of the project and identified no impacts.

Pursuant to Assembly Bill 52, the City commenced tribal notification on August 30, 2016, and closed the 30-day notification period on September 29, 2016. No letters were received, nor were there any tribal requests for consultation. On February 7, 2017, the City followed up with a conversation with Ann Briery, San Manuel Band of Mission Indians Cultural Resources Field Manager, to ensure the tribe did not have any comments. The tribe requested copies of the project-specific Cultural Resources Assessment; however, no other comments were received from the tribe on the significance of a tribal resource in the project area.

The 2018 IS/MND indicated that the project site was not listed on, or eligible for listing on, the California Register of Historical Resources. Additionally, the City, as Lead Agency, has not determined that there are any existing resources significant to Native American tribes within the project site. As the proposed project would be located on the same site as the approved project, the proposed project would not impact tribal cultural resources.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts associated with tribal cultural resources, nor would it result in new significant impacts. With adherence to applicable regulatory requirements, there would be no new or substantially more severe significant impacts related to tribal cultural resources. ***No new impacts or increase in the severity of impacts related to tribal cultural resources would occur, and no additional mitigation measures are required.***

4.1.1.17 Utilities and Service Systems

Section 18 of the 2018 IS/MND analyzed potential impacts on utilities and service systems with implementation of the approved project and identified either no impacts or less than significant impacts associated with utilities and service systems. Similar to the approved project, the proposed project would not include the construction of structures or features that would require water delivery/treatment or wastewater conveyance/treatment, nor would it generate wastewater. Similar to the 2018 IS/MND, the proposed project would relocate two utilities, but these utilities would only be temporarily relocated. All existing utilities would be permanently relocated after the

completion of each stage of construction. The proposed project would cause temporary relocations for SCE and EVWD. Both SCE and EVWD will be permanently relocated during Stage 1 construction. AT&T, Frontier Communications, and Charter/Spectrum will be relocated prior to the beginning of Stage 2 of construction. As part of the proposed project, SoCalGas would de-energize its gas line prior to the beginning of Stage 2 construction, and the gas line would be permanently relocated during Stage 2 construction once the bridge work is complete.

Similar to the approved project, the proposed project would generate waste in the form of concrete, asphalt, and rebar. This waste would be collected and transported to a waste facility for disposal in accordance with the City's construction and demolition ordinance. The proposed project would be required to adhere to federal, State, and local statutes and regulations concerning the disposal of construction waste, consistent with the approved project.

Based on the information in the 2018 IS/MND and this environmental analysis, the proposed project would not substantially increase the severity of the previously identified impacts associated with utilities and service systems, nor would it result in new significant impacts. With adherence to applicable regulatory requirements, there would be no new or substantially more severe significant impacts related to utilities and service systems. ***No new impacts or increase in the severity of impacts related to utilities and service systems would occur, and no additional mitigation measures are required.***

5.0 COMPARISON TO THE CONDITIONS LISTED IN CEQA GUIDELINES SECTIONS 15162 AND 15164

The following discussion summarizes the reasons that a new or subsequent IS/MND or Environmental Impact Report (EIR), pursuant to CEQA Guidelines Section 15162, is not required to evaluate the environmental effects of the proposed project. The analyses prepared for each CEQA topic in the previous sections demonstrate that the proposed project is addressed within the scope of the 2018 IS/MND and no new significant impacts are identified, no significant impacts are more severe, no new mitigation measures are required, and no substantial changes to the existing environmental circumstances have occurred leading to new or more severe previously identified significant impacts.

5.1 SUBSTANTIAL CHANGES TO THE PROJECT

As discussed in Section 2.0, Project Description, the proposed project has not substantially changed from the project identified and evaluated in the 2018 IS/MND. Additionally, the changes identified for the proposed project do not substantially change the scope of proposed improvements proposed and evaluated in the 2018 IS/MND. As such, an Addendum is the appropriate document to address these minor modifications rather than a Subsequent IS/MND or EIR.

5.2 SUBSTANTIAL CHANGES IN CIRCUMSTANCES

As described for each CEQA topic in the previous sections, the existing environmental conditions or circumstances in and around the project site have not changed such that implementation of the proposed minor modifications to the project would result in new significant environmental effects or a substantial increase in the severity of significant environmental effects identified in the 2018 IS/MND. Thus, major revisions to the 2018 IS/MND are not required.

5.3 NEW INFORMATION

No new information of substantial importance, which was not known and could not have been known when the 2018 IS/MND was adopted, has been identified to show that the proposed minor modifications to the project would be expected to result in: (1) new significant environmental effects not identified in the 2018 IS/MND; (2) substantially more severe environmental effects than those shown in the 2018 IS/MND; (3) mitigation measures or alternatives previously determined to be infeasible that would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project sponsor declines to adopt the mitigation measure or alternative; or (4) mitigation measures or alternatives that are considerably different from those identified in the 2018 IS/MND would substantially reduce one or more significant effects of the project, but the project sponsor declines to adopt the mitigation measure or alternative.

5.4 CONCLUSIONS

On the basis of the evaluation presented above, the proposed project, if implemented, would not trigger any of the conditions listed under the CEQA Framework for Use of an Addendum section of

this Addendum, requiring preparation of a subsequent or supplemental IS/MND. Thus, this Addendum satisfies the requirements of CEQA Guidelines Section 15162 and 15164.

Implementation of the proposed project would include a replacement bridge for the Base Line Bridge (State Bridge Number 54C0035) over City Creek. The new bridge would measure approximately 98 feet wide and 600 feet long and replace the existing 72-foot-wide and 42-foot-long bridge. Both the northern and southern edges of the proposed bridge deck would extend past their current locations to accommodate standard shoulders and the pedestrian corridors. Additionally, the proposed project would include associated street improvements including utility construction, pavement widening, curbs, gutters, sidewalks, and street lighting. The proposed project would not introduce new significant environmental effects, substantially increase the severity of previously identified significant environmental effects or demonstrate that mitigation measures or alternatives previously found not to be feasible would in fact be feasible. The proposed project would not alter the findings in the 2018 IS/MND. In addition, no change has occurred with respect to the circumstances surrounding the proposed project that would cause new or substantially more severe significant environmental effects than identified in the 2018 IS/MND, and no new information has become available that shows that the project would cause significant environmental effects not already analyzed in the 2018 IS/MND. Therefore, no further environmental review is required beyond this Addendum to the 2018 IS/MND.

APPENDIX A

UPDATED MITIGATION MONITORING AND REPORTING PLAN

ATTACHMENT A

UPDATED MITIGATION MONITORING AND REPORTING PROGRAM

This Updated Mitigation Monitoring and Reporting Program has been prepared for use in implementing mitigation measures for the Base Line Bridge Replacement Project.

As the Lead Agency, the City is responsible for ensuring full compliance with the mitigation measures adopted for the proposed project. The City will monitor and report on all mitigation activities. Mitigation measures will be implemented at different stages of development throughout the project area. In this regard, the responsibilities for implementation have been assigned to the Applicant, Contractor, or a combination thereof. If during the course of project implementation, any of the mitigation measures identified herein cannot be successfully implemented, the City shall be immediately informed, and the City will then inform any affected responsible agencies. The City, in conjunction with any affected responsible agencies, will then determine if modification to the project is required and/or whether alternative mitigation is appropriate.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
MM-AIR-01	**Construction Equipment.** The construction contractor shall select the construction equipment used on site based on low-emission factors and high energy efficiency. The construction contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.	Prior to the issuance of permit(s) and/or start of construction During construction activities (as required)	City Planner or Director of Building and Safety (or designee)	Prior to the issuance of permit(s) and/or start of construction. During construction activities (as required)	Provide evidence that the construction plans include this requirement. Verify through site visit (as required).
MM-AIR-02	**Electric or Diesel-Powered Engines.** The construction contractor shall use electric or diesel-powered equipment in lieu of gasoline powered engines where feasible.	Prior to the issuance of permit(s) and/or start of construction During construction activities (as required)	City Planner or Director of Building and Safety (or designee)	Prior to the issuance of permit(s) and/or start of construction During construction activities (as required)	Provide evidence that the construction plans include this restriction. Verify through site visit (as required).
MM-AIR-03	**Equipment Shutoff.** The construction contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use.	Prior to the issuance of permit(s) and/or start of construction During construction activities (as required)	City Planner or Director of Building and Safety (or designee)	Prior to the issuance of permit(s) and/or start of construction During construction activities (as required)	Provide evidence that the construction plans include this restriction. Verify through site visit (as required).
MM-AIR-04	**Construction Scheduling.** The construction contractor shall time the construction activities so as not to interfere with peak-hour traffic and so as to minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.	Prior to the issuance of permit(s) and/or start of construction During construction activities (as required)	Director of Building and Safety (or designee)	Prior to the issuance of permit(s) and/or start of construction During construction activities (as required)	Provide evidence that the project construction schedule satisfies the required mitigation.
MM-AIR-05	**Ridesharing and Transit Incentives.** The construction contractor shall support and	Prior to the issuance of permit(s) and/or start of construction	City Planner or Designee	Prior to the issuance of permit(s) and/or start of construction	Provide evidence that the contractor has identified ridesharing and transit

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	encourage ridesharing and transit incentives for the construction crew.				incentives for the construction crew.
BIOLOGICAL RESOURCES					
MM-BIO-01	**Removal of Southern Willow Scrub Vegetation.** Removal of southern willow scrub vegetation will occur prior to construction and between September 1 and February 14 to avoid least Bell's vireo breeding season, as well as the general breeding season for other nesting birds. If vegetation removal must occur during nesting season, a nest survey must be conducted by a qualified biologist within 3 days prior to vegetation removal activities to ensure that no active nests are present. If nests are present, no vegetation removal may occur within 500 feet of the active nest until the young have fledged or the nest is determined to be inactive.	Prior to the issuance of a grading permit or construction permit	City Engineer or Designee	Prior to the issuance of a grading permit or construction permit	Submittal of construction schedule detailing avoidance of nesting season. As required, submittal of preconstruction nesting survey. As required, evidence of avoidance of nesting areas.
MM-BIO-02	**Removal of Riversidean Sage Scrub Vegetation.** Removal of Riversidean sage scrub vegetation will occur prior to construction and between September 1 and February 14 to avoid the general breeding season for nesting birds, which is inclusive of the coastal California gnatcatcher breeding season. If vegetation removal must occur during nesting season, a nest survey must be conducted by a qualified biologist within 3	Prior to construction During construction	City Engineer or Designee	Prior to construction During construction	Submittal of construction schedule detailing avoidance of nesting season. As required, submittal of preconstruction nesting survey. As required, evidence of avoidance of nesting areas.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	days prior to vegetation removal activities to ensure that no active nests are present. If nests are present, no vegetation removal may occur within up to 300 feet of the active nest until the young have fledged or the nest is determined to be inactive.				
MM-BIO-3	**Education/Awareness Program.** Prior to the onset of ground-disturbing activities, the City will develop and implement an employee education/awareness program in coordination with the USFWS. Each employee, contractor, or subcontractor involved in project construction (including temporary contractors and subcontractors) will receive San Bernardino kangaroo rat training.	Prior to ground disturbance	City Engineer or Designee	Prior to ground disturbance During construction (as applicable)	Submittal of evidence that construction crews have been advised of the project's employee education/awareness program. Submittal of evidence that construction crews have received San Bernardino kangaroo rat training.
MM-BIO-4	**Mitigation Measure BIO-4** has been replaced with **Conservation Measures CM-17 and CM-18**, as detailed below.				
MM-BIO-5	**Mitigation Measure BIO-5** has been replaced with **Conservation Measures CM-7, CM-11, CM-12, CM-13, and CM-20 through CM-24**, as detailed below.				
MM-BIO-6	**Preconstruction Clearance Survey for Burrowing Owls.** Prior to the start of ground-disturbing activities, a preconstruction clearance survey for burrowing owls shall be conducted to ensure that burrowing owls remain absent and impacts to occupied burrows do not occur. In accordance with the Staff Report on Burrowing Owl Mitigation, two preconstruction clearance surveys shall be conducted 14 days and 24 hours, respectively, prior to any vegetation removal or ground-disturbing activities.	Prior to the commencement of ground disturbance	City Engineer or Designee	Prior to the commencement of ground disturbance	Submittal of evidence of completion of the preconstruction survey.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	In the event this species is not identified on site, no further mitigation (BIO-7) is required. If, during the pre-construction burrowing owl survey, this species is found to occupy the site, Mitigation Measure BIO-07 shall be required.				
MM-BIO-7	**Burrowing Owl Relocation and Conservation Strategy.** In the event burrowing owls are identified during the survey periods, the City shall contact the California Department of Fish and Wildlife (CDFW) to develop a burrowing owl relocation and conservation strategy. Prior to ground-disturbing activities, the project applicant shall take the following actions: A minimum 75-meter (250-foot) buffer shall be provided around any active nest until fledging has occurred. Following fledging, owls may be passively relocated (use of one-way doors and collapse of burrows) by a qualified biologist. If impacts to occupied (nonnesting) burrows are unavoidable, on-site passive relocation techniques, as approved by the CDFW, may be employed to encourage owls to move to alternative burrows outside of the impact area. If relocation of the owls is approved for the site by the CDFW, the City shall require the developer to hire a qualified biologist to prepare a plan for relocating the owls to a	Upon identification of burrowing owls within the project limits	Project Applicant, City Engineer or Designee	Upon identification of burrowing owls within the project limits	Submittal of evidence that the required actions and measures have been completed subject to the review and approval of the CDFW.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	suitable site. The relocation plan must include all of the following: The location of the nest and owls proposed for relocation. The location of the proposed relocation site. The number of owls involved and the time of year when the relocation is proposed to take place. The name and credentials of the biologist who will be retained to supervise the relocation. The proposed method of capture and transport for the owls to the new site. A description of site preparation at the relocation site (e.g., enhancement of existing burrows, creation of artificial burrows, and/or one-time or long-term vegetation control). A description of efforts and funding support proposed to monitor the relocation.				
MM-BIO-8	**Nighttime Exit Count Acoustic Bat Survey.** Prior to demolition of the existing bridge, a nighttime exit count and acoustic bat survey shall be performed at the bridge by a qualified bat biologist during the peak bat maternity season (June through July). This survey shall be performed as soon as possible and well in advance of project construction in order to determine whether a maternity colony is present and to identify the numbers and species of bats present. This information will aid in determining appropriate site-specific and species-specific minimization measures. Performing the survey well in advance of	Prior to demolition of the existing bridge	City Engineer or Designee	Prior to demolition of the existing bridge	Submittal of the required bat survey(s).

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	project construction will also serve to provide adequate time for mitigation planning.				
MM-BIO-9	**Humane Evictions and Exclusions of Roosting.** Prior to the demolition of the existing bridge, humane evictions and exclusions of roosting bats shall be performed under the supervision of a qualified bat biologist in the fall (September or October) prior to any work activities that would result in direct impacts or direct mortality to roosting bats. This action shall be performed in coordination with the CDFW. To avoid potential mortality of flightless juvenile bats, evictions and exclusions of bats cannot be performed during the maternity season (April 1 through August 31). Winter months (November through February) are also inappropriate for bat eviction because not all individuals in a roost will emerge on any given night. In addition, long-distance movements to other roost sites are more difficult during the winter, when prey availability is scarce, resulting in high mortality rates of evicted bats.	Prior to demolition of the existing bridge	City Engineer or Designee	Prior to demolition of the existing bridge	Submittal of evidence the eviction and/or exclusion of bats have been completed pursuant to applicable CDFW guidelines.
MM-BIO-10	**Alternative Bat Roosting Habitat.** Alternative bat roosting habitat structures shall be installed and provided at least 6 months in advance of the eviction/exclusion of bats from the Base Line Bridge. Since the Base Line Bridge will be completely removed, these bat roosting habitat structures shall be installed on an adjacent structure such as the Boulder Avenue Bridge over City Creek. The design, numbers, and precise locations of these roost	Prior to eviction/ exclusion of bats	City Engineer or Designee	Prior to eviction/ exclusion of bats	Submittal of evidence that alternative roosting structures have been installed per CDFW guidelines.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	structures shall be determined in consultation with the CDFW and a qualified bat biologist.				
MM-BIO-11	**Avoidance of Bat Maternity Season.** Within 500 feet of structures where maternity roosting is confirmed, demolition and pile-driving activities shall avoid the recognized bat maternity season (April 1 through August 31) to prevent the potential mortality of flightless young bats.	Prior to the commencement of demolition or pile-driving activities	City Engineer or Designee	Prior to the commencement of demolition or pile-driving activities	Submittal of construction plans and/or construction schedule confirming compliance with this measure.
MM-BIO-12	**Avoidance and Construction Monitoring**. Prior to the commencement of earth-disturbing activities, the construction contractor shall submit to the City for review and approval and/or demonstrate to the satisfaction of the City, evidence that the following measures will be implemented: Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed along the boundaries of the project footprint (including necessary construction access), where it abuts natural vegetation communities, to designate Environmentally Sensitive Areas (ESAs) to be preserved. No grading or fill activity of any type will be permitted within these ESAs. In addition, no construction activities, materials, or equipment will be allowed within the ESAs. All construction equipment shall be operated in a manner so as to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones. Silt fence barriers will	Prior to the commencement of ground disturbance	City Engineer or Designee	Prior to the commencement of ground disturbance	Submittal of evidence the required measures have been implemented at the time and in the manner identified.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is adjacent to planned grading activities. All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated nonsensitive upland habitat areas. The designated upland areas will be located in such a manner as to prevent any spill runoff from entering waters of the United States. A weed abatement program to minimize the import of nonnative plant material during and after construction. Eradication strategies would be employed should an invasion occur. A biologist will monitor construction within the vicinity of natural vegetation communities for the duration of the project construction and to ensure that vegetation removal, Best Management Practices (BMPs), ESAs, and all avoidance and minimization measures are properly constructed and followed. The portions of the City Creek bottom affected by the project will be recontoured to their original grades.				
MM-BIO-13	**Water Quality Permits.** Prior to the issuance of a Section 401, Section 404, and Section 1602 (Streambed Alteration Agreement) permits, the City shall consult and coordinate with the RWQCB, USACE, and CDFW to determine mitigation measures for impacts to the wetlands located on site. This may include, but not be limited to, on-site revegetation or	Prior to the issuance of regulatory permits	City Engineer or designee	Prior to the issuance of regulatory permits	Completion of consultation and coordination with the regulatory agencies to identify required mitigation and evidence that the mitigation program has been established,

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	contribution to an approved mitigation bank for off-site habitat preservation.				implemented, and/or funded.
MM-BIO-14	**Vegetation Removal**. If feasible, project construction and vegetation removal shall be completed outside the bird breeding season (typically set as February 15 through August 31).	Prior to the commencement of ground disturbance.	City Engineer or designee	Prior to the commencement of ground disturbance	Submittal of construction schedule.
MM-BIO-15	**Focused Nesting Bird Surveys.** In the event that vegetation removal cannot be conducted outside the bird breeding season (typically set as February 15 through August 31), focused nesting bird surveys shall be conducted by a qualified biologist prior to ground-disturbing activities. Should nesting birds be found, an exclusionary buffer shall be established by a qualified biologist. The buffer may be up to 500 feet in diameter depending on the species of nesting bird found. This buffer shall be clearly marked in the field by construction personnel under guidance of the qualified biologist, and construction or clearing shall not be conducted within this zone until the qualified biologist determines that the young have fledged or the nest is no longer active.	Prior to the commencement of ground disturbance	City Engineer or designee	Prior to the commencement of ground disturbance	Submittal of a completed nesting bird survey and evidence that required exclusionary buffer(s) have been established.
MM-BIO-16	**Exclusionary Devices Nest Prevention Methods.** If nesting birds are found within the Base Line Bridge structure, exclusionary devices and nest prevention methods, designed to prevent birds from utilizing the bridge, shall be determined and implemented by a qualified biologist. Exclusionary devices must be installed prior to the initiation of nesting season (February 15) and before any	Prior to the commencement of demolition	City Engineer or designee	Prior to the commencement of demolition	Submittal of evidence that required exclusionary devices and nest prevention methods have been installed and/or implemented.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	bridge demolition and other bridge construction activities begin.				
MM-BIO-17	**Nesting Bird Resurveys.** Nesting bird habitat within the Biological Study Area shall be resurveyed during the bird breeding season if there is a lapse in construction activities longer than 7 days.	Prior to the (re)commencement of construction (as required)	City Engineer or designee	Prior to the (re)commencement of construction (as required)	Submittal of evidence the required nesting bird survey has been completed.
CM-1 (New Measure)	**Designated Biologist.** The City will retain a well-qualified biologist to function as the Designated Biologist for the duration of project-related activities and ensure the Designated Biologist position is maintained for the life of the project. The Designated Biologist shall have a Designated Biologist Assistant(s) to act on the Designated Biologist's behalf during times that the Designated Biologist may be unavailable to perform the construction monitoring duties and functions identified in the ITP. The Designated Biologist Assistant(s) would be knowledgeable and experienced in the biology, natural history, collecting, and handling of the SBKR and have CDFW and USFWS prior approval. The Designated Biologist will be present during all SBKR relocation work. The Designated Biologist or Designated Biologist Assistant(s) will be present during geotechnical activities, installation of avoidance and minimization measures, initial vegetation clearing, grading and construction, and be present during project-related activities. The California Department of Transportation (Caltrans), the	Prior to construction	City or designee, Designated Biologist	Prior to construction	Designation of a well-qualified Biologist for the duration of project-related activities.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	United States Fish and Wildlife Service (Service), and the California Department of Fish and Wildlife (CDFW) will periodically evaluate whether additional monitoring needs, if any, are required. In addition: • At least 15 days prior to the start of project-related activities, the City will submit to the Palm Springs Fish and Wildlife Office (PSFWO) and CDFW for review and approval the name(s), any permit numbers, and resumes of the Designated Biologist and Designated Biologist Assistant(s), in addition to other prospective biological monitors; • The Designated Biologist and Designated Biologist Assistant(s) will have expertise with federally listed species and their associated habitats within the project area; The Designated Biologist and Designated Biologist Assistant(s) will ensure compliance with the project avoidance and minimizations measures, including Conservation Measures and Terms and Conditions identified in this document, and have the authority to halt/suspend all project related activities in non-compliance until appropriate corrective measures have been taken; and • The Designated Biologist or Designated Biologist Assistant(s) will report any non-compliance within 24 hours to the PSFWO and CDFW.				

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
CM-2 (New Measure)	**Restoration Specialist.** The City shall submit to CDFW, in writing, the name, qualifications, business address, and contact information of the Restoration Specialist at least 30 days before starting construction. The City shall obtain CDFW approval of the Restoration Specialist in writing before starting construction, and shall also obtain approval in advance, in writing, if the Restoration Specialist must be changed. Permittee shall ensure the Restoration Specialist implements all the habitat restoration and protection activities described. The Restoration Specialist or equivalent shall possess the following qualifications: (1) have knowledge and experience in the biology and natural history of the San Bernardino kangaroo rat (SBKR) and (2) have experience in the restoration and enhancement of alluvial fan sage scrub and alluvial fan ephemeral stream habitats. Permittee may utilize the Designated Biologist as the Restoration Specialist if the Designated Biologist possesses all the qualifications required for the Restoration Specialist.	30 days before starting construction	City or designee, Restoration Specialist	30 days before starting construction	Submittal of the name, qualifications, business address, and contact information of the Restoration Specialist at least 30 days before starting construction to CDFW.
CM-3 (New Measure)	**Delineation of Property Boundaries and Habitat.** Prior to clearing or construction, highly visible barriers (e.g., orange construction fencing) will be installed under the supervision of the Designated Biologist to delineate the project's footprint. Following installation, project disturbance will not be permitted beyond the designated boundary. In areas adjacent to native vegetation, silt	Prior to clearing or construction	City Engineer or designee, Designated Biologist	Prior to clearing or construction	Installation of construction fencing and delineation of SBKR habitat within the Project Area.

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Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	fence barriers will be installed to prevent accidental deposition of fill material beyond the designated boundary. The City shall clearly delineate habitat of SBKR within the Project Area with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of SBKR habitat.				
CM-4 (New Measure)	**Education Program.** The City will develop a worker education/awareness program presented by the Designated Biologist to all project personnel. The program will include information such as a discussion of the biology and general behavior of SBKR; information about the distribution and habitat needs of SBKR; sensitivity of SBKR to human activities; its status pursuant to the California Endangered Species Act (CESA), including legal protection, recovery efforts, and penalties for violations; and project-specific protective measures. A fact sheet will be distributed for workers to carry in the project area. The training will be provided to each employee, contractor, or subcontractor involved in project construction (including temporary contractors and subcontractors). Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.	Prior to construction	City Engineer or designee, Construction Contractor, Designated Biologist	Prior to construction	Implementation of a worker education/awareness program.

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CM-5 (New Measure)	**Weed Abatement Program.** A weed abatement program will be developed by the City of Highland to minimize the import of non-native plant material during and after construction.	During and after construction	City Engineer or designee, Construction Contractor	During and after construction	Development and implementation of a weed abatement program.
CM-6 (New Measure)	**Construction Monitoring.** The Designated Biologist or Designated Biologist Assistant(s) will monitor construction within the vicinity of natural vegetation communities for the duration of the project construction and ensure that vegetation removal, Best Management Practices (BMPs), Environmentally Sensitive Areas (ESAs), and conservation measures are properly implemented. The Designated Biologist or Designated Biologist Assistant(s) shall be on site daily when initial clearing and ground-disturbing activities occur within Covered Species habitat, and at least once weekly thereafter to conduct compliance monitoring. The Designated Biologist or Designated Biologist Assistant(s) shall prepare daily written observation and inspection records summarizing oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this Incidental Take Permit (ITP). The Designated Biologist or Designated Biologist Assistant(s) shall conduct compliance inspections a minimum of once weekly during periods of inactivity and after clearing, grubbing, and grading are completed.	During initial clearing and ground-disturbing activities	Designated Biologist or Designated Biologist Assistant(s)	During initial clearing and ground-disturbing activities	Implementation of construction monitoring within the vicinity of natural vegetation communities for the duration of the project construction.

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Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
CM-7 (Updated Measure)	**Refuse Removal.** Spoils and rubble will be deposited within the identified limits of project footprint. Any excess material generated by the project, will be transported off site and disposed of at a City approved facility. Upon completion of construction, the contractor shall remove from the Project Area and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.	During construction	City or designee, Construction Contractor	During construction	Completion of refuse removal.
CM-8 (New Measure)	**Project Access.** All construction-related activities by contractors, subcontractors or their agents, and equipment (including vegetation removal, grading, equipment laydown and storage, and contractor parking) will be restricted to the designated limits of construction.	During construction	City Engineer or designee, Construction Contractor	During construction	Restriction of all construction-related activities by contractors, subcontractors or their agents, and equipment to the designated construction limits.
CM-9 (New Measure)	**Hazardous Waste**. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated staging areas to prevent the release of hazardous substances into the project site. Any accidental spills will be immediately contained and properly disposed.	During construction	City Engineer or designee, Construction Contractor	During construction	Implementation of hazardous waste abatement.
CM-10 (New Measure)	**Trash Abatement.** To avoid attracting scavengers and predators, project generated trash will be stored in closed containers and removed from the construction site at the end of each construction day.	During construction	City Engineer or designee, Construction Contractor, Qualified Biologist	During construction	Implementation of trash abatement strategies.

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Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
CM-11 (Updated Measure)	**Recontouring.** Following construction, temporary disturbance areas will be recontoured and terraced to match existing topography within City Creek.	Following construction	City Engineer or designee, Construction Contractor, Qualified Biologist	Following construction	Completion of recontouring to match existing topography within City Creek.
CM-12 (Updated Measure)	**Lighting.** Following construction, all permanent lighting installed along the bridge and road will use wildlife-friendly lighting and be permanently shielded and directed onto the roadway or trail.	Following construction	City or designee, Construction Contractor, Qualified Biologist	Following construction	Installation of permanent lighting along the bridge and road.
CM-13 (Updated Measure)	**Time of Day Restriction.** Project related actions will be limited to daylight hours.	During construction	City or designee, Construction Contractor, Qualified Biologist	During construction	Implementation of time-of-day restrictions.
CM-14 (New Measure)	**Habitat Enhancement and Restoration Plan.** A Habitat Enhancement and Restoration Plan will be prepared to address temporary on-site impacts. A draft will be provided to the Service and CDFW prior to ground disturbing activities and include goals identified in the *Base Line Bridge at City Creek Biological Assessment Amendment* (Caltrans 2018).	Prior to ground disturbing activities	City or designee, Designated Biologist, CDFW	Prior to ground disturbing activities	Preparation of a Habitat Enhancement and Restoration Plan to address temporary on-site impacts.
CM-15 (New Measure)	**Dust Control.** The City shall implement dust control measures during construction to facilitate visibility for monitoring of the SBKR by the Designated Biologist or Designated Biologist Assistant(s). The City shall keep the amount of water used to the minimum amount needed and shall not allow water to form puddles.	During construction	City or designee, Designated Biologist	During Construction	Implementation of dust control measures during construction.
CM-16 (New Measure)	**Erosion Control Materials.** The City shall prohibit use of erosion control materials potentially harmful to SBKR and other species,	Prior to construction	City or designee, Qualified Biologist, CDFW	Prior to construction	Prohibition of erosion control materials

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Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	such as monofilament netting (erosion control matting) or similar material, in potential SBKR habitat. Any seed mix used for erosion control shall be submitted to CDFW for review and approval prior to use.				potentially harmful to SBKR and other species.
CM-17 (New Measure)	**Exclusionary Fencing Plan.** Prior to the onset of ground disturbing activities, the City will submit an exclusionary fencing plan to the Service and CDFW for review and approval. The plan will identify design and installation, SBKR trapping/release protocols, and assurances fencing will be monitored and maintained for the duration of the proposed project.	Prior to ground disturbing activities	City or designee, Qualified Biologist	Prior to ground disturbing activities	Completion and submittal of an exclusionary fencing plan to the Service and CDFW for review and approval.
CM-18 (New Measure)	**Phased SBKR Relocation.** The City shall perform a phased SBKR relocation using the below minimization measures. • *Pre-Exclusionary Fencing* – Burrow Mapping. Within 90 days prior to installing the exclusionary fencing, the Designated Biologist(s) shall identify and map all potential SBKR burrows within the Project Areas, and a 300-foot buffer surrounding the Project Area. The map of the SBKR burrows shall be provided to CDFW no less than 5 days prior to any work being performed, including exclusionary fence installation or other ground disturbing activities. • *Pre-Exclusionary Fencing – Small Mammal Trapping.* Within 90 days prior to erecting the exclusionary fencing, the Designated Biologist(s) shall design small mammal	During construction	City or designee, Designated Biologist, CDFW	During construction	Implementation and completion of phased SBKR relocation.

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	trapping grids/transects for CDFW review and approval. To achieve total coverage of SBKR suitable habitat, transects shall be used within narrow linear habitat and grids shall be used within larger areas of habitat. Transects and grids shall be established within the Project Areas and 300-foot buffer surrounding the Project Area. Trap locations shall be geographically indexed with latitude/longitude coordinates along with the datum used (e.g., degrees/ minutes/seconds, decimal degrees, etc.). The grids shall be permanent (e.g. capable of replication), with equal stratification to be representative of different qualities of suitable SBKR habitat and distributed throughout the Project Area and 300-foot buffer surrounding the Project Area. Once the permanent grids and transect locations are approved by CDFW, the Designated Biologist(s) shall trap the grids/transects for 5 consecutive nights within 60 days prior to installing the exclusionary fencing. The Designated Biologist(s) shall conduct trapping only if the nightly low temperature is forecasted to be 50 degrees Fahrenheit or above and if no extended periods of wind, rain, fog, or other inclement weather will occur to make conditions unsuitable for trapping or will unduly imperil the lives of the animals. To measure future SBKR survivorship and abundance/density estimates, as well as				

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	measure conspecific interactions, all captured SBKR shall be individually marked. Marking techniques shall include the use of ear tags with unique alphanumeric codes or passive integrated transponders (PIT tags). Trapping results shall include captured SBKR's age, gender, mass, trap location, new/recapture status, tag identification, and any burrow locations that are used upon release. Pre-exclusionary fencing trapping results shall be provided to CDFW no less than 5 days prior to installing the exclusionary fence. • *Exclusionary Fencing Installation.* The City will install a semi-permanent SBKR exclusionary fence constructed of ¼-inch mesh hardware cloth with a 6-inch one-side ledge at a 90-degree angle away from the constructed area. There will be no gaps larger than ½-inch at hinges, center post and between gate frame and existing ground. It should be noted that this SBKR exclusionary fence design was successfully used for the State Route 210 project at Lytle Creek. Exclusionary fencing shall be erected around the South Project footprint no more than 15 days before the initiation of any work within City Creek south of the Base Line Bridge. Likewise, fencing shall be placed to exclude SBKR within the North Project no more than 15 days prior to the start of work within City Creek north of Base Line Bridge. The Designated				

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Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	Biologist(s) shall be present during exclusionary fence installation. Once clearing and grubbing is completed, the Designated Biologist(s) or Designated Biologist Assistant(s) shall inspect the site at least once weekly and be available to respond immediately should the on-site representative identify any non-compliance with the ITP measures. • *Post-Exclusionary Fencing Installation–Relocation.* Within 7 days following the installation of the exclusionary fence, the Designated Biologist(s) shall coordinate with CDFW to remove SBKR to outside the excluded Project Area. The relocation sites will be dependent on the number of SBKR captured and the need for intra/inter spatial distribution. Designated Biologist(s) shall perform the relocation activities as follows: ○ *Small Mammal Trapping within the Exclusionary Fence Area.* The Designated Biologist(s) shall conduct small mammal trapping for a minimum of 5 consecutive nights, with at least 3 consecutive nights of no SBKR captures. If the exclusionary fence is damaged (e.g., cut, removed, knocked down, etc.) for more than 24 hours and may have resulted in SBKR reentry into the exclusion area, CDFW will be immediately notified to determine if modification of and/or an extension to the trapping requirements				

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Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	is needed. The Designated Biologist(s) shall place either a PIT or ear tag to each captured SBKR. ○ *Data Marking and Recordation.* The Designated Biologist(s) shall place either a PIT or ear tag to each captured SBKR and record age, gender, reproductive status, mass, trap location, new/recapture status, and tag identification for all captured kangaroo rats before placing into a standard rodent carrier. ○ *Data and Map Submittals.* Prior to any SBKR being relocated, the City shall provide CDFW for review and approval (1) a spatial map of where all SBKR were trapped both within the exclusionary fence and adjacent 300- foot buffer surrounding the Project Area, (2) all captured SBKR information, as described in Condition of Approval 8.1.2, and (3) a spatial map of proposed relocation area(s) that includes individual spatial grouping. ○ *SBKR Holding.* The Designated Biologist(s) shall hold all captured SBKR until trapping within the exclusionary fence(s) is complete (after 3 consecutive nights of no SBKR captures) and CDFW approves the proposed relocation areas. Following CDFW approval of the relocation locations, the Designated				

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Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	Biologist(s) shall perform a soft release of all SBKR as described below. ○ *SBKR Lactating Females and Pups.* If a SBKR lactating female is captured, she shall be released and followed to determine where her burrow is located. A fiber-optic scope or mini camera shall be immediately used within the located burrow or, if not found, all SBKR burrows within a 20- meter (66 feet) radius. If no SBKRs are observed within the burrow, it shall be hand excavated to ensure no occupancy. If SBKR pups are observed, CDFW shall be notified at once, and the pups shall be captured and placed in a rodent carrier with the female. All juveniles and nonlactating females captured shall be soft released. If a previously tagged juvenile or non-lactating female is captured, the Designated Biologist(s) shall consult previous capture locations inform the release location. If the animal was previously captured outside of the exclusion zone, that animal shall be soft released within 24 hours, at the last-known capture location outside of the exclusionary fence. If the animal had not been previously trapped or was previously trapped only inside the exclusion fence area, the Designated Biologist(s) shall hold the animal until trapping within the exclusionary fence is				

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	complete (after 3 consecutive nights of no SBKR captures) and CDFW approves the proposed relocation site. ○ *SBKR Males.* Males captured within the exclusion fence shall be evaluated as candidates to receive transmitters based on weight. If males are captured within the exclusionary fence and will be moved into, or out of, the Restoration Areas, the candidate males shall be held in individual cages in a temperature-controlled location where daylight is excluded until transmitters can be fitted on the individuals. A Designated Biologist(s) with previous experience fitting and assessing harness functionality and impact (e.g., Dr. Shier or other similarly qualified, CDFW-approved person) shall place or oversee the placement of Very High Frequency (VHF) radio transmitters (e.g., Holohil Systems [model BD- 2C]) with a backpack harness, created from a modified figure 8 design used for small passerine birds (10-200 g) (Rappole and Tipton 1991) on male SBKR so that movements and survival can be monitored after release. The loops of the figure 8 wrap around the animal's front legs and the transmitter sits across the animals back (Shier and Swaisgood 2012). The release procedures for any males not slated to receive transmitters				

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	shall follow the soft release approach, whereby any previously tagged males previously captured outside of the exclusion zone shall be soft released at the last-known capture location outside of the exclusionary fence. If the animal had not been previously trapped or was previously trapped only inside the exclusion fence area, the Designated Biologist(s) shall hold the animal until trapping within the exclusionary fence is complete (after 3 consecutive nights of no SBKR captures) and CDFW approves the proposed relocation site. • *Soft Release.* To limit dispersal and allow SBKR to acclimate to relocation, the Designated Biologist(s) shall perform a soft release at CDFW-approved locations as follows: ○ *Retention Cage Construction*. The Designated Biologist(s) shall construct above-ground wire mesh retention cage using 6.4 millimeters (mm) (1/4 inch) hardware cloth, each measuring about 90 × 60 centimeters (cm) (23.6 x 35.4 inches) and closed on the top and open on the bottom. ○ *Burrow Construction*. The Designated Biologist(s) shall dig burrows into the ground using a soil auger that is approximately the same diameter as a SBKR burrow (i.e., 45 mm) at roughly a 30 degree angle to a length of 1 meter				

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	(3.3 feet). To maintain the integrity of the created burrow, cardboard mailing tubes, or other structural material shall be placed in the burrow, as required. The burrows shall be established outside of the exclusionary fencing in the same approximate neighbor relationship as trapped, and as approved by CDFW. Holes should be close to natural size. ○ *Retention Cage Installation.* The Designated Biologist(s) shall place each retention cage over the burrow. The sides of the cage shall be buried to an approximate depth of 20 cm (8 inches) to discourage animals from digging out. The retention cages/burrows shall be placed at least 15 meters apart to avoid aggressive interactions when the retention cage is removed, unless trapping and burrow mapping suggests otherwise. ○ *Spatial Arrangement.* The Designated Biologist(s) shall move SBKR from the Project Areas to outside of the exclusionary fencing in the same approximate neighbor relationship as trapped and approved by CDFW. ○ *Wildlife Cameras.* The Designated Biologist(s) shall install remote infrared wildlife cameras at 10 percent of the enclosures, or 10 cameras, whichever is greater, to video record activity during acclimation and for 30 days following				

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	removal of the cage. If, after placing one camera at each enclosure, there are cameras remaining from the 10 total cameras, the additional cameras shall be placed strategically. The Designated Biologist shall make every attempt to conceal the camera to discourage theft or damage. If tampering occurs, CDFW shall be notified within 48 hours of discovery. If alternative practices (e.g., movement to another secure location, concealment, etc.) prove to be ineffective in deterring additional vandalism, the City shall not be responsible for replacing the camera(s). If theft occurs, the City shall not be responsible for replacing the camera(s). ○ *Retention Cage Process.* The Designated Biologist(s) shall place each relocated SBKR into its own retention cage for up to 10 days to allow acclimation to the release site and dampen dispersal. The burrow entrance shall be manually plugged during the day and unplugged each night to allow the SBKR to enter into the cage if one has not been created by the animal. ○ *Feeding.* The Designated Biologist(s) shall feed SBKR a combination of romaine lettuce, inoculated finch seed mix, and plant seeds native to the release site daily while in the retention cage/burrow. Seed shall be microwaved				

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	for 1-3 minutes before broadcast at the release site to prevent seed germination and alteration of the native vegetation community. ○ *Retention Cage Removal.* The Designated Biologist(s) shall use their experience and professional judgement in determining the timing of retention cage removal. The Designated Biologist(s) shall consider all factors (e.g. acclimation, stress/injury from cage) relevant to the health and well-being of the individuals in the decision-making process. ○ *Reporting.* The Designated Biologist(s) shall provide CDFW daily updates on the status of SBKR during, and 30 days following, the soft release, including any camera data information (activity period, behaviors, physical trauma, predation attempts), daily monitoring summary, and any vandalism issues. • *Post Release Supplemental Feeding.* The City shall complete supplemental feeding, as follows, for each soft release session (i.e., at the initial release following the exclusion fence installation and trapping). Seed shall be broadcast at the release sites 3 evenings per week for the first month following the removal of the retention cages and one evening each week thereafter for the next 3 months. Seed shall be microwaved for 1-3 minutes before				

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	being broadcast at the release site to prevent seed germination and alteration of the native vegetation community. • *Post Soft Release* - Relocation Monitoring. Following the removal of the retention cages, the Designated Biologist(s) shall conduct small mammal trapping, as follows, for each "soft" release session (i.e., at the initial release following the exclusion fence installation and trapping). Small mammal trapping shall occur within 30 days and then approximately every 3 months for the first year following the relocation (4 times total within the Project Areas, and a 300- foot buffer surrounding the Project Area). In addition, small mammal trapping shall occur annually following the first year of construction for the duration of the project. The Designated Biologist(s) shall individually mark all captured SBKR using either a PIT or ear tag and record age, gender, mass, trap location, new/recapture status, and tag identification of all captured kangaroo rats. A report of the relocation monitoring findings shall be submitted to CDFW annually for the duration of the project.				
CM-19 (New Measure)	**Habitat Restoration and Monitoring Plan.** No less than 3 months prior to the commencement of construction, the City shall submit to CDFW for review and approval, a Habitat Restoration and Monitoring Plan (HRMP) to facilitate restoration of 15.95 acres	Prior to the commencement of construction	City or designee, Designated Biologist, CDFW	Prior to the commencement of construction	Completion and implementation of the Habitat Enhancement and Restoration Plan.

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	of temporarily impacted SBKR habitat within the Project Area. The Permittee shall integrate the methods, results, and findings from the SBKR Report (2006–2011) within similar habitat types (alluvial fan sage scrub early stage and alluvial fan sage scrub intermediate stage) into the HRMP by including, at a minimum, the following: (1) a quantitative description of the existing pre-project habitat and a plan to adequately sample ongoing restoration efforts at randomly distributed locations (plots, nearest neighbor, transects) to measure: (a) substrate, including (i) sediment depth measurements (driving a 48-inch long, 1/2 inch thick piece of rebar into the soil until first refusal), (ii) percent cover, where sand (< 2 mm), gravel (3–64 mm), cobble (65–256 mm), and boulder; (b) vegetation, including (i) perennial shrub percent cover, (ii) perennial/annual forb percent cover, (iii) perennial/annual grass canopy percent cover, (iv) vegetation composition, and (v) average height at each strata; (c) restoration impacts to SBKR (e.g., survivorship, demographics, intra/inter competition) and population trends, distribution, and occupancy, using small mammal trapping sampling and methodology; and (d) photo station locations; (2) vegetation removal/thinning methods to achieve and maintain percent annual (forbs and grasses) cover less than 35 percent cover (Bromus madritensis ssp. rubens presence can be				

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	excluded from the calculated percent cover) and 25 percent perennial shrub cover, including (a) the dates of the thinning/removal treatments; (b) location (map or global positioning system [GPS] coordinates) where treatment occurred; (c) type of treatment (e.g., grazing, hand tools, percent concentration of herbicide used, and volume of mix used by date and species, etc.); (d) the name(s) of species treated; (e) before, during, and after photographs; and (f) GIS shapefiles and illustrations depicting vegetation distribution; (3) techniques to contour, distribute, deposit, and decompact streambed and floodplain substrate and ASS habitat to pre-impact or better condition to achieve 10 percent or less of cobble and boulders and an average soil depth between 20–25 cm/7.9–9.9 inches including (a) locations of substrate source/deposit, (b) stockpiling and protection of native topsoil, (c) grading plans, (d) stream profile/elevation maps; (4) a planting plan with a California native local plant palette and/or seed mix appropriate for ASS and application methods if necessary; (5) performance criteria based on quantitative vegetative description of existing habitat (e.g., recruitment, diversity, abundance, and vegetation and substrate coverage) and small mammal data (e.g., number of SBKR greater than pre construction/restoration conditions, recruitment, etc.); (6) contingency measures if performance criteria are not met (e.g., limiting				

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	trespassing, planting of container plants, irrigation plan, etc.); and (7) maintenance and monitoring schedule. The City shall ensure that the HRMP is successfully implemented by the Restoration Specialist.				
CM--20 (Updated Measure)	**SBKR Construction Monitoring.** The Designated Biologist(s) or Designated Biologist Assistant(s) shall perform daily visual surveys during initial substrate disturbance, vegetation clearing, and grubbing, and during all occurrences of pile driving within the Project Area, including stockpiles, equipment storage areas, and buffers for exclusionary fencing, SBKR burrows, signs, and individuals prior to the start of construction. • *Exclusionary Fence Maintenance.* The Designated Biologist(s) or Designated Biologist Assistant(s) shall inspect SBKR exclusionary fencing during weekly construction monitoring. The City's on-site representative would inspect SBKR exclusionary fencing, signs, and stakes at the beginning and end of each workday to ensure that it is in place and properly maintained for the duration of Covered Activities. The Designated Biologist(s) or Designated Biologist Assistant(s) shall be immediately notified to inspect any breaches to the integrity of the exclusionary fencing and ensure that repairs are made promptly and adequately. The fence shall be repaired within 24 hours and any signs of vandalism that	During construction	City's on-site representative, Designated Biologist(s) or Designated Biologist Assistant(s)	During construction	Implementation and completion of SBKR construction monitoring.

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	compromise the integrity of the fence shall be reported to CDFW, including, but not limited to the location and length that was affected, duration, and how it was repaired. • *Project Access*. Should any work occur beyond the fenced or otherwise demarcated limits of disturbance, the biological monitor will request that the resident engineer halt work until the problem has been remedied. The Designated Biologist or Designated Biologist Assistant(s) will also notify the City, the Service, and CDFW of the problem within 24 hours of the incident. • *Trenches.* Unfilled holes or trenches will be inspected for trapped SBKR each morning. Any individuals discovered will be removed from the trench or hole by the Designated Biologist or Designated Biologist Assistant(s) and released outside of the limits of construction. Unburied pipes or conduit laid in trenches overnight will be capped. If SBKR or other small mammals are discovered inside the construction area, the exclusion fence will be examined for breaches and repaired if necessary. • *Pipes and Conduit*. All pipes or conduits with a bore-diameter of 1.5 inches or greater stored overnight within the construction site for one or more nights will be thoroughly inspected for the presence of SBKR before the pipe is subsequently				

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	buried, capped, or otherwise used or moved in any way. If SBKR are discovered inside a pipe, the Designated Biologist or Designated Biologist Assistant(s) will supervise movement or relocation of the pipe until the animal has been removed and released. • *Soil and Fill.* All soil and fill piles will be surrounded by silt fence or similar exclusionary materials to prevent creating an attractive nuisance to SBKR and burrowing animals. • *Burrows.* If construction occurs within 125 feet of any SBKR burrow, the Designated Biologist(s) or Designated Biologist Assistant(s) shall conduct the following: ○ *Monitor.* The Designated Biologist(s) or Designated Biologist Assistant(s) shall monitor the burrow(s) for disturbance a minimum of 3 times daily. ○ *Project Adjustments*. If a burrow shows evidence of disturbance, the Designated Biologist(s) or Designated Biologist Assistant(s) shall immediately make adjustments to the location, type, and/or frequency of the construction occurring to preclude further potential impacts and increase monitoring of the burrow to ensure the adjustments were effective. The Designated Biologist(s) or Designated Biologist Assistant(s) shall use their best professional judgement regarding the monitoring period and				

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	adjustment of the work buffer surrounding the burrow. ○ *Stop Work.* If impacts beyond those described are identified or suspected, Permittee shall cease the Covered Activities potentially responsible for those impacts and notify CDFW immediately. ○ *Weekly Reporting.* The Designated Biologist(s) or Designated Biologist Assistant(s) shall provide CDFW the results of the burrow monitoring, including photographs and a brief assessment, the type of activity occurring (e.g. drilling, grading, falsework, etc.), distance from the burrow, impacts measured/noted, and any buffer adjustment made on a weekly basis. In the event the City must stop work or the take or injury of SBKR occurs, reporting timeframes within those Conditions shall apply.				
CM-BIO-21 (Updated Measure)	**Lighting Minimization.** During nighttime construction, the City shall implement the following measures within 500 feet of SBKR habitat: • *Designated Biologist*. The Designated Biologist(s) or Designated Biologist Assistant(s) shall be present at all times. • *Speed Limit.* Vehicles and equipment shall not exceed 5 miles per hour. • *Lighting*. All construction related lighting shall avoid causing significant illumination	During nighttime construction	City or designee, Designated Biologist	During nighttime construction	Implementation of lighting minimization measures.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	beyond the immediate work area. Shielding techniques may include, but should not be limited to, the use of fence slats, netting, mesh, or tarps; and all construction lighting used shall be yellow or orange lighting.				
CM-BIO-22 (Updated Measure)	**Covered Species Injury.** If SBKR is injured as a result of project-related activities, the Designated Biologist or Designated Biologist Assistant(s) shall immediately take it to a CDFW-approved wildlife rehabilitation or veterinary facility. The City shall identify the facility before starting construction. The City shall bear any costs associated with the care or treatment of such injured SBKR. The City shall notify CDFW and the Service of the injury to the SBKR immediately by telephone and e-mail followed by a written incident report. Notification shall include the name of the facility where the animal was taken.	If SBKR is injured as a result of project-related activities	City or designee, Designated Biologist or Designated Biologist Assistant(s)	If SBKR is injured as a result of project-related activities	If SBKR is injured during project activities, implementation of immediate transport to a CDFW-approved facility at the City's expense and notification to CDFW and the Service immediately, followed by a written report within 24 hours, is required.
CM-BIO-23 (Updated Measure)	**SBKR Mortality.** Any personnel who inadvertently kills an SBKR will immediately report the incident to the Designated Biologist or Designated Biologist Assistant(s), who will contact the Service and CDFW via electronic or hardcopy correspondence within one working day. Notification must include the date, time, and location of the incident, or of the finding of a dead animal, as well as any other pertinent information.	After inadvertent killing of SBKR	Designated Biologist or Designated Biologist Assistant(s), CDFW	After inadvertent killing of SBKR	Implementation of incident reporting for the inadvertent killing of SBKR.
CM-BIO-24 (Updated Measure)	**Restoration of Temporary Impact Areas.** The 15.95 acres of SBKR habitat temporarily impacted on-site shall be restored within 6 months of completing construction activities.	Within 6 months of completing construction activities	City Engineer or designee, Designated Biologist, CDFW	Within 6 months of completing construction activities	Completion of restoration for 15.95 acres of SBKR habitat.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	The 15.95 acres of temporarily impacted habitat shall be restored to pre-project or better conditions. Restoration activities shall include (1) recontouring and decompaction of the stream, floodplain, and ASS habitats to preimpact grade; (2) placement of collected topsoil/substrate and/or seeds; (3) removal of nonnative species; (4) limiting unwanted activities (e.g. flood maintenance, trespassing); and (5) if necessary to meet performance criteria, planting of local, native ASS species by installing container plants and/or broadcasting seeds. Permittee shall maintain and monitor the restored habitat for a minimum of 3 years, or until CDFW determines the restoration effort is successful. Permittee shall submit an Annual Status Report to CDFW each year that restoration activities occur and a Final Mitigation Report when the restoration has been completed.				
CM-BIO-25 (New Measure)	**Compensatory Mitigation.** Compensatory mitigation for permanent impact areas would be achieved through purchasing 0.49 acres of credits from a CDFW-approved mitigation or conservation bank or through acquisition, protection, and perpetual management of 0.49 acres of SBKR habitat management lands.	Following construction	City Engineer or designee, Designated Biologist	Following construction	Implementation of Compensatory mitigation for permanent impact areas.
CUL-01	**Discovery of Cultural Resources or Human Remains**. If cultural resources are discovered during project construction, all work in the area of the find shall cease and a qualified archaeologist shall be retained by the project	During construction	City Engineer or designee	During construction	Submittal of evidence that work in the vicinity of the find has been halted. Confirmation that a qualified archeologist has

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	sponsor to investigate the find and to make recommendations on its disposition. If human remains are encountered during construction, all work shall cease, and the San Bernardino County Coroner's Office shall be contacted pursuant to Health and Safety Code provisions.				investigated any such resource. Submittal of evidence that required recommendations regarding the disposition of any such resource have been satisfied.
CUL-02	**Discovery of Paleontological Resources.** If paleontological resources are discovered during project construction, all work in the area of the find shall cease and a qualified paleontologist shall be retained by the project sponsor to investigate the find and make recommendations on its disposition.	During construction	City Engineer or designee	During construction	Submittal of evidence that work in the vicinity of the find has been halted. Confirmation that a qualified archeologist has investigated any such resource. Submittal of evidence that required recommendations regarding the disposition of any such resource have been satisfied.
HAZ-01	**Phase II site Investigation.** Prior to any demolition activities, a Phase II site investigation shall be conducted to verify the presence of any asbestos-containing material (ACM) or lead-based paint (LBP) within the existing bridge structure. If identified, material containing ACM and/or LBP shall be removed pursuant to applicable State and federal regulations.	Prior to demolition activity	City Engineer or designee	Prior to demolition activity	Submittal of aerially deposited sampling. Submittal of report providing evidence that any asbestos containing material and/or lead based paint has been removed and disposed of according to applicable guidelines.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	All ACM- and/or LBP-containing bridge materials shall be removed from the on-site structures, hauled to a licensed receiving facility, and disposed of by a certified company. Following completion of the material removal, a report documenting the abatement procedures uses, the volume of ACM and/or LBP removed, where the materials were moved to, and transportation/disposal manifests or dump tickets shall be compiled with a copy submitted to the City of Highland Public Works Department. If no bridge materials containing ACM or LBP are identified, no further investigations are required.				
HAZ-02	**Soil Sampling.** Prior to any construction activities, the soils adjacent to the existing roadway shall be sampled and tested for aerially deposited lead (ADL) and other materials in accordance with applicable ADL testing guidelines. If ADL concentrations are detected in existing soils, such soils will be handled in accordance with State and federal regulations and California Department of Transportation (Caltrans) Standard Specifications. If contaminated soils are not identified within or adjacent to the project site, no further mitigation is warranted.	Prior to ground-disturbing activity	City Engineer or designee	Prior to ground-disturbing activity	Submittal of ADL sampling. Submittal of evidence that ADL soils have been handled and/or remediated in pursuant to applicable State and federal regulations.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
HAZ-03	**LBP and Heavy Metal Testing.** Prior to any construction activities, pavement within the project site containing yellow thermoplastic markings shall be tested for LBP and other heavy metals. If markings are found to contain LBP and/or other heavy metals, then the material will be handled in accordance with Caltrans Standard Specification and corresponding Standard Special Provisions. If no LBP materials are identified within the project site, no further mitigation is needed.	Prior to the commencement of construction	City Engineer or designee	Prior to the commencement of construction	Submittal of required testing of thermoplastic markings. Submittal of evidence that material containing LBP and/or other heavy metals have been handled and/or remediated in pursuant to applicable State and federal regulations.
WQ-01	**Preparation of a Stormwater Pollution Prevention Plan (SWPPP).** Prior to the issuance of a construction permit, the contractor shall provide evidence to the City of Highland Public Works Department that a Stormwater Pollution Prevention Plan (SWPPP) has been prepared for the proposed project. This SWPPP shall address all construction-related activities, equipment, and materials that may affect water quality. The SWPPP shall include Best Management Practices (BMPs) to ensure that potential soil erosion, sedimentation, and spills have been minimized and to control discharge of pollutants in stormwater runoff as a result of construction activities. Additionally, the contractor shall submit to the City of Highland Public Works Department a Notice of Termination (NOT) via the Stormwater Multiple Application and Report Tracking System (SMARTS). The proposed	Prior to issuance of a construction permit	City Engineer or designee	Prior to issuance of a construction permit	Submittal of a SWPPP, including required BMPs. Submittal of a Notice of Intent.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	project shall abide by all local, federal, and State standards and regulations.				
WQ-02	**General Waste Discharge Requirements**. Prior to the issuance of a grading permit, if groundwater dewatering is required, the construction contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges to Surface Water that Pose an Insignificant Threat to Water Quality. Additionally, the City shall submit a Notice of Intent (NOI) to the Santa Ana Regional Water Quality Control Board (RWQCB) at least 45 days prior to start of groundwater dewatering activities. The construction contractor shall comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in this permit.	Prior to the issuance of a grading permit	City Engineer or designee	Prior to the issuance of a grading permit	Submittal of evidence that the project complies with the applicable water discharge requirements. Submittal of evidence that the NOI has been provided as established in this measure.
WQ-03	**San Bernardino County Municipal Separate Storm Sewer System (MS4) Permit**. Prior to the issuance of a grading permit, the contractor shall provide evidence to the City of Highland Public Works Department that the project is in compliance with the provisions of the San Bernardino County Municipal Separate Storm Sewer System (MS4) Permit and Waste Discharge Requirements for the San Bernardino County Flood Control District (SBCFCD), and the incorporated cities of San Bernardino County within the Santa Ana region. The MS4 permit shall include implementation of Low Impact Development	Prior to the issuance of a grading permit	City Engineer or designee	Prior to the issuance of a grading permit	Submittal of evidence the project complies with the applicable provisions of the San Bernardino County MS4 Permit and SBCFCD water discharge requirements. Submittal of a final project-specific Water Quality Management Plan.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	(LID), site design, and source control BMPs to the maximum extent practicable as specified by the project-specific Water Quality Management Plan (WQMP). A final project-specific WQMP shall be prepared during final design. The WQMP shall evaluate the potential for catch basin inserts to be incorporated into the project design. Control BMPs shall include, but not be limited to: irrigation system and landscape maintenance, sweeping of transportation surfaces adjoining curb and gutter, drainage facility inspection and maintenance, MS4 stenciling and signage, landscape and irrigation system design, and protection of slopes and channels.				
WQ-04	**Water Quality Permits.** Prior to the issuance of a demolition permit, the City shall obtain the following permits for the proposed project: • Clean Water Act (CWA) Section 401 Water Quality Certification from the Santa Ana RWQCB for any discharge to a water of the United States. • CWA Section 404 Nationwide Permit from the United States Army Corps of Engineers (USACE) for the discharge of dredge or fill material into a water of the United States. • California Fish and Game Code Section 1602 Streambed Alteration Agreement will be required from the California	Prior to the issuance of demolition permits.	City Engineer or designee	Prior to the issuance of demolition permits.	Submittal of evidence that the regulatory permits have been granted.

Mitigation Monitoring and Reporting Program

Mitigation Measure/ Conservation Measure	Avoidance and Minimization Measure	Timing	Monitoring Party	Frequency and Duration of Monitoring	Performance Criteria
	Department of Fish and Wildlife (CDFW) for impact to CDFW riparian streambed.				

APPENDIX B

2018 IS/MND NATURAL ENVIRONMENTAL STUDY



Natural Environment Study

Discussions of Biological Assessments, Rare Plant Survey, Coastal California Gnatcatcher Survey, San Bernardino Kangaroo Rat Survey, and Jurisdictional Delineation

HIGHLAND, CALIFORNIA

DISTRICT 8 – SAN BERNARDINO COUNTY
Federal Project No. BR-NBIL 5449 (505)

September 29, 2017

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

BASE LINE BRIDGE REPLACEMENT PROJECT

HIGHLAND, CALIFORNIA
DISTRICT 8 – SAN BERNARDINO COUNTY
Federal Project No. BR-NBIL 5449 (505)

September 29, 2017

STATE OF CALIFORNIA
Department of Transportation
and City of Highland

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Summary

This Natural Environment Study (NES) report serves to document the results of a biological resources assessment conducted for the Base Line Bridge Replacement Project (project). The City of Highland, in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), proposes to improve Base Line across City Creek. The existing bridge and low-water crossing do not have adequate capacity to convey the creek flow during the design flood event; therefore, Caltrans has recommended constructing a new bridge on a raised profile. As a consequence of raising the profile for the bridge, the roadway sections approaching the bridge from both the east and west, which are four-lane roadways, will need to be raised to meet the raised bridge profile. The purpose of the proposed project is to replace the existing bridge and eliminate the low-water crossing over City Creek, replacing it with a raised bridge with adequate clearance for the creek to flow underneath and to maintain safe access through the project area on a roadway that meets adopted City standards.

The Biological Study Area (BSA) contains potentially suitable habitat for five federally and/or State-listed species: Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), Santa Ana sucker (*Catostomus santaanae*), least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher (*Polioptila californica californica*), and San Bernardino kangaroo rat (*Dipodomys merriami parvus*). The BSA is also within federally designated critical habitat for Santa Ana sucker and San Bernardino kangaroo rat. The least Bell's vireo and San Bernardino kangaroo rat were found to be present within the BSA. Santa Ana River woollystar, coastal California gnatcatcher, and Santa Ana sucker are considered absent within the BSA at this time. Project effects to these species will be avoided and minimized. The widening of Base Line Bridge and the spanning of City Creek will provide an additional 0.70 acre that will be subject to natural stream action. The project will improve hydrologic function and habitat connectivity in the BSA and is anticipated to provide long-term beneficial effects for San Bernardino kangaroo rat and Santa Ana sucker designated critical habitat.

The BSA contains suitable habitat for several non-listed special-status species. Six species (Santa Ana speckled dace, coast horned-lizard, Bell's sage sparrow, southern rufous-crowned sparrow, northwestern San Diego pocket mouse, and San Diego desert woodrat) were found to be present. The BSA also contains suitable habitat for burrowing owl. Project impacts to these species will be avoided and minimized.

The BSA primarily contains one natural community of concern, Riversidean alluvial fan sage scrub. The project will result in 6.24 acres of temporary impacts and 0.03 acre of permanent impacts to Riversidean alluvial fan sage scrub. Other communities in the

BSA that may be considered to be of concern are southern willow scrub and wetland emergent. The project will have 0.76 acre of temporary effects to southern willow scrub, and 0.01 acre of temporary effects to wetland emergent vegetation.

Vegetation within the BSA provides suitable habitat for nesting birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. To avoid potential effects to nesting birds, pre-construction surveys will be required unless vegetation clearing is conducted outside of the general bird breeding season (February 15 through August 31).

A jurisdictional delineation of the BSA was conducted and identified the presence of potential jurisdictional waters. The project will result in 6.42 acres of temporary effects and 0.03 acre of permanent impacts to nonwetland waters, and 0.77 acre of temporary impacts to wetland waters regulated by the U.S. Army Corps of Engineers (USACE). The project would result in 7.79 acres of temporary impacts and 0.05 acre of permanent impacts to California Department of Fish and Wildlife (CDFW) jurisdictional streambed/riparian habitat. The Base Line Bridge widening will result in a net increase of 0.70 acre of USACE and CDFW jurisdiction within City Creek. The proposed project is anticipated to require the following agency authorizations: a Federal Clean Water Act (CWA) Section 404 permit authorization from the USACE, a CWA Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a Fish and Game Code Section 1602 Streambed Alteration Agreement from the CDFW.

The project has the potential to spread invasive, non-native species to native habitats in and adjacent to the BSA caused by (1) the entering and exiting of contaminated construction equipment, (2) the inclusion of invasive species in seed mixtures and mulch, and (3) through the improper removal and disposal of invasive species causing seed to be spread along the highway. In compliance with Executive Order 13112, a weed abatement program will be developed and implemented to avoid or minimize the importation of invasive, non-native plant material during and after construction.

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Chapter 1 – Introduction

The City of Highland (City) in cooperation with the California Department of Transportation (Caltrans), proposes to improve the existing Base Line over City Creek Crossing, a four-lane low-water crossing. The Base Line Bridge Replacement Project site is located approximately 0.4 mile east of State Route 210 (SR-210 aka Foothill Freeway) on Base Line between Boulder Avenue and Yarnell Road, in the City of Highland, San Bernardino County, California (Figure 1, all figures are included in Appendix A). A biological study area (BSA) was designated to address potential impacts from the proposed project to sensitive biological resources (Figure 2).

Caltrans is the lead agency for environmental review under the National Environmental Policy Act (NEPA). The City is the lead agency under the California Environmental Quality Act (CEQA).

Project History

PURPOSE

The purpose of the proposed project is to replace the existing bridge and eliminate the low-water crossing over City Creek, replacing it with a raised bridge with adequate clearance for the creek to flow underneath and to maintain safe access through the project area on a roadway that meets adopted City standards.

NEED

Upstream of Base Line, during normal flow conditions, flows are contained within “piled-up” channel side slopes and pass under the existing bridge structure. However during major flood events, breaches have been observed and documented at multiple locations in the “piled-up” channel side slopes. As a result of these breaches, flows are diverted to the low-water crossing where the existing box culvert is inadequate to convey such large flows. Consequently, the flows overtop the roadway. Major storms in December 2010 resulted in significant flows within City Creek, resulting in the overtopping of a number of roadways and culverts within the City.

According to the City of Highland General Plan, Base Line crossing City Creek is classified as “Major Highway,” defined as a four-lane, 80-foot roadway (including a 12-foot median) curb-to-curb, within 104-foot rights-of-way. The existing Base Line Bridge carries four lanes of traffic over City Creek (two lanes in each direction) via a 42-foot roadway curb-to-curb but without a median. The new bridge will include a 95.5-foot wide roadway (including a 16-foot median and 5-foot dedicated pedestrian path on each side) curb-to-curb, within a 160-foot City right-of-way.

Project Description

The existing Base Line four-lane roadway sections approaching the bridge over City Creek from both the east and the west will be elevated to meet the proposed raised bridge profile. The existing four-lane low-water crossing will be replaced by the four-lane bridge. The proposed action (Figure 2) will include, but is not limited to, the following improvements:

- Replace the Base Line low-water crossing over City Creek with a raised bridge. The raised bridge will span 240 feet across City Creek and will be 95.5 feet wide.
- Construct roadway approaches, approximately 130 feet to the west of the proposed bridge and approximately 860 feet to the east, to tie into the existing four-lane roadway section.
- Construct street improvements including utility construction, pavement widening, curbs, gutters, sidewalks, and street lighting and the relocate utilities as needed.
- Construct a 16 × 10-foot box culvert to replace the existing 8 × 4-foot low-flow box culvert east of the proposed bridge.
- Accommodate the construction of a north to southwestern trending multipurpose trail along the western bank of City Creek (to be locally funded by the City of Highland at a later date).

Other miscellaneous improvements include channel grading in City Creek to divert flows under the new bridge. In addition, two temporary test pits approximately 15 × 4 feet (L × W), with a maximum depth of 15 feet are proposed to be excavated during the Design Phase as part of geotechnical investigation to ascertain the suitability of using pile foundations at abutments and pier.

The proposed project would not require the acquisition of new right-of-way (ROW).

CONSTRUCTION

The proposed project may require a few short-term (partial day) closures to facilitate the project staging and construction. Construction will occur in stages to allow for continued traffic flow during construction. Depending on the results of the Traffic Analysis, two, three, or four lanes of traffic with pedestrian access will remain open at all times. The details of the final construction methods addressing these issues will be developed during the project design phase. Potential staging areas have been identified north of Base Line along the eastern terminus of the project site and along the upland banks of City Creek in the northwest section of the project site.

BUILD ALTERNATIVE

One build alternative was selected for the proposed project, which includes the design features discussed above.

NO BUILD ALTERNATIVE

The No Build Alternative assumes that no improvements would be made to the Base Line Bridge at City Creek, and existing conditions would be maintained. Under the No Build Alternative, the structural integrity of the bridge would continue to deteriorate and safety concerns for adequate freeboard would increase. Due to deficient hydraulic conveyance capacity at the low-water crossing, public safety could be compromised during a major storm event.

Chapter 2 – Study Methods

This section provides the regulatory framework by which biological resources were reviewed for the proposed project and the methods used in determining the suitability of the habitat for a given biological resource. There are several federal, state, and local biological resources regulations and policies that pertain to this project. These policies are summarized below, along with a brief description of how they relate to the proposed project's planning, permitting, and implementation.

Regulatory Requirements

FEDERAL LAWS AND REGULATIONS

National Environmental Policy Act. The National Environmental Policy Act (NEPA) was signed into law on January 1, 1970. NEPA requires federal agencies to assess the environmental impacts of their proposed actions prior to making decisions. Using the NEPA process, agencies evaluate the environmental and related social and economic effects of their proposed actions. Agencies also provide opportunities for public review and comment on those evaluations.

NEPA policy requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony. Federal agencies must incorporate environmental considerations in their planning and decision-making through a systematic interdisciplinary approach. Each federal agency maintains its own procedures for implementing NEPA. The NEPA process begins when an agency proposes to take an action (this can include proposals to adopt rules and regulations, formal plans that direct future actions, programs, and specific projects). Once the proposal is conceptualized and any reasonable alternatives have been developed, the agency must determine if the action has the potential to affect the quality of the human environment.

Under the provisions of the Memorandum of Understanding (MOU) between the FHWA and Caltrans, the Secretary of Transportation has assigned, and the State of California has assumed, responsibility for FHWA functions under other federal environmental laws. The MOU was signed pursuant to Section 6005 of the 2005 SAFETEA-LU, and extended in October 2012 under Moving Ahead for Progress in the 21st Century Act (MAP-21), The FHWA requires California to consent to the jurisdiction of federal courts for actions taken by Caltrans under NEPA Assignment, waiving California's immunity under the Eleventh Amendment to the U.S. Constitution. On March 30, 2017, the FHWA acknowledged the waiver of immunity was adequately reinstated; therefore, Caltrans is authorized to continue to participate in the NEPA Assignment Program. The project is funded in part with federal money. Caltrans in its assumption of FHWA responsibility, is

required to review and approve biological resources surveys and studies including (but not limited to) those prepared pursuant to the Federal Endangered Species Act (FESA) of 1973, the Federal Clean Water Act (CWA), and the Migratory Bird Treaty Act (MBTA).

Federal Endangered Species Act. Under provisions of Section 7(a)(2) of FESA, a federal agency that permits, licenses, funds, or otherwise authorizes a project activity must consult with the U.S. Fish and Wildlife Service (USFWS) if the activity may affect a listed endangered or threatened species or its designated critical habitat. The purpose of this consultation is to ensure that its actions would not jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat.

Under the provisions of the *Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and the California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Pilot Program,* which became effective on July 1, 2007, Caltrans serves as the NEPA Lead Agency for compliance with Section 7(a)(2) of FESA. Because this project is covered by the Pilot Program MOU, the FHWA has assigned, and Caltrans has assumed, FHWA responsibility for environmental review, consultation, and coordination on this project.

Clean Water Act. Provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. 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.

Section 404: The USACE regulates discharges of dredged or fill material into waters of the United States (waters of the U.S.). These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. The USACE regulatory jurisdiction, pursuant to Section 404 of the CWA, is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or it may be indirect (through a nexus identified in the USACE regulations). In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic must meet a specific set of mandatory wetland criteria.

The discharge of dredged or fill material (temporarily or permanently) into waters of the U.S. (including wetlands) requires authorization from the USACE pursuant to Section 404 of the CWA. Potential waters of the U.S. under the jurisdiction of the Section 404 are present within the BSA.

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 that the discharge complies with other provisions of CWA. The Regional Water Quality Boards (RWQCB) administers the certification program in California. Potential waters of the U.S. under the jurisdiction of Section 401 are present within the BSA.

Migratory Bird Treaty Act and Executive Order 13186. Native bird species and their nests are protected under the MBTA (16 United States Code [USC] 703 712). The MBTA states that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. The MBTA prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering for sale, purchase, or barter, of any migratory bird or its eggs, parts, or nests, except as authorized under a valid permit.

Executive Order (EO) 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) directs federal agencies "taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement an MOU with the USFWS that promotes the conservation of migratory bird populations."

Executive Order 11990 – Protection of Wetlands. EO 11990 established a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. The U.S. Department of Transportation (DOT) promulgated DOT Order 5660.1A in 1978 to comply with this direction. On federally funded projects, impacts on wetlands must be identified. 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.

- Additional requirement is to provide early public involvement in projects affecting wetlands. FHWA provides technical assistance (Technical Advisory 6640.8A) and reviews environmental documents for compliance.

Executive Order 13112 – Invasive Species. On February 3, 1999, President William J. Clinton signed EO 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

Under EO 13112, federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

STATE LAWS AND REGULATIONS

California Environmental Quality Act. Enacted in 1970, the California Environmental Quality Act (CEQA) requires state and local government agencies to inform decision-makers and the public about the potential environmental impacts of proposed projects, and to reduce those environmental impacts to the extent feasible. CEQA requires the disclosure of potential environmental impacts and the identification of enforceable measures to avoid or reduce environmental damage through feasible mitigation or project alternatives. A key feature of the CEQA process is the opportunity for the public to review and provide input throughout the environmental process. The CEQA process allows a robust public disclosure of a project's potential environmental impact and provides for informed governmental decisions.

CEQA requirements apply to public agency projects including activities directly undertaken by a governmental agency, activities financed in whole or in part by a governmental agency, and private activities that require discretionary approval from a governmental agency; as well as private projects that involve governmental participation, financing, or approval.

The City of Highland, acting as the CEQA Lead Agency, will review and consider, and take appropriate action on the CEQA document prepared for the proposed project.

California Endangered Species Act. The California Endangered Species Act (CESA) is administered by the California Department of Fish and Wildlife (CDFW) and prohibits the "take" of plant and animal species identified as either threatened or endangered in the State of California by the Fish and Game Commission (Fish and Game Code Section 2050 to 2097). "Take" is defined to mean hunt, pursue, catch, capture or kill or to attempt those activities. Sections 2080.1 and 2081 of CESA allow the CDFW to authorize exceptions to the "take" prohibition for state-listed threatened or endangered plant and animal species for purposes such as public and private development, provided the take is incidental to an otherwise lawful activity and the take is minimized and fully mitigated.

Section 1600 of the California Fish and Game Code. The State of California Code of Regulations empowers the CDFW to issue Agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be substantially adversely affected. These regulations do not apply to Tribal Lands. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an ephemeral flow of water. The

CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW.

The CDFW has not defined wetlands for jurisdictional purposes. The CDFW generally includes within the jurisdictional limits of streams and lakes any riparian habitat present. Riparian habitat includes willows, alders, and other vegetation typically associated with stream banks or lake shorelines. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas. Wetlands not associated with a lake, stream, or other regulated areas generally are not subject to CDFW jurisdiction. Streambeds under the jurisdiction of CDFW are present within the BSA.

Studies Required

LITERATURE REVIEW

A literature review and records search were conducted to identify the existence or potential occurrence of sensitive or special-status biological resources (e.g., plant and animal species) in or within the vicinity of the BSA. The BSA is the proposed project footprint plus a buffer to include all areas of permanent and temporary construction related impacts.

Federal and state lists of special-status species were examined. Current and historical aerial photographs were also reviewed in Google Earth (1994, 1995, 2002–2007, 2009, and 2011–2017). The project is located outside of the National Marine Fisheries Service (NMFS) jurisdictional boundary/quadrangle, and the BSA is outside the range of species under NMFS jurisdiction listed on the USFWS Information Planning and Conservation System (IPaC) species list, identified below. Therefore, the NMFS species list was not requested from NMFS. Current database records reviewed included the following:

- California Natural Diversity Data Base (CNDDB). 2016. CDFW. Rarefind 5. July 2016. California 7.5-minute USGS quadrangles searched: *San Bernardino South, Redlands, San Bernardino North,* and *Harrison Mountain, California*.
- California Native Plant Society (CNPS). Electronic Inventory of Rare and Endangered Plants (CNPSEI online edition, v8-01b). Website: http://www.cnps.org/inventory. July 2016. California 7.5-minute USGS quadrangles searched up to an elevation of 1,700 feet: *San Bernardino North, Harrison Mountain, Keller Peak, San Bernardino South, Redlands,* and *Yucaipa, California.*

- USFWS, Information Planning and Conservation System (IPaC). Website: http://www.ecos.fws.gov (accessed July 16, 2017) (Appendix B).Draft Natural Environment Study. City of Highland 2010. Baseline Bridge Replacement Project.

FIELD REVIEWS

On-site field investigations were conducted in 2009, 2016, and 2017 to identify vegetation communities, habitats for special-status species, potential jurisdictional waters, and other biological resources issues. Based on the literature review and initial field investigations, focused field surveys were completed as follows:

- Rare plants focused survey;
- Santa Ana sucker (*Catostomus santaanae*) habitat assessment;
- Burrowing owl (*Athene cunicularia*) habitat assessment;
- Riparian bird habitat assessment;
- Coastal California gnatcatcher (*Polioptila californica californica*) focused survey;
- San Bernardino kangaroo rat (*Dipodomys merriami parvus*) focused survey;
- Bat habitat assessment; and
- Jurisdictional Delineation.

Personnel and Survey Dates

Table A lists the survey data, including survey type, date(s), and biologist(s) for the various surveys performed within the BSA. Table A is followed by a detailed discussion of the methods used for these surveys.

Table A: Survey Data

Survey Type	Survey Personnel	Survey Date(s)
Rare Plant Focused Survey	Marnie McKernan, Stan Spencer	May 9, June 10, and July 21, 2009; April 29 and June 8, 2016
Coastal California Gnatcatcher Focused Survey	Marnie McKernan Stan Spencer, Denise Woodard	March 17, 24, 31 and April 8, 15, 22, 2009; April 28, May 5, 12,19, 26, and June 2, 2016
Burrowing Owl Habitat Assessment	Denise Woodard, Claudia Bauer	April 22, 2016
San Bernardino Kangaroo Rat Focused Trapping Survey	Marnie McKernan	July 6, 7, 8, 9 and 10 and July 27, 28, 29, 30, and 31, 2009.
Bat Daytime Habitat Assessment	Jill Carpenter	January 17, 2017
Jurisdictional Delineation	Denise Woodard, Claudia Bauer	June 17, 2016

Rare Plants. Focused rare plant surveys were conducted in 2009 and 2016. The 2009 special-status plant species survey was conducted on May 9, June 10, and July 21 by consulting biologist Marnie McKernan. Transects were walked on foot, spaced to allow 100 percent visual coverage of the site. The 2016 survey was conducted by LSA biologist Stan Spencer, PhD, on April 29 and June 8. Areas of potentially suitable habitat on the site were surveyed by walking 10- to 30-foot transects. All plant species observed during the survey were noted. The results of the 2009 and 2016 focused rare plant surveys are provided in Appendix C.

California Gnatcatcher. Focused coastal California gnatcatcher surveys were conducted in 2009 by consulting biologist Marnie McKernan under Federal Permit Number TE 839211-2, and in 2016 by consulting biologists Stan Spencer and Denise Woodard under Federal 10(a)(1)(A) Permit TE 777965. The survey was conducted in accordance with Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol (USFWS, revised July 28, 1997). The surveys consisted of six site visits during the breeding season. The entire site was surveyed. Taped vocalizations were used periodically during each site visit. The results of the 2009 and 2016 focused coastal California gnatcatcher surveys are provided in Appendix D.

Burrowing Owl. A habitat assessment for the burrowing owl was conducted on April 22, 2016 by consulting biologists Denise Woodard and Claudia Bauer. The survey was conducted by walking transects spaced at approximately 50 feet wide, and stopping periodically to search for owls with the use of binoculars, as well as burrowing owl sign (e.g., whitewash, pellets, scat, tracks, and/or feathers). Potential burrows, such as fossorial mammal burrows and manmade structures including earthen berms, concrete culverts, concrete, asphalt, rock, or wood debris piles, or openings beneath concrete or asphalt pavement were noted.

San Bernardino Kangaroo Rat. Focused surveys for San Bernardino kangaroo rat were conducted by consulting biologist Marnie McKernan under USFWS permit number TE 839211-2. Two trapping sessions consisting of five consecutive nights each were conducted during the weeks of July 6 and July 27, 2009, to determine the presence/ absence of San Bernardino kangaroo rat within the BSA. Trapping surveys were conducted according to USFWS protocols established for San Bernardino kangaroo rat. The current protocol calls for five consecutive nights of trapping, conducted when the species is active and when air temperature lows are above 50° F.

Twelve-inch modified Sherman live traps were used and placed in both transects and grids. Each trap was baited with birdseed and oats placed at the back of the traps. The traps were left in place and opened at dusk each night and inspected once during the

night and at dawn each morning. All animals were identified and released at the point of capture. The San Bernardino kangaroo rat trapping results are provided in Appendix E.

Bats. During the daylight hours on January 17, 2017, consulting biologist and bat specialist Jill Carpenter performed a daytime bat habitat suitability assessment to determine whether roosting habitat for bats is present in the Base Line Bridge and adjacent culvert structures within the proposed project area. These structures were visited on foot and potential bat roosting sites were identified by examining the sides and underside of the bridge and each culvert structure with a light emitting diode (LED) spotlight for any structural features, (e.g., crevices or recessed spaces that may be suitable for use as day- or night-roosting habitat). Structural features suitable for day-roosting bats include crevices (e.g., hinges or expansion joints, weep holes, or cavities), while structural features used by night-roosting bats include features suitable for day roosting as well as recessed areas (e.g., concrete girders that can trap warm air, or the walls of concrete box culverts). The structures were also inspected for the presence of bats or any bat sign (e.g., guano, urine staining, or vocalizations) indicating current or past use of an area by roosting bats. Locations containing suitable day-roosting habitat were also assessed for potential use as maternity roost sites based on indications that the observed roost feature supports or may support a large congregation of bats. The bat habitat assessment is provided in Appendix F.

Jurisdictional Delineation. The fieldwork for this evaluation delineation was conducted in June 2016 by consulting biologists Denise Woodard and Claudia Bauer. The BSA was surveyed on foot for both federal and state jurisdictional areas. Areas of potential jurisdiction were evaluated according to currently accepted federal and state regulations and guidelines. The jurisdictional delineation report is provided in Appendix G.

Agency Coordination and Professional Contacts

No agency coordination was completed for the preparation of this NES. Table B summarizes agency coordination conducted for the draft 2010 NES.

Table B: Agency Coordination and Professional Contacts

Name	Agency	Type of Coordination	Date
Steve Lowe	San Bernardino National Forest	Marnie McKernan phone call regarding potential presence of sensitive fish and amphibians within the BSA.	December 15, 2009
Dr. Jonathan Baskin	San Marino Environmental Associates	Marnie McKernan phone call regarding potential presence of speckled dace within the BSA.	March 24, 2010

Table B: Agency Coordination and Professional Contacts

Name	Agency	Type of Coordination	Date
Scott Quinell	Caltrans	Marnie McKernan phone call regarding proposed critical habitat for Santa Ana sucker.	July 20, 2010
Michael Flores	CDFW	Marnie McKernan initial coordination and field review.	August 23, 2010

Limitations That May Influence Results

The collection of biological field data is normally subject to environmental factors that cannot be controlled or reliably predicted. Consequently, the interpretation of field data must be conservative and consider the uncertainties and limitations necessarily imposed by the environment. However, due to the experience and qualifications of the consulting biologist involved in the surveys, this limitation is not expected to severely influence the results or substantially alter the findings.

Chapter 3 – Results: Environmental Setting

Description of the Existing Biological and Physical Conditions

The BSA is located at the intersection of City Creek with Base Line. The BSA includes City Creek and adjacent uplands. City Creek is mainly vegetated by Riversidean alluvial fan sage scrub. Vegetation along the City Creek low-flow channel is primarily southern willow scrub. Areas outside the City Creek levees are primarily developed. Details of the biological and physical conditions within the BSA are discussed below.

STUDY AREA

The BSA includes City Creek and adjacent upland areas in the vicinity of the existing Base Line Bridge, encompassing an area 100 to 605 feet north of Base Line and 100 to 400 feet south of Base Line within the east and west limits of the City Creek floodplain (Figures 1 and 2).

As described in Baldwin et al. (2012), the BSA is located within the South Coast Subregion of the Southwestern California Region of the California Floristic Province. The South Coast Subregion is characterized by valleys and small hills extending from the coast inland to the foothills of the Transverse and Peninsular Mountain Ranges. Much of the area is intensively developed for urban, suburban, and agricultural uses. The natural vegetation of the subregion consists primarily of chaparral, coastal sage scrub (CSS), annual grasslands, and some riparian scrub and woodland.

Physical Conditions

The natural topography within the BSA consists of the City Creek floodplain and adjacent banks and upland areas. The topography slopes gently from the north to the south and the elevation ranges from approximately 1,290 feet to 1,325 feet above mean sea level.

Table C provides a list of soils within the BSA, as mapped by the Natural Resource Conservation Service, Online Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm).

Table C: Soil Series Occurring within the Biological Study Area

Soil Series	Description
Psamments, Fluvents, and Frequently flooded soils	
Soboba stony loamy sand (SpC)	2 to 9% slopes

Source: Natural Resource Conservation Service SSURGO Database (2003).

Biological Conditions in the Biological Study Area

The BSA consists of natural areas associated with City Creek surrounded by developed areas associated with existing transportation corridors as well as residential and commercial development.

VEGETATION/NATURAL COMMUNITIES

The BSA contains five vegetation communities and land uses: developed/disturbed lands, Riversidean alluvial fan sage scrub, southern willow scrub, emergent wetland, and unvegetated stream channel. The predominant natural plant community within the BSA is Riversidean alluvial fan sage scrub within the City Creek floodplain. Figure 3 shows land cover within the BSA, Figure 4 provides site photographs, and Table D shows the acreage of each vegetation type and land use within the BSA. The vegetation communities within the BSA are discussed below.

Table D: Land Cover Occurring within the Biological Study Area

Vegetation Community	Total Acres
Developed/Disturbed Lands	11.08
Riversidean Alluvial Fan Sage Scrub	13.44
Southern Willow Scrub	1.19
Emergent Wetland	0.01
Unvegetated Stream Channel	0..23
Total	**26.12**

Source: Compiled by LSA Associates, Inc., September 2017.

Developed/Disturbed. This cover type lacks native vegetation and is dominated by roadway infrastructure and associated hardscapes, dirt access roads, and sparsely vegetated vacant lands. Vegetation on disturbed vacant lands consisted of ruderal non-native grassland species including foxtail chess (*Bromus madritensis*), ripgut brome (*Bromus diandrus*), redstem stork's bill filaree (*Erodium cicutarium*), and shortpod mustard (*Hirschfeldia incana*).

Riversidean Alluvial Fan Sage Scrub. Riversidean alluvial fan sage scrub (RAFSS) occurs within the floodplain of City Creek. RAFSS within the BSA is dominated by California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), yerba santa (*Eriodictyon trichocalyx*), and scalebroom (*Lepidospartum squamatum*).

Southern Willow Scrub. Southern willow scrub within the BSA occurs within the alluvial low-flow channel of City Creek that contains perennial flows. Dominant southern willow

scrub species identified include arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*), Fremont cottonwood (*Populus fremontii*), and mule fat (*Baccharis salicifolia*).

Emergent Wetland. The emergent wetland within the BSA occurs at the base of a storm drain that outlets into City Creek and ultimately drains under Base Line via a concrete box culvert. The area where the outlet drains into City Creek is eroded below the level of the concrete box culvert, which allows water to pond and support emergent wetland vegetation. Dominant emergent wetland species identified include Canadian horseweed (*Erigeron canadensis*), prickly lettuce (*Lactuca serriola*), and umbrella plant (*Cyperus involucratus*).

Unvegetated Channel. Unvegetated channel includes those portions of City Creek that are subject to more frequent flooding such as high flows following a larger storm event, and areas that do not contain adequate substrate to promote vegetative growth. Unvegetated channels occur within the two low-flow channels in City Creek.

ANIMAL SPECIES

Most animal species identified within BSA are characteristic of those found in RAFSS and riparian scrub habitats in interior southern California. Common animal species observed during the field surveys include common side-blotched lizard (*Uta stansburiana*), black phoebe (*Sayornis nigricans*), song sparrow (*Melospiza melodia*), California towhee (*Melozone crissalis*), and desert cottontail (*Sylvilagus audubonii*). A complete list of wildlife species observed during the biological resources surveys is included as Appendix H.

AQUATIC RESOURCES

City Creek contains a primary perennial low-flow channel within the BSA that provides habitat for aquatic resources. One native aquatic amphibian species observed within the BSA is the California treefrog (*Pseudacris cadaverina*). Within the BSA, City Creek is within federally designated critical habitat for the Santa Ana sucker (*Catostomus santaanae*), although the Santa Ana sucker is believed to be extirpated from this portion of City Creek.

INVASIVE SPECIES

Exotic species are typically most numerous in disturbed habitats, adjacent to roads and developed areas, and frequently border areas of ornamental landscaping. Non-native plant species occur within the plant communities throughout the BSA, within patches of native plant communities, and in areas that have been disturbed by human uses. Twenty-five non-native plants species listed on the California Invasive Plant Council (Cal IPC) California Invasive Plant Inventory were identified in the BSA. Of these species, two

have an overall high rating, 12 have a moderate rating, and 11 have a limited rating. Invasive species that have severe ecological impacts are given a high rating; in the BSA, these are foxtail chess (*Bromus madritensis*) and Mediterranean tamarisk (*Tamarix ramosissima*).

HABITAT CONNECTIVITY

Although the BSA is located in an urbanized area that surrounds City Creek, City Creek contains habitats that support special-status plant and wildlife species and serves as a wildlife corridor between habitats in the San Bernardino Mountains north of the BSA and habitats in the Santa Ana River south of the BSA.

Regional Species and Habitats and Natural Communities of Concern

For the purposes of this NES, special-status species are considered those listed under FESA and/or CESA, animal species considered of special concern by the CDFW, and plant species with a California Rare Plant Rank (CRPR) of 1A, 2A, 1B, or 2B. The presence or absence of special-status species depends on many factors, including habitat conditions, behavior, seasonal activity, and seasonal occurrence. It is often difficult to ascertain the presence or absence of a species at any particular moment in time. Thus, the presence, or the likelihood of the presence, of special-status species is based on the following criteria (in descending order, from species determined to be present to those considered potentially present): (1) direct observation of the species or its sign in the BSA or the immediate vicinity during surveys conducted for this study or reported in previous biological studies; (2) sighting by other qualified observers; (3) record reported by the CNDDB published by the CDFW; (4) presence or location of specific species on lists provided by private groups (e.g., CNPS); and/or (5) the BSA lies within the known distribution of a given species and contains appropriate habitat.

Table E lists the listed and special-status species, natural communities, and critical habitat potentially present within the proposed project area.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
PLANTS					
Singlewhorl burrobush	*Ambrosia monogyra*	US: – CA: 2B	Sandy soils in washes and ravines in chaparral and desert scrub below 500 meters (1,640 feet) elevation. In California, known from Riverside, San Bernardino, and San Diego Counties. Also occurs in Arizona, New Mexico, Texas, and Mexico.	A	Not observed during focused survey.
Marsh sandwort	*Arenaria paludicola*	US: FE CA: SE/1B	Sandy soils in marshes from 3 to 170 meters (10 to 560 feet) elevation, where it grows up through mats of *Typha*, *Juncus*, *Scirpus*, etc. Known to presently occur only in San Luis Obispo County. Believed extirpated from Los Angeles, San Francisco, Santa Cruz, Riverside, and San Bernardino Counties, and from the State of Washington. The last known record of this species in Riverside, San Bernardino, or Los Angeles Counties is from 1900.	A	Not in elevation range.
Horn's milk-vetch	*Astragalus hornii* var. *hornii*	US: – CA: 1B	Alkaline playas and lake margins from 60 to 850 meters (200 to 2,800 feet) elevation. In California, known only from Inyo and Kern Counties. Believed extirpated from San Bernardino County. Also occurs in Nevada.	A	No alkaline areas or lake margins. Believed extirpated from San Bernardino County.
Nevin's barberry	*Berberis nevinii*	US: FE CA: –	Gravelly wash margins in alluvial scrub or coarse soils and rocky slopes in chaparral at 275 to 825 meters (900 to 2,700 feet) elevation. Known occurrences at higher elevations are planted (not natural). Known only from Los Angeles, San Bernardino, Riverside, and San Diego Counties.	A	Not observed during focused survey.
Thread-leaved brodiaea	*Brodiaea filifolia*	US: FT CA: SE/1B	Usually on clay or associated with vernal pools or alkaline flats; occasionally in vernally moist sites in fine soils (clay loam, silt loam, fine sandy loam, loam, loamy fine sand). Typically associated with needlegrass or alkali	A	No fine soils, alkaline areas, or vernal pools.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
			grassland or vernal pools. Occurs from 25 to 1,120 meters (80 to 3,700 feet) elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, San Diego, and San Luis Obispo Counties, California.		
Palmer's mariposa lily	*Calochortus palmeri* var. *palmeri*	US: – CA: 1B	Mesic sites in chaparral and lower montane coniferous forest at 600 to 2,400 meters (2,000 to 7,900 feet) elevation. Known from Riverside, San Bernardino, Santa Barbara, Los Angeles, Ventura, Kern, and San Luis Obispo Counties.	A	Not in elevation range.
Bristly sedge	*Carex comosa*	US: – CA: 2B	Bogs and fens, freshwater marshes and swamps, and lake margins below 425 meters (1,400 feet). Known from Lake, Santa Cruz, San Francisco, Shasta, San Joaquin, and Sonoma Counties; and Idaho, Oregon, and Washington. Believed extirpated from San Bernardino County (last known occurrence was in 1882).	A	No marsh or similar habitat present.
Ash-gray paintbrush	*Castilleja cinerea*	US: FT CA: 1B	Clay openings in Mojave desert scrub, meadows, pebble plains, pinyon-juniper woodland, upper montane coniferous forest at 1,800 to 2,850 meters (5,900 to 9,400 feet) elevation. Known only from the eastern San Bernardino Mountains.	A	Not in elevation range.
San Bernardino Mountains owl's-clover	*Castilleja lasiorhyncha*	US: – CA: 1B	Mesic to drying soils in open areas of stream and meadow margins or margins of vernally wet areas in meadows, chaparral, pebble plains, and upper montane coniferous forest at 1,300 to 2,400 meters (4,300 to 7,900 feet) elevation. Known from San Bernardino County, and historically from Riverside County.	A	Not in elevation range.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Smooth tarplant	*Centromadia pungens* ssp. *laevis*	US: – CA: 1B	Generally alkaline areas in chenopod scrub, meadows, playas, riparian woodland, valley and foothill grassland below 480 meters (1,600 feet) elevation. Known from Riverside and San Bernardino Counties, extirpated from San Diego County.	A	No alkaline areas or other suitable habitat observed.
Salt marsh bird's beak	*Chloropyron (Cordylanthus) maritimus* spp. *maritimus*	US: FE CA: SE/1B	Coastal dunes and salt marshes below 30 meters (100 feet) elevation. In California, known from Los Angeles, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties. Historical collections referred to this taxon from alkaline meadow in vicinity of San Bernardino Valley are intermediate to *C. maritimus* ssp. *canescens*. Also occurs in Mexico.	A	No suitable habitat (dunes or marshes).
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	US: – CA: 1B	Sandy or rocky soils in chaparral, coastal scrub, or woodlands at 40 to 1,705 meters (100 to 5,600 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties.	A	Not observed during focused survey.
White-bracted spineflower	*Chorizanthe xanti* var. *leucotheca*	US: – CA: 1B	Sandy to gravelly places in Mojave desert scrub, pinyon and juniper woodland, or coastal scrub in the Transverse and Peninsular Ranges and desert edge foothills at 300 to 1,200 meters (980 to 3,900 feet) elevation in coastal southern California and adjacent desert areas. Known only from Los Angeles, Riverside, San Bernardino, and San Diego Counties, California.	A	Not observed during focused survey.
Peruvian dodder	*Cuscuta obtusifolia* var. *glandulosa*	US: – CA: 2B	May be extirpated in California. Formerly found sporadically in freshwater marsh on herbs including *Alternanthera*, *Dalea, Lythrum, Polygonum,* and *Xanthium* below about 500 meters (1,600 feet). Reported in California from Los	A	No marsh on site.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
			Angeles, San Bernardino, Sonoma, Sutter, Butte, Sacramento, and Merced Counties. Also known from eastern and southern U.S., West Indies, and Mexico.		
Slender-horned spineflower	*Dodecahema leptoceras*	US: FE CA: SE/1B	In the Vail Lake area, occurs in gravel soils of Temecula arkose deposits in openings in chamise chaparral. In other areas, occurs in sandy cobbly riverbed alluvium in alluvial fan sage scrub (usually late seral stage), on floodplain terraces and benches that receive infrequent overbank deposits from generally large washes or rivers, where it is most often found in shallow silty depressions dominated by leather spineflower (*Lastarriaea coriacea*) and other native annual species, and is often associated with cryptogamic soil crusts composed of bryophytes, algae and/or lichens. Occurs at 200 to 760 meters (600 to 2,500 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties.	A	Not observed during focused survey.
Santa Ana River woollystar	*Eriastrum densifolium* ssp. *sanctorum*	US: FE CA: SE/1B	Riversidean alluvial fan sage scrub and chaparral in sandy or gravelly soils of floodplains and terraced fluvial deposits of the Santa Ana River and larger tributaries (Lytle and Cajon Creeks, lower portions of City and Mill Creeks) at 90 to 625 meters (300 to 2,100 feet) elevation in San Bernardino and Riverside Counties.	HP	Riversidean alluvial fan sage scrub, sandy or gravelly soils of floodplains found within the BSA. Not observed during 2016 focused survey. Known CNDDB occurrence one mile south of site.
Hot springs fimbristylis	*Fimbristylis thermalis*	US: – CA: 2B	Meadows and seeps (alkaline, near hot springs) in elevations from 120 to 1,340 meters (400 to 4,400 feet). Known from Inyo Kern, Mono, and San Bernardino Counties, California, and Arizona and Nevada.	A	No suitable habitat (alkaline areas).

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Alvin meadow bedstraw	*Galium californicum* ssp. *primum*	US: – CA: 1B	Granitic soils in chaparral and lower montane coniferous forest; 1,350 to 1,700 meters (4,400 to 5,600 feet). Known from Riverside and San Bernardino Counties.	A	Not within expected elevational range of the species.
Los Angeles sunflower	*Helianthus nuttallii* ssp. *parishii*	US: – CA: 1A	Marshes and swamps (coastal salt and freshwater) at 10 to 500 meters (30 to 1,600 feet) elevation. This species is historically known from Los Angeles, Orange, and San Bernardino Counties. Last seen in 1937. Presumed extinct. Plants found in 2002 at Castaic Spring along the Santa Clara River in Los Angeles County were initially reported as possibly this taxon, but instead appear to be hybrids or evolutionary intermediates between *H. nuttallii* and *H. californicus*, based on chromosome counts and pollen morphology (*A Quantitative Analysis of Pollen Variation in Two Southern California Perennial* Helianthus *(Heliantheae: Asteraceae)*, J.M. Porter and N. Fraga, 2004).	A	No marshes or swamps in BSA. Presumed extinct.
Parish's alumroot	*Heuchera parishii*	US: – CA: 1B	Rocky areas in coniferous forests in Riverside and San Bernardino Counties at 1,500 to 3,800 meters (4,900 to 12,500 feet) elevation.	A	Not in elevation range.
Mesa horkelia	*Horkelia cuneata* ssp. *puberula*	US: – CA: 1B	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 70 to 825 meters (200 to 2,700 feet) elevation. Known only from San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Bernardino Counties. Believed extirpated from Riverside and San Diego Counties.	A	Not observed during focused survey.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
California satintail	*Imperata brevifolia*	US: – CA: 2B	Desert seeps, springs, moist canyons, canals, alkaline sinks, and similar wet areas below 500 meters (1,600 feet) elevation. Widespread in California and the western U.S. Also occurs in Mexico.	A	Not observed during focused survey.
Silver-haired ivesia	*Ivesia argyrocoma* var. *argyrocoma*	US: – CA: 1B	Alkaline meadows and pavement plains at 1,475 to 2,680 meters (4,800 to 8,800 feet) elevation. In California, known only from San Bernardino County.	A	No alkaline areas in BSA.
Lemon lily	*Lilium parryi*	US: – CA: 1B	Bulbiferous perennial herb of wet areas in meadows and riparian and montane coniferous forests at 1,220 to 2,790 meters (4,000 to 9,200 feet) elevation. In California, known from Los Angeles, Riverside, San Bernardino, and San Diego Counties. Also occurs in Arizona and Mexico.	A	Not in elevation range.
Parish's desert-thorn	*Lycium parishii*	US: – CA: 2B	Coastal scrub and Sonoran desert scrub at 135 to 1,000 meters (440 to 3,300 feet) elevation. In California, known from Imperial and San Diego Counties. Report from Riverside County is based on a misidentification. Known only historically from San Bernardino County (benches and/or foothills north of San Bernardino).	A	Not observed during focused survey.
Parish's bush mallow	*Malacotham-nus parishii*	US: – CA: 1A	Known only from one occurrence in 1895, in chaparral and coastal sage scrub at 490 meters (1,600 feet) elevation in vicinity of San Bernardino. Presumed extinct.	A	Not in elevation range and observed during focused survey.
Hall's monardella	*Monardella macrantha* ssp. *hallii*	US: – CA: 1B	Dry slopes and ridges in openings in chaparral, woodland, and forest at 695 to 2,195 meters (2,280 to 7,200 feet) elevation. Known only from Los Angeles, San Diego, Orange, Riverside, and San Bernardino Counties, California.	A	Not in elevation range.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Pringle's monardella	*Monardella pringlei*	US: – CA: 1A	Sandy hills in coastal sage scrub at 300 to 400 meters (980 to 1,300 feet) elevation. Known only from two occurrences west of Colton. Last seen in 1941. Habitat lost to urbanization. Presumed extinct.	A	No sandy hills on site. Considered extinct.
Gambel's water cress	*Nasturtium gambelii*	US: FE CA: ST/1B	Marshes and swamps from 5 to 330 meters (20 to 1,100 feet) elevation. Currently believed to occur in California only in Santa Barbara and San Luis Obispo Counties. There are historical records from Los Angeles, Orange, San Diego, and San Bernardino Counties, although the San Diego County records may be based on misidentification of another species. Also occurs in Baja California.	A	Not in elevation range.
San Bernardino ragwort	*Packera bernardina*	US: - CA: 1B	Mesic (sometimes alkaline) meadows and dry rocky slopes in pebble plains, and upper montane coniferous forest at 1,800 to 2,315 meters (5,900 to 7,600 feet) elevation. Known only from San Bernardino County.	A	Not in elevation range.
Parish's yampah	*Perideridia parishii* ssp. *parishii*	US: – CA: 1A	Deciduous shrub of willow swales in riparian habitats at 60 to 300 meters (200 to 1,000 feet) elevation. Believed to be extinct. Historical collections from Los Angeles and San Bernardino Counties.	A	Not in elevation range.
Parish's gooseberry	*Ribes divericatum* var. *parishii*	US: – CA: 1A	Deciduous shrub of willow swales in riparian habitats at 60 to 300 meters (200 to 1,000 feet) elevation. Believed to be extinct. Historical collections from Los Angeles and San Bernardino Counties.	A	Not in elevation range.
Black bog-rush	*Schoenus nigricans*	US: – CA: 2B	Marshes and swamps (often in alkali soils) in elevations from 140 to 2,130 meters (500 feet to 7,000 feet). Known from Inyo and San Bernardino Counties, California, and Nevada, Texas, and elsewhere.	A	No marshes within BSA.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Parish's checker-bloom	*Sidalcea hickmanii* ssp. *parishii*	US: – CA: 1B	Burned or cleared areas on rocky slopes, and along roads in chaparral, cismontane woodland, and lower montane coniferous forest at 1,000 to 2,135 meters (3,300 to 7,000 feet) elevation. Known only from in Santa Barbara, San Bernardino and San Luis Obispo Counties, California.	A	Not in elevation range.
Bear Valley checker-bloom	*Sidalcea malviflora* ssp. *dolosa*	US: – CA: 1B	Wet areas in forested habitats from 1,495 to 2,685 meters (4,900 to 8,800 feet) in elevation. Known only from the San Bernardino Mountains in San Bernardino County, California.	A	Not in elevation range.
Salt spring checker-bloom	*Sidalcea neomexicana*	US: – CA: 2B	Alkaline springs and brackish marshes below 1,530 meters (5,000 feet) elevation. In California, known only from Kern, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Believed extirpated from Los Angeles County. Also known from Arizona, New Mexico, Nevada, Utah, and Mexico.	A	No suitable wet areas within BSA.
Bird-foot checker-bloom	*Sidalcea pedata*	US: FE CA: SE/1B	Vernally mesic sites in meadows and pebble plains at 1,600 to 2,500 meters (5,200 to 8,200 feet) elevation. Known only from San Bernardino County, California.	A	Not in elevation range.
Prairie wedge grass	*Sphenopholis obtusata*	US: – CA: 2B	Wet meadows, stream banks, and ponds at 300 to 2,000 meters (1,000 to 6,600 feet) elevation. Widely distributed. In Southern California, known only from San Bernardino, Riverside (Santa Ana River), and perhaps San Diego Counties.	A	Not observed during focused survey.
Southern jewel flower	*Streptanthus campestris*	US: – CA: 1B	Open rocky areas in chaparral, lower montane coniferous forest and pinyon-juniper woodland at 600 to 2,400 meters (2,000 to 7,800 feet) elevation. In California, known from Riverside, San Bernardino, and San Diego Counties.	A	Not in elevation range.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
San Bernardino aster	*Symphyotri-chum defoliatum*	US: – CA: 1B	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 2,040 meters (6,700 feet) elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County.	A	Not observed during focused surveys.
Sonoran maiden fern	*Thelypteris puberula* var. *sonorensis*	US: – CA: 2B	Seeps and along streams in meadows at 50 to 610 meters (170 to 2,000 feet) elevation. Known from western Riverside, southwest San Bernardino, Santa Barbara, and Los Angeles Counties.	A	Not observed during focused survey.
INVERTEBRATES					
Delhi sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	US: FE CA: SA	Restricted to Delhi series sands in western Riverside and San Bernardino Counties.	A	No Delhi series sands in BSA.
FISH					
Santa Ana sucker	*Catostomus santaanae*	US: FT CA: SSC	The Santa Ana sucker's historical range includes the Los Angeles, San Gabriel, and Santa Ana River drainage systems located in Southern California. An introduced population also occurs in the Santa Clara River drainage system in southern California. Found in shallow, cool, running water.	HP, CH	City Creek within the BSA is considered Critical Habitat for the Santa Ana sucker. Portions of City Creek provide habitat; however, this species is believed extirpated from City Creek.
Arroyo chub	*Gila orcuttii*	US: – CA: SSC	Perennial streams or intermittent streams with permanent pools; slow water sections of streams with mud or sand substrates; spawning occurs in pools. Native to Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita River systems; introduced in Santa Ynez, Santa Maria, Cuyama, and Mojave River systems and smaller coastal streams.	A	The BSA is outside the known range of this species.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Santa Ana speckled dace	*Rhinichthys osculus* ssp. *3*	US: – CA: SSC	Found in the headwaters of the Santa Ana and San Gabriel River drainages. Found in riffles in small streams and shore areas with abundant gravel and rock.	HP	Suitable habitat is present in the BSA. This species was found approximately 4,000 feet upstream of the BSA during studies for the San Bernardino Municipal Water District.
AMPHIBIANS					
Western spadefoot	*Spea hammondii*	US: – CA: SSC	Grasslands and occasionally hardwood woodlands; largely terrestrial but requires rain pools or other ponded water persisting at least three weeks for breeding; burrows in loose soils during dry season. Occurs in the Central Valley and adjacent foothills, the non-desert areas of southern California, and Baja California.	HP	Marginally suitable habitat is present.
REPTILES					
Silvery legless lizard	*Anniella pulchra pulchra*	US: – CA: SSC	Inhabits sandy or loose loamy soils with high moisture content under sparse vegetation from central California to northern Baja California.	HP	Sandy soils and sparse vegetation are present.
California glossy snake	*Arizona elegans occidentalis*	US: – CA: SSC	Most common in desert habitats but also occurs in chaparral, sagebrush, valley-foothill hardwood, pine-juniper, and annual grass. Occurs from the eastern part of the San Francisco Bay Area south to northwestern Baja California. Absent along the central coast.	A	Suitable habitat is absent.
Orange-throat whiptail	*Aspidoscelis hyperythra*	US: – CA: SSC	Prefers washes and other sandy areas with patches of brush and rocks, in chaparral, coastal sage scrub, juniper woodland, and oak woodland from sea level to 915 meters (3,000 feet) elevation. Perennial plants required. Occurs in Riverside, Orange, and San Diego Counties west of the crest of the Peninsular	HP	Washes with patches of brush and rocks and Riversidean alluvial fan sage scrub are present.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
			Ranges, in extreme southern San Bernardino County near Colton, and in Baja California.		
Coastal whiptail	*Aspidoscelis tigris stejnegeri*	US: – CA: SA	Wide variety of habitats including coastal sage scrub, sparse grassland, and riparian woodland; coastal and inland valleys and foothills; Ventura County to Baja California.	HP	Riversidean sage scrub and riparian habitats are present.
Red diamond rattlesnake	*Crotalus ruber*	US: – CA: SSC	Desert scrub, thornscrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Morongo Valley in San Bernardino and Riverside Counties to the west and south into Mexico.	A	Outside the known range of this species
Coast horned lizard	*Phrynosoma blainvillii (coronatum)*	US: – CA: SSC	Primarily in sandy soil in open areas, especially washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Occurs west of the deserts from northern Baja California north to Shasta County below 2,400 meters (8,000 feet) elevation.	HP, P	Site provides scrub vegetation and sandy soils. This species was observed within the BSA.
Two-striped garter snake	*Thamnophis hammondii*	US: – CA: SSC	Highly aquatic. Only in or near permanent sources of water. Streams with rocky beds supporting willows or other riparian vegetation. From Monterey County to northwest Baja California.	HP	Site contains fresh water and sandy beds. Riparian vegetation is present.
BIRDS					
Tricolored blackbird	*Agelaius tricolor*	US: – CA: SSC	Open country in western Oregon, California, and northwestern Baja California. Forages in grassland and cropland habitats. Nests in large groups near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, or tall herbs. Seeks cover for roosting in emergent wetland vegetation, especially	HP	The BSA provides marginally suitable nesting habitat. May use the BSA during foraging activities.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
			cattails and tules, and also in trees and shrubs.		
Burrowing owl	*Athene cunicularia* (burrow sites)	US: – CA: SSC (breeding)	Open country in much of North and South America. Usually occupies ground squirrel burrows in open, dry grasslands, agricultural and range lands, railroad rights-of-way, and margins of highways, golf courses, and airports. Often utilizes man-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, or wood debris piles. They avoid thick, tall vegetation, brush, and trees, but may occur in areas where brush or tree cover is less than 30 percent.	HP	The site contains open areas with sparse vegetation and riprap.
Swainson's hawk	*Buteo swainsoni* (nesting)	US: – CA: ST	Open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Breeds and nests in western North America; winters in South America. Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley. In Southern California, now mostly limited to spring and fall transient. Formerly abundant in California with wider breeding range.	A	Suitable nesting and foraging habitat is absent.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis* (nesting)	US: FT CA: SE	Breeds and nests in extensive stands of dense cottonwood/willow riparian forest along broad, lower flood bottoms of larger river systems at scattered locales in western North America; winters in South America.	A	The BSA does not contain riparian woodland.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Yellow warbler	*Dendroica petechia* (nesting)	US: – CA: SSC (breeding)	Riparian woodland while nesting in the western U.S. and northwestern Baja California; more widespread in brushy areas and woodlands during migration. Occurs from western Mexico to northern South America in winter. Migrants are widespread and common. Three subspecies breed in California: *morcomi, brewsteri,* and *sonorana.* (Sonoran yellow warbler nests along the Colorado River.)	A	The BSA does not contain riparian woodland. May forage in the project area during migration.
South-western willow flycatcher	*Empidonax traillii extimus*	US: FE CA: SE	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and possibly extreme northwestern Mexico. Winters in Central and South America. Below 6,000 feet elevation.	A	The BSA does not contain suitable habitat (extensive riparian areas).
Yellow-breasted chat	*Icteria virens* (nesting)	US: – CA: SSC (breeding)	Riparian thickets of willow, brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	HP	The BSA provides marginally suitable habitat.
Loggerhead shrike	*Lanius ludovicianus* (nesting)	US: – CA: SSC (breeding)	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Inhabits open country with short vegetation, pastures, old orchards, cemeteries, golf courses, riparian areas, and open woodlands. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Occurs only rarely in heavily urbanized areas, but often found in open cropland. Found in open country in much of North America.	HP	The BSA provides marginally suitable habitat.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Coastal California gnatcatcher	*Polioptila californica californica*	US: FT CA: SSC	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 500 meters (1,640 feet) elevation in cismontane southwestern California and Baja California.	HP	Marginally suitable scrub habitat occurs on site.
Least Bell's vireo	*Vireo bellii pusillus*	US: FE CA: SE	Riparian forests and willow thickets. The most critical structural component of least Bell's vireo habitat in California is a dense shrub layer 2 to 10 feet (0.6–3.0 meter) above ground. Nests from central California to northern Baja California. Winters in southern Baja California.	HP, P	The BSA contains marginally suitable nesting habitat; The species was observed within the BSA.
MAMMALS					
Pallid bat	*Antrozous pallidus*	US: – CA: SSC	Most common in open, dry habitats with rocky areas for roosting. Day roosts in caves, crevices, rocky outcrops, tree hollows or crevices, mines and occasionally buildings, culverts, and bridges. Night roosts may be more open sites, such as porches and open buildings. Grasslands, shrublands, woodlands, and forest in western North America.	HP	Suitable night-roosting habitat present in bridge. May forage in study area.
North-western San Diego pocket mouse	*Chaetodipus fallax fallax*	US: – CA: SSC	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and sagebrush, from Los Angeles County through southwestern San Bernardino, western Riverside, and San Diego Counties to northern Baja California.	HP; P	Suitable habitat is present. This species was captured during the focused trapping survey.
Townsend's big-eared bat	*Corynorhinus townsendii*	US: – CA: SCE	Requires caves, mines, tunnels, bridges, buildings, or other similar structures for roosting. Has also been documented using rock crevices and hollow trees for roosting. Often uses separate sites for night, day, hibernation, or maternity roosts. Ranges from southwestern Canada through the western United States to southern Mexico.	A	Not expected to occur due to lack of cavernous roosting habitat.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	US: FE CA: SSC	Gravelly and sandy soils of alluvial fans, braided river channels, active channels and terraces; San Bernardino Valley (San Bernardino County) and San Jacinto Valley (Riverside County). In San Bernardino County, this species occurs primarily in the Santa Ana River and its tributaries north of Interstate 10, with small remnant populations in the Etiwanda alluvial fan, the northern portion of the Jurupa Mountains in the south Bloomington area, and in Reche Canyon.	CH; HP; P	Suitable habitat is present. This species was captured during the focused trapping survey.
Stephens' kangaroo rat	*Dipodomys stephensi*	US: FE CA: ST	Found in plant communities transitional between grassland and coastal sage scrub, with perennial vegetation cover of less than 50%. Most commonly associated with *Artemisia tridentata, Eriogonum fasciculatum,* and *Erodium.* Requires well-drained soils with compaction characteristics suitable for burrow construction (neither sandy nor too hard). Not found in soils that are highly rocky or sandy, less than 20 inches deep, or heavily alkaline or clay, or in areas exceeding 25% slope. Occurs only in western Riverside County, northern San Diego County, and extreme southern San Bernardino County, below 915 meters (3,000 feet) elevation. In northwestern Riverside County, known only from east of Interstate 15. Reaches its northwest limit in south Norco, southeast Riverside, and in the Reche Canyon area of Riverside and extreme southern San Bernardino Counties.	A	No suitable habitat is present.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Western mastiff bat	*Eumops perotis californicus*	US: – CA: SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, and tunnels, and travels widely when foraging.	HP	No suitable roosting habitat onsite; however, species may forage within or around the BSA.
Western yellow bat	*Lasiurus xanthinus*	US: – CA: SSC	Found mostly in desert and desert riparian areas of the southwest U.S., but also expanding its range with the increased usage of native and nonnative ornamental palms in landscaping. Individuals typically roost amid dead fronds of palms in desert oases, but have also been documented roosting in cottonwood trees. Forage over many habitats.	HP	No suitable roosting habitat onsite; however, species may forage within or around the BSA.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	US: – CA: SSC	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of Southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino, and Santa Rosa Mountain ranges.	HP	Habitat is present within open space areas of the BSA.
San Diego desert woodrat	*Neotoma lepida intermedia*	US: – CA: SSC	Found in desert scrub and coastal sage scrub habitat, especially in association with cactus patches. Builds stick nests around cacti, or on rocky crevices. Occurs along the Pacific slope from San Luis Obispo County to northwest Baja California.	HP, P	Habitat is present within the BSA. This species was captured during the focused trapping survey.
Pocketed free-tailed bat	*Nyctinomops femorasaccus*	US: – CA: SSC	Usually associated with cliffs, rock outcrops, or slopes. May roost in buildings (including roof tiles) or caves. Rare in California, where it is found in Riverside, San Diego, and Imperial Counties. More common in Mexico.	A	No suitable roosting habitat on site; however, species may forage within or around the BSA.

Table E: Listed and Special-Status Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat	Rationale
Southern grass-hopper mouse	*Onychomys torridus ramona*	US: – CA: SSC	Believed to inhabit sandy or gravelly valley floor habitats with friable soils in open and semi-open scrub, including coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, and annual grassland with scattered shrubs, preferring low to moderate shrub cover. More susceptible to small- and large-scale habitat loss and fragmentation than most other rodents, due to its low fecundity, low population density, and large home range size. Arid portions of southwestern California and northwestern Baja California.	HP	Marginally suitable habitat is present.
Los Angeles pocket mouse	*Perognathus longimembris brevinasus*	US: – CA: SSC	Prefers sandy soil for burrowing, but has been found on gravel washes and stony soils. Found in coastal sage scrub in Los Angeles, Riverside, and San Bernardino Counties.	HP	Marginally suitable habitat is present.
American badger	*Taxidea taxus*	US: – CA: SSC	Primary habitat requirements seem to be sufficient food and friable soils in relatively open uncultivated ground in grasslands, woodlands, and desert. Widely distributed in North America.	HP	Marginally suitable habitat is present.

Source: LSA Associates, Inc. March 2017

LEGEND

US: Federal Classifications

–	No applicable classification
FE	Taxa listed as Endangered.
FT	Taxa listed as Threatened.

CA: State Classifications

–	No applicable classification
SE	Taxa State-listed as Endangered.
ST	Taxa State-listed as Threatened.
SCE	Candidate for State listing as Endangered.
SSC	California Species of Special Concern. Refers to animals with vulnerable or seriously declining populations.
1A	California Rare Plant Rank 1A: Presumed extinct in California.
1B	California Rare Plant Rank 1B: Rare, threatened, or endangered in California and elsewhere.
2B	California Rare Plant Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

California Rare Plant Ranks are assigned by a committee of government agency and nongovernmental botanical experts and are not official State designations of rarity status.

Habitat Presence/Absence Determinations	
A	Habitat is absent, or habitat may be present but the species was determined to be absent.
HP	Habitat is or may be present. The species may be present
P	The species was determined to be present.
CH	Designated Critical Habitat present.

LISTED SPECIES AND CRITICAL HABITAT

Eighteen state/federally listed species were evaluated for the proposed project including nine plant species and nine animal species (Table E). Of the 18 state/federally listed as threatened or endangered species, the following five species have potentially suitable habitat present within the BSA:

- Santa Ana River woollystar;
- Santa Ana sucker;
- Coastal California gnatcatcher;
- Least Bell's vireo; and
- San Bernardino kangaroo rat.

Two of these five species were observed within the BSA: the least Bell's vireo and San Bernardino kangaroo rat (Figure 5). The BSA is also within federally designated critical habitat for the Santa Ana sucker and San Bernardino kangaroo rat (Figure 5).

Based on the results of the 2009 and 2016 focused surveys, the Coastal California gnatcatcher and Santa Ana River woollystar are considered absent from the BSA.

Potential project impacts to Santa Ana Sucker and its critical habitat, the San Bernardino kangaroo rat and its critical habitat, and least Bell's vireo are discussed in detail in Chapter 4.

NON-LISTED SPECIAL INTEREST SPECIES

Of the 58 non-listed special-status species identified in Table E, 21 species were found to have potentially suitable habitat present within the BSA and four species (Santa Ana speckled dace, coast horned-lizard, northwestern San Diego pocket mouse, and San Diego desert woodrat) were found to be present. The BSA also contains suitable habitat for burrowing owl. Project-related impacts to the four non-listed special status species identified as present along with burrowing owl are detailed in Chapter 4.

Chapter 4 – Results: Biological Resources, Discussion of Impacts and Mitigation

Habitats and Natural Communities of Special Concern

Certain habitats/natural communities are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) whether they support the habitat requirements of special-status plants or animals. The vegetation communities and land use within the BSA include developed/ disturbed, Riversidean alluvial fan sage scrub, southern willow scrub, and emergent wetland. Riversidean alluvial fan sage scrub is identified by the CNDDB as a sensitive natural community. In some cases, federal, state, and/or local agencies may consider the southern willow scrub and emergent wetland within the BSA important. These habitats are described in more detail below.

Table F provides project impact acreages for vegetation and land cover within the BSA. Project impacts were calculated using geographic information systems (GIS) software based on current design plans.

Table F: Impacts to Land Cover Occurring within the BSA

Vegetation Community	Total within BSA (acres)	Impacts (acres)	
		Temporary	Permanent
Developed/Disturbed Lands	11.08	1.92	0.05
Riversidean Alluvial Fan Sage Scrub	13.44	6.24	0.03
Southern Willow Scrub	1.19	0.76	0
Emergent Wetland	0.01	0.01	0
Unvegetated Stream Channel	0.23	0.07	0
Total	**26.12**	**9.00**	**0.08**

Source: LSA Associates, Inc., September 2017.

DISCUSSION OF NATURAL COMMUNITY: RIVERSIDEAN ALLUVIAL FAN SAGE SCRUB

Survey Results. The BSA contains 13.44 acres Riversidean alluvial fan sage scrub, which occurs throughout most of the City Creek floodplain within the BSA.

Project Impacts. As shown in Table F, proposed project impacts to Riversidean alluvial fan sage scrub include 6.24 acres of temporary indirect impacts associated with temporary construction easements, temporary equipment access areas, and temporary staging areas, and 0.03 acre of permanent impacts.

Avoidance and Minimization Efforts. The following measures are recommended as a means of avoiding and minimizing adverse impacts to biological resources, including

Riversidean alluvial fan sage scrub, that occur or have the potential to occur within the project footprint:

- Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed along the boundaries of the project footprint (including necessary construction access), where it abuts natural vegetation communities, to designate Environmentally Sensitive Areas (ESAs) to be preserved. No grading or fill activity of any type will be permitted within these ESAs. In addition, no construction activities, materials, or equipment will be allowed within the ESAs. All construction equipment should be operated in a manner so as to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is adjacent to planned grading activities.
- All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated non-sensitive upland habitat areas. The designated upland areas will be located in such a manner as to prevent any spill runoff from entering waters of the U.S.
- A weed abatement program will be developed by the City of Highland to minimize the import of non-native plant material during and after construction. Eradication strategies would be employed should an invasion occur.
- A biologist will monitor construction within the vicinity of natural vegetation communities for the duration of the project construction and to ensure that vegetation removal, Best Management Practices (BMPs), ESAs, and all avoidance and minimization measures are properly constructed and followed.
- The portions of the City Creek bottom affected by the project will be recontoured to their original grades.

Compensatory Mitigation. The temporary loss of 6.24 acres and permanent loss of 0.03 acre of Riversidean alluvial fan sage scrub is not considered substantial. The project-related impacts to Riversidean alluvial fan sage scrub are expected to restore naturally over time, with control of non-native vegetation.

Because City Creek is leveed in the project area and subject to unpredictable flood events, a habitat restoration plan or other natural restoration program is not considered feasible within the BSA. The Base Line Bridge widening will result in a net increase of 0.70 acre that will be subject to natural stream action. The project will improve hydrologic function and enhance connectivity between upstream and downstream habitats in City Creek and is anticipated to benefit Riversidean alluvial fan sage scrub within the BSA, as

well as Riversidean alluvial fan sage scrub in downstream habitats. Because the project will benefit Riversidean alluvial fan sage scrub within the BSA, no compensatory mitigation is anticipated to be required.

Cumulative Impacts. As described above, the project will result in the permanent and temporary removal of Riversidean alluvial fan sage scrub within the BSA. Because the project will benefit Riversidean alluvial fan sage scrub within the BSA, no cumulative effects are anticipated.

DISCUSSION OF NATURAL COMMUNITY: SOUTHERN WILLOW SCRUB

Survey Results. The BSA contains 1.19 acres of southern willow scrub vegetation that occurs along the main low-flow channel within City Creek.

Project Impacts. As shown in Table F, proposed project impacts to southern willow scrub include 0.76 acre of temporary direct impacts associated with temporary construction easements, temporary equipment access areas, and temporary staging areas. The project will have no permanent impacts to southern willow scrub.

Avoidance and Minimization Efforts. The avoidance and minimization measures identified for Riversidean alluvial fan sage scrub will reduce the project impacts to southern willow scrub.

Compensatory Mitigation. The temporary loss of 0.76 acre of southern willow scrub is not considered substantial. The project-related impacts to southern willow scrub are expected to restore naturally over time.

Because City Creek is leveed in the project area and subject to unpredictable flood events, a habitat restoration plan or other natural restoration program is not considered feasible within the BSA. The Base Line Bridge widening will result in a net increase of 0.70 acre that will be subject to natural stream action. The project will improve hydrologic function and enhance connectivity between upstream and downstream habitats in City Creek and is anticipated to benefit southern willow scrub vegetation within the BSA, as well as southern willow scrub in downstream habitats. Because the project will result in a benefit to southern willow scrub within the BSA, no compensatory mitigation is anticipated to be required.

Cumulative Impacts. As described above, the project will result in the temporary removal of southern willow scrub within the BSA. Because the project will result in a benefit to southern willow scrub within the BSA, no cumulative effects are anticipated.

DISCUSSION OF NATURAL COMMUNITY: WETLAND EMERGENT VEGETATION

Survey Results. The BSA contains 0.01 acre of wetland emergent vegetation, which occurs at a storm drain outlet that forms the secondary low-flow channel within City Creek. This vegetation formed as a result of scouring that formed a depression below the entrance to the concrete box culvert under City Creek.

Project Impacts. As shown in Table F, proposed project will have 0.01 acre of temporary impact to wetland emergent vegetation.

Avoidance and Minimization Efforts. The loss of 0.1 acre of wetland emergent vegetation created as a result of existing storm drain structure is not considered substantial. Therefore, no avoidance and minimization measures are proposed.

Compensatory Mitigation. The temporary loss of 0.01 acre of wetland emergent vegetation is not considered substantial. The project widening of the Base Line Bridge is not expected to provide suitable conditions for the natural restoration of wetland emergent vegetation.

Because the impacts to wetland emergent vegetation are minimal, and because the project will result in a net increase in natural communities within the BSA, cumulative effects are not considered substantial. Therefore, no compensatory mitigation is required.

Cumulative Impacts. As described above, the project will result in the permanent removal of wetland emergent vegetation within the BSA. The project will result in a minor but cumulative incremental loss of wetland emergent vegetation in the region.

Special-Status Plant Species

As identified in Table F, based on the results of focused rare plant surveys, no special-status plant species were found in the BSA. As a result, no project-related impacts will occur to special-status plant species, and no avoidance, minimization, or mitigation measures are required.

Special-Status Animal Species Occurrences

The least Bell's vireo (federally/state listed as endangered) and San Bernardino kangaroo rat (federally listed as endangered) were determined to be present in the BSA. The BSA is within USFWS-designated critical habitat for the Santa Ana sucker and San Bernardino kangaroo rat. In addition, a focused survey for the California gnatcatcher was conducted. Potential project impacts to these species are discussed further in the following sections.

In addition, five non-listed special-status species (coast horned-lizard, Bell's sage sparrow, southern rufous-crowned sparrow, northwestern San Diego pocket mouse, and San Diego desert woodrat) were observed in the BSA and habitat for the burrowing owl is present. These species as well as migratory birds are discussed in further detail below.

The remaining non-listed special interest species with potential to occur in the BSA have no official status, but merit consideration under CEQA in order to evaluate any potential adverse impacts. Project impacts to these non-listed species are not considered substantial with implementation of avoidance and minimization measures discussed in this section for habitats and other special-interest species present within the BSA.

DISCUSSION OF SANTA ANA SUCKER

Survey Results. According to agency/professional contact coordination conducted in 2009 and 2010, and the revised final critical habitat designation for Santa Ana sucker (USFWS 2010), the Santa Ana sucker is considered extirpated from City Creek. Therefore, focused surveys were not conducted and the species is considered absent from the BSA.

Although the Santa Ana sucker is considered extirpated from City Creek, the BSA is located within USFWS 2010 designated critical habitat for this species (Figure 5).

Project Impacts. Because the Santa Ana sucker is considered absent from the BSA, the project will have no impacts to this species.

The project, however, will have 6.88 acres of temporary direct impacts associated with temporary construction easements, temporary equipment access areas, and temporary staging areas, and 0.06 acre of permanent impacts to Santa Ana sucker critical habitat. The widening of Base Line Bridge and the spanning of City Creek will provide an additional 0.70 acre that will be subject to natural stream action. The project will improve hydrologic function and habitat connectivity in the BSA and is anticipated to provide a net benefit to Santa Ana sucker critical habitat. Figure 6 shows project effects on Santa Ana sucker designated critical habitat.

Avoidance and Minimization Efforts. The avoidance and minimization measures provided for the natural communities discussed above are anticipated to avoid and minimize project impacts to Santa Ana sucker critical habitat.

Compensatory Mitigation. The Santa Ana sucker is considered absent from the BSA and the project will result in a net increase in habitat within City Creek. Because of this and through implementation of avoidance and minimization measures described above,

no compensatory mitigation is required for the Santa Ana sucker designated critical habitat.

Cumulative Impacts. The project will provide a net benefit to Santa Ana sucker critical habitat in the BSA and the region. As a result, the project will have no cumulative impacts to Santa Ana sucker designated critical habitat in the region.

DISCUSSION OF COAST HORNED LIZARD

Survey Results. The coast horned lizard is a designated California Species of Special Concern. This species was observed within the BSA during biological resources field studies. The species is associated with Riversidean alluvial fan sage scrub vegetation within the BSA.

Project Impacts. This species has no official status but merits consideration under CEQA. The project will have 6.24 acres of temporary direct impacts associated with temporary construction easements, temporary equipment access areas, and temporary staging areas, and 0.03 acre of permanent impacts to coast horned lizard habitat (Riversidean alluvial fan sage scrub).

Avoidance and Minimization Efforts. The avoidance and minimization measures identified for natural communities in the BSA will minimize the project impacts to the coast horned lizard.

Compensatory Mitigation. With implementation of avoidance and minimization measures, no mitigation is required.

Cumulative Impacts. Through implementation of the avoidance and minimization identified above, no substantial cumulative impacts are anticipated to occur to the coast horned lizard.

DISCUSSION OF LEAST BELL'S VIREO

Survey Results. The least Bell's vireo is federally/state listed as endangered. An individual male least Bell's vireo was observed (vocalizing) on two occasions within the southern willow scrub habitat along City Creek (Figure 5). The observations occurred on June 2 and 17, 2016, and were incidental to other biological studies conducted within the BSA.

Project Impacts. Project-related impacts to the least Bell's vireo may be direct (e.g., loss of nests occupied with eggs or young) or indirect (e.g., construction noise). The project will have 0.76 acre of temporary impacts associated with temporary construction easements, temporary equipment access areas, and temporary staging areas to least

Bell's vireo habitat (southern willow scrub) within the BSA. The project will have no permanent effects to least Bell's vireo habitat.

Avoidance and Minimization Efforts. The least Bell's vireo occupies southern willow scrub vegetation within the BSA. The avoidance and minimization measures identified for southern willow scrub will reduce the project impacts to this bird species along with the following measure:

- Removal of southern willow scrub vegetation will occur prior to construction and between September 1 and February 14 to avoid least Bell's vireo breeding season, as well as the general breeding season for other nesting birds. If vegetation removal must occur during nesting season, a nest survey must be conducted by a qualified biologist within three days prior to vegetation removal activities to ensure that no active nests are present. If nests are present, no vegetation removal may occur within 500 feet of the active nest until the young have fledged or the nest is determined to be inactive.

Compensatory Mitigation. The temporary loss of 0.76 acre of least Bell's vireo habitat is not considered substantial. With implementation of the avoidance and minimization measures identified above, no compensatory mitigation is required.

Cumulative Impacts. With implementation of the avoidance and minimization measures identified above, no substantial cumulative impacts are anticipated to occur to the least Bell's vireo.

DISCUSSION OF COASTAL CALIFORNIA GNATCATCHER

Survey Results. The coastal California gnatcatcher is federally listed as threatened and is a California Species of Special Concern. This species is associated with Riversidean alluvial fan sage scrub vegetation within the BSA. Focused surveys were conducted for this species in 2009 and 2016. The results of these focused surveys found the coastal California gnatcatcher to be absent from the BSA.

Project Impacts. Project-related impacts to the coastal California gnatcatcher may be direct (e.g., loss of nests, eggs, or young) or indirect (e.g., construction noise).The coastal California gnatcatcher was determined to be absent and the project is not anticipated to have any project-related impacts to the species. However, this is a mobile species and it has the potential to occupy Riversidean alluvial fan sage scrub vegetation within the BSA in the future.

Avoidance and Minimization Efforts. The avoidance and minimization measures identified for Riversidean alluvial fan sage scrub will reduce the project impacts to

coastal California gnatcatchers that may occupy the BSA in the future along with the following measure:

- Removal of Riversidean sage scrub vegetation will occur prior to construction and between September 1 and February 14 to avoid the general breeding season for nesting birds, which is inclusive of the coastal California gnatcatcher breeding season. If vegetation removal must occur during nesting season, a nest survey must be conducted by a qualified biologist within three days prior to vegetation removal activities to ensure that no active nests are present. If nests are present, no vegetation removal may occur within up to 300 feet of the active nest until the young have fledged or the nest is determined to be inactive.

Compensatory Mitigation. With implementation of avoidance and minimization measures identified above, no compensatory mitigation for these species is required.

Cumulative Impacts. With implementation of the avoidance and minimization measures identified above, no substantial cumulative impacts are anticipated to occur to coastal California gnatcatcher.

DISCUSSION OF BURROWING OWL

Survey Results. The burrowing owl is a California Species of Special Concern and is known from the project vicinity. The 2010 Draft NES reported an owl observation approximately 600 feet north of the BSA. A habitat assessment for burrowing owls was conducted in 2016. The BSA provides potentially suitable habitat for burrowing owls; however, no burrowing owls, burrowing owl sign, or potentially occupied burrows were detected during habitat assessment. Burrowing owl is a highly mobile species with the potential to move into the BSA prior to construction.

Project Impacts. Project-related impacts to the burrowing owl may be direct (e.g., loss of occupied burrows with nests, eggs, or young) or indirect (e.g., construction noise). The habitat suitability assessment determined that burrowing owl was absent from the BSA at the time of the assessment; however, to ensure that any burrowing owls that may occupy the site in the future are not affected by construction activities, and for compliance with the California Fish and Game Code and the MBTA, a pre-construction survey for this species will be required prior to project clearing of potential burrowing owl habitat to avoid potential project-related impacts.

Avoidance and Minimization Efforts. A pre-construction survey within three days prior to ground disturbance will be conducted in accordance with the currently accepted protocol of the CDFW.

Compensatory Mitigation. No mitigation is required if impacts are avoided as stated above; however, if burrowing owls are discovered during subsequent surveys, additional project-specific avoidance and minimization measures would be required. Such measures would be developed in accordance with the *Burrowing Owl Staff Report* (CDFW, formerly known as the California Department of Fish and Game [CDFG] 2012) and through consultation with the CDFW.

Cumulative Impacts. With implementation of the avoidance and minimization measures identified above, no substantial cumulative impacts are anticipated to occur to the burrowing owl.

DISCUSSION OF SAN BERNARDINO KANGAROO RAT

Survey Results. The San Bernardino kangaroo rat is federally listed as endangered and is a California Species of Special Concern. A focused trapping survey (Appendix E) was conducted for San Bernardino kangaroo rat within the BSA in 2009. Twenty-eight San Bernardino kangaroo rats were captured during the two-week trapping effort. The BSA is also located within USFWS designated critical habitat for this species (Figure 5).

Project Impacts. The project has the potential to result in take of individual San Bernardino kangaroo rats and will have 0.09 acre of permanent impacts and 7.82 acres of temporary impacts to federally designated critical habitat within the BSA (Figure 7). The widening of Base Line Bridge and the spanning of City Creek will provide an additional 0.70 acre that will be subject to natural stream action. The project will improve hydrologic function and enhance connectivity between upstream and downstream habitats in City Creek and is anticipated to provide a net benefit to the San Bernardino kangaroo rat.

Avoidance and Minimization Efforts. In addition to the avoidance and minimization measures identified for natural communities within the BSA, the following avoidance and minimization measures will be implemented for project impacts to the San Bernardino kangaroo rat and its critical habitat.

- The City will develop and implement an employee education/awareness program in coordination with the USFWS. Each employee, contractor, or subcontractor involved in project construction (including temporary contractors and subcontractors) will receive San Bernardino kangaroo rat training.
- The City will submit an exclusion fencing plan design to the USFWS for review and approval prior to the onset of ground-disturbing activities. The plan will identify 1) fence design and installation procedures, 2) San Bernardino kangaroo rat trapping/

release protocols, and 3) assurances fencing will be maintained for the duration of the project. In addition:

- Immediately before fence installation, the Designated Biologist, or other USFWS approved biologist (Designated Biologist) with small mammal handling experience and familiar with San Bernardino kangaroo rat life history and diagnostic sign, will inspect the proposed fence alignment and mark small mammal burrows potentially affected. During fence construction, the Designated Biologist will hand-excavate marked burrows at least 200 feet in advance of the trenching backhoe. Any San Bernardino kangaroo rats found will be released outside of the exclusion area as near as possible to the point of capture just after sunset on the day of capture.
- Following installation of the exclusionary fence, and prior to initial ground disturbance (i.e., clearing and grading), the project area will be trapped and any small mammals captured will be released into adjacent habitat outside of the fence on the side nearest to the point of capture. The Designated Biologist will live-trap and remove as many San Bernardino kangaroo rats as possible from within the enclosed construction area. Trapping will be conducted for at least five consecutive nights. If San Bernardino kangaroo rats are captured on the fifth night, trapping will continue until there have been two consecutive nights of trapping with no San Bernardino kangaroo rat captures, or until the USFWS has provided written approval to discontinue trapping. The Designated Biologist will mark all captured San Bernardino kangaroo rats on the chest with a non-toxic marker to identify any San Bernardino kangaroo rats that reenter the exclusion area. If there are recaptures, the exclusion fence will be examined, repaired as necessary, and trapping will be conducted until there are two consecutive nights with no San Bernardino kangaroo rat captures.
- Within 45 days following trapping within the exclusion area, the Designated Biologist will submit a report to the City, Caltrans, and the USFWS providing the results of the trapping effort.
- Black mesh silt-fencing will be installed adjacent to exclusionary fencing, to prevent accidental deposition of fill material outside the limits of construction. The Designated Biologist will inspect the fencing during each site visit throughout the construction phase. The contractor will implement any required repairs to the fencing within 24 hours of receiving notification of the required repair.
- Should any work occur beyond the fenced or otherwise demarcated limits of disturbance, the biological monitor will request that the resident engineer halt work until the problem has been remedied. The Designated Biologist will also notify the City, Caltrans, and the USFWS of the problem within 24 hours of the incident.

- No nighttime construction will occur.
- Unfilled holes or trenches will be inspected for trapped San Bernardino kangaroo rat each morning. Any San Bernardino kangaroo rat discovered will be removed from the trench or hole by the Designated Biologist and released outside of the limits of construction. Unburied pipes or conduit laid in trenches overnight will be capped. If San Bernardino kangaroo rats or other small mammals are discovered inside the construction area, the exclusion fence will be examined and repaired.
- All pipes or conduit with a bore-diameter of 1.5 inches or greater stored overnight within the construction site for one or more nights will be thoroughly inspected for the presence of San Bernardino kangaroo rat before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If San Bernardino kangaroo rats are discovered inside a pipe, the Designated Biologist will supervise movement or relocation of the pipe until the animal has been removed and released.
- Due to the nature of soils in the project area, any piles of fill are considered an attractive nuisance to fossorial mammals. Therefore, all soil and fill piles will be surrounded by silt fence or similar materials to prevent burrowing by San Bernardino kangaroo rat or other species.
- Any personnel who inadvertently kills or injures a San Bernardino kangaroo rat shall immediately report the incident to the Designated Biologist, who will notify USFWS in writing within one working day. Notification must include the date, time, and location of the incident, or of the finding of a dead or injured animal, as well as any other pertinent information.
- All construction-related activities by contractors, subcontractors or their agents, and equipment (including vegetation removal, grading, equipment laydown and storage, and contractor parking) will be restricted to the designated limits of construction. All movement of contractors, subcontractors or their agents, and equipment will be restricted to the limits of construction and staging areas.
- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated staging areas to prevent the release of hazardous substances into the project site. Any accidental spills will be immediately contained and properly disposed of.
- Trash will be stored in closed containers so that it is not readily accessible to scavengers and will be removed from the construction site on a daily basis so as not to attract potential San Bernardino kangaroo rat predators.
- Spoils and rubble will be deposited within the identified limits of construction. Any excess material generated by the project, will be disposed of off the site according to Caltrans specifications.

- Following construction, temporary disturbance areas will be will be recontoured and terraced to match existing topography within City Creek within the BSA.
- Following construction, all permanent lighting installed along the bridge and road will use wildlife-friendly lighting and be permanently shielded and directed onto the roadway or trail.

Compensatory Mitigation. With implementation of the avoidance and minimization measures described above, and because the proposed project is expected to provide a net benefit for San Bernardino kangaroo rat, no compensatory mitigation is proposed. However, a FESA Section 7 Consultation will be required with the USFWS to address project impacts to San Bernardino kangaroo rat. Additional avoidance, minimization, and mitigation measures may be required as a result of the Section 7 Consultation process.

Cumulative Impacts. Because the project is anticipated to provide a net benefit to San Bernardino kangaroo rat, and with implementation of the avoidance and minimization measures identified above, no substantial cumulative impacts are anticipated to occur to the San Bernardino kangaroo rat and its critical habitat.

DISCUSSION OF NORTHWESTERN SAN DIEGO POCKET MOUSE AND SAN DIEGO DESERT WOODRAT

Survey Results. The 2009 trapping survey for San Bernardino kangaroo rat (Appendix E) found northwestern San Diego pocket mouse and San Diego desert woodrat to be present within the BSA. These species were captured in areas of City Creek vegetated by Riversidean alluvial fan sage scrub.

Project Impacts. These two species have no official status but merit consideration under CEQA. The project will have 6.24 acres of temporary direct impacts associated with temporary construction easements, temporary equipment access areas, and temporary staging areas, and 0.03 acre of permanent impacts to northwestern San Diego pocket mouse and San Diego desert woodrat habitat (Riversidean alluvial fan sage scrub). The Base Line Bridge widening will result in a net increase of 0.96 acre of habitat within the BSA that is expected to provide a net benefit for these two species.

Avoidance and Minimization Efforts. The avoidance and minimization measures provided for the natural communities discussed above are anticipated to reduce project impacts to northwestern San Diego pocket mouse and San Diego desert woodrat habitat.

Compensatory Mitigation. With the implementation of avoidance and minimization measures described above with regard to habitats occupied by northwestern San Diego pocket mouse and San Diego woodrat within the BSA, no mitigation is required.

Cumulative Impacts. The project is expected to have a net benefit for northwestern San Diego pocket mouse and San Diego woodrat. Therefore, no cumulative impacts are anticipated.

DISCUSSION OF BATS

Survey Results. All bat species (regardless of listing status) and other nongame mammals are protected by California Fish and Game Code Section 4150. Crevice habitat suitable for day and night roosting bats is present in the spaces between the concrete slab beams of the Base Line Bridge, which form 17 crevices spanning the length of the bridge structure. In addition, high-quality foraging habitat for bats is present in the riparian and scrub vegetation along City Creek, increasing the desirability of the bridge structure for use by roosting bats. Although no bats were observed roosting at the time of the assessment, the probability of roosting is moderate to high due to the high-quality foraging habitat surrounding the bridge. The observed crevice habitat is also suitable for use by multiple bat species for maternity roosting and it is possible that a maternity colony is present in this bridge structure during the maternity season.

Two concrete culverts, a concrete pipe culvert, and a rectangular culvert were also examined. The concrete pipe was not accessible and was not evaluated. The concrete box culvert provides marginal night roosting habitat.

In addition, ungrouted riprap and large river cobbles present along the banks of City Creek may provide roosting habitat for western canyon bats, which are known to roost in rock piles, including human-made piles such as riprap.

Project Impacts. The project has the potential to affect bat roosting habitat within the BSA.

Avoidance and Minimization Efforts. To minimize potential impacts to night roosting bats, the following measures will be implemented:

- A nighttime exit count and acoustic survey shall be performed at the Base Line Bridge by a qualified bat biologist prior to construction and during the peak of the bat maternity season, which occurs in June and July. This survey shall be performed as soon as possible and well in advance of project construction in order to determine whether a maternity colony is present and to identify the numbers and species of any bats present. This information will aid in determining appropriate site-specific and species-specific minimization measures. Performing the survey well in advance of project construction will also serve to provide adequate time for mitigation planning.
- Humane evictions and exclusions of roosting bats shall be performed under the supervision of a qualified bat biologist in the fall (September or October) prior to any

work activities that would result in direct impacts or direct mortality to roosting bats. This action shall be performed in coordination with the CDFW. To avoid potential mortality of flightless juvenile bats, evictions and exclusions of bats cannot be performed during the maternity season (April 1–August 31). Winter months (November–February) are also inappropriate for bat eviction because not all individuals in a roost will emerge on any given night. In addition, long-distance movements to other roost sites are more difficult during the winter when prey availability is scarce, resulting in high mortality rates of evicted bats

- Since permanent, direct impacts to bat roosting habitat will occur from removal of the Base Line Bridge over City Creek, alternative bat roosting habitat shall be provided to ensure no net loss of bat roosting habitat. This habitat mitigation may be provided on an adjacent, existing bridge such as the Boulder Avenue Bridge over City Creek, on the replacement Base Line Bridge, or distributed across both structures. This action shall be coordinated with the CDFW and a qualified bat biologist to ensure that the installed habitat will provide adequate mitigation for impacts to roosting habitat.
- Alternative bat roosting habitat structures should be installed and provided at least six months in advance of the eviction/exclusion of bats from the Base Line Bridge. Since the Base Line Bridge will be completely removed, these bat roosting habitat structures shall be installed on an adjacent structure such as the Boulder Avenue Bridge over City Creek. The design, numbers, and precise locations of these roost structures should be determined in consultation with the CDFW and a qualified bat biologist.
- Within 500 feet of structures where maternity roosting is confirmed, demolition and pile driving activities shall avoid the recognized bat maternity season (April 1–August 31) to prevent the potential mortality of flightless young bats.
- Construction activities at structures housing maternity colonies shall be coordinated with a qualified bat biologist and the CDFW.

Compensatory Mitigation. With implementation of avoidance and minimization measures identified above, no mitigation is required.

Cumulative Impacts. No cumulative impacts to bats are anticipated to occur as a result of the project.

DISCUSSION OF NESTING MIGRATORY BIRDS

Survey Results. The BSA provides nesting habitat for migratory birds, including special-status bird species discussed above. In addition, nesting birds have the potential to nest in the Base Line Bridge structure.

Project Impacts. Potential project impacts to nesting raptors, special-status birds, and other migratory bird species may occur during the bird breeding season (typically February 15 through August 31). Project-related impacts to the nesting birds may be direct (e.g., loss of nests, eggs, or young) or indirect (e.g., construction noise). Project effects can be avoided by conducting a pre-construction survey for nesting birds prior to removal of trees and/or by removing vegetation outside of the bird breeding season and/or the use of exclusionary buffers and/or devices if nests are found.

Avoidance and Minimization Efforts. To avoid potential impacts to fully protected raptors, special-status bird species, and other nesting birds protected by the MBTA and the California Fish and Game Code, the following measures will be implemented:

- If feasible, project construction and vegetation removal should be completed outside of bird breeding season (typically set as February 15 through August 31).
- In the event that vegetation removal cannot be conducted outside the bird breeding season, focused surveys will be conducted by a qualified biologist prior to ground-disturbing activities. Should nesting birds be found, an exclusionary buffer will be established by a qualified biologist. The buffer may be up to 500 feet in diameter depending on the species of nesting bird found. This buffer will be clearly marked in the field by construction personnel under guidance of the qualified biologist, and construction or clearing will not be conducted within this zone until the qualified biologist determines that the young have fledged or the nest is no longer active.
- If nesting birds are found within the Base Line Bridge structure, exclusionary devices and nest prevention methods, designed to prevent birds from utilizing the bridge, will be determined and implemented by a qualified biologist. Exclusionary devices must be installed prior to the initiation of nesting season (February 15) and before any bridge demolition and other bridge construction activities begin.
- Nesting bird habitat within the BSA will be resurveyed during bird breeding season if there is a lapse in construction activities longer than 7 days.

Compensatory Mitigation. No mitigation is required if impacts are avoided as stated above.

Cumulative Impacts. With implementation of the avoidance and minimization measures identified above, no substantial cumulative impacts are anticipated to occur to nesting migratory birds.

Chapter 5 – Conclusions and Regulatory Determinations

Federal Endangered Species Act Consultation Summary

The USFWS authorizes take of listed species and destruction of critical habitat through Section 7(a)(2) of FESA (16 USC 1531-1544). A species list was received from the USFWS on July 16, 2017 (refer to Appendix A). Table G lists one of the following effect determinations for every listed species and critical habitat: no effect; may affect, not likely to adversely affect (NLAA); or may affect, likely to adversely affect (LAA).

Table G: Effects Determination on USFWS Species

Species and Critical Habitat	Status	Effects Determination
SPECIES		
Birds		
Coastal California gnatcatcher *(Polioptila californica californica)*	Threatened	No effect
Least Bell's vireo (*Vireo bellii pusillus*)	Endangered	May Affect, Not Likely to Adversely Affect
Southwestern willow flycatcher (*Empidonax traillii extimus*)	Endangered	No effect
Fishes		
Santa Ana sucker (*Catostomus santaanae)*	Threatened	No effect
Flowering Plants		
Nevin's barberry (*Berberis nevinii*)	Endangered	No effect
San Diego ambrosia (*Ambrosia pumila*)	Endangered	No effect
Santa Ana River woollystar (*Eriastrum densifolium* ssp.*sanctorum*)	Endangered	No effect
Slender-horned spineflower (*Dodecahema leptoceras*)	Endangered	No effect
Mammals		
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)	Endangered	Likely to Adversely Affect
Stephens' kangaroo rat (*Dipodomys stephensi*)	Endangered	No effect
CRITICAL HABITAT		
Fishes		
Santa Ana sucker *(Catostomus santaanae)*		May Affect, NLAA
Mammals		
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)		May Affect, NLAA

Notes: NLAA = not likely to adversely affect

The least Bell's vireo and San Bernardino kangaroo rat were found to be present within the BSA. The BSA contains designated critical habitat for two federally listed species: Santa Ana sucker and San Bernardino kangaroo rat.

A Section 7 Consultation is required for "take" allocation where there is a federal nexus (i.e., FHWA). A Section 7 incidental take permit will be required for project-related effects

to least Bell's vireo, San Bernardino kangaroo rat and its designated critical habitat, and designated critical habitat for the Santa Ana sucker**.**

Essential Fish Habitat Consultation Summary

The project lies in a disturbed urban location and is located outside of the National Marine Fisheries Service jurisdictional boundary/quadrangle. Furthermore, none of the species under the jurisdiction of NMFS was listed on the USFWS IPaC species list dated July 16, 2017. For this reason, an NMFS species list was not requested from the NMFS. NMFS species will not be affected.

California Endangered Species Act Summary

The CDFW authorizes take of endangered, threatened, or other species of concern through the provisions of Sections 2081 and 2080.1 of the California Fish and Game Code. The state-listed least Bell's vireo was found to be present within the BSA and may be affected by the proposed project. Authorization from the CDFW under Sections 2080 or 2080.1 may be required.

Wetlands and Other Waters Coordination Summary

Fieldwork associated with a Jurisdictional Delineation was conducted to determine the potential for federal and state jurisdictional waters and wetland resources in 2016. The Jurisdictional Delineation report is provided as Appendix G.

The USACE regulates discharges of dredged or fill material into waters of the U.S. These waters include wetlands and nonwetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. The USACE regulatory jurisdiction, pursuant to Section 404 of the CWA, is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or indirect (through a nexus identified in the USACE regulations). In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met.

The proposed project is within the jurisdiction of the Santa Ana RWQCB, which is responsible for the administration of Section 401 of the CWA. Water quality certification under Section 401 is required only as part of an application process for certain federal licenses or permits. The applicable federal permit in this case is a USACE Section 404

permit. The RWQCB may also choose to assert authority over “waters of the State” under waste discharge requirements pursuant to the Porter-Cologne Act. Often, waters found to be isolated and not subject to CWA regulation still are regulated by the RWQCB under the Porter-Cologne Act.

The CDFW, through provisions of the California Fish and Game Code (Sections 1600–1616), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an ephemeral flow of water. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW.

CITY CREEK

City Creek is leveed, with a low gradient and is considered perennial within the BSA. City Creek conveys flows south, under Base Line and into the Santa Ana River, that ultimately conveys flows into the Pacific Ocean. The soils within the river are mapped by the NRCS as “Soboba stony loamy sand (SpC) (2 to 9 percent slopes),” and “psamments, fluvents and frequently flooded soils.” Psamments, fluvents and frequently flooded soils are on the NRCS 2015 National Hydric Soils List (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/).

Because City Creek is perennial within the BSA, it will likely meet the USACE definition of a relatively permanent water (RPW) body. Thus, the creek is considered to be a potential jurisdictional water regulated by the USACE.

City Creek is generally bounded by commercial/industrial development on the west and single-family residences on the east. These upland areas are dominated by ornamental vegetation. City Creek bears evidence of disturbance due to historical vegetation removal activities and channel contouring, which was confirmed through review of Google Earth aerial imagery.

City Creek contains a primary perennial low-flow channel within the BSA located along the western bank of the larger floodplain. This channel is contained by a berm that was created after a large storm event in 2011. The low-flow channel is vegetated by willow scrub, while Riversidean alluvial fan sage scrub and non-native grasslands dominate the remainder of the floodplain.

Two wetland sample plots (LSA Sample Points 1 and 2) were analyzed along City Creek’s Low Flow Channel 1. Wetland vegetation and hydrology indicators were present at the locations of the two sample points. The soils within this portion of City Creek are mapped by the NRCS as “psamments, fluvents and frequently flooded soils,” which are

on the NRCS 2015 National Hydric Soils List, as noted above. Based on the presence of an ordinary high water mark (OHWM) and the presence of all three USACE wetland indicators at the two sample point locations, it is LSA's opinion that the portions of City Creek associated with the low-flow channel meet the USACE definition of wetlands. Based on the presence of streambed and bank, and riparian habitat (willow scrub), the creek would be subject to the regulatory authority of the CDFW.

A secondary low-flow channel, identified as "Low Flow Channel 2" (Appendix G, Figure 2 and Figure 3B, photograph 5) is located along the east levee bank of the larger floodplain. Low Flow Channel 2 primarily receives flows from an approximately 4-foot diameter pipe that is aligned parallel to the north side of Base Line. It also receives localized surface runoff from the east bank of the levee and adjacent areas. Low Flow Channel 2 conveys flows under Base Line by way of an approximately 8-foot by 4-foot concrete box culvert. Low Flow Channel 2 conveys flows southwest to converge with Low Flow Channel 1 south of the BSA. Low Flow Channel 2 is considered ephemeral.

A wetland sample point (LSA Sample Point 3) was excavated near the outlet of the aforementioned 4-foot diameter pipe due to the presence of ponded water. The dominant vegetation observed within the vicinity of Sample Point 3 was Canada horseweed, a FACW wetland indicator species. The soils within the tributary are mapped by the NRCS as "psamments, fluvents and frequently flooded soils." In addition to the ponded water, signs of hydrology observed in the area included water marks, sediment deposits, and drift deposits. The OHWM was determined by the presence of these hydrological features. However, hydrophytic vegetation was absent from the portion of Low Flow Channel 2 south of Base Line. Low Flow Channel 2 south of Base Line is dry and vegetated primarily by Riversidean alluvial fan sage scrub species and non-native grasslands species. Low Flow Channel 2 hydrology south of Base Line was determined by the presence shelving and scouring.

The ponded area north of Base Line within Low Flow Channel 2 possesses all three USACE wetland indicators, resulting in this localized area being considered jurisdictional wetland waters of the U.S. However, the segment of Low Flow Channel 2 south of Base Line would be considered jurisdictional non-wetland water of the U.S., given the lack of hydrophytic vegetation.

DRAINAGE A

Drainage A is an earthen channel at the eastern edge of the BSA. It parallels the west side of Yarnell Road and terminates in a low earthen area north of Base Line. The drainage is situated in an upland area east of the City Creek floodplain and is considered ephemeral. It conveys localized runoff from the developed areas north of the BSA.

The OHWM was determined by the presence shelving and scouring. The dominant soils are mapped by the NRCS as “Soboba stony loamy sand (2 to 9 percent slopes).” Drainage A is unvegetated within BSA, does not have any connectivity to City Creek, and is considered isolated. Because the USACE typically does not assert jurisdiction over non-tidal drainages and ditches that are excavated on dry land and drain adjacent upland areas, Drainage A is considered to be a USACE non-jurisdictional drainage feature.

Based on the presence of a defined bed and banks, Drainage A within the study area would likely be subject to the jurisdiction of the CDFW. As indicated previously, no riparian habitat is associated with Drainage A within the BSA.

USACE Jurisdiction

The BSA contains 12.61 acres of potential non-wetland waters of the United States and 1.20 acres of wetland waters of the United States that could be regulated by the USACE. The project will result in 6.42 acres of temporary effects and 0.03 acre of permanent impacts to nonwetland waters, and 0.77 acre of temporary impacts to wetland waters. The Base Line Bridge widening will result in a net increase of 0.70 acre of USACE jurisdiction within City Creek. Figure 8 shows impacts to USACE jurisdictional waters.

The project applicant can request that the USACE verify the results and conclusions of the jurisdictional delineation report (Appendix G) through the formal Approved Jurisdictional Determination process or, the project applicant can submit a Preliminary Jurisdictional Determination in which case all of the areas delineated as jurisdictional waters are assumed to be waters of the U.S.

CDFW Jurisdiction

The BSA was determined to have 15.85 acres of potential jurisdictional area subject to CDFW regulatory authority. The project would result in 7.78 acres of temporary impacts and 0.05 acre of permanent impacts to CDFW jurisdictional streambed/riparian habitat. The Base Line Bridge widening will result in a net increase of 0.70 acre of CDFW jurisdiction within City Creek.

A California Fish and Game Code Section 1602 Notification of Streambed Alteration will need to be submitted to the CDFW for authorization of impacts to CDFW jurisdictional areas.

RWQCB Jurisdiction

Because there is no public guidance on determining RWQCB jurisdictional areas, RWQCB authority was determined based on the federal definition of wetlands and other

waters of the U.S. as recommended by the State Water Resources Control Board September 2004 Workplan. The waters determined to be regulated by the USACE above would be subject to RWQCB jurisdiction under Section 401 of the CWA.

The project will have a net increase in USACE and CDFW jurisdictional areas. Impacts from the project will occur as a result of a portion of the Base Line Bridge widening and vegetation removal. The final determination of what is jurisdictional, what permits will be required, and whether mitigation will be required for such impacts ultimately is subject to the discretion of the agencies (i.e., USACE, CDFW, and RWQCB) during the federal and state regulatory processes.

Invasive Species

Twenty-five exotic plants on the Cal-IPC Invasive Plant Inventory were identified as occurring within the BSA (Table H). Each plant in the inventory is given an overall rating of high, moderate, or limited. Plants with a rating of high have severe ecological impacts. Plants with a rating of moderate have a substantial and apparent, but not severe, ecological impact. Plants with a limited rating are invasive but their ecological impacts are minor on a statewide level. Two plant species that have a high rating for ecological impacts, Mediterranean tamarisk and foxtail chess, were identified in the BSA.

Table H: Cal-IPC Invasive Plants Identified in the BSA and Ranking

Plant Species	Rank
Mediterranean tamarisk (*Tamarix ramosissima*)	High
Foxtail chess (*Bromus madritensis*)	High
Tocalote (*Centaurea melitensis*)	Moderate
Bull thistle (*Cirsium vulgare*)	Moderate
Shortpod mustard (*Hirschfeldia incana*)	Moderate
London rocket (*Sisymbrium irio*)	Moderate
Australian saltbush (*Atriplex semibaccata*)	Moderate
Tree of heaven (*Ailanthus altissima*)	Moderate
Tree tobacco (*Nicotiana glauca*)	Moderate
Mexican fan palm (*Washingtonia robusta*)	Moderate
Slender wild oat (*Avena barbata*)	Moderate
Wild oat (*Avena fatua*)	Moderate
Ripgut brome (*Bromus diandrus*)	Moderate
Mouse barley (*Hordeum murinum*)	Moderate
Smooth cat's ear (*Hypochaeris glabra*)	Limited
Fivehorn smotherweed (*Bassia hyssopifoli*)	Limited
Russian thistle (*Salsola tragus*)	Limited
Bur-clover (*Medicago polymorpha*)	Limited
Redstem stork's bill (*Erodium cicutarium*)	Limited
Horehound (*Marrubium vulgare*)	Limited

Table H: Cal-IPC Invasive Plants Identified in the BSA and Ranking

Plant Species	Rank
Eucalyptus (*Eucalyptus* sp.)	Limited
Curley dock (*Rumex crispus*)	Limited
Soft chess (*Bromus hordeaceus*)	Limited
Annual rabbitsfoot grass (*Polypogon monspeliensis*)	Limited
Common Mediterranean grass (*Schismus barbatus*)	Limited

In compliance with EO 13112, a weed abatement program will be developed to minimize the importation of nonnative plant material during and after construction. Eradication strategies would be employed to prevent the introduction of and eliminate the establishment of invasive plants that could occur in the proposed project area. At a minimum, this program will include the following measures:

- During construction, the construction contractor shall inspect and clean construction equipment at the beginning of each day and prior to transporting equipment from one project location to another.
- During construction, soil and vegetation disturbance will be minimized to the greatest extent feasible.
- During construction, the construction contractor shall ensure that all active portions of the construction site are watered as necessary to prevent excessive amounts of dust.
- During construction, soil, gravel, and rock will be obtained from weed-free sources.
- Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control.
- After construction, affected areas adjacent to native vegetation will be reseeded with plant species that are native to the vicinity as approved by the District Biologist.
- After construction, all revegetated areas will avoid the use of species listed on Cal-IPC's California Invasive Plant Inventory that have a high or moderate rating.
- Erosion control and/or revegetation sites will be monitored after construction to detect and control the introduction/invasion of non-native species. The monitoring period will be determined in consultation with resource agencies.
- Eradication procedures (e.g., spraying and/or hand weeding) will be outlined should an infestation occur; the use of herbicides will be prohibited within and adjacent to native vegetation, except as specifically authorized and monitored by the District Biologist.
- All woody invasive species (e.g., tamarisk) will be removed from the project limits.

Chapter 6 – References

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Appendix A – Figures

Figure 1: Regional and Project Location

Figure 2: Project Features

Figure 3: Land Cover and Photograph Locations

Figure 4: Site Photographs

Figure 5: Critical Habitats and Least Bell's Vireo Observation

Figure 6: Impacts to Santa Ana Sucker Critical Habitat

Figure 7: Impacts to San Bernardino Kangaroo Rat Critical Habitat

Figure 8: Impacts to Potential Jurisdictional Waters

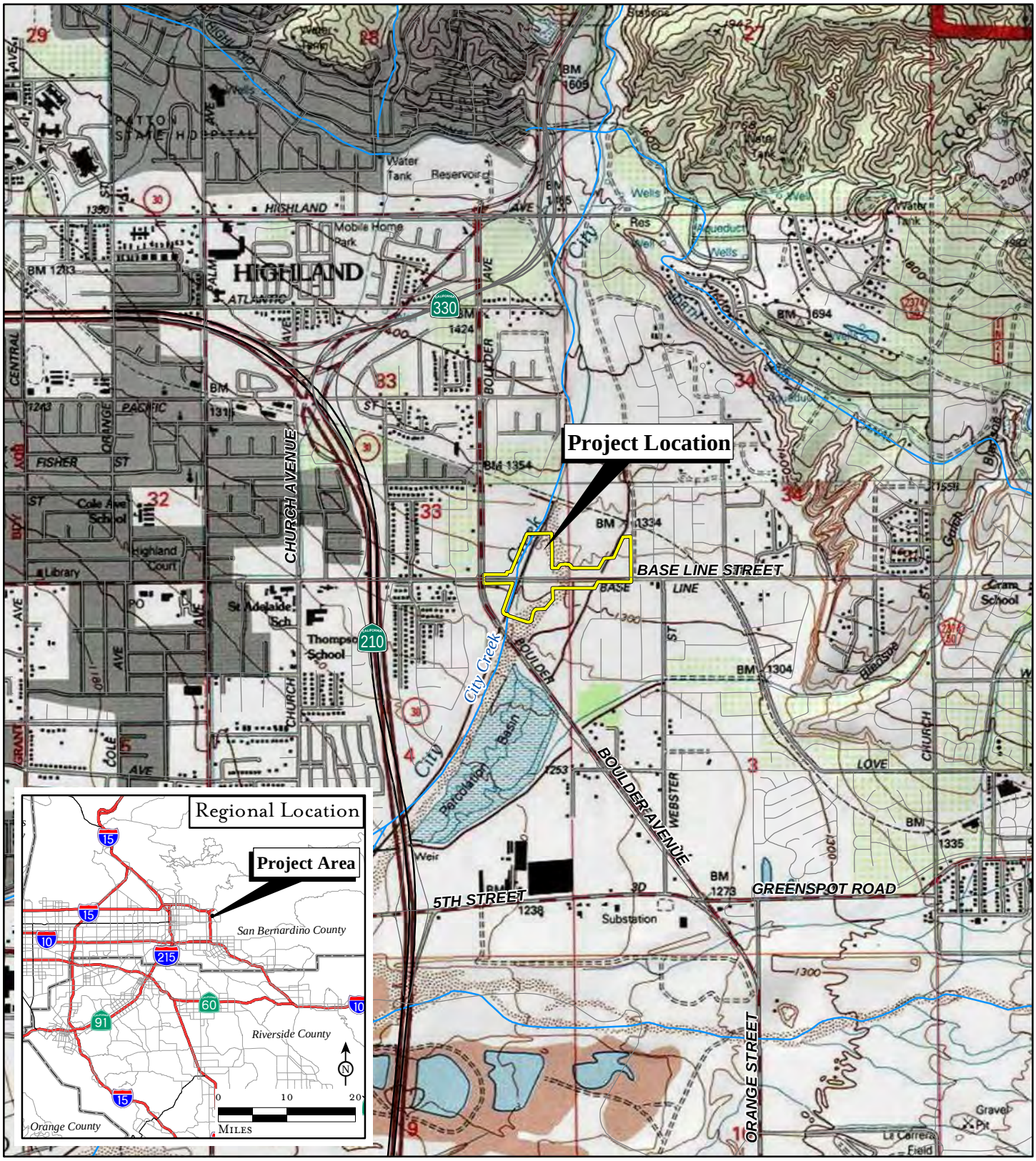


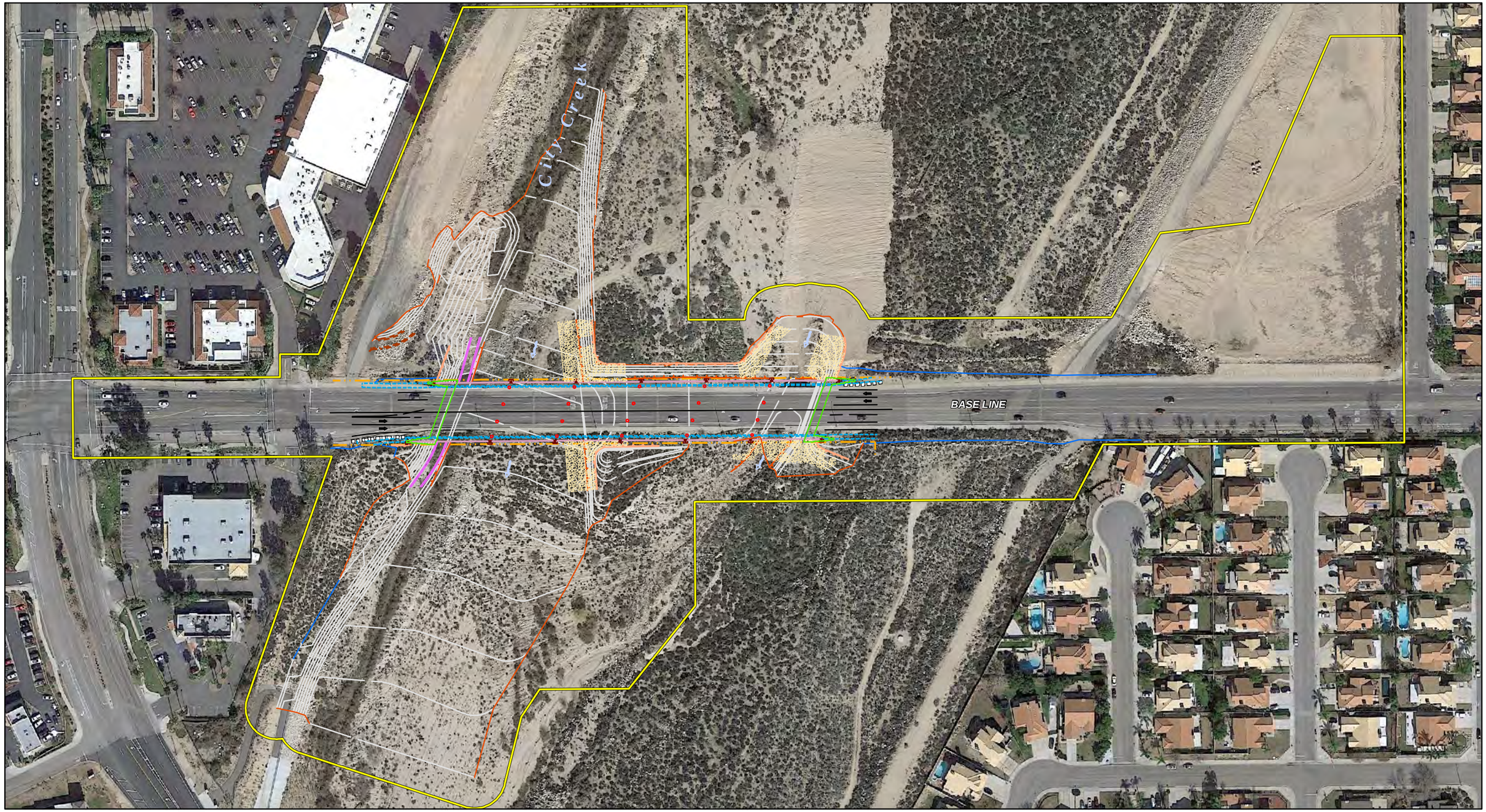
FIGURE 1

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Regional and Project Location

SOURCE: USGS 7.5' Quads: Redlands and Harrison Mtn. (1988), CA; ESRI Streetmap, 2013

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Biological Study Area
Abutment
Access
Accomodations for Future Trail
Column
Concrete Barrier
Cut-off Wall
Direction of Flow
Existing City ROW
Guard Rail
Light Pole & Pilaster/Pedestal
Metal Barrier
Rip-Rap
Striping
Toe of Slope
Top of Slope
Channel Grading
Proposed Fill

N

0 75 150 FEET

0 23 46 METERS

SOURCE: AECom, 2017

FIGURE 2

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Project Features

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Legend

- Biological Study Area (26.12 Ac)
- Photograph Location

Land Cover

- Developed/Disturbed (11.08 Acres)
- Riversidean Alluvial Fan Sage Scrub (13.44 Acres)
- Southern Willow Scrub (1.19 Acres)
- Emergent Wetland (0.01 Acres)
- Unvegetated Channel (0.23 Acres)

N

0 80 160
FEET

SOURCE: Google Earth, 2016

I:\AEM1603(LIM0801)\Reports\NES\fig3_LandCover_Photos.mxd (9/18/2017)

FIGURE 3

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Land Cover and Photograph Locations



Photograph 1: *View of disturbed area that is devoid of vegetation in the northeasterly portion of the BSA. Taken June 17, 2016.*



Photograph 2: *View of Riversidean alluvial fan sage scrub vegetation north of Base Line. Taken June 17, 2016.*



Photograph 3: *View of Riversidean alluvial fan sage scrub vegetation south of Base Line. Taken June 17, 2016.*



Photograph 4: *View of disturbed habitat conditions in the City Creek main channel north of Base Line. Taken April 22, 2016.*

LSA

FIGURE 4A

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Site Photographs



Photograph 5: *View of southern willow scrub habitat south of Base Line.*



Photograph 6: *View of 6. View of southern willow scrub vegetation north of Base Line.*



Photograph 7: *View of secondary low flow channel in City Creek that is unvegetated.*



Photograph 8: *View of wetland emergent wetland vegetation at the culvert within City Creek on the westerly side of the BSA.*

LSA

FIGURE 4B

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Site Photographs



Biological Study Area

San Bernardino Kangaroo Rat, final, Reinstated 4/23/02 (19.04 Ac*)

Santa Ana Sucker, final Critical Habitat, 12/14/10 (10.0 Ac*)

Least Bell's Vireo Observation

**Acreage excludes developed areas.*

N

0 100 200 FEET

0 30.4 60.8 METERS

SOURCE: Google Earth, 2016; Critical Habitat Federal Registry, 2002 and 2010

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FIGURE 5

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Critical Habitats and
Least Bell's Vireo Observation



Biological Study Area

Impacts to Santa Ana Sucker Critical Habitat

- Permanent Impact (0.06 Acres)
- Temporary Impact (6.89 Acres)
- No Impact (4.99 Acres)
- Beneficial Impact (0.70 Acres)

N

0 100 200 FEET

0 30.4 60.8 METERS

SOURCE: Google Earth, 2016; Critical Habitat Federal Registry, 2010

FIGURE 6

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Impacts to Santa Ana Sucker Critical Habitat

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Biological Study Area

Impacts to San Bernardino Kangaroo Rat Critical Habitat

- Permanent Impact (0.09 Acres) (Does not include existing paved Base Line)
- Temporary Impact (7.82 Acres) (Does not include existing paved Base Line)
- Beneficial Impact (0.70 Acres)
- No Impact (14.37 Acres)

N

0 100 200 FEET

0 30.4 60.8 METERS

SOURCE: Google Earth, 2016; Critical Habitat Federal Registry, 2002.

I:\AEM1603(LIM0801)\Reports\NES\fig7_ImpactstoSBKR_CH.mxd (9/28/2017)

FIGURE 7

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Impacts to San Bernardino Kangaroo Rat Critical Habitat



FIGURE 8

Biological Study Area

USACE Impacts
- No Impact (6.59 Ac)
- Permanent Impact, Non-wetland Waters (0.03 Ac)
- Temporary Impact, Non-wetland/Wetland Waters (7.19 Ac)

CDFW Impacts
- No Impact (8.02 Ac)
- Permanent Impact (0.05 Ac)
- Temporary Impact (7.78 Ac)

Beneficial Impacts
- Beneficial Impact, USACE Floodplain/CDFW Streambed (0.70 Ac)

N

0 100 200
FEET

SOURCE: Google Earth, 2016

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Base Line Bridge Over City Creek (Replace)
Natural Environment Study

Impacts to Potential Jurisdictional Waters

08-SBd-0-HIGH
EA 08-925035

Appendix B – USFWS IPaC

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
http://www.fws.gov/carlsbad/

In Reply Refer To: July 16, 2017
Consultation Code: 08ECAR00-2017-SLI-0361
Event Code: 08ECAR00-2017-E-02361
Project Name: Baseline Bridge at City Creek

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Project Summary

Consultation Code: 08ECAR00-2017-SLI-0361

Event Code: 08ECAR00-2017-E-02361

Project Name: Baseline Bridge at City Creek

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: The City of Highland, in cooperation with the California Department of Transportation (Caltrans), District 8, proposes to improve the Baseline Bridge over City Creek.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/34.12149402472636N117.19120498033448W



Counties: San Bernardino, CA

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
San Bernardino Merriam's Kangaroo Rat *(Dipodomys merriami parvus)* There is a **final** critical habitat designated for this species. Your location overlaps the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2060	Endangered
Stephens' Kangaroo Rat *(Dipodomys stephensi (incl. D. cascus))* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3495	Endangered

Birds

NAME	STATUS
Coastal California Gnatcatcher *(Polioptila californica californica)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *(Vireo bellii pusillus)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *(Empidonax traillii extimus)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Fishes

NAME	STATUS
Santa Ana Sucker *(Catostomus santaanae)* Population: 3 CA river basins There is a **final** critical habitat designated for this species. Your location overlaps the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3785	Threatened

Flowering Plants

NAME	STATUS
Nevin's Barberry *(Berberis nevinii)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8025	Endangered
San Diego Ambrosia *(Ambrosia pumila)* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8287	Endangered
Santa Ana River Woolly-star *(Eriastrum densifolium ssp. sanctorum)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6575	Endangered
Slender-horned Spineflower *(Dodecahema leptoceras)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4007	Endangered

Critical habitats

There are 2 critical habitats wholly or partially within your project area.

NAME	STATUS
San Bernardino Merriam's Kangaroo Rat *(Dipodomys merriami parvus)*	Final designated
Santa Ana Sucker *(Catostomus santaanae)*	Final designated

Appendix C – Rare Plants Focused Surveys (2016 and 2009)

2016 Focused Suvey

LSA ASSOCIATES, INC.
1500 IOWA AVENUE, SUITE 200
RIVERSIDE, CALIFORNIA 92507
951.781.9310 TEL
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BERKELEY
CARLSBAD
FRESNO
IRVINE
PALM SPRINGS
PT. RICHMOND
ROCKLIN
SAN LUIS OBISPO

M E M O R A N D U M

DATE: June 22, 2016

TO: Denise Woodard, LSA Associates, Inc.

FROM: Stan Spencer, LSA Associates, Inc.

SUBJECT: Results of a Special-Status Plant Survey on the Base Line Bridge Project Site (LSA Project No. LIM0801)

This memo provides the results of a survey for special-status plants by LSA Associates, Inc. (LSA) for the above-referenced project site located in the City of Highland, San Bernardino County, California, approximately 0.4 mile east of State Route 210 on Base Line between Boulder Avenue and Yarnell Road.

BACKGROUND

The survey area includes the City Creek channel and adjacent upland areas. Elevation at the site varies from approximately 1,280 to 1,330 feet above mean sea level. The predominant land cover consists of developed areas and ornamental plantings, Riversidean alluvial fan sage scrub, willow scrub, and non-native grassland. There are also areas of unvegetated stream channel. The mapped soils in the undeveloped portions of the survey area are Soboba stony loamy sand and psamments and fluvents.

METHODS

A literature review was conducted to identify special-status plants known to occur in the project vicinity. Database records for the *San Bernardino North, Harrison Mountain, Keller Peak, San Bernardino South, Redlands,* and *Yucaipa, California* U.S. Geological Survey (USGS) 7.5-minute quadrangles were searched on April 29, 2016, using *Rarefind 3* (version 3.1.0, California Department of Fish and Wildlife [CDFW], Natural Diversity Data Base, dated January 31, 2016) and *Electronic Inventory of Rare and Endangered Vascular Plants of California* (online edition, v7, California Native Plant Society [CNPS], dated April 14, 2016, http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi/).

The survey was conducted by LSA biologist Stan Spencer, PhD, on April 29, 2016, from 1:45 to 4:45 p.m. and June 8 from 6:40 to 9:55 a.m. Areas of potentially suitable habitat on the site were surveyed by walking 10- to 30-foot transects. The survey was floristic in nature and all plant species observed during the survey were noted.

RESULTS

The literature review identified 42 special-status plant species known to occur in the general project vicinity. None of these target species or any other special-status plant species was observed during the survey, and all are determined to be absent from the project site (Table A). A list of all plant species identified during the survey is provided as Table B.

Attachments: Table A: Special-Status Plants and Potential to Occur on Site
Table B: Plant Species Observed

Table A: Special-Status Plants and Potential to Occur on Site

Scientific Name	Common Name	Status	General Habitat Description	Habitat	Rationale
Ambrosia monogyra	**Singlewhorl burrobush**	US: – CA: 2B	Sandy soils in washes and ravines in chaparral and desert scrub below 500 meters (1,640 feet) elevation. In California, known from Riverside, San Bernardino, and San Diego Counties. Also occurs in Arizona, New Mexico, Texas, and Mexico.	Absent	Not observed during focused survey.
Arenaria paludicola	**Marsh sandwort**	US: FE CA: SE/1B	Boggy areas in freshwater marshes and swamps below 170 meters (560 feet) elevation. Known to presently occur only in San Luis Obispo County (at Oso Flaco Lake and Morro Bay). Believed extirpated from Los Angeles, San Francisco, Santa Cruz, Riverside, and San Bernardino Counties, and from the State of Washington. The last known record of this species in Riverside, San Bernardino, or Los Angeles Counties is from 1900.	Absent	Not in elevation range.
Astragalus hornii var. *hornii*	**Horn's milk-vetch**	US: – CA: 1B	Alkaline playas and lake margins from 60 to 850 meters (200 to 2,800 feet) elevation. In California, known only from Inyo and Kern Counties. Believed extirpated from San Bernardino County. Also occurs in Nevada.	Absent	No alkaline areas or lake margins.
Berberis nevinii	**Nevin's barberry**	US: FE CA: SE/1B	Gravelly wash margins in alluvial scrub or coarse soils and rocky slopes in chaparral at 70 to 825 meters (220 to 2,700 feet) elevation. Known occurrences at higher elevations are planted (not natural). Known only from Los Angeles, San Bernardino, Riverside, and San Diego Counties, California.	Absent	Not observed during focused survey.
Brodiaea filifolia	**Thread-leaved brodiaea**	US: FT CA: SE/1B	Usually on clay or associated with vernal pools or alkaline flats; occasionally in vernally moist sites in fine soils (clay loam, silt loam, fine sandy loam, loam, loamy fine sand). Typically associated with needlegrass or alkali grassland or vernal pools. Occurs from 25 to 1,120 meters (80 to 3,700 feet) elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, San Diego, and San Luis Obispo Counties, California.	Absent	No fine soils, alkaline areas, or vernal pools.
Calochortus palmeri var. *palmeri*	**Palmer's mariposa lily**	US: – CA: 1B	Mesic sites in chaparral and lower montane coniferous forest at 600 to 2,400 meters (2,000 to 7,900 feet) elevation. Known from Riverside, San Bernardino, Santa Barbara, Los Angeles, Ventura, Kern, and San Luis Obispo Counties.	Absent	Not in elevation range.
Carex comosa	**Bristly sedge**	US: – CA: 2B	Bogs and fens, freshwater marshes and swamps, and lake margins below 425 meters (1,400 feet). Known from Lake, Santa Cruz, San Francisco, Shasta, San	Absent	No marshy areas or lake margins.

Table A: Special-Status Plants and Potential to Occur on Site

Scientific Name	Common Name	Status	General Habitat Description	Habitat	Rationale
			Joaquin, and Sonoma Counties; and Idaho, Oregon, and Washington. Believed extirpated from San Bernardino County (last known occurrence was in 1882).		
Castilleja cinerea	**Ash-gray paintbrush**	US: FT CA: 1B	Clay openings in Mojave desert scrub, meadows, pebble plains, pinyon-juniper woodland, upper montane coniferous forest at 1,800 to 2,850 meters (5,900 to 9,400 feet) elevation. Known only from the eastern San Bernardino Mountains.	Absent	Not in elevation range.
Castilleja lasiorhyncha	**San Bernardino Mountains owl's-clover**	US: – CA: 1B	Mesic to drying soils in open areas of stream and meadow margins or margins of vernally wet areas in meadows, chaparral, pebble plains, and upper montane coniferous forest at 1,300 to 2,400 meters (4,300 to 7,900 feet) elevation. Known from San Bernardino County, and historically from Riverside County.	Absent	Not in elevation range.
Centromadia pungens ssp. *laevis*	**Smooth tarplant**	US: – CA: 1B	Generally alkaline areas in chenopod scrub, meadows, playas, riparian woodland, valley and foothill grassland below 480 meters (1,600 feet) elevation. Known from Riverside and San Bernardino Counties, extirpated from San Diego County.	Absent	No alkaline areas or other suitable habitat.
Chloropyron maritimus spp. *maritimus*	**Salt marsh bird's beak**	US: FE CA: SE/1B	Coastal dunes and salt marshes. In California, known from Los Angeles, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties. Historical collections referred to this taxon from alkaline meadow in vicinity of San Bernardino Valley and from interior San Diego County are intermediate to *C. maritimus* ssp. *canescens*. Also occurs in Mexico.	Absent	No suitable habitat (dunes, marshes).
Chorizanthe parryi var. *parryi*	**Parry's spineflower**	US: – CA: 1B	Sandy or rocky soils in chaparral, coastal scrub, oak woodlands, and grassland at 40 to 1,705 meters (100 to 5,600 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties.	Absent	Not observed during focused survey.
Chorizanthe xanti var. *leucotheca*	**White-bracted spineflower**	US: – CA: 1B	Sandy to gravelly places in Mojave desert scrub, pinyon and juniper woodland, or coastal scrub in the Transverse and Peninsular Ranges and desert edge foothills at 300 to 1,200 meters (980 to 3,900 feet) elevation in coastal southern California and adjacent desert areas. Known only from Los Angeles, Riverside, San Bernardino, and San Diego Counties, California.	Absent	Not observed during focused survey.
Cuscuta obtusifolia var. *glandulosa*	**Peruvian dodder**	US: – CA: 2B	May be extirpated in California. Formerly found sporadically in freshwater marsh on herbs including Alternanthera, Dalea, Lythrum, Polygonum, and Xanthium below	Absent	No marshes.

Table A: Special-Status Plants and Potential to Occur on Site

Scientific Name	Common Name	Status	General Habitat Description	Habitat	Rationale
			about 500 meters (1,600 feet). Believed extirpated from California. Reported historically from Los Angeles, San Bernardino, Sonoma, Sutter, Butte, Sacramento, and Merced Counties. Also known from eastern and southern U.S., West Indies, and Mexico.		
Dodecahema leptoceras	**Slender-horned spineflower**	US: FE CA: SE/1B	In the Vail Lake area, occurs in gravel soils of Temecula arkose deposits in openings in chamise chaparral. In other areas, occurs in sandy cobbly riverbed alluvium in alluvial fan sage scrub (usually late seral stage), on floodplain terraces and benches that receive infrequent overbank deposits from generally large washes or rivers, where it is most often found in shallow silty depressions dominated by leather spineflower (*Lastarriaea coriacea*) and other native annual species, and is often associated with cryptogamic soil crusts composed of bryophytes, algae and/or lichens. Occurs at 200 to 760 meters (600 to 2,500 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties, California.	Absent	Not observed during focuses survey.
Eriastrum densifolium ssp. *sanctorum*	**Santa Ana River woollystar**	US: FE CA: SE/1B	Riversidean alluvial fan sage scrub and chaparral in sandy or gravelly soils of floodplains and terraced fluvial deposits of the Santa Ana River and larger tributaries (Lytle and Cajon Creeks, lower portions of City and Mill Creeks) at 90 to 625 meters (300 to 2,100 feet) elevation in San Bernardino and Riverside Counties.	Absent	Not observed during focuses survey.
Fimbristylis thermalis	**Hot springs fimbristylis**	US: – CA: 2B	Meadows and seeps (alkaline, near hot springs) in elevations from 120 to 1,340 meters (400 to 4,400 feet). Known from Inyo Kern, Mono, and San Bernardino Counties, California, and Arizona and Nevada.	Absent	No suitable habitat (alkaline areas).
Galium californicum ssp. *primum*	**Alvin meadow bedstraw**	US: – CA: 1B	Granitic soils in chaparral and lower montane coniferous forest; 1,350 to 1,700 meters (4,400 to 5,600 feet). Known from Riverside and San Bernardino Counties.	Absent	Not in elevation range.
Helianthus nuttallii ssp. parishii	**Los Angeles sunflower**	US: – CA: 1A	Marshes and swamps (coastal salt and freshwater) at 10 to 500 meters (30 to 1,600 feet) elevation. This species is historically known from Los Angeles, Orange and San Bernardino Counties, California. Last seen in 1937. Presumed extinct. Plants found in 2002 at Castaic Spring along the Santa Clara River in Los Angeles County were initially reported as possibly this taxon, but	Absent	No suitable habitat (marshes). Considered extinct.

Table A: Special-Status Plants and Potential to Occur on Site

Scientific Name	Common Name	Status	General Habitat Description	Habitat	Rationale
			instead appear to be hybrids or evolutionary intermediates between *H. nuttallii* and *H. californicus*, based on chromosome counts and pollen morphology (A Quantitative Analysis of Pollen Variation in Two Southern California Perennial Helianthus (*Heliantheae: Asteraceae*), J.M. Porter and N. Fraga, 2004).		
Heuchera parishii	**Parish's alumroot**	US: – CA: 1B	Rocky areas in coniferous forests in Riverside and San Bernardino Counties at 1,500 to 3,800 meters (4,900 to 12,500 feet) elevation.	Absent	Not in elevation range.
Horkelia cuneata ssp. *puberula*	**Mesa horkelia**	US: – CA: 1B	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 70 to 825 meters (200 to 2,700 feet) elevation. Known only from San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Bernardino Counties, California. Believed extirpated from Riverside and San Diego Counties.	Absent	Not observed during focused survey.
Imperata brevifolia	**California satintail**	US: - CA: 2B	Springs, meadows, streambanks, moist canyons, canals, alkaline sinks, and similar wet areas below 1,220 meters (4,000 feet) elevation. Known from Butte, Fresno, Imperial, Inyo, Kern, Lake, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, and Ventura Counties, though many collections are old and the populations likely extirpated. Also occurs in other areas of the western U.S. and Mexico.	Absent	Not observed during focused survey.
Ivesia argyrocoma var. *argyrocoma*	**Silver-haired ivesia**	US: – CA: 1B	Alkaline meadows and pavement plains at 1,475 to 2,680 meters (4,800 to 8,800 feet) elevation. In California, known only from San Bernardino County.	Absent	No alkaline areas or pavement plain.
Lilium parryi	**Lemon lily**	US: – CA: 1B	Bulbiferous perennial herb of wet areas in meadows and riparian and montane coniferous forests at 1,220 to 2,790 meters (4,000 to 9,200 feet) elevation. In California, known from Los Angeles, Riverside, San Bernardino, and San Diego Counties. Also occurs in Arizona and Mexico.	Absent	Not in elevation range.
Lycium parishii	**Parish's desert-thorn**	US: – CA: 2B	Coastal scrub and Sonoran desert scrub at 135 to 1,000 meters (440 to 3,300 feet) elevation. In California, known from Imperial and San Diego Counties. Report from Riverside County is based on a misidentification. Known only historically from San Bernardino County (benches and/or foothills north of San Bernardino).	Absent	Not observed during focused survey.

Table A: Special-Status Plants and Potential to Occur on Site

Scientific Name	Common Name	Status	General Habitat Description	Habitat	Rationale
Malacothamnus parishii	**Parish's bush mallow**	US: – CA: 1A	Known only from one occurrence in 1895, in chaparral and coastal sage scrub at 490 meters (1,600 feet) elevation in vicinity of San Bernardino. Presumed extinct.	Absent	Not in elevation range or observed during focused survey.
Monardella macrantha ssp. *hallii*	**Hall's monardella**	US: – CA: 1B	Dry slopes and ridges in openings in chaparral, woodland, and forest at 695 to 2,195 meters (2,280 to 7,200 feet) elevation. Known only from Los Angeles, San Diego, Orange, Riverside, and San Bernardino Counties, California. In the western Riverside County area, known only from higher elevations in the Santa Ana and Aqua Tibia Mountains (The Vascular Plants of Western Riverside County, California. F.M. Roberts et al., 2004).	Absent	Not in elevation range.
Monardella pringlei	**Pringle's monardella**	US: – CA: 1A	Sandy hills in coastal sage scrub at 300 to 400 meters (980 to 1,300 feet) elevation. Known only from two occurrences west of Colton. Last seen in 1941. Habitat lost to urbanization. Presumed extinct.	Absent	No sandy hills. Considered extinct.
Nasturtium (Rorippa) gambelii	**Gambel's watercress**	US: FE CA: ST/1B	Marshes from 5 to 330 meters (20 to 1,100 feet) elevation. Currently believed to occur in California only in Santa Barbara and San Luis Obispo Counties. There are historical records from Los Angeles, Orange, and San Bernardino Counties. A historical report from San Diego County likely constitutes a misidentification. Also occurs in Baja California.	Absent	Not in elevation range.
Packera bernardina	**San Bernardino ragwort**	US: – CA: 1B	Mesic (sometimes alkaline) meadows and dry rocky slopes in pebble plains, and upper montane coniferous forest at 1,800 to 2,315 meters (5,900 to 7,600 feet) elevation. Known only from San Bernardino County.	Absent	Not in elevation range.
Perideridia parishii ssp. *parishii*	**Parish's yampah**	US: – CA: 2B	Damp meadows or margins of streambeds (usually with an open pine canopy) in meadows and lower and upper montane coniferous forest at 1,420 to 3,000 meters (4,700 to 9,800 feet) elevation. In California, known only from San Bernardino County.	Absent	Not in elevation range.
Ribes divericatum var. *parishii*	**Parish's gooseberry**	US: – CA: 1A	Deciduous shrub of willow swales in riparian habitats at 60 to 300 meters (200 to 1,000 feet) elevation. Believed to be extinct. Historical collections from Los Angeles and San Bernardino Counties.	Absent	Not in elevation range.
Schoenus nigricans	**Black bog-rush**	US: – CA: 2B	Marshes and swamps (often in alkali soils) in elevations from 140 to 2,130 meters (500 feet to 7,000 feet). Known from Inyo and San Bernardino Counties, California, and Nevada, Texas, and elsewhere.	Absent	No marshes.

Table A: Special-Status Plants and Potential to Occur on Site

Scientific Name	Common Name	Status	General Habitat Description	Habitat	Rationale
Sidalcea hickmanii ssp. *parishii*	**Parish's checker-bloom**	US: – CA: SR/1B	Burned or cleared areas on rocky slopes, and along roads in chaparral, cismontane woodland, and lower montane coniferous forest at 1,000 to 2,135 meters (3,300 to 7,000 feet) elevation. Known only from in Santa Barbara, San Bernardino and San Luis Obispo Counties, California.	Absent	Not in elevation range.
Sidalcea malviflora ssp. *dolosa*	**Bear Valley checker-bloom**	US: – CA: 1B	Wet areas in forested habitats from 1,495 to 2,685 meters (4,900 to 8,800 feet) in elevation. Known only from the San Bernardino Mountains in San Bernardino County, California.	Absent	Not in elevation range.
Sidalcea neomexicana	**Salt Spring checker-bloom**	US: – CA: 2B	Alkaline springs and brackish marshes below 1,530 meters (5,000 feet) elevation. In California, known only from Kern, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Believed extirpated from Los Angeles County. Also known from Arizona, New Mexico, Nevada, Utah, and Mexico.	Absent	No alkaline springs or brackish marshes.
Sidalcea pedata	**Bird-foot checker-bloom**	US: FE CA: SE/1B	Vernally mesic sites in meadows and pebble plains at 1,600 to 2,500 meters (5,200 to 8,200 feet) elevation. Known only from San Bernardino County, California.	Absent	Not in elevation range.
Sphenopholis obtusata	**Prairie wedge grass**	US: – CA: 2B	Wet meadows, stream banks, and ponds at 300 to 2,000 meters (1,000 to 6,600 feet) elevation. Widely distributed. In Southern California, known only from San Bernardino, Riverside (Santa Ana River), and perhaps San Diego Counties.	Absent	Not observed during focused survey.
Streptanthus campestris	**Southern jewel-flower**	US: – CA: 1B	Open rocky areas in chaparral, lower montane coniferous forest and pinyon-juniper woodland at 600 to 2,400 meters (2,000 to 7,800 feet) elevation. In California, known from Riverside, San Bernardino, and San Diego Counties.	Absent	Not in elevation range.
Symphyo-trichum defoliatum	**San Bernardino aster**	US: – CA: 1B	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 2,040 meters (6,700 feet) elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County. In the western Riverside County area, this species is scarce, and documented only from Temescal and San Timoteo Canyons (The Vascular Plants of Western Riverside County, California. F.M. Roberts et al., 2004).	Absent	Not observed during focused survey.
Thelypteris puberula var. *sonorensis*	**Sonoran maiden fern**	US: – CA: 2B	Seeps and along streams in meadows at 50 to 610 meters (170 to 2,000 feet) elevation. Known from western Riverside, southwest	Absent	Not observed during focused survey.

Table A: Special-Status Plants and Potential to Occur on Site

Scientific Name	Common Name	Status	General Habitat Description	Habitat	Rationale
			San Bernardino, Santa Barbara, and Los Angeles Counties.		

LEGEND	
US: Federal Classifications	
–	No applicable classification
FE	Taxa listed as Endangered.
FT	Taxa listed as Threatened.
CA: State Classifications	
SE	Taxa State-listed as Endangered.
ST	Taxa State-listed as Threatened.
SR	Taxa State-listed as Rare.
1A	California Rare Plant Rank 1A: Presumed extinct in California.
1B	California Rare Plant Rank 1B: Rare, threatened, or endangered in California and elsewhere.
2B	California Rare Plant Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

California Rare Plant Ranks are assigned by a committee of government agency and non-governmental botanical experts and are not official State designations of rarity status.

Table B: Plant Species Observed

Scientific Name	Common Name
PINOPHYTA	**GYMNOSPERMS**
Cupressaceace	**Cypress family**
Juniperus californica	California juniper
Pinaceae	**Pine family**
Pinus sp.	Pines
MAGNOLIOPHYTA: MAGNOLIOPSIDA	**DICOT FLOWERING PLANTS**
Anacardiaceae	**Sumac family**
Rhus ovata	Sugar bush
Schinus molle (non-native species)	Peruvian peppertree
Apiaceae	**Carrot family**
Cyclospermum leptophyllum (non-native species)	Ciclospermum
Asteraceae	**Sunflower family**
Artemisia californica	California sagebrush
Artemisia douglasiana	Mugwort
Baccharis pilularis	Coyote brush
Baccharis salicifolia	Mule fat
Bebbia juncea	Sweetbush
Bidens pilosa (non-native species)	Common beggar's tick
Brickellia californica	California brickellbush
Centaurea melitensis (non-native species)	Tocalote
Cotula australis (non-native species)	Australian brass-buttons
Encelia farinosa	Brittlebush
Erigeron canadensis	Canadian horseweed
Helianthus annuus	Common sunflower
Heterotheca grandiflora	Telegraph weed
Heterotheca sessiliflora	Golden aster
Hypochaeris glabra (non-native species)	Smooth cat's-ear
Lactuca serriola (non-native species)	Prickly lettuce
Lepidospartum squamatum	Scalebroom
Logfia filaginoides	California cottonrose
Pseudognaphalium beneolens	Fragrant rabbit-tobacco
Pseudognaphalium biolettii	Two-color rabbit-tobacco
Pseudognaphalium microcephalum	San Diego rabbit-tobacco
Pseudognaphalium stramineum	Cottonbatting plant
Senecio vulgaris (non-native species)	Common groundsel
Sonchus asper (non-native species)	Prickly sow thistle
Sonchus oleraceus (non-native species)	Common sow thistle
Xanthium strumarium	Rough cocklebur

Table B: Plant Species Observed

Scientific Name	Common Name
Boraginaceae	**Borage family**
Cryptantha intermedia	Common cryptantha
Cryptantha muricata	Pointed cryptantha
Emmenanthe penduliflora	Whispering bells
Eriodictyon trichocalyx	Yerba santa
Phacelia brachyloba	Shortlobe phacelia
Phacelia distans	Distant phacelia
Phacelia minor	Wild Canterbury bells
Phacelia ramosissima	Branching phacelia
Brassicaceae	**Mustard family**
Hirschfeldia incana (non-native species)	Shortpod mustard
Lepidium oblongum	Peppergrass
Nasturtium officinale	Watercress
Sisymbrium orientale (non-native species)	Indian hedgemustard
Cactaceae	**Cactus family**
Opuntia littoralis	Coastal prickleypear
Caryophyllaceae	**Pink family**
Loeflingia squarrosa	Spreading pygmyleaf
Polycarpon tetraphyllum (non-native species)	Fourleaf manyseed
Chenopodiaceae	**Saltbush family**
Chenopodium berlandieri	Pitseed goosefoot
Convolvulaceae	**Morning-glory family**
Calystegia macrostegia	Morning-glory
Crassulaceae	**Stonecrop family**
Crassula connata	Sand pygmyweed
Euphorbiaceae	**Spurge family**
Croton californicus	California croton
Euphorbia maculata (non-native species)	Spotted spurge
Ricinus communis (non-native species)	Castor bean
Fabaceae	**Pea family**
Acmispon glaber	Deerweed
Lupinus hirsutissimus	Stinging lupine
Lupinus sparsiflorus	Coulter's lupine
Melilotus albus (non-native species)	White sweetclover
Spartium junceum (non-native species)	Spanish broom
Vicia villosa (non-native species)	Winter vetch
Fagaceae	**Beech family**
Quercus chrysolepis (non-native species)	Canyon live oak

Table B: Plant Species Observed

Scientific Name	Common Name
Geraniaceae	**Geranium family**
Erodium cicutarium (non-native species)	Redstem stork's bill
Lamiaceae	**Mint family**
Lamium amplexicaule (non-native species)	Henbit deadnettle
Marrubium vulgare (non-native species)	Horehound
Salvia apiana	White sage
Salvia columbariae	Chia
Salvia mellifera	Black sage
Malvaceae	**Mallow family**
Malacothamnus fasciculatus	Chaparral mallow
Montiaceae	**Miner's lettuce family**
Calyptridium monandrum	Coastal pussy paws
Myrsinaceae	**Myrsine family**
Anagallis arvensis (non-native species)	Scarlet pimpernel
Myrtaceae	**Myrtle family**
Melaleuca sp. (non-native species)	Bottlebrush
Oleaceae	**Olive family**
Fraxinus velutina	Velvet ash (Modesto ash)
Onagraceae	**Evening primrose family**
Camissoniopsis bistorta	Southern suncup
Camissoniopsis sp.	Camissoniopsis
Clarkia purpurea	Winecup clarkia
Epilobium ciliatum	Green willow herb
Eulobus californicus	Mustard-like evening primrose
Oenothera elata ssp. *hookeri*	Hooker's evening-primrose
Papaveraceae	**Poppy family**
Dendromecon rigida	California bush poppy
Ehrendorferia chrysantha	Golden eardrops
Eschscholzia californica	California poppy
Phrymaceae	**Monkey-flower family**
Mimulus aurantiacus	Red bush monkey-flower
Mimulus guttatus	Yellow monkey-flower
Penstemon spectabilis	Royal penstemon
Platanaceae	**Sycamore family**
Platanus racemosa	California sycamore
Polemoniaceae	**Phlox family**
Eriastrum sapphirinum	Sapphire woollystar

Table B: Plant Species Observed

Scientific Name	Common Name
Polygonaceae	**Buckwheat family**
Eriogonum elongatum	Long-stemmed eriogonum
Eriogonum fasciculatum	California buckwheat
Eriogonum gracile	Slender buckwheat
Eriogonum thurberi	Thurber's buckwheat
Persicaria spp.	Smartweed
Salicaceae	**Willow family**
Populus fremontii	Fremont cottonwood
Salix exigua	Narrowleaf willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Sapindaceae	**Soapberry family**
Koelreuteria bipinnata (non-native species)	Chinese flame tree
Scrophulariaceae	**Figwort family**
Verbascum thapsus (non-native species)	Common mullein
Simaroubaceae	**Quassia family**
Ailanthus altissima (non-native species)	Tree of heaven
Solanaceae	**Nightshade family**
Datura wrightii	Sacred thorn-apple
Nicotiana glauca (non-native species)	Tree tobacco
Tamaricaceae	**Tamarisk family**
Tamarix ramosissima (non-native species)	Mediterranean tamarisk
MAGNOLIOPHYTA: LILIOPSIDA	**MONOCOT FLOWERING PLANTS**
Agavaceae	**Agave family**
Hesperoyucca whipplei	Chaparral yucca
Arecaceae	**Palm family**
Washingtonia robusta (non-native species)	Mexican fan palm
Cyperaceae	**Sedge family**
Cyperus involucratus (non-native species)	Umbrella plant
Poaceae	**Grass family**
Avena barbata (non-native species)	Slender wild oat
Bromus diandrus (non-native species)	Ripgut brome
Bromus madritensis (non-native species)	Foxtail chess
Bromus tectorum (non-native species)	Cheatgrass
Cynodon dactylon (non-native species)	Bermuda grass
Festuca myuros (non-native species)	Rat-tail fescue
Festuca perennis (non-native species)	Ryegrass
Hordeum murinum (non-native species)	Mouse barley

Table B: Plant Species Observed

Scientific Name	Common Name
Pennisetum setaceum (non-native species)	African fountain grass
Phalaris minor (non-native species)	Littleseed canary grass
Polypogon interruptus (non-native species)	Ditch rabbitsfoot grass
Polypogon monspeliensis (non-native species)	Annual rabbitsfoot grass
Polypogon viridis (non-native species)	Water bentgrass
Schismus barbatus (non-native species)	Common Mediterranean grass
Stipa miliacea (non-native species)	Smilo grass

2009 Focused Survey

September 14, 2009

Mr. Dennis Barton
City of Highland
27215 Base Line Road
Highland, California 92346

Subject: Results of a Focused Sensitive Plant Survey for the Base Line Bridge Replacement Project, City of Highland, San Bernardino County, California.

PBS&J has completed a focused sensitive plant survey for the Base Line Bridge Replacement Project in the City of Highland, San Bernardino County, California. PBS&J conducted the focused survey to determine the presence/absence of sensitive plant species within the Area of Potential Effect (APE). A prior habitat assessment determined that the APE contains habitat suitable to support slender-horned spineflower (*Dodecahema leptoceras*), Parry's spineflower (*Chorizanthe parryi var. parryi*), Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), Parish's bush-mallow (*Malacothamnus parishii),* Robin's pepper-grass (*Lepidium virginicum var. robinsonii*), California satintail (*Imperata brevifoloa*), Mesa horkelia (*Horkelia cuneata ssp. puberula*), Parish's gooseberry (*Ribes divaricatum var. parishii*), and Plummer's mariposa lily (*Calochortus plummerae*).

Project Site Location

The Base Line Bridge Replacement Project hereinafter referred to as study area is located in the City of Highland, San Bernardino County, California (Exhibit 1). The study area is located approximately 0.4 mile east of State Route 210 (SR-210; Foothill Freeway) on Base Line Road between Boulder Avenue and Yarnell Road. The study area is further defined as being located in Sections 33 and 34 of Township 1 North, Range 3 West, and Sections 3 and 4 of Township 1 South, Range 3 West, as depicted on the Redlands, California, United States Geological Survey (USGS) 7.5 minute topographic quandrangle (Exhibit 2).

Study Area

The study area for the Base Line Bridge Replacement Project encompasses an area of from 100 to 605 feet north of Base Line from 100 to 400 feet south of Base Line within the east and west limits of the City Creek floodplain approximately 20.17-acres (Exhibit 3). The study area encompasses an area slightly larger than that which is expected to be permanently and temporarily impacted by project related activities.

Project Description

The City of Highland, in cooperation with the California Department of Transportation (Department) and the Federal Highway Administration (FHWA), proposes to improve the Base Line road across City Creek. The existing Base Line Crossing is a four (4) lane low water crossing over City Creek. The existing bridge and low water crossing do not have adequate capacity to convey the creek flow during the design flood event, and therefore the Department has recommended constructing a new bridge on a raised profile. As a consequence of raising the profile for the bridge, the roadway sections approaching the bridge from both the East and the West, which are four (4) lane roadways, will need to be raised as well to meet the raised bridge profile. The proposed project will include, but are not limited to, the following components:

- Replace the existing precast prestressed single span bridge approximately 72-ft in length and 42-ft in width with a raised bridge measuring approximately 240-ft long and 96-ft wide.
- Replace the existing single box culvert at low water crossing with a larger double box culvert
- Construct City Creek channel improvements, including regrading and recontouring the bed and banks within portions of the Creek channel to remain earthen-lined.
- Construct a multi-use trail, and tie to the trail from the Boulder Avenue bridge replacement project.
- Construct roadway approaches, approximately 130-ft to the west of BB (Begin Bridge) of the proposed bridge, and approximately 860 ft from the EB (End Bridge) to tie into the existing four (4) lane roadway section.
- Construction of street improvements includes utility construction, pavement widening, curbs, gutters, sidewalks, approach guard rails, drainage improvements, which includes permanent BMPs, and decorative street lightings.
- Relocate utilities as needed.
- Other miscellaneous improvements.

Existing Conditions

General land uses within the study area include developed land associated with the Base Line right-of-way; maintained undeveloped floodplain for the City Creek channel (flood control facility); and undeveloped terraces adjacent to the floodplain. The Base Line right-of-way portion of the study area consists of paved asphalt and concrete, and generally does not contain

any vegetation. The undeveloped floodplain for City Creek is primarily characterized by compacted and loose unvegetated fluvial material including sand, cobbles and boulders; however, portions contain concrete rip-rap or are sparsely vegetated with wetland, riparian, scrub, and ruderal (weedy) type plant species. The undeveloped terraces that occur adjacent to the floodplain are characterized by compacted bare earth, disturbed land, and native alluvial scrub that is present in various phases of disturbance and succession.

Land uses surrounding the study area consist of additional undeveloped floodplain for City Creek to the north and south, residential development to the east, and commercial and retail development to the west.

In general, topography within the study area is relatively flat, with the only substantial relief occurring along embankments for Base Line and the City Creek floodplain. Outside of these areas and within the undeveloped terraces, minor undulations in the land are evident as a result of previous maintenance and flood control activities. Surface elevations range from approximately 1,325 feet above mean sea level (AMSL) within the northernmost portion of the BSA to approximately 1,290 feet AMSL within the southernmost portion

Soils

The study area is mapped by the Natural Resource Conservation Service (NRCS) as containing three soils series; Psamments and Fluvents, Soboba stony loamy sand, and Tujunga gravelly loamy sand.

Vegetation Communities

The study area contains three vegetation communities; Riversidean alluvial fan sage scrub (including both intermediate and pioneer phases), southern willow scrub, and emergent wetlands.

Approximately 11.28 acres of RAFSS occur within the study area, including 8.47 acres of the pioneer phase, and 2.81 acres of the intermediate phase. The pioneer RAFSS encompasses the majority of the lower floodplain areas within the study area, as well as disturbed portions of the floodplain slopes, levee berms, and upper bench areas. The intermediate RAFSS is restricted to a few smaller stands occupying portions of the higher slopes and upper bench areas within the study area. These areas are not as susceptible to disturbance from flood waters and do not contain evidence of disturbance from previous flood control maintenance. Dominant plant species characterizing the pioneer RAFSS within the study area include California buckwheat, deerweed (*Lotus scoparius*), brittlebush (*Encelia farinosa*), and mule fat (*Baccharis salicifolia*). Dominant plant species within the intermediate RAFSS include California buckwheat, California

sagebrush (*Artemisia californica*), and shiny-leaf yerba santa. Better quality RAFSS continues further to the north and south within the historic floodplain for City Creek.

Approximately 0.69 acre of southern willow scrub occurs within the study area. During the vegetation mapping survey this community was present as narrow stands within the study area primarily confined to areas immediately adjacent to the active (wetted) channel for City Creek. Dominant tree layer species include arroyo willow (*Salix lasiolepis*) and Fremont cottonwood; dominant shrub layer species include mule fat and sandbar willow (*Salix exigua*); and, dominant herbaceous layer species include stinging nettle (*Urtica dioica*), California mugwort (*Artemisia douglasiana*), wide-throated yellow-monkeyflower (*Mimulis brevipes*), many-flowered monkeyflower (*Mimulus floribundus*), and rabbit's foot grass (*Polypogon monspeliensis*). A number of scattered salt cedar (*Tamarix* sp.), tree tobacco (*Nicotiana glauca*), and castor bean (*Ricinus communis*) occur throughout the community within the study area as well.

A single, approximately 0.01 acre stand of emergent wetland occurs within the central portions of the study area. The small stand of emergent wetland occurs within an upper bench for the City Creek floodplain, and is situated within a low spot immediately north and upstream from an existing culvert. Because this wetland is situated well above the flowline and thalweg for City Creek, the primary water source for this small wetland is presumed to be urban runoff and nuisance flows discharging from an existing catch basin and storm drain outfall for Base Line. Dominant plant species observed within the emergent wetland include common cattail (*Typha latifolia*), mule fat (*Baccharis salicifolia*), and umbrella sedge (*Cyperus eragrostis*).

Regulatory Framework

Federally listed species are protected under the federal Endangered Species Act (FESA) and regulations related to the FESA are enforced by the U.S. Fish and Wildlife Service (USFWS). State-listed species are protected under the California Endangered Species Act (CESA) and these regulations are enforced by the California Department of Fish and Game (CDFG). CDFG may also designate a species as a Species of Special Concern because of local and/or statewide population declines. California's Native Plant Protection Act (NPPA) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants under Fish and Game Code Sections 1900-1913. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFG at least 10 days in advance of any change in land use that would adversely impact listed plants. This requirement allows CDFG to salvage listed plant species that would otherwise be destroyed. Additionally, local government agencies or watch groups may provide a list of species considered to be locally-important. The California Native Plant Society (CNPS) maintains a list of plants considered to be sensitive which are generally considered during the environmental review process. Guidelines for the

implementation of the California Environmental Quality Act (CEQA) provide that a species be considered endangered or "rare" regardless of appearance on a formal list. CEQA requires that any impacts deemed significant must be mitigated.

Methodology

Analysis of sensitive plants potentially occurring on the study area began with a thorough review of relevant literature followed by the focused survey.

Literature Review

Prior to the field visit, reviewed available literature for all species targeted during the survey effort. Information gathered included species listing and recovery status, morphology, life history and habitat requirements, historic and current distribution, threats, special biological considerations and known locations of individuals and populations that have been recorded in the region. The literature review included a review of field guides, web sites, recovery plans, species databases, and Geographic Information Systems (GIS) data. Known recorded locations of the target species were queried using the Consortium of California Herbarium database (Consortium 2009), the California Natural Diversity Database (CNDDB 2009), the California Native Plant Society Electronic Inventory (CNPS 2009), and the Calflora Plant Observation Library (Calflora 2009). A complete list of references is included at the end of this report

Field Survey

PBS&J biologist Marnie McKernan conducted focused plant surveys of the study area on May 9, 2009, June 10, 2009 and on July 21, 2009. Transects were walked on foot over the entire project site, spaced to allow 100 percent visual coverage of the site.

Surveys were conducted according to recent protocols and guidelines that have been approved and recommended by the U.S. Fish and Wildlife Service (USFWS; 1996), California Department of Fish and Game (CDFG; 2000), California Native Plant Society (CNPS; 2001), and other respected sources (Cypher 2002). Only special status species with known blooming periods during the time of the survey were targeted during the effort. Blooming periods for target species were confirmed in the region using available sources (CNPS 2009). The entire survey area was surveyed on foot and by focal observations to obtain a complete botanical inventory and specifically locate and identify any target species.

All specimens observed during the survey were identified to the appropriate taxonomic level necessary to determine whether or not they are rare, threatened, or endangered. Specimens not identified to the species level in the field were pulled and later identified in the office using taxonomic guides and other resources. All collecting was conducted according to recognized collecting guidelines and documentation techniques for ethical collecting (CNPS 2001). All plant

species names in this report were derived from Hickman (1993) and Jepson (2009). Nomenclature of vegetation communities were derived from Holland (1986), Sawyer and Keeler-Wolf (1995), and CDFG (2009).

Literature Review Results

Nine sensitive plant species were determined to have potential to occur in the study areas based on habitat present and locality data from the above referenced sources. Table 1 below provides a summary of each species, its status, and habitat requirements. Table 2 below provides information provided in the CNDDB for the sensitive plant species that occur within 5 miles of the site.

Table 1: Summary of Sensitive Plants with the Potential to Occur on Site

Common Name	Scientific Name	Status	Habitat	Blooming Period
Santa Ana River Woollystar	*Eriastrum densifolium* ssp. *sanctorum*	FE, SE CNPS 1B.1	Coastal scrub, alluvial fan, sandy or gravelly soils.	June - September
Slender-horned spineflower	*Dodecahema leptoceras*	FE, SE CNPS 1B.1	Coastal scrub, chaparral in sandy soils on river floodplain or terraced fluvial deposits.	April – June
Plummer's mariposa lily	*Calochortus plummerae*	CNPS 1B.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grasslands.	May-July
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	CNPS 1B.1	Chaparral, coastal scrub in sandy soils.	April-June
Parish's bush mallow	*Malacothamnus parishii*	CNPS 1A	Chaparral, coastal scrub.	June-July
Mesa horkelia	*Horkelia brevifolia*	CNPS 1B.1	Chaparral, coastal scrub in sandy or gravelly soils.	Feb-July
Robin's pepper-grass	*Lepidium virginicum var. robinsonii*	CNPS 1B.2	Chaparral, coastal scrub with dry soils	Jan-July
California satintail	*Imperata brevifolia*	CNPS 2.1	Chaparral, coastal scrub, wetland-riparian	Sep-May
Parish's gooseberry	*Ribes divaricatum var. parishii*	CNPS 1A	Willow swales in riparian woodlands	Feb-April

U.S. Fish and Wildlife Service
FE Federal Endangered
FT Federal Threatened
FC Federal Candidate

California Department of Fish and Game
SE State Endangered
ST State Threatened
SR State Rare
CSC California Species of Concern

California Native Plant Society (CNPS):
List 1B = rare, threatened, or endangered in California and elsewhere.
List 2 = rare, threatened, or endangered in California, but more common elsewhere.
List 4 = limited distribution (Watch List).
***Threat Code*:**
.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

Table 2: CNDDB Information for Plant Species within 3.5 Miles of the Project Site

Plant	Relation to Project Site	Information on Occurrence
Santa Ana River woollystar	Along Bledsoe Creek, and both sides of Boulder Avenue	About 50 plants seen in 1985. Unknown how many plants seen in 1988; 110 plants on east side of Boulder Avenue in 1994. 12 plants documented on west side of Boulder Avenue in 2006.
Santa Ana River woollystar	1 mile south of site	Santa Ana River wash; floodplain of the Santa Ana River, north of Redlands. Huge area of subpopulations, from approximately Norton Air Force Base East to Greenspot Road. Thousands of plants seen in 1984-1986. Some plants transplanted as mitigation for Hwy 30. Over 1,000 plants seen in 1999.
Slender-horned spineflower	1.5 miles south of site	East and west sides of Highway 30: 3 populations in 1985, West side with 2 populations: 100 plants and 14 plants. Hundreds in third population on East side. Not counted in 1990. Extant, but not counted in 1992. 66-70 plants in 1998
Slender-horned spineflower	2 miles southeast	Upper Santa Ana Wash; east of church street. 150 200 plants in 1988. 1,100+ plants observed in 4 sub-populations in 1992. Site is leased to gravel mining
Slender-horned spineflower	2.5 miles southeast	Santa Ana River Wash; approximately 250 plants in 1990. 102 plants observed by in 1992. Site is owned by gravel mining company. Company is aware of this site.
Slender-horned spineflower	2.8 miles southeast	Santa Ana River wash. 95 plants in 1990.
Parry's spineflower	2.2 miles southeast	Santa Ana River wash, one colony mapped in this area in 1991. 1888 collection attributed to this site.
Parry's spineflower	2.5 miles southeast	Santa Ana River wash, one colony mapped in this area in 1991. Old collections by Jepson and Parish attributed to this site.
Parry's spineflower	2.7-3 miles southeast	Santa Ana River wash, 17 colonies mapped in 1991, but area likely holds a more extensive population of this species.
Plummer's mariposa lily	3.5 miles southeast	Santa Ana River wash, between East Highlands and Mentone. Documented in 1995, no additional information
Parish's bush mallow	2 miles south of site	Mapped as non-specific polygon in the Santa Ana River wash in 1895. This is the only known occurrence for this taxon.

Focused Survey Results

The focused sensitive plant surveys conducted during spring and summer of 2009 resulted in negative finding. A know occurrence of the federal endangered Santa Ana River woolly star occurs approximately .25 mile south of the study area on the west side of Boulder Avenue and is far outside the APE for the Base Line Bridge Replacement project.

Conclusions

In conclusion, the spring 2009 sensitive plant surveys resulted in negative findings therefore impacts to sensitive plants are not expected from the proposed project.

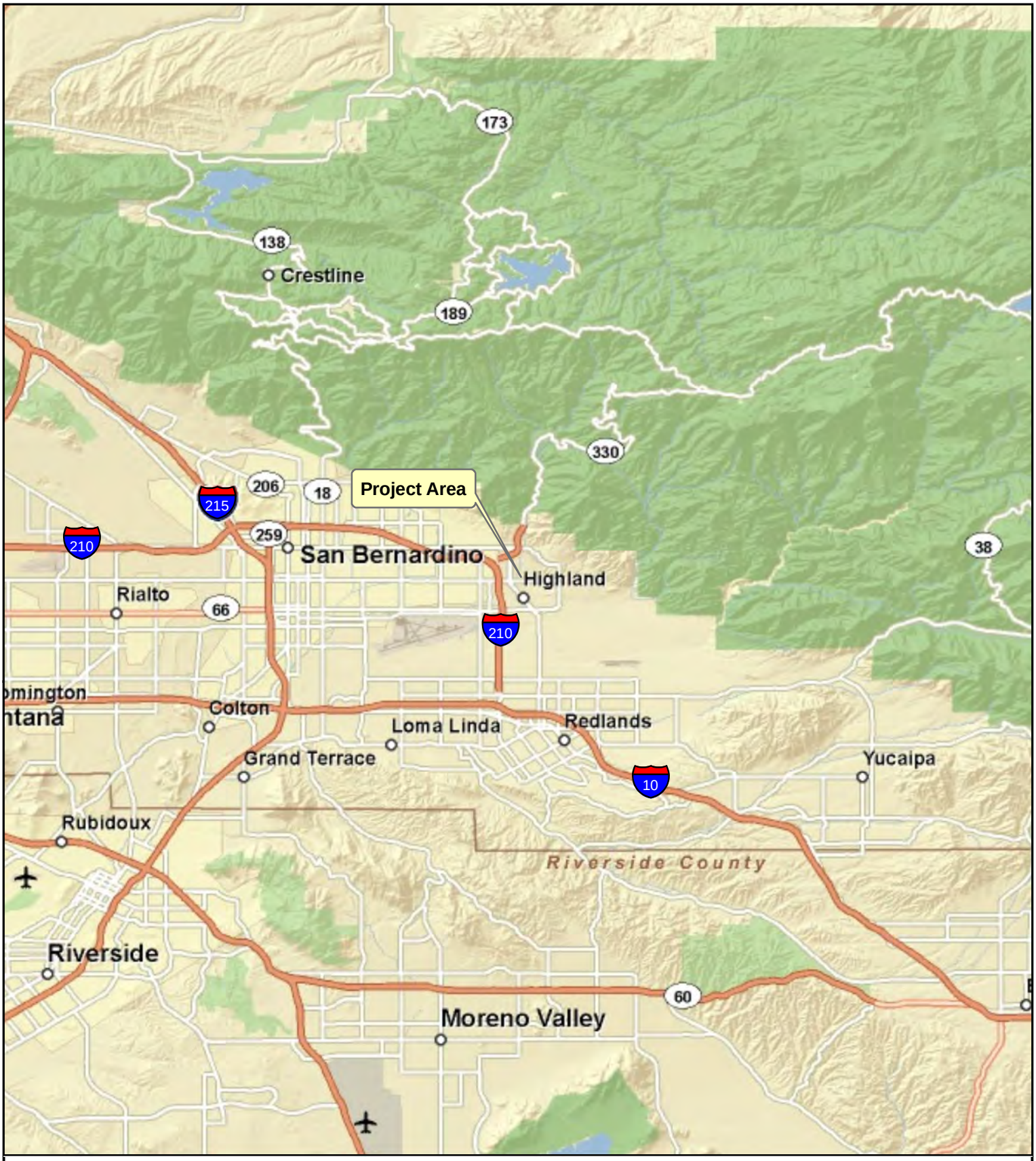
If you have any questions or comments regarding this letter, please do not hesitate to contact me at 909.384.2147

Sincerely,

Marnie S. McKernan

Marnie S. McKernan
Senior Scientist
PBS&J

Attachments: Exhibit 1: Site Vicinity Map
Exhibit 2: Site Location Map
Exhibit 3: Survey Area Map
Exhibit 4: Vegetation Communities Map
Floral Compendium



Source: ESRI StreetMap World 2D.

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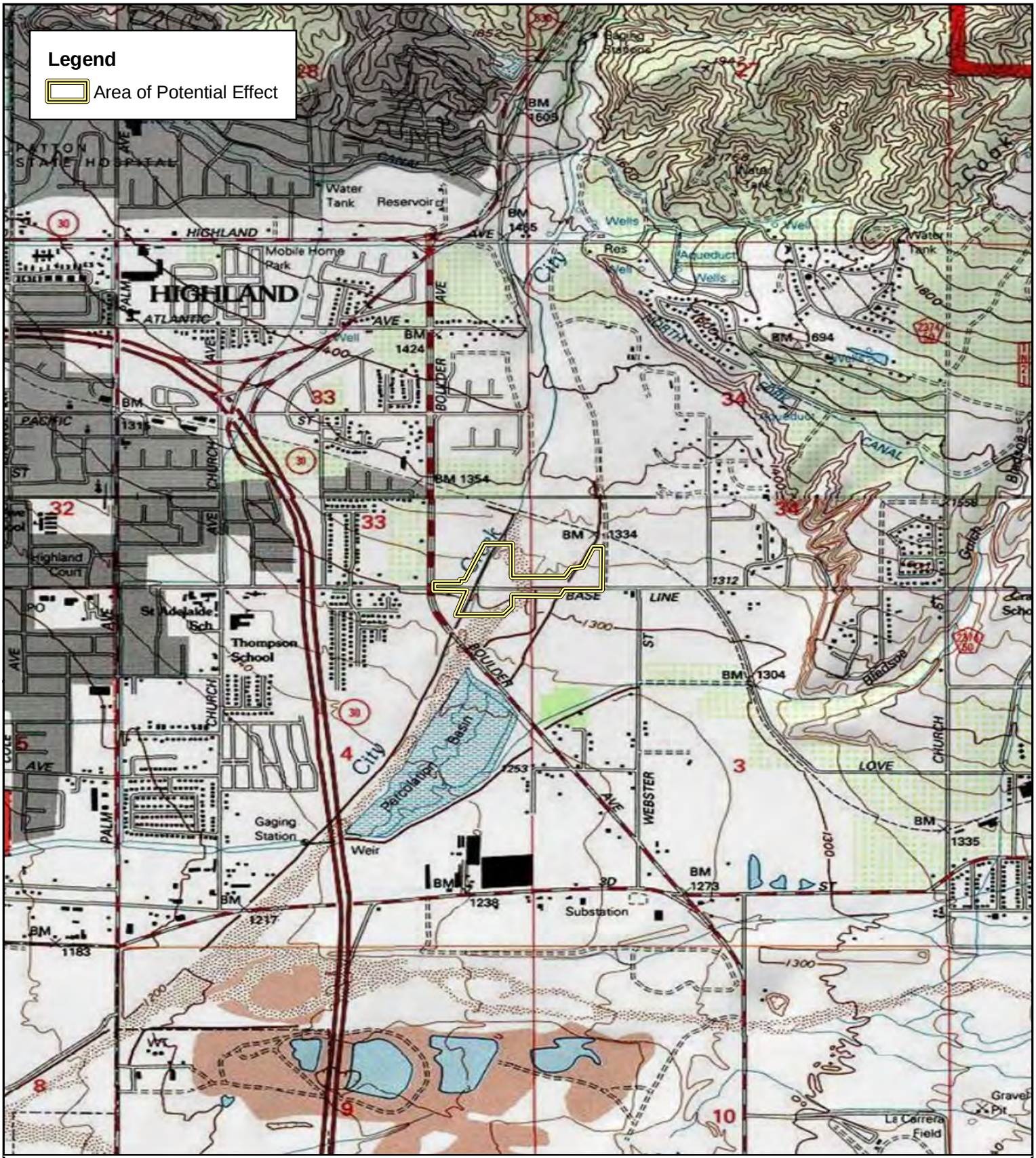
1 in = 4 miles

0 2 4 8 Miles

Exhibit 1
Regional Location Map

100006490 - 092209 | 1_FSPS_Regional.mxd

FOCUSED SENSITIVE PLANT SURVEY
BASE LINE BRIDGE REPLACEMENT PROJECT



Source: National Geographic TOPO!.

N
W E
S

1 in = 2,000 feet

0 1,000 2,000 4,000 Feet

Exhibit 2
Local Vicinity Map
Topographic Base

100006490 - 092209 | 2_FSPS_Topo.mxd

FOCUSED SENSITIVE PLANT SURVEY
BASE LINE BRIDGE REPLACEMENT PROJECT



Source: San Bernardino County.

N
W E
S

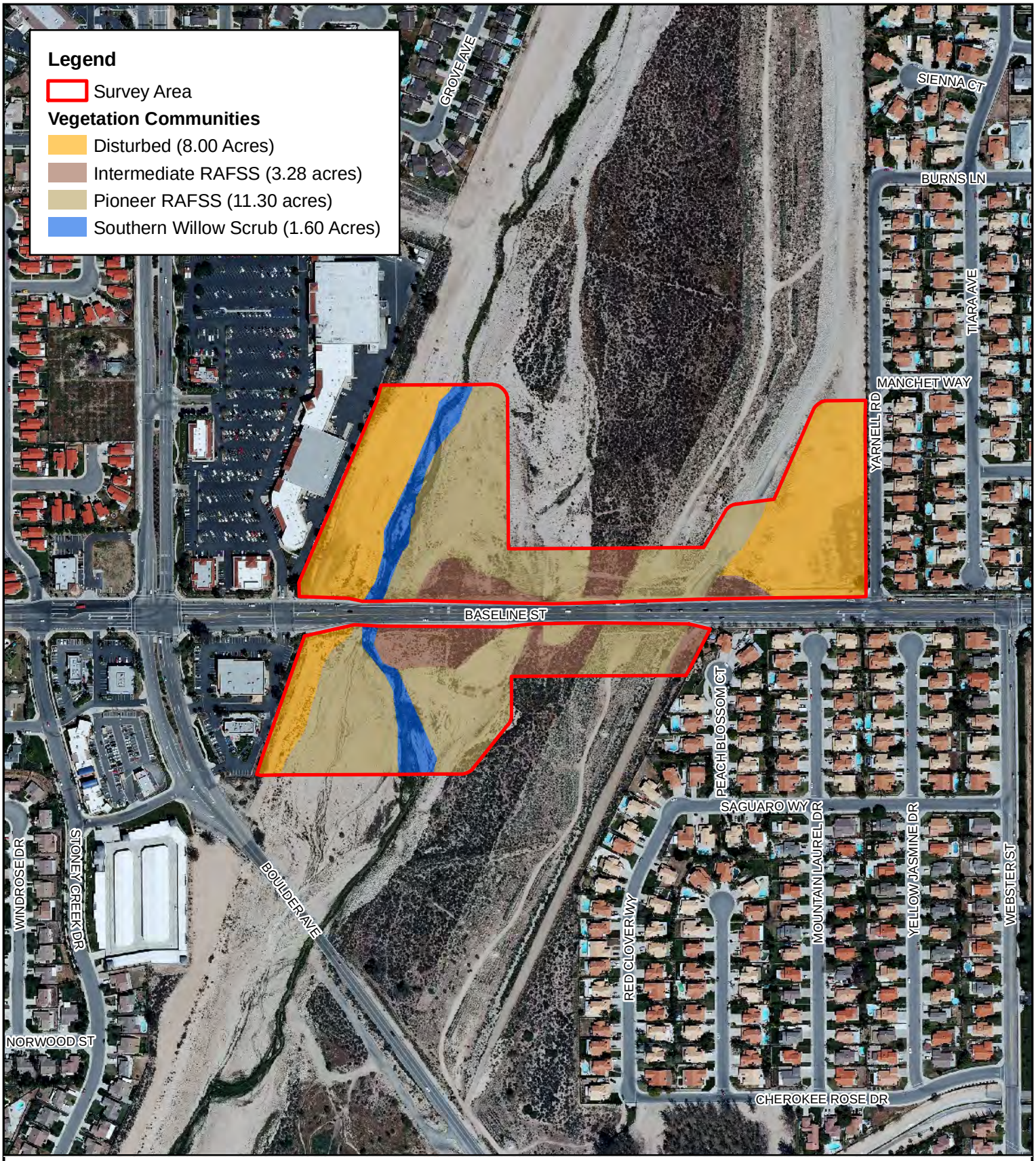
1 in = 400 feet

0 200 400 800 Feet

Exhibit 3
Survey Areas

100006490 - 092209 | 3_FSPS_Survey.mxd

FOCUSED SENSITIVE PLANT SURVEY
BASE LINE BRIDGE REPLACEMENT PROJECT



Source: San Bernardino County.

N
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S

1 in = 400 feet

0 200 400 800 Feet

Exhibit 4
Vegetation Map

100006490 - 092209 | 4_CAGN_Veg.mxd

FOCUSED SENSITIVE PLANT SURVEY
BASE LINE BRIDGE REPLACEMENT PROJECT

FLORAL COMPENDIUM

ANGIOSPERMAE: DICOTYLEDONES	DICOT FLOWERING PLANTS
Asteraceae	**Sunflower family**
Artemisia californica	California sagebrush
Artemesia douglasiana	Mugwort
Baccharis salicifolia	Mulefat
**Centaurea melitensis*	Tocalote
Ericameria pinifolia	Pinebush
Helianthus annuus	Annual sunflower
Heterotheca grandiflora	Telegraph weed
Lepidospartum squamatum	Scale-broom
Sonchus oleraceus	Sow-thistle
Boraginaceae	**Borage family**
Amsinckia menziesii	Fiddleneck
Cryptantha intermedia	Popcorn flower
Cryptantha micrantha	Tiny popcorn flower
Heliotropium curassivicum	Saltmarsh heliotrope
Brassicaceae	**Mustard family**
**Hirschfeldia incana*	Short-podded mustard
Lepidium sp.	Pepper grass
Cactaceae	**Cactus family**
Opuntia littoralis	Coastal prickly pear
Caprifoliaceae	**Honeysuckle family**
Sambucus mexicana	Mexican elderberry
Chenopodiaceae	**Goosefoot Family**
Salsola tragus	Russian thistle
Cucurbitaceae	**Gourd family**
Cucurbita palmata	Coyote melon
Cuscutaceae	**Dodder family**
Cuscuta californica	California dodder
Euphorbiaceae	**Spurge family**
Croton californica	Croton
Ricinus communis	Castor bean

FLORAL COMPENDIUM (CONT.)

Fabaceae	**Pea family**
Lotus scoparius	Deer weed
**Melilotus officinalis*	Yellow sweet clover
Geraniaceae	**Geranium family**
**Erodium cicutarium*	Red-stemmed filaree
Hydrophyllaceae	**Waterleaf family**
Eriodictyon crassifolium	Thick-leaved yerba santa
Nemophila menziesii	Baby blue-eyes
Phacelia distans	Fern leaf phacelia
Lamiaceae	**Mint family**
**Marrubium vulgare*	Horehound
Salvia apiana	White sage
Salvia columbariae	Chia
Salvia mellifera	Black sage
Onagraceae	**Evening primrose family**
Camissonia bistorta	California suncup
Camissonia brevipes	Yellow cups
Platanaceae	**Sycamore family**
Platanus racemosa	Sycamore
Polygonaceae	**Buckwheat family**
Chorizanthe staticoides	Turkish rugging
Eriogonum fasciculatum	California buckwheat
Rumex crispus	Curly dock
Polemoniaceae	**Phlox Family**
Eriastrum sapphirinum	Saphire eriastrum
Rubiaceae	**Madder family**
Solanaceae	Nightshade family
Datura wrightii	Jimson weed
Solanum xanti	Deadly nightshade
Salicaceae	**Willow Family**
Populus fremontii	Freemont's cottonwood
Salix exigua	Sandbar willow
Salix lasiolepis	Arroyo willow

FLORAL COMPENDIUM (CONT.)

Scrophulariaceae	**Figwort Family**
Mimulis brevipes	Wide-throated monkeyflower
Mimulus floribundus	Many-flowered monkeyflower
Solanaceae	**Nightshade Family**
Nicotiana glauca	Tree tobacco
Tamaricaceae	**Tamarisk Family**
Tamarix aphylla	Salt cedar
Urticaceae	**Nettle Family**
Urtica dioica	Nettle

ANGIOSPERMAE: MONOCOTYLEDONAE	**MONOCOT FLOWERING PLANTS**
Cyperaceae	**Sedge Family**
Cyperus eragrostis	Umbrella sedge
Liliaceae	**Lily family**
Dichelostema pulchellum	Blue dicks
Yucca whipplei	Whipple's yucca
Poaceae	**Grass family**
**Avena barbata*	Slender wild oats
Bromus carinatus	California brome
**Bromus diandrus*	Ripgut brome
**Bromus madritensis*	Red brome
**Bromus mollis*	Soft chess
**Hordeum murinum*	Wild barley
**Polypogon monspeliensis*	Rabbit's foot grass
Typhaceae	**Cattail Family**
Typha latifolia	Common cattail

* denotes non-native species

Appendix D – Coastal California Gnatcatcher Focused Surveys (2016 and 2009)

2016 Focused Suvey

LSA ASSOCIATES, INC.
1500 IOWA AVENUE, SUITE 200
RIVERSIDE, CALIFORNIA 92507
951.781.9310 TEL
951.781.4277 FAX
BERKELEY
CARLSBAD
FRESNO
IRVINE
PALM SPRINGS
PT. RICHMOND
ROCKLIN
SAN LUIS OBISPO

July 5, 2016

Ms. Stacey Love
U.S. Fish and Wildlife Service
Carlsbad Field Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Ms. Esther Burkett
Nongame Wildlife Program
California Department of Fish and Wildlife
1812 Ninth Street
Sacramento, California 95811

Subject: Results of a Focused California Gnatcatcher Survey on the Baseline Bridge Replacement Project in the City of Highland (LSA Project No. LIM0801)

Dear Ms. Love and Ms. Burkett:

This letter provides the results of a focused presence/absence survey for California gnatcatcher (*Polioptila californica californica*) by LSA Associates, Inc. (LSA) for the above-named project located at Baseline Road Bridge over City Creek in the City of Highland, San Bernardino County, California.

STUDY AREA

The study area is 21.17 acres and is located in Township 1 North, Range 3 West, Sections 33 and 34 and Township 1 South, Range 3 West, Sections 3 and 4 as shown on the United States Geological Survey (USGS) *Redlands, California* 7.5-minute topographic quadrangle (attached Figure 1). The study area includes City Creek and adjacent upland areas. The elevation at the site varies from approximately 1,280 to 1,330 feet above mean sea level. The predominant land cover consists of developed areas and ornamental plantings, Riversidean alluvial fan sage scrub, willow scrub, and non-native grassland. There are also areas of unvegetated stream channel.

METHODS

The California gnatcatcher survey was conducted by LSA biologists Stan Spencer and Denise Woodard under LSA Federal 10(a)(1)(A) Permit TE-777965 and a California Department of Fish and Wildlife (CDFW) attachment to Scientific Collecting Permit SC-000777 providing Conditions for Research on Listed Birds (November 29, 2012–January 31, 2017). The survey was conducted in accordance with *Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/ Absence Survey Protocol* (U.S. Fish and Wildlife Service [USFWS], revised July 28, 1997). The survey consisted of six site visits during the breeding season. The entire site was surveyed. Average survey rate was about 9 acres per hour. Taped vocalizations were used periodically during each site visit. Table A provides the survey personnel, dates, and weather conditions for each site visit.

Table A: Survey Personnel, Dates and Weather Conditions

Personnel	Date	Time (24-hour) Start/Finish	Cloud Cover (%) Start/Finish	Wind (mph) Start/Finish	Temperature (°F) Start/Finish
Denise Woodard	4/28/16	0750/1000	100/100	1–3/1–3	52/55
Stan Spencer	5/5/16	0930/1200	100/100	1–3/1–3	61/67
Stan Spencer	5/12/16	0800/1030	0/0	1–3/1–3	75/83
Stan Spencer	5/19/16	0730/1035	10/10	1–3/1–3	65/78
Denise Woodard	5/26/16	0720/0930	100/100	3–5/3–5	57/62
Stan Spencer	6/2/16	0810/1050	0/0	1–3/1–3	72/86

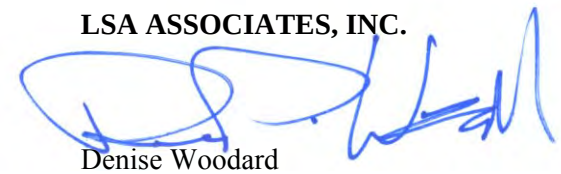
RESULTS

No gnatcatchers were detected during the survey. An individual male least Bell's vireo (*Vireo bellii pusillus*) was observed on two occasions within the willow scrub habitat along City Creek (see attached Figure 2 and CDFW California Native Species Field Survey Form). The first observation occurred during the June 2, 2016, survey, and the second occurred on June 17, 2016, by Denise Woodard, while conducting other biological studies on the site. A list of bird species observed during the focused survey is attached.

Please contact me if you require any additional information.

Sincerely,

LSA ASSOCIATES, INC.



Denise Woodard
Associate/Senior Biologist

Attachments: Figure 1: Regional and Project Location
Figure 2: Survey Area and Least Bell's Vireo Observation
California Native Species Field Survey Form
List of Bird Species Observed

cc: Richard Erickson, LSA Associates, Inc.

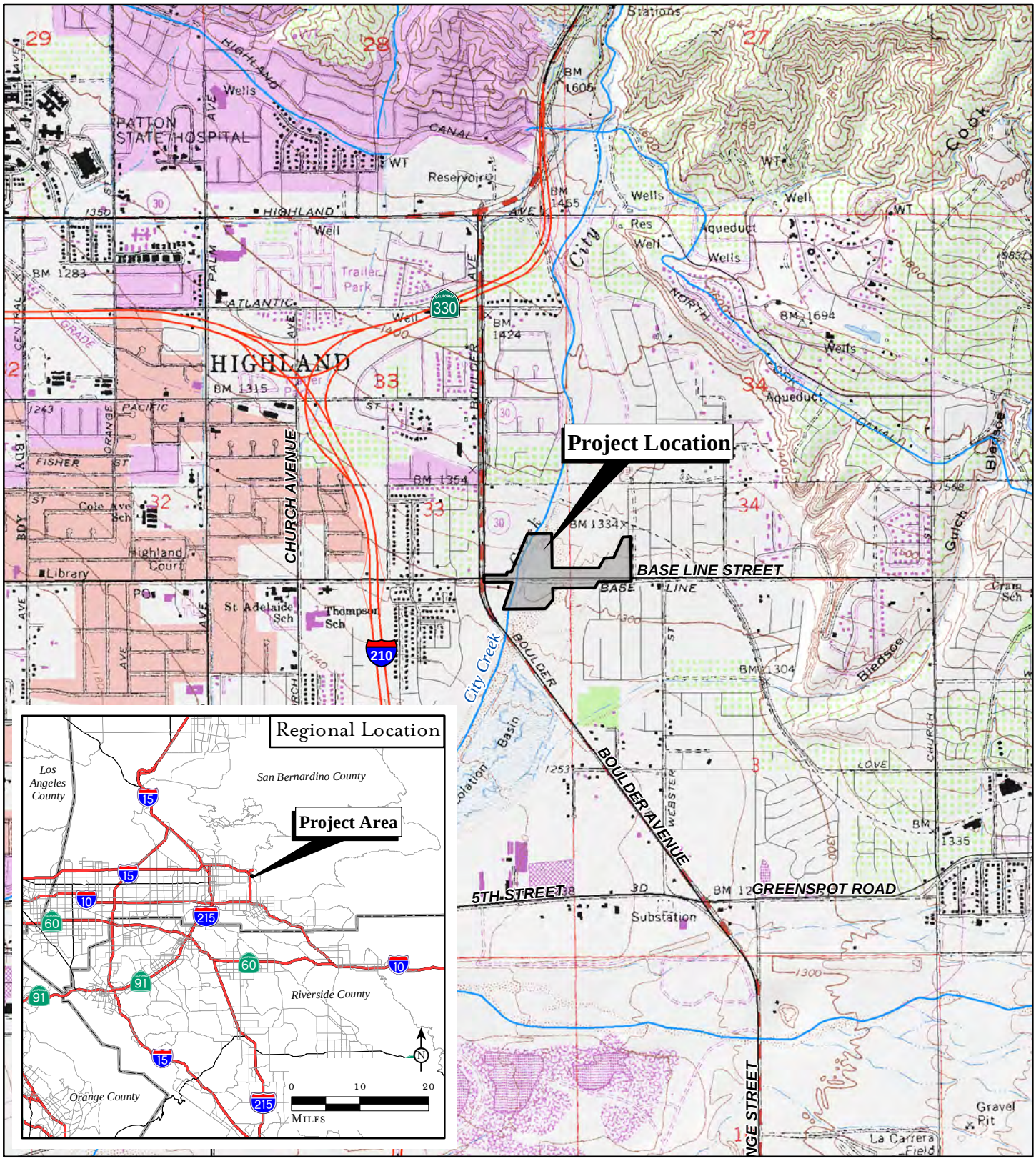


FIGURE 1

0 1,000 2,000 FEET

0 304.8 609.6 METERS

SOURCE: USGS 7.5' Quads: Redlands and Harrison Mtn. (1988), CA; Thomas Bros., 2009.

I:\LIM0801\Reports\CAGN\Fig1_reg_loc.mxd (6/22/2016)

Baseline Bridge Over City Creek

Regional and Project Location



LSA

LEGEND

Study Area

Least Bell's Vireo Observation Area

N

0 150 300

FEET

SOURCE: Bing Aerial, 2016.

I:\LIM0801\Reports\CAGN\fig2_StudyArea.mxd (6/22/2016)

FIGURE 2

Base Line Bridge Over City Creek (Replace)

Study Area and
Least Bell's Vireo Observation Area

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95814
Fax: (916) 324-0475 email: WHDAB@dfg.ca.gov

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work: 6 - 2 - 16

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Vireo bellii pusillus*

Common Name: least Bell's vireo

Species Found? ❑ Yes ❑ No _____ If not, why?

Total No. Individuals 1 Subsequent Visit? ❑ yes ❑ no
Is this an existing NDDB occurrence? _____ ❑ no ❑ unk.
Yes, Occ. #

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Denise Woodard
Address: 1500 Iowa Avenue, Suite 200
Riverside CA 92507
E-mail Address: denise.woodard@lsa.net
Phone: (951) 781-9310

Plant Information

Phenology: _____ % vegetative _____ % flowering _____ % fruiting

Animal Information

1 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ❑ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

City Creek, north of Baseline Road, City of Highland, San Bernardino County, California

County: San Bernardino Landowner / Mgr.: City of Highland/San Bernardino Co Flood Control
Quad Name: Redlands Elevation: ~1280
T____ R ___ Sec ____ , ____ ¼ of _____ ¼, Meridian: **H M S** Source of Coordinates (GPS, topo. map & type): _____
T____ R ___ Sec ____ , ____ ¼ of _____ ¼, Meridian: **H M S** GPS Make & Model _____
Datum: NAD27 NAD83 WGS84 Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10 UTM Zone 11 *OR* Geographic (Latitude & Longitude)
Coordinates: Easting/Longitude _____ Northing/Latitude _____

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Willow scrub within City Creek dominated by arroyo willow (Salix lasiolepis) and mule fat (Baccharis salicifolia). Adjacent habitats include ornamental plantings, Riversidean alluvial fan sage scrub, and non-native grassland. The mapped soils in the undeveloped portions of the survey area are Soboba stony loamy sand and psamments and fluvents.

Other rare species? No

Site Information Overall site quality: ❑ Excellent ❑ Good ❑ Fair ❑ Poor

Current / surrounding land use: Development east and west of City Creek, and undeveloped lands north and south within City Creek.

Visible disturbances: Earth moving activities associated with previous large storm events.

Threats: Large storm events.

Comments:

Determination: *(check one or more, and fill in blanks)*
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
Other: LSA Associates, Inc. permitted biologist

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? ☑ yes ☐ no

List of Bird Species Observed

Scientific Name	Common Name
AVES	**BIRDS**
Anatidae	**Swans, Geese, and Ducks**
Anas platyrhynchos	Mallard
Accipitridae	**Kites, Hawks, and Eagles**
Accipiter cooperii	Cooper's hawk
Charadriidae	**Plovers and Lapwings**
Charadrius vociferus	Killdeer
Columbidae	**Pigeons and Doves**
Zenaida macroura	Mourning dove
Apodidae	**Swifts**
Aeronautes saxatalis	White-throated swift
Trochilidae	**Hummingbirds**
Archilochus alexandri	Black-chinned hummingbird
Calypte anna	Anna's hummingbird
Calypte costae	Costa's hummingbird
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	Black phoebe
Vireonidae	**Vireos**
Vireo bellii pusillus	Least Bell's vireo
Corvidae	**Crows and Ravens**
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Hirundinidae	**Swallows**
Stelgidopteryx serripennis	Northern rough-winged swallow
Aegithalidae	**Bushtits**
Psaltriparus minimus	Bushtit
Troglodytidae	**Wrens**
Salpinctes obsoletus	Rock wren
Thryomanes bewickii	Bewick's wren
Mimidae	**Mockingbirds and Thrashers**
Mimus polyglottos	Northern mockingbird
Ptilogonatidae	**Silky flycatchers**
Phainopepla nitens	Phainopepla
Geothlypis trichas	Common yellowthroat
Cardellina pusilla	Wilson's warbler

List of Bird Species Observed

Scientific Name	Common Name
Emberizidae	**Emberizines**
Pipilo maculatus	Spotted towhee
Melozone crissalis	California towhee
Melospiza melodia	Song sparrow
Cardinalidae	**Cardinals, Grosbeaks, and Allies**
Passerina caerulea	Blue grosbeak
Icteridae	**Blackbirds, Orioles and Allies**
Icterus cucullatus	Hooded oriole
Fringillidae	**Finches**
Carpodacus mexicanus	House finch
Spinus psaltria	Lesser goldfinch

2009 Focused Survey

Coastal California Gnatcatcher Focused Survey
Base Line Bridge Replacement Project
City of Highland, San Bernardino County, California

Prepared for:

City of Highland
27215 Baseline
Highland, California 92346
909.864.6861

Contact: Ernie Wong/Dennis Barton

Prepared by:

650 East Hospitality Lane, Suite 450
San Bernardino, CA 92408

Contact: Marnie McKernan

September 2, 2009

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Chapter 1 Introduction

1.1 SURVEY PURPOSE

This report describes the findings of focused protocol surveys for the federally-listed threatened coastal California gnatcatcher (*Polioptila californica*) (CAGN). The CAGN is fully protected under the Federal Endangered Species Act of 1973 (FESA). The purpose of the study is to identify the presence/absence of CAGN within the impact areas and adjacent buffer of the proposed Base Line Bridge Replacement Project. While the focus of this survey was CAGN, the presence of any observed sensitive plant or animal species was also recorded.

1.2 SITE LOCATION

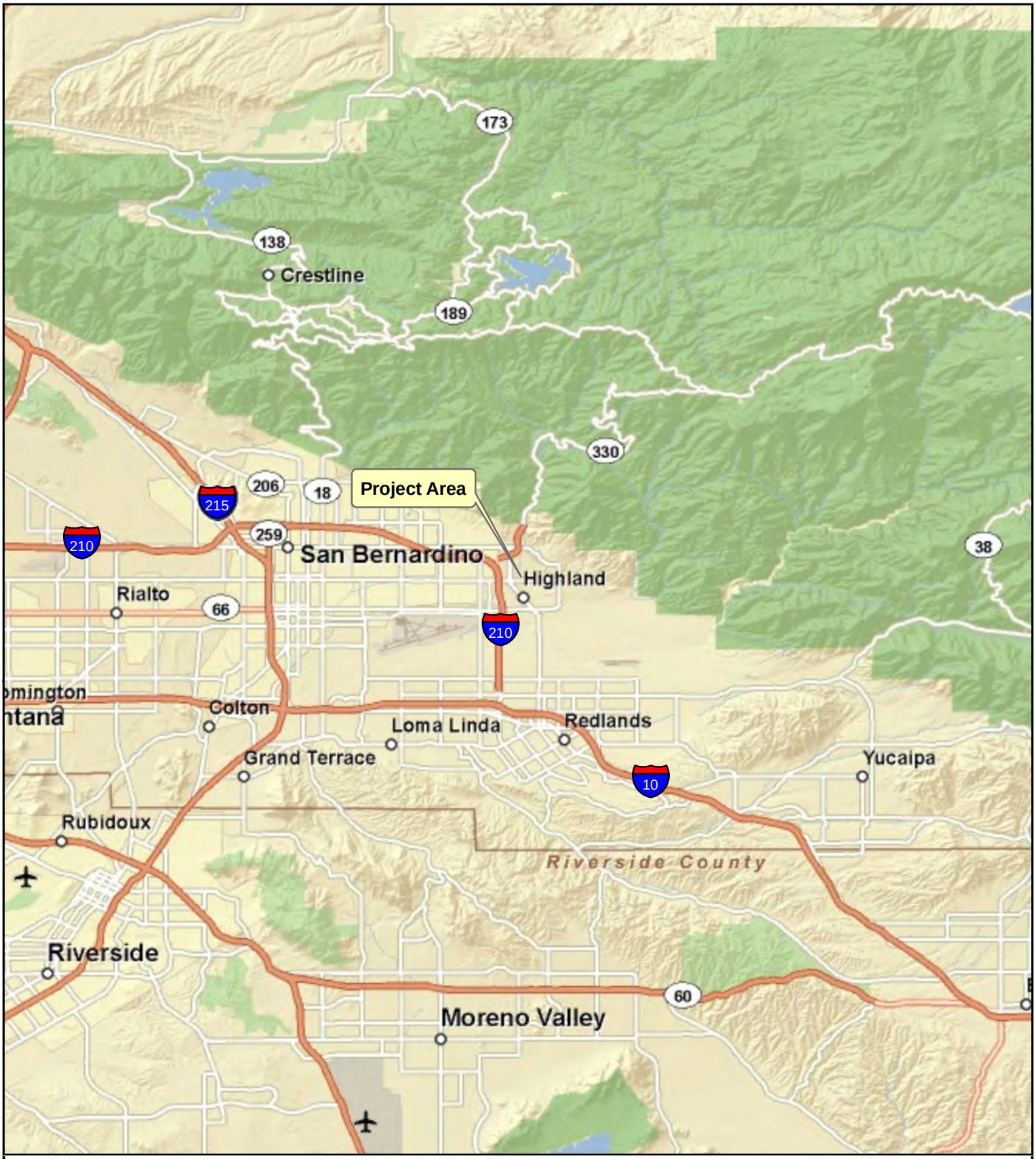
The study area is generally located north and south of Base Line in the City of Highland, San Bernardino County, California (Exhibit 1). It is specifically located on the eastern benches of City Creek. The site is depicted on the Redlands, United States Geological Survey (USGS) 7.5-minute topographic quadrangle map in Township 1 North, Range 3 West, Sections 33 & 34 and Township 1 South, Range 3 West, Sections 3 & 4 (Exhibit 2).

1.3 TARGET SPECIES

The California gnatcatcher is an obligate resident of coastal sage scrub in southern California and northwestern Baja California (Atwood and Bontrager 2001). This small, non-migratory, insectivorous bird nests and forages in moderately dense stands of coastal sage scrub occurring on arid hillsides, mesas, and in washes. It typically occurs below 950 feet elevation and on slopes less than 40%, but gnatcatchers have been observed at elevations greater than 2,000 feet. The species is threatened primarily by loss, degradation, and fragmentation of coastal sage scrub habitat and is also impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism

The breeding season of the coastal California gnatcatcher extends from about February 15 through August 30, with the peak of nesting activity occurring from mid-March through mid-May. Incubation takes 14 days. The young fledge at 8 to 13 days of age and are dependent upon their parents for as little as three to four weeks (ERCE 1990), but fledglings may associate with their parents for several months.

.



Source: ESRI StreetMap World 2D.

N
W E
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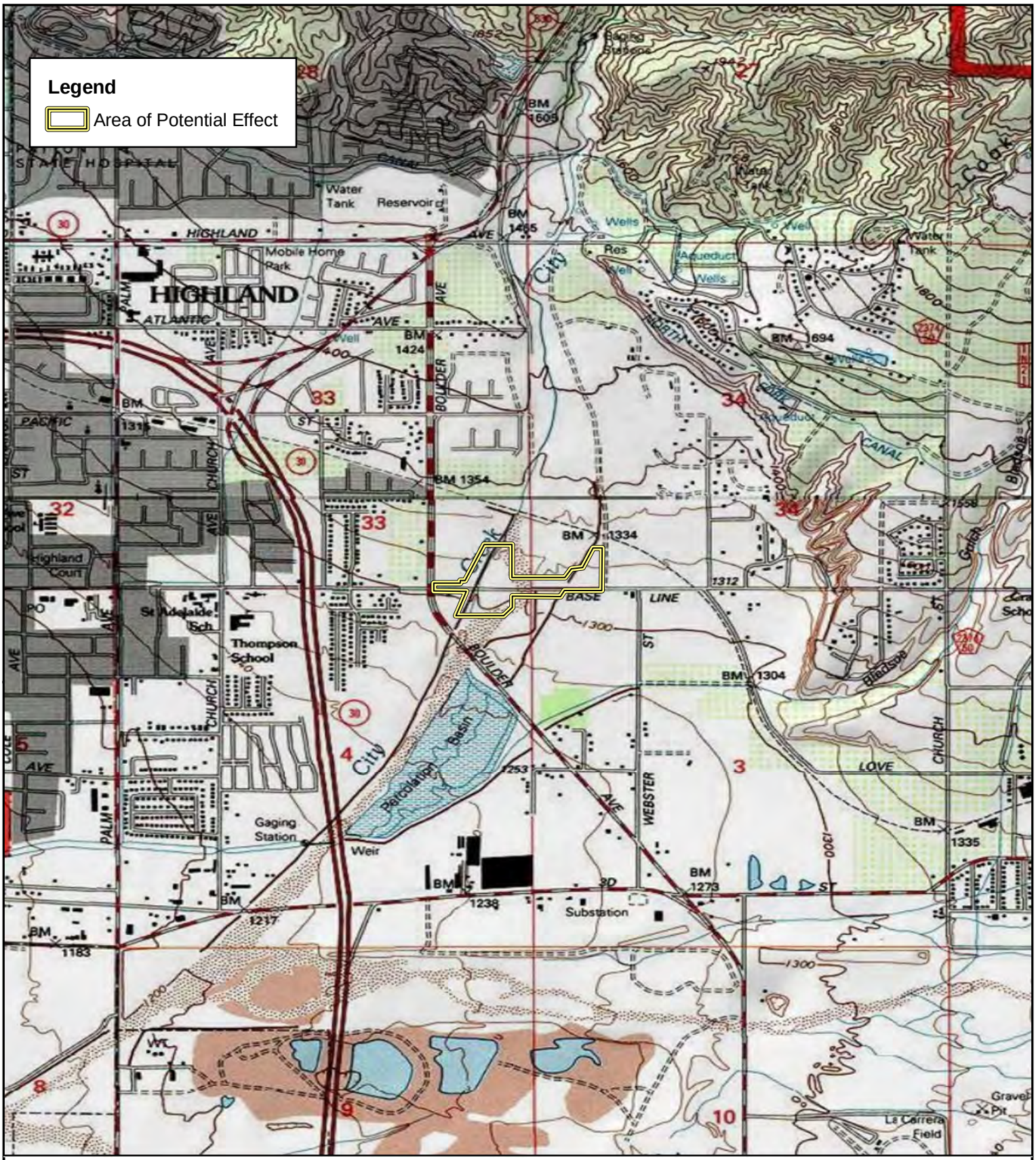
1 in = 4 miles

0 2 4 8 Miles

Exhibit 1
Regional Location Map

100006490 - 092209 | 1_FSPS_Regional.mxd

CAGN SURVEY
BASE LINE BRIDGE REPLACEMENT PROJECT


Legend
Area of Potential Effect
HIGHLAND
Water Tank
Reservoir
Mobile Home Park
Thompson School
St Adelaide Sch
Highland Court
Gaging Station
Weir
Percolation Basin
Substation
Gravel Pit
La Carrera Field
BASE LINE
BOULDER AVE
WEBSTER ST
CHURCH AVE
PALM AVE
PACIFIC ST
ATLANTIC AVE
CANAL
BM 1605
BM 1455
BM 1424
BM 1354
BM 1334
BM 1304
BM 1335
BM 1273
BM 1238
BM 1217
BM 1183
BM 1315
BM 694
1852
1942
1756
1558
1312
1253
1400
1300
1200
1800
1600
City
Cook
Wells
Aqueduct
Res
Water Tank
Gravel Pit
Field
Substation
Weir
Gaging Station
Thompson School
Mobile Home Park
Reservoir
Water Tank
Wells
Aqueduct
Res

Chapter 2 Methodology

All surveys for the federally-listed threatened CAGN were conducted by PBS&J biologist Marnie McKernan under United States Fish and Wildlife Service (USFWS) permit number TE 839211-2. Methods employed were in conformance with USFWS *Coastal California Gnatcatcher Presence/Absence Survey Protocol*, issued July 28, 1997.

Per the approved protocol for the breeding season, six surveys were performed at least 1 week apart, between dawn and 1200 hours. The surveys were conducted within suitable habitat on the benches of City Creek (Exhibit 3).

The biologist slowly walked the survey area, stopping at approximately 50-foot intervals, uttering pishing sounds and playing an audio recording of CAGN vocalizations. The recording was played for several seconds at each interval, followed by a brief pause to listen for a response. If coastal CAGN were noted, additional observations would have included sex, age, breeding status, and behavioral characteristics.

A list of avian species observed during the surveys is provided in Appendix A. Surveys were conducted during appropriate weather conditions. Weather conditions were documented during the surveys and are included in Table 1.

Table 1: Coastal California Gnatcatcher Survey Conditions

Date	Time		Temperature (ºF)		Conditions and % clouds		Wind Speed Average (MPH)		Surveyor
	Begin	End	Begin	End	Begin	End	Begin	End	
3/17/09	0600	1000	54	68	100	10	1-3	1-3	Marnie McKernan
3/24/09	0600	1100	43	66	clear	clear	1-3	1-3	Marnie McKernan
3/31/09	0600	1100	45	71	35	clear	1-3	1-3	Marnie McKernan
4/8/09	0600	1100	50	62	10	clear	1-3	1-3	Marnie McKernan
4/15/00	0600	1030	40	56	100	20	1-3	3-5	Marnie McKernan
4/22/09	0530	1030	50	78	15	clear	1-3	3-5	Marnie McKernan



Source: San Bernardiono County.

N
W E
S

1 in = 500 feet

0 250 500 1,000 Feet

Exhibit 3
Survey Areas

100006490 - 092209 | 3_CAGN_Survey.mxd

CAGN SURVEY
BASE LINE BRIDGE REPLACEMENT PROJECT

Chapter 3 Existing Conditions

3.1 SITE DESCRIPTION

The study area is located within the City Creek drainage system north and south of Base Line in the City of Highland, California. It is bounded by residential and commercial areas to the east and west and by undeveloped land to the north and south.

The elevation within the study area is approximately 1,330 feet above mean sea level. The study area is mapped by the Natural Resource Conservation Service (NRCS) as containing three soils series; Psamments and Fluvents, Soboba stony loamy sand, and Tujunga gravelly loamy sand.

Disturbances within the survey area include dirt roads and trash dumping.

The vegetation in the study area consists of Riversidean alluvial fan sage scrub (RAFSS) plant community. There are both pioneer and intermediate phases of RAFSS onsite. The pioneer phase represents the area that has been planted (revegetated) along the Metropolitan Water District (MWD) feeder line corridor and within the low flow channel east of City Creek. The intermediate succession of RAFSS occurs along the eastern benches that extend the length of City Creek.

A description of this community and its condition within the site is discussed below. This description is based on Holland (1986 and 1992 update).

3.1.1 Riversidean Alluvial Fan Sage Scrub (32.005.02 {32720})

The California Department of Fish and Game (CDFG) lists RAFSS as rare and it is considered a sensitive plant community. CDFG's list of natural communities categorizes plant communities first by general habitat, then as alliances within the general habitat, and finally as associations within alliances. RAFSS is an association within the Riversidean sage scrub (RSS) alliance, which falls within the general habitat type of coastal scrub. RAFSS is an open plant community adapted to the harsh conditions of flooding. It grows on sandy, rocky alluvium deposited by streams that experience infrequent episodes of flooding. Alluvial sage scrub is composed of an assortment of drought-deciduous sub-shrubs and large, evergreen, woody shrubs that are adapted to the periodic and intense episodes of flooding and erosion that occurs along the alluvial fans. Scalebroom (*Lepidospartum squamatum*) generally is regarded as an indicator of Riversidean alluvial scrub (Smith 1980; Hanes et al. 1989). In addition to scalebroom, alluvial scrub typically is composed of white sage (*Salvia apiana*), spiny redberry (*Rhanmus crocea*), buckwheat (*Eriogonum* spp.), our Lord's candle (*Yucca whipplei*), California croton (*Croton californicus*), cholla (*Opuntia* spp.), tarragon (*Artemisia dracunculus*), yerba santa (*Eriodictyon* spp.), mule fat (*Baccharis salicifolia*) and mountain-mahogany (*Cercocarpus betuloides*) (Hanes et al. 1989; Smith 1980).

Areas mapped as pioneer RAFSS are typically sparse, of low stature and low diversity. The present include deerweed (*Lotus scoparius*), California buckwheat, scalebroom, and brittlebush (*Encelia farinosa*).

Areas mapped as intermediate RAFSS are typically moderately dense and consists primarily of subshrubs. Species present include California buckwheat, scalebroom, prickly pear cactus (*Opuntia phaceantha*), California sagebrush (*Artemesia californica*), deerweed, yerba santa (*Eriodictyon trichocalyx* var. *trichocalyx*), and our Lord's candle.



Source: San Bernardino County.

N
W E
S

1 in = 500 feet

0 250 500 1,000 Feet

Exhibit 4
Vegetation Map

100006490 - 092209 | 4_CAGN_Veg.mxd

CAGN SURVEY
BASE LINE BRIDGE REPLACEMENT PROJECT

Chapter 4 Survey Results

No CAGN were observed or heard onsite during the six weeks of focused surveys. It is assumed that this species is absent from the project site at this time. The closest documented occurrence of CAGN to the study area is approximately 1.7 miles southeast in the Santa Ana River.

General avian activity and diversity was high throughout the surveys season, and common avian species expected to occur within the habitat onsite were observed on a regular basis. A list of those species observed is attached in Appendix A: Avian Compendium. Brown-headed cowbirds (*Molothrus ater*), which are considered to be a nest parasite to CAGN and other avian species, were not observed on the site during the course of the surveys.

Several California Species of Special Concern were observed during the focused surveys. These are southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza belli*), coast horned-lizard (*Phrynosoma coronatum blainvillei*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*).

Chapter 5 References

American Ornithologists' Union. June 1998. *The American Ornithologists' Union Checklist of North American Birds*. 7th Edition, American Ornithologists' Union, Washington, DC.

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United States Fish and Wildlife Service (USFWS). 2003. *Federal Register, Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Coastal California Gnatcatcher (Polioptila californica californica) and Determination of Distinct Population Segment for the California gnatcatcher (Polioptila californica); Proposed Rule.* April 24.

United States Fish and Wildlife Service (USFWS). 2007. *Federal Register, Endangered and Threatened Wildlife and Plants; Revised Final Designation of Critical Habitat for the Coastal California Gnatcatcher; Final Rule.* December 19.

United States Geological Survey (USGS). 1967, Photo-revised 1980. *Redlands, California* 7.5-Minute Topographic Quadrangle Map. Department of the Interior. Washington DC: US Government Printing office.

Appendix A: Avian Compendium

AVIAN COMPENDIUM

Accipitridae	**Hawks**
Accipiter cooperii	Cooper's hawk
Buteo lineatus	red-shouldered hawk
Buteo jamaicensis	red-tailed hawk
Falconidae	**Falcons**
Falco sparverius	American kestrel
Phasianidae	**Pheasants and Quails**
Callipepla californica	California quail
Columbidae	**Pigeons and Doves**
Patagioenas fasciata	band-tailed pigeon
Zenaida macroura	mourning dove
Cuculidae	**Cuckoos and Roadrunners**
Geococcyx californianus	greater roadrunner
Caprimulgidae	**Goatsuckers**
Chordeiles acutipennis	lesser nighthawk
Trochilidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Calypte costae	Costa's hummingbird
Picidae	**Woodpeckers**
Colaptes auratus	northern flicker
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus verticalis	western kingbird
Hirundinidae	**Swallows**
Stelgidopteryx serripennis	northern rough-winged swallow
Petrochelidon pyrrhonota	cliff swallow

Corvidae	**Jays and Crows**
Corvus brachyrhynchos	American crow
Aphelocoma coerulescens	western scrub jay
Aegithalidae	**Bushtits**
Psaltriparus minimus	bushtit
Troglodytidae	**Wrens**
Thryomanes bewickii	Bewick's wren
Salpinctes obsoletus	rock wren
Sylviidae	**Gnatcatchers**
Polioptila caerulea	blue-gray gnatcatcher
Mimidae	**Thrashers**
Mimus polyglottos	northern mockingbird
Parulidae	**Warblers**
Vermivora celata	orange-crowned warbler
Dendroica coronata	yellow-rumped warbler
Wilsonia pusilla	Wilson's warbler
Emberizidae	**Towhees and Sparrows**
Pipilo crissalis	California towhee
Aimophila ruficeps canescens	southern rufous-crowned sparrow
Amphispiza belli	Bell's sage sparrow
Chondestes grammacus	lark sparrow
Melospiza melodia	song sparrow
Zonotrichia leucophrys	white-crowned sparrow
Icteridae	**Blackbirds**
Euphagus cyanocephalus	Brewer's blackbird
Icterus cucullatus	hooded oriole
Fringillidae	**Finches**
Carpodacus mexicanus	house finch
Carduelis tristis	American goldfinch
Passeridae	**Old World Sparrows**
**Passer domesticus*	house sparrow

Appendix E – San Bernardino Kangaroo Rat Focused Trapping Survey Report (2009)

San Bernardino Kangaroo Rat Presence/Absence Trapping Surveys Base Line Bridge Replacement Project

Submitted to:

City of Highland
27215 Base Line Road
Highland, CA 92346

Contact: Dennis Barton

Submitted by:

650 E. Hospitality Lane, Suite 450
San Bernardino, CA 92408

Contact: Marnie S. McKernan,

July 22, 2009

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Chapter 1 Introduction and Summary of Findings

PBS&J has prepared this report for the City of Highland to document the presence or absence of the federally endangered San Bernardino kangaroo rat (*Dipodomys merriami parvus*) (SBKR) within the Area of Potential Effect of the proposed Base Line Road Bridge Replacement Project.

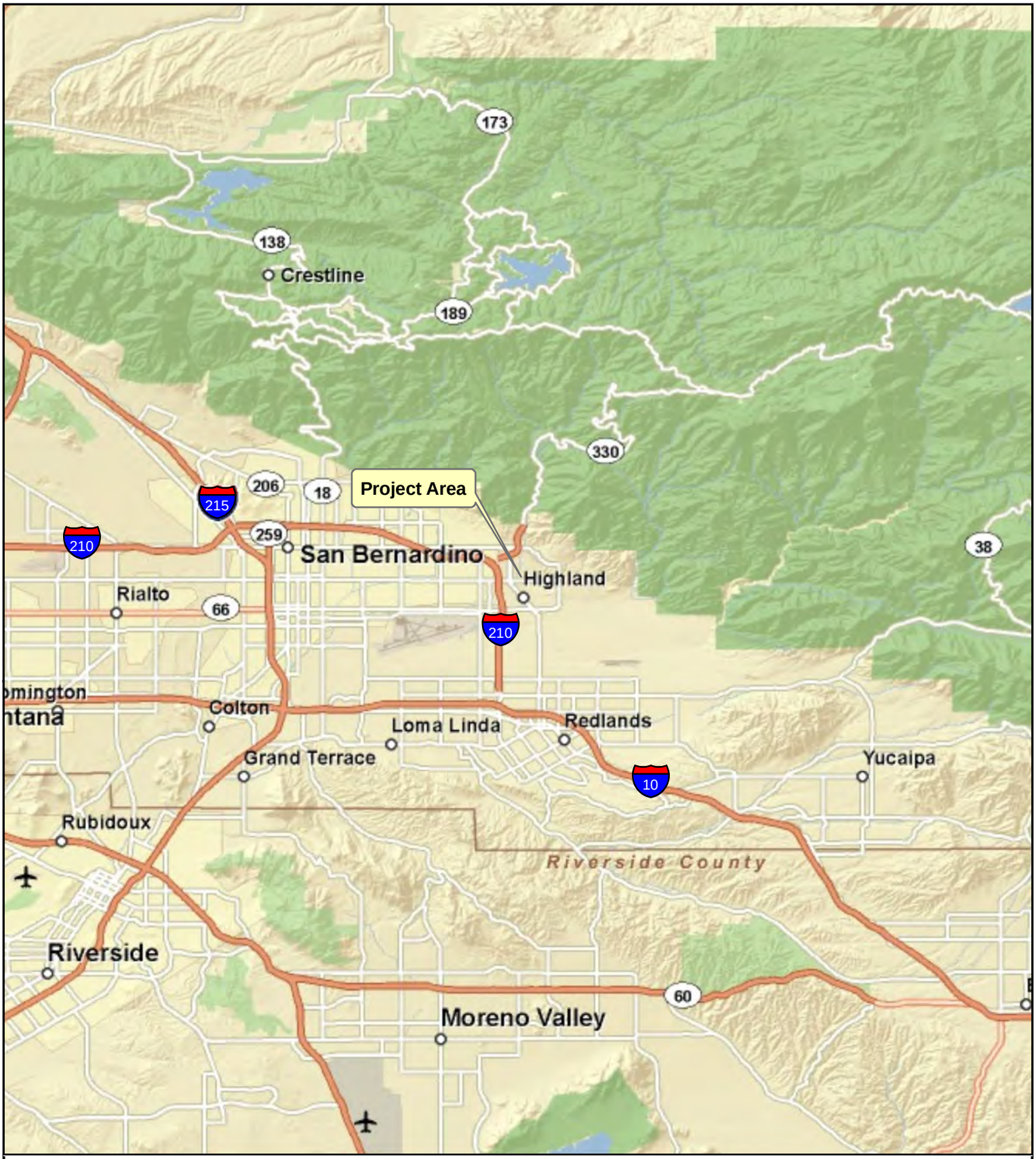
The study area herein referred to as project site or site is located in the City of Highland, San Bernardino County, California and can be generally located north of Interstate 10, east of State Route 30 and south of State Route 330 (Exhibit 1). The site is depicted on the Redlands, California USGS 7.5-minute topographic quadrangle in Township 1 North, Range 3 West, Sections 33 & 34 and Township 1 South, Range 3 West, Sections 3 & 4 (Exhibit 2). Specifically, it is located north and south of Base Line Road within the City Creek drainage system (Exhibit 3).

Marnie McKernan, a U.S. Fish and Wildlife Service (USFWS) permitted biologist for SBKR (TE839211-2), conducted two sessions of protocol-level live trapping for 5 consecutive nights each, during the weeks of July 6, and July 27, 2009, to determine the presence/absence of SBKR, their relative abundance, and breeding status within the project site.

Twenty-eight SBKR were captured during the two survey efforts. All SBKR were captured on the eastern benches of the City Creek channel. No kangaroo rats were captured within City Creek wash or on the western benches of City Creek

The entire project site is located within designated SBKR Critical Habitat Unit 1 (USFWS 2008). Impacts to SBKR and SBKR Critical Habitat are potentially significant under the California Environmental Quality Act (CEQA). The project will require a permit from the U.S. Army Corps of Engineers (USACE) for modification of City Creek channel; consequently, the USACE will consult the USFWS regarding impacts and mitigation measures for SBKR and its habitat.

.



Source: ESRI StreetMap World 2D.

N
W E
S

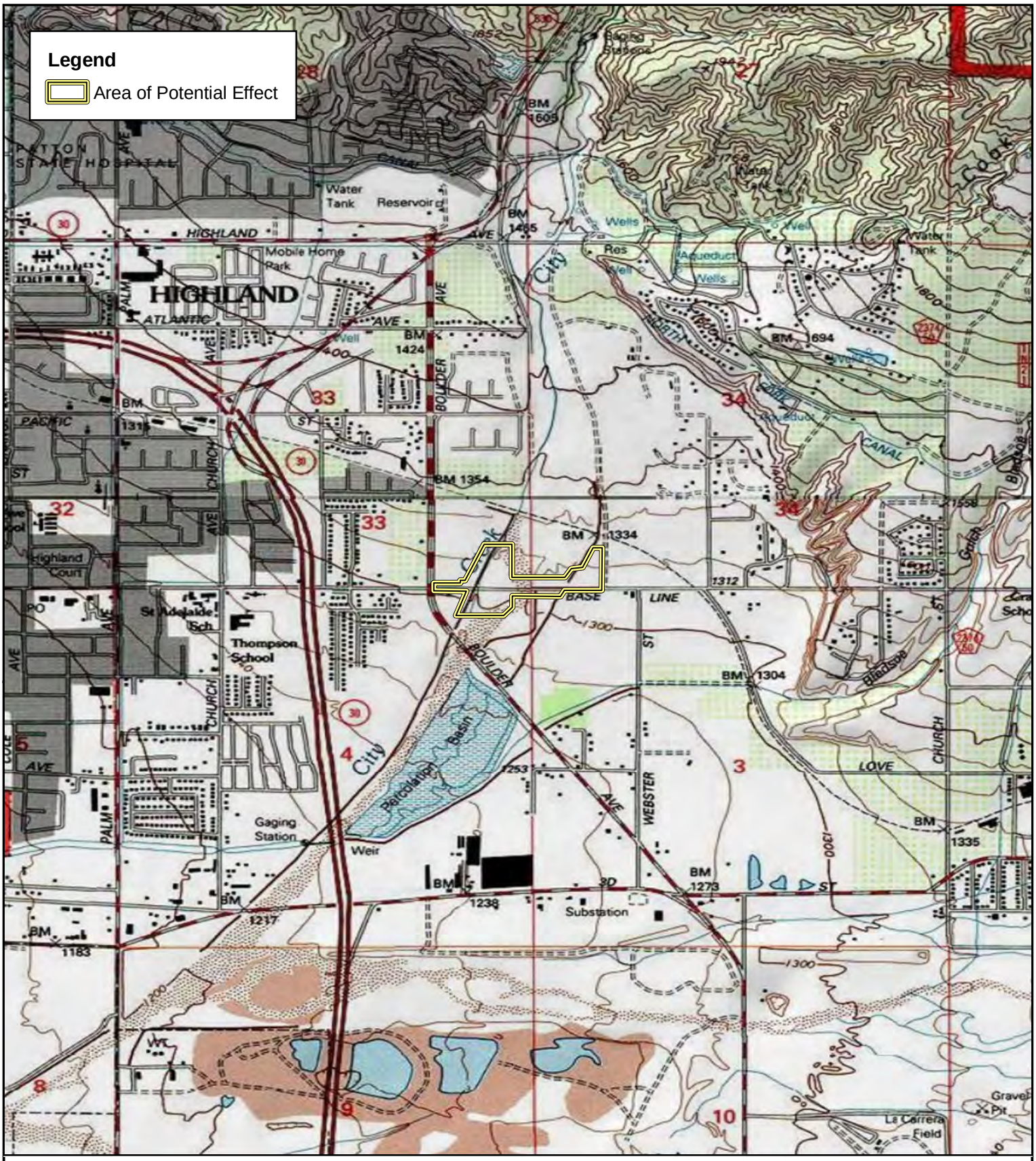
1 in = 4 miles

0 2 4 8 Miles

Exhibit 1
Regional Location Map

100006490 - 092209 | 1_FSPS_Regional.mxd

FOCUSED SBKR TRAPPING
BASE LINE BRIDGE REPLACEMENT PROJECT



Source: National Geographic TOPO!.

N
W E
S

1 in = 2,000 feet

0 1,000 2,000 4,000 Feet

Exhibit 2
Local Vicinity USGS Map

100006490 - 092209 | 2_SBKR_Topo.mxd

FOCUSED SBKR TRAPPING
BASE LINE BRIDGE REPLACEMENT PROJECT



Source: San Bernardino County.

N
W E
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1 in = 500 feet

0 250 500 1,000 Feet

Exhibit 3
Local Vicinity Aerial Map

100006490 - 092209 | 3_SBKR_Aerial.mxd

FOCUSED SBKR TRAPPING
BASE LINE BRIDGE REPLACEMENT PROJECT

Chapter 2 Methods

A literature review and records check was conducted for sensitive resources within the vicinity of the proposed project. In addition to the literature review, a general field assessment of the project area was conducted. The field survey provided information on the existing conditions of the site and the potential for sensitive resources to be present. Following the assessment, focused trapping surveys for SBKR were conducted where suitable habitat occurs within and adjacent to the APE of the Base Line Bridge Project.

2.1 LITERATURE REVIEW

The literature review and records check included a review of standard field guides and texts on sensitive and non-sensitive biological resources potentially onsite, as well as the following sources:

- List of sensitive biological resources provided by the California Natural Diversity Data Base (CNDDB 2009)
- USFWS. 2008. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*); Final Rule.

2.2 GENERAL BIOLOGICAL ASSESSMENT

A reconnaissance survey was conducted on the project site to assess suitable habitat for sensitive biological resources within the project boundaries. The habitats within the project site were assessed for their ability to support SBKR or other sensitive species. Notes were taken during the surveys of all plant and wildlife species observed. Observations of wildlife species included burrows, nests, sounds, and visual observation. In addition, site characteristics such as soils, topography, the condition of the plant communities, and evidence of human use of the site were noted. A list of plant and wildlife species observed is included in Appendix A.

2.3 PRIMARY CONSTITUENT ELEMENTS

The project site was assessed in terms of suitability for SBKR by evaluating the primary constituent elements considered essential for the primary biological needs of foraging, reproducing, rearing of young, intra-specific communication, dispersal, genetic exchange, or sheltering. These are:

- Dynamic geomorphological and hydrological processes typical of fluvial systems within the historical range of the animal
- Historical and current alluvial processes
- Alluvial sage scrub and associated vegetation
- Sand, loam, or sandy loam soils
- Upland areas that may provide refugia
- Moderate to low degree of human disturbance to habitat

2.4 FOCUSED TRAPPING SURVEYS

Live trapping surveys for SBKR were conducted according to USFWS protocols established for SBKR. The current protocol calls for five consecutive nights of trapping, conducted when the species are active and when air temperature lows are above 50°F (degrees Fahrenheit). The two trapping sessions were conducted from July 6 to July 10 and from July 27 to July 31, 2009.

The first trapping session was conducted within City Creek wash and on the east and west benches of City Creek, south of Base Line Road. The second trapping session was conducted north of Base Line Road. All areas of the APE were trapped except for within the active narrow channel of City Creek as the channel contained flowing water (Exhibit 4).

Two hundred traps were set during both of the 5-night trapping efforts. The traps were placed either in a grid or along linear transects. In general, traps were placed approximately 10 meters apart in all areas within the APE.

The grids and transects are labeled and shown on Exhibit 4 as SG and ST 1-8 for the areas trapped south of Base Line Road and NG and NT 1-8 for the areas trapped north of Base Line Road.

Each trap was baited with a mixture of birdseed and rolled oats, and placed at the back of the traps. The traps were left in place and opened at dusk each night, and inspected once during the night and at dawn each morning. All animals were identified and released at the point of capture. Weather conditions at the time of the trapping were also noted.



Source: San Bernardino County, PBS&J.

N
W E
S

1 in = 500 feet

0 250 500 1,000 Feet

Exhibit 4
Trap Locations

100006490 - 092209 | 4_SBKR_Trap.mxd

FOCUSED SBKR TRAPPING
BASE LINE BRIDGE REPLACEMENT PROJECT

Chapter 3 Existing Conditions

3.1 TOPOGRAPHY AND SOILS

The project site is located in the Upper Santa Ana River Watershed within the Bunker Hill Sub-basin of the larger San Bernardino Basin Area. The topography of the site includes sandy washes and terraces of City Creek. The elevation of the site is approximately 1,300 feet above mean sea level (AMSL).

The project site is mapped by the Natural Resource Conservation Service (NRCS) as containing two soils series; Psamments and Fluvents, frequently flooded and Soboba Stony Loamy Sand, 2 to 9 percent slopes.

Psamments and Fluvents, frequently flooded (Ps)

This soil type is about 50 percent Psamments and 50 percent Fluvents and similar soils. They occur in drainages at elevation ranges from 10 to 1,500 feet. These soils are frequently flooded, and runoff capacity is high.

Soboba stony loamy sand, 2 to 9 percent slopes (SpC)

This soil type is about 85 percent Soboba and similar soils. It occurs on alluvial fans at elevations of 30 to 4,200 feet. These soils are excessively drained, and runoff is very high.

3.2 LAND USES

Surrounding land uses include residential and commercial development to the east and west and City Creek floodplain to the north and south.

3.3 DESCRIPTION OF HABITAT

The project site is composed of Riversidean alluvial fan sage scrub (RAFSS) and riparian plant communities. In addition, there are highly disturbed areas within the APE that contain minimal vegetation growth (Exhibit 5).

3.3.1 Riversidean Alluvial Fan Sage Scrub

The California Department of Fish and Game (CDFG) lists RAFSS as rare and it is considered a sensitive plant community. CDFG's list of natural communities categorizes plant communities first by general habitat, then as alliances within the general habitat, and

finally as associations within alliances. RAFSS is an association within the Riversidean sage scrub (RSS) alliance, which falls within the general habitat type of coastal scrub. RAFSS is an open plant community adapted to the harsh conditions of flooding. It grows on sandy, rocky alluvium deposited by streams that experience infrequent episodes of flooding. Alluvial sage scrub is composed of an assortment of drought-deciduous sub-shrubs and large, evergreen, woody shrubs that are adapted to the periodic and intense episodes of flooding and erosion that occurs along the alluvial fans. Scalebroom (*Lepidospartum squamatum*) generally is regarded as an indicator of Riversidean alluvial scrub (Smith 1980; Hanes et al. 1989). In addition to scalebroom, alluvial scrub typically is composed of white sage (*Salvia apiana*),

The RAFSS located with the site includes both pioneer and intermediate phases of succession. Areas mapped as pioneer RAFSS typically have an open canopy, low stature and low diversity. The dominant species present within the pioneer RAFSS include deerweed (*Lotus scoparius*), California buckwheat, scalebroom, and brittlebush (*Encelia farinosa*).

Areas mapped as intermediate RAFSS are typically moderately dense and consists primarily of subshrubs. Species present include California buckwheat, scalebroom, prickly pear cactus (*Opuntia phaceantha*), California sagebrush (*Artemesia californica*), deerweed, yerba santa (*Eriodictyon trichocalyx* var. *trichocalyx*), scalebroom and our Lord's candle.

3.3.2 Southern Willow Scrub

Southern willow scrub is generally described as a relatively short, and often sparse, riparian habitat that is adapted to flooding and scour events that are frequent enough to prevent the establishment of larger tree species. This riparian scrub occurs within the City Creek channel. Dominant species observed include arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*), mulefat (*Baccharis salicifolia*), and young Freemont cottonwood, with an understory of herbaceous vegetation. Herbaceous understory species observed include stinging nettle (*Urtica dioica*), wild mint (*Mentha arvensis*), rabbit's foot grass (*Polypogon monspeliensis*), and California mugwort (*Artemisia douglasiana*).

3.3.3 Disturbed

Disturbed habitat includes areas in which the vegetative cover comprises less than 10 percent of the surface area (disregarding natural rock outcrops), and where there is evidence of soil surface disturbance and compaction from previous human activity. Vegetation within disturbed habitat will have a high predominance of non-native or weedy species that are indicators of soil disturbance.



Source: San Bernardino County, NRCS.

N
W E
S

1 in = 400 feet

0 200 400 800 Feet

Exhibit 5
Soils Map

100006490 - 092209 | 5_SBKR_Soils.mxd

FOCUSED SBKR TRAPPING
BASE LINE BRIDGE REPLACEMENT PROJECT

3.4 CRITICAL HABITAT

Critical habitat is a term defined and used in the Endangered Species Act. It is a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.

The entire project site is located inside the USFWS (2008) final designated Critical Habitat area for the federally listed endangered SBKR. Specifically, the project site is located within Critical Habitat Unit 1-Santa Ana River Wash. Unit 1 consists of approximately 3,258 acres and encompasses Plunge Creek, Mill Creek, Santa Ana River and City Creek (Exhibit 7).



Source: San Bernardino County, PBS&J.

N
W E
S

1 in = 400 feet

0 200 400 800 Feet

Exhibit 6
Vegetation Communities

100006490 - 092209 | 4_SBKR_Veg.mxd

FOCUSED SBKR TRAPPING
BASE LINE BRIDGE REPLACEMENT PROJECT

Chapter 4 Results

4.1 WEATHER CONDITIONS

Weather conditions during the trapping surveys included morning temperatures varying from 56 to 68°F with clear to partly cloudy skies and no wind. No ground fog or rain occurred during the survey periods. The weather conditions are summarized in Table 1 below.

Table 1: Weather Conditions

Day 2009	*Temperature (F)*	*Wind (mph)*
July 6	58	Calm
July 7	58	Calm
July 8	58	Calm
July 9	57	Calm
July 10	56	Calm
July 27	68	Calm
July 28	65	Calm
July 29	64	Calm
July 30	63	Calm
July 31	62	Calm

4.2 TRAPPING

Five different small mammal species were trapped during the survey period. Twenty-eight SBKR were captured, and two additional sensitive mammal species were trapped—northwestern San Diego pocket mouse, and San Diego desert woodrat. Table 2 provides summary information on the species trapped and the minimum number known to be alive (maximum number captured during a single trap check) per trap group.

Table 2: Focused Trapping Results

Trap Group	*# of Traps*	*DIME*	*CHFA*	*PEMA*	*SPBE*	*NELE*
SG	25	0	7	4	0	2
ST1	15	2	2	2	1	2
ST2	20	3	3	1	0	4
ST3	20	1	6	3	0	4
ST4	20	4	5	4	0	2
ST5	25	0	0	14	0	0
ST6	25	0	1	9	0	1
ST7	25	0	6	13	3	0
ST8	25	0	0	3	1	0
NG	75	12	13	25	0	6
NT1	15	0	0	3	1	0
NT2	15	0	0	2	0	0
NT3	15	1	2	4	0	0
NT4	15	3	3	6	0	0
NT5	15	2	0	3	0	0
NT6	15	0	0	5	0	0
NT7	15	0	0	7	1	0
NT8	20	0	0	5	2	0
Totals	**400**	**28**	**52**	**113**	**9**	**21**

Legend:
DIME = *Dipodomys merriami parvus* (San Bernardino kangaroo rat)
CHFA= *Chaetodipus fallax fallax* (Northwestern San Diego pocket mouse)
PEMA=*Peromyscus maniculatus* (Deer mouse)
NELE = *Neotoma lepida intermedia* (San Diego desert woodrat)
SPBE = *Spermophilus beecheyi* (California ground squirrel)

4.3 WILDLIFE

The habitats on the study area provide foraging, cover, and nesting habitat for various wildlife species. Common bird species observed include California towhee (*Pipilo crissalis*), mourning dove (*Zenaida macroura*), Bewick's wren (*Thryomanes bewickii*), bushtit

(*Psaltriparus minimus*), western kingbird (*Tyrannus verticalis*), American kestrel (*Falco sparverius*), and red-tailed hawk (*Buteo jamaicensis*).

Common mammal species observed during the surveys in addition to those trapped include desert cottontail (*Sylvilagus audubonii*), and coyote (*Canis latrans*).

Common reptiles observed during the surveys include sagebrush lizard (*Uta stansburiana*) and coachwhip (*Masticophis flagellum*).

4.3.1 Sensitive Biological Resources

Three sensitive mammal species were identified as present during the focused mammal trapping—San Bernardino kangaroo rat (*Dipodomys merriami parvus*), San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*). Two sensitive bird species were identified as present on the project site—southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and Bell's sage sparrow (*Amphispiza belli*). One sensitive (CSC) reptile, coast horned lizard (*Phrynosoma coronatum*), was observed onsite as well.

San Bernardino Kangaroo Rat

SBKR are members of the rodent family Heteromyidae and are endemic to southwestern California. It is one of three subspecies of the more common Merriam's kangaroo rat (*Dipodomys merriami*) that is widely distributed throughout the western United States and northwestern Mexico. Historically, SBKR ranged from the San Bernardino Valley in San Bernardino County to Menifee Valley in Riverside County. The present distribution is limited to seven widely separated locations in San Bernardino and Riverside counties, only three of which support significant populations (i.e., Santa Ana River, Lytle and Cajon creeks, and San Jacinto River [for a combined total of approximately 3,200 acres]). SBKR habitats have been historically altered as a result of flood control efforts and the increased use of river resources, including mining, off-road vehicle use, road and housing development (McKernan, 1997). Overall habitat loss is estimated at 96 percent. These alterations led to an emergency listing as endangered in 1998 by the USFWS (USFWS, 1998a), followed by a Final Rule issuance in that same year (USFWS, 1998b). SBKR Critical Habitat was designated by USFWS in 2002 and re-designated in 2008.

The SBKR is described as being confined to primary and secondary alluvial fan scrub habitats, with sandy soils deposited by fluvial (water) rather than aeolian (wind) processes (USFWS 1998). Burrows are dug in loose soil, usually near or beneath shrubs. In recent years, SBKR have been found in highly disturbed habitats adjacent to suitable habitat and source populations.

Northwestern San Diego Pocket Mouse

The northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) inhabits coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities, and is commonly is found in disturbed grassland and open sage scrub vegetation with sandy-loam to loam soils. It generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates, and, to a lesser extent, shrubby areas.

The range of this species extends from Orange County to San Diego County, and includes the inland areas of Riverside and San Bernardino counties (Hall 1981). This pocket mouse is a California Species of Special Concern whose historical range has been reduced by urban development and agriculture (CDFG 2001).

San Diego Desert Woodrat

The coastal species of the desert woodrat, the San Diego desert woodrat (*Neotoma lepida intermedia*), prefers scrub habitats such as coastal sage scrub, chaparral and alluvial fan sage scrub; within coastal sage scrub communities, it appears strongly associated with prickly pear and large cactus patches. It is more common in areas with rock piles and coarse sandy to rocky soils throughout coastal Southern California. The desert woodrat (*Neotoma lepida*) is a relatively wide-ranging species extending along the coast of California from south of San Francisco through to the border with Baja California. This species also occurs in the Central Valley and the deserts of southern California and extends along the desert side of the Sierra Nevada into southeastern Oregon. The coastal subspecies of the widespread *Neotoma lepida* is listed as a California Species of Special Concern as its historical range has been impacted by the conversion of scrub habitats into residential, commercial and industrial use.

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Chapter 5 Discussion and Conclusion

Twenty-eight SBKR were captured during the two trapping sessions.

Locations where SBKR were trapped on the eastern benches of City Creek within the project site contain all six primary constituent elements (PCEs) for the SBKR that are essential for the primary biological needs of foraging, reproducing, rearing of young, intra-specific communication, dispersal, genetic exchange, or sheltering. It is vital that the PCEs for SBKR occur within this area if the long-term conservation value of the site is to be maintained:

- The project site is within a dynamic geomorphological and hydrological process typical of fluvial systems within the historical range of the animal.
- Historical and current alluvial processes occur within areas of the project site.
- The project site supports alluvial sage scrub and associated vegetation.
- The project site supports sand, loam, or sandy loam soils.
- Upland areas occur within the project site that provide refugia for SBKR.
- There is moderate to low degree of human disturbance to habitat throughout the project site.

The entire study area is located within USFWS-designated SBKR Critical Habitat Unit 1. Impacts to SBKR and SBKR Critical Habitat are potentially significant under CEQA. The project will require a permit from USACE for modification of the City Creek channel; consequently, the USACE will consult the USFWS regarding impacts and mitigation measures for SBKR and its habitat.

Impacts to state sensitive species, such as San Diego pocket mouse and San Diego desert woodrat are not typically considered significant under CEQA due to their abundance on a local and regional level.

Chapter 6 Certification

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: July 22, 2009 Signed: Marnie S. McKernan

Marnie McKernan, Senior Scientist

Chapter 7 References

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Appendix A
Floral And Faunal Compendia

FLORAL COMPENDIUM

ANGIOSPERMAE: DICOTYLEDONES	DICOT FLOWERING PLANTS
Asteraceae	**Sunflower family**
Artemisia californica	California sagebrush
**Centaurea melitensis*	Tocalote
Ericameria pinifolia	Pinebush
Helianthus annuus	Annual sunflower
Lepidospartum squamatum	Scale-broom
Boraginaceae	**Borage family**
Amsinckia menziesii	Fiddleneck
Cryptantha intermedia	Popcorn flower
Cryptantha micrantha	Tiny popcorn flower
Heliotropium curassivicum	Saltmarsh heliotrope
Brassicaceae	**Mustard family**
**Hirschfeldia incana*	Short-podded mustard
Lepidium sp.	Pepper grass
Cactaceae	**Cactus family**
Opuntia littoralis	Coastal prickly pear
Caprifoliaceae	**Honeysuckle family**
Sambucus mexicana	Mexican elderberry
Cucurbitaceae	**Gourd family**
Cucurbita palmata	Coyote melon
Cuscutaceae	**Dodder family**
Cuscuta californica	California dodder
Euphorbiaceae	**Spurge family**
Croton californica	Croton
Fabaceae	**Pea family**
Lotus scoparius	Deer weed
**Melilotus officinalis*	Yellow sweet clover
Geraniaceae	**Geranium family**
**Erodium cicutarium*	Red-stemmed filaree

FLORAL COMPENDIUM (CONT.)

Hydrophyllaceae	**Waterleaf family**
Eriodictyon crassifolium	Thick-leaved yerba santa
Phacelia distans	Fern leaf phacelia
Lamiaceae	**Mint family**
Salvia apiana	White sage
Salvia columbariae	Chia
Salvia mellifera	Black sage
Onagraceae	**Evening primrose family**
Camissonia bistorta	California suncup
Camissonia brevipes	Yellow cups
Platanaceae	**Sycamore family**
Platanus racemosa	Sycamore
Polygonaceae	**Buckwheat family**
Eriogonum fasciculatum	California buckwheat
Polemoniaceae	**Phlox Family**
Eriastrum sapphirinum	Saphire eriastrum
Rubiaceae	**Madder family**
Solanaceae	Nightshade family
Datura wrightii	Jimson weed
Solanum xanti	Deadly nightshade
ANGIOSPERMAE: MONOCOTYLEDONAE	**MONOCOT FLOWERING PLANTS**
Liliaceae	**Lily family**
Dichelostema pulchellum	Blue dicks
Yucca whipplei	Whipple's yucca
Poaceae	**Grass family**
**Avena barbata*	Slender wild oats
Bromus carinatus	California brome
**Bromus diandrus*	Ripgut brome
**Bromus madritensis*	Red brome
**Bromus mollis*	Soft chess
**Hordeum murinum*	Wild barley

* denotes non-native species

FAUNAL COMPENDIUM

REPTILIA	**REPTILES**
Iguanidae	**Iguanas and their allies**
Uta stansburiana	Side-blotched lizard
Phrynosoma coronatum	Coast horned-lizard
Colubridae	**Colubrids**
Masticophis flagellum	Coachwhip
AVES	**BIRDS**
Accipitridae	**Kites, hawks and eagles**
Buteo jamaicensis	Red-tailed hawk
Phasianidae	**Quails and pheasants**
Callipepla californica	California quail
Columbidae	**Pigeons and doves**
Zenaida macroura	Mourning dove
Trochlidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Tyrannidae	**Tyrant flycatchers**
Tyrannus verticaulis	Western kingbird
Corvidae	**Crows and ravens**
Corvus brachyrhynchos	American crow
Emberizidae	**Warblers, sparrows, blackbirds and relatives**
Pipilo crissalis	California towhee
Aimophila ruficeps canescens	Southern rufous-crowned sparrow
Amphispiza belli	Bell's sage sparrow
Fringillidae	**Finches**
Carpodacus neomexicanus	House finch
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and hares**
Sylvilagus audubonii	Audubon's cottontail

Sciuridae	**Squirrels, chipmunks and marmots**
Spermophilus beecheyi	California ground squirrel
Geomyidae	**Pocket Gophers**
Thomomys bottae	Botta's pocket gopher
Heteromyidae	**Pocket Mice and Kangaroo Rats**
Chaetodipus fallax	San Diego pocket mouse
Dipodomys merriami parvus	San Bernardino kangaroo rat
Muridae	**Mice, Rats, and Voles**
Peromyscus maniculatus	Deer mouse
Neotoma lepida intermedia	San Diego desert woodrat
Canidae	**Foxes, wolves and relatives**
Canis latrans	Coyote

Appendix F – Bat Habitat Assessment (2017)

BERKELEY
CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

March 23, 2017

Lynn Calvert-Hayes
LSA
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

Subject: Results of Daytime Bat Habitat Assessment at Base Line Street Bridge over City Creek, City of Highland, San Bernardino County, California

Dear Ms. Hayes:

This letter documents the results of a daytime bat habitat assessment performed by LSA on January 17, 2017, at the Base Line Street Bridge over City Creek in the City of Highland, San Bernardino County, California (see Figure 1, attached). The City of Highland proposes to replace the existing Base Line Street Bridge, which is a precast, prestressed single-span bridge approximately 72 feet in length and 42 feet in width, with a raised bridge measuring approximately 600 feet long and 96 feet wide.

The project also includes the removal of an existing low-flow concrete single-box culvert, which will be spanned over by the proposed bridge structure and will no longer be needed. The bat habitat suitability assessment described in this document was conducted to locate potential bat roosting sites, and to evaluate the potential for bat foraging and roosting activity within and adjacent to the existing Base Line Street Bridge, as well as at adjacent culvert structures within the proposed project area. In addition to providing the results of the habitat suitability assessment, this memorandum includes recommendations to minimize potential impacts to bats from activities associated with the proposed bridge replacement project.

BAT NATURAL HISTORY

Bats are the primary predators of nocturnal, flying insects and are largely adapted to a variety of habitats. Bat populations are generally declining throughout Southern California and globally due to various factors, including loss of natural roosting and foraging habitats, exposure to pesticides and pathogens, and direct extermination (Johnston et al. 2004; Miner and Stokes 2005). Because bats have low reproductive turnover (i.e., most species have only one young per year, and only a few species have twins or multiple births) and high juvenile mortality, it can take many years for a colony or population of bats to recover from any impacts that result in mortality or even a decrease in reproductive ability.

As natural roost sites become scarcer due to urban development and changes in land use, the use of human-made structures (e.g., bridges and buildings) as roost sites by some bat species has increased as bats seek alternative roosting options (Erickson et al. 2003). The importance and ecological value of anthropogenic structures as roosts have consequently increased to the point that many of these "artificial" roost sites are becoming essential to the survival of local bat populations (Johnston et al. 2004; Smith and Stevenson 2013). However, these anthropogenic roosting sites are also highly vulnerable because bats are often driven out or killed once they are discovered occupying human-

made structures. Even bats attempting to roost in landscape plantings can be subject to impacts from tree removal or trimming activities (e.g., the trimming of palm fronds). Therefore, as urban and suburban development occurs across the landscape, many of these areas may act as habitat "sinks"[1] where bats may at first appear to be relatively common and may even be attracted to human-made structures, but then decrease in abundance over time as development of that area continues (Miner and Stokes 2005; Remington 2000). The protection of bat roosting and foraging habitat, particularly those identified as being maternity or nursery sites, is therefore considered during the environmental review process to prevent potentially significant negative effects to, or further loss of, remaining populations.

Day roosts protect bats from predators and the elements during the day while resting and/or rearing their young. Examples of day-roosting sites include, but are not limited to, human-made structures, trees, cliff or rock crevices, caves, and mines. In human-made structures (e.g., bridges and culverts), day roosts are typically in expansion joints, hinges, or other crevices. Some types of day roosts where bats are particularly vulnerable to disturbance include maternity colonies, where female bats congregate in the spring and summer months to give birth and raise young, and hibernacula, where bats enter a period of hibernation during the winter months.

A night roost, on the other hand, refers to a structure or structural feature (i.e., natural or human-made) in which bats roost during the evening between foraging bouts (e.g., crevices, cavities, corners, culvert walls, and recessed open spaces that are sheltered from the wind). Night roosts are typically situated in or near a foraging area and play an important role in the energetics and social interaction of bats. When a night roost is eliminated, the energetics for bats to successfully use the surrounding foraging area may be negatively affected. Day roosts may also double as night roosts, particularly if they are situated in or near a foraging area.

Because bats have separate roosting and foraging habitat requirements, it is expected that some bats may utilize one area for foraging and another for roosting. While more extensive and direct impacts to bats occur through roost removal, destruction, or disturbance, indirect impacts (e.g., the decline of a prey base due to loss or modification of foraging habitat) can also be substantial. Therefore, when assessing an area with regard to proposed alterations to habitat, a landscape-level approach is required to adequately determine potential impacts to bats.

Many bats use crevices or hollow cavities in bridges and culverts as day roosts and the open spaces between bridge beams or girders for night roosting. In the absence of crevices, some bat species day roost in clusters on the ceiling of a tunnel or cavity. While some bat species (e.g., Townsend's big-eared bat [*Corynorhinus townsendii*]) commonly roost in this manner, other species that typically roost in crevices will occasionally use this roosting strategy. Bat species that commonly utilize human-made structures for day and/or night roosting include the Mexican free-tailed bat (*Tadarida brasiliensis mexicana*), big brown bat (*Eptesicus fuscus*), pallid bat (*Antrozous pallidus*), and Yuma myotis (*Myotis yumanensis*); other species that may use these types of roosts include small-footed myotis (*Myotis ciliolabrum*), California myotis (*Myotis californicus*), western mastiff bat (*Eumops perotis*), canyon bat (*Parastrellus hesperus*), and Townsend's big-eared bat. Bats may also roost in

[1] A habitat sink refers to an area where the productivity of a given species is insufficient to offset mortality.

trees situated in the vicinity of human-made structures, and although bat roosts in structures can be relatively easy to identify, tree roosts are more cryptic and require close examination. Some species of bats, such as the western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), and hoary bat (*Lasiurus cinereus*), day roost in the foliage of trees; other bat species, such as pallid bat and big brown bat, day roost in crevices or cavities found in mature trees and snags.

METHODS

During the daylight hours on January 17, 2017, LSA Senior Biologist and bat specialist Jill Carpenter performed a daytime bat habitat suitability assessment to determine whether roosting habitat for bats is present in the Base Line Street Bridge and adjacent culvert structures within the proposed project area. These structures were visited on foot, and potential bat roosting sites were identified by examining the sides and underside of the bridge and each culvert structure with a light emitting diode (LED) spotlight for any structural features, (e.g., crevices or recessed spaces that may be suitable for use as day- or night-roosting habitat). Structural features suitable for day-roosting bats include crevices (e.g., hinges or expansion joints, weep holes, or cavities), while structural features used by night-roosting bats include features suitable for day roosting as well as recessed areas (e.g., concrete girders that can trap warm air, or the walls of concrete box culverts). The structures were also inspected for the presence of bats or any bat sign (e.g., guano, urine staining, or vocalizations) indicating current or past use of an area by roosting bats.

Locations containing suitable day-roosting habitat were also assessed for potential use as maternity roost sites based on indications that the observed roost feature supports or may support a large congregation of bats. However, it should be noted that the use of the structure for roosting by maternity colonies could not be confirmed during this assessment because it was conducted in the winter and outside of the bat maternity season (April 1–August 31), when maternity colonies have typically disbanded and are more dispersed across the landscape.

RESULTS AND DISCUSSION

Crevice habitat suitable for day- and night-roosting bats is present in the spaces between the concrete slab beams of the Base Line Street Bridge, which form a total of 17 crevices spanning the length of the bridge structure. In addition, high-quality foraging habitat for bats is present in the riparian and scrub vegetation along City Creek, increasing the desirability of the bridge structure for use by roosting bats. Although no bats were observed roosting at the time of the assessment, the probability of roosting is moderate to high due to the high-quality foraging habitat surrounding the bridge. The observed crevice habitat is also suitable for use by multiple bat species for maternity roosting, and it is possible that a maternity colony is present in this bridge structure during the maternity season.

Two concrete culverts are also present within the project area: one concrete pipe culvert measuring approximately 5–6 feet in diameter located immediately adjacent to the bridge just north of the western abutment, and one concrete box culvert measuring approximately 8 feet wide by 4 feet tall, situated beneath the roadway east of the bridge. Although the pipe wasn't entered and examined due to the presence of a heavy metal grate that precluded human entry, the box culvert was entered and inspected for the presence of bat roosting habitat features and bat sign. No crevices

suitable for day-roosting habitat were observed within the box culvert. In addition, the presence of cobwebs and lack of bat sign (e.g., staining) within the culvert suggest that bats do not use this structure for night roosting.

Finally, ungrouted riprap and large river cobbles present along the banks of City Creek may provide roosting habitat for western canyon bats, which are known to roost in rock piles, including humanmade piles such as rip rap.

It should be noted that several factors and limitations influence the results of this assessment. Although it is possible to assess the presence of suitable roosting habitat for maternity colonies at any time of the year, the presence of maternity colonies at the Base Line Street Bridge could not be confirmed during this assessment because it was performed in January, which is outside the bat maternity season (April 1–August 31) and well after these colonies would have disbanded. Rain from winter storm events, which washed away any accumulated bat sign beneath the roost features at the Base Line Street Bridge, may also have influenced the results of this assessment. The presence of deep, fast-moving water also precluded access to parts of the underside of the bridge structure due to safety considerations. Consequently, the apparent absence of bats or bat sign at the Base Line Street Bridge during this assessment cannot be construed as evidence that bats do not occupy that structure.

CONCLUSIONS AND RECOMMENDATIONS

Roosting habitat suitable for use by day-roosting bats, including maternity colonies, was observed at the Base Line Street Bridge over City Creek. Although this habitat did not appear to be occupied by roosting bats at the time of the assessment, the complete absence of bats could not be confirmed because it was not possible to closely examine all of the crevices due to the presence of fast-moving water beneath the middle of the bridge. In addition, use of the bridge for maternity roosting could not be adequately determined because the survey was performed in January, which is outside of the bat maternity season. Marginal quality night-roosting habitat for bats was observed within the low-flow single box culvert proposed for removal; however, no bats or sign of bats indicating use of this structure was observed during the assessment. Because a heavy metal grate precluded access to the concrete pipe culvert near the western abutment of the Base Line Street Bridge, the potential for the presence of bats within that structure could not be ascertained during this assessment.

Townsend's big-eared bat, a State Candidate for listing as threatened or endangered, is not expected to occur at the Base Line Street Bridge or the low flow single box culvert structure due to lack of suitable cavernous roosting habitat for this species. However, it is possible that maternity colonies including one or more other species of bats may roost within this structure. All bat species (regardless of listing status) and other nongame mammals are protected by California Fish and Game Code Section 4150, which states that all nongame mammals or parts thereof may not be taken or possessed except as provided otherwise in the code, or in accordance with regulations adopted by the California Fish and Game Commission. Activities resulting in the mortality of nongame mammals (e.g., destruction of an occupied bat roost, resulting in the death of bats) or disturbance that results in the loss of a maternity colony of bats (including the death of young) may be considered "take" by the California Department of Fish and Wildlife (CDFW). Furthermore, any structure occupied by a bat maternity colony of any species is considered a native wildlife nursery

site that is essential to the viability of local populations; as such, impacts to a maternity colony could be considered potentially significant under the California Environmental Quality Act.

To minimize potential impacts to day-roosting bats (including maternity colonies) from project construction, LSA recommends the following measures:

- A nighttime exit count and acoustic survey shall be performed at the Base Line Street Bridge by a qualified bat biologist during the peak of the bat maternity season, which occurs in June and July. This survey shall be performed as soon as possible and well in advance of project construction in order to determine whether a maternity colony is present and to identify the numbers and species of any bats present. This information will aid in determining appropriate site-specific and species-specific minimization measures. Performing the survey well in advance of project construction will also serve to provide adequate time for mitigation planning.

- Humane evictions and exclusions of roosting bats shall be performed under the supervision of a qualified bat biologist in the fall (September or October) prior to any work activities that would result in direct impacts or direct mortality to roosting bats. This action shall be performed in coordination with the CDFW. To avoid potential mortality of flightless juvenile bats, evictions and exclusions of bats cannot be performed during the maternity season (April 1–August 31). Winter months (November–February) are also inappropriate for bat eviction because not all individuals in a roost will emerge on any given night. In addition, long-distance movements to other roost sites are more difficult during the winter when prey availability is scarce, resulting in high mortality rates of evicted bats.

- Since permanent, direct impacts to bat roosting habitat will occur from removal of the Base Line Street Bridge over City Creek, alternate bat roosting habitat shall be provided to ensure no net loss of bat roosting habitat. This habitat mitigation may be provided on an adjacent, existing bridge such as the Boulder Avenue Bridge over City Creek, on the replacement Base Line Street Bridge, or distributed across both structures. This action shall be coordinated with the CDFW and a qualified bat biologist to ensure that the installed habitat will provide adequate mitigation for impacts to roosting habitat.

- Alternate bat roosting habitat structures should be installed and provided at least 6 months in advance of the eviction/exclusion of bats from the Base Line Street Bridge. Since the Base Line Street Bridge will be completely removed, these bat roosting habitat structures shall be installed on an adjacent structure such as the Boulder Avenue Bridge over City Creek. The design, numbers, and precise locations of these roost structures should be determined in consultation with the CDFW and a qualified bat biologist.

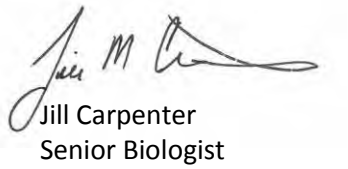
- Within 500 feet of structures where maternity roosting is confirmed, demolition and pile driving activities shall avoid the recognized bat maternity season (April 1–August 31) to prevent the potential mortality of flightless young bats.

- Construction activities at structures housing maternity colonies shall be coordinated with a qualified bat biologist and the CDFW.

If you have questions regarding this report or would like to discuss the project further, please contact me at (949) 337-6103.

Sincerely,

LSA Associates, Inc.



Jill Carpenter
Senior Biologist
Bat Specialist

Attachments: References
Figure 1 – Regional and Project Location

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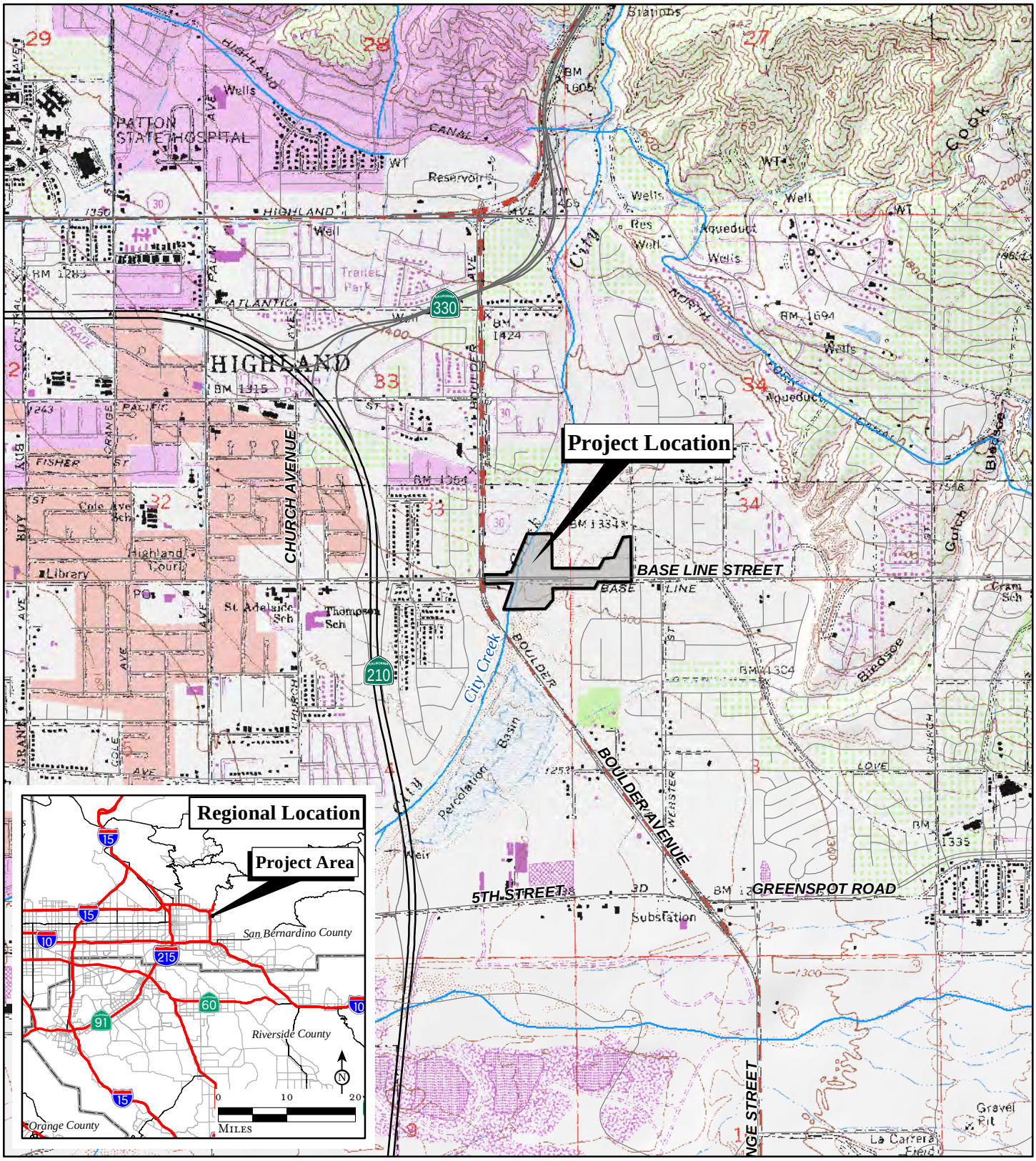


FIGURE 1

ase Line Bridge Over City Creek (Replace)

Regional and Project Location

08-SBd-0-HIGH

EA 08-925035

SOURCE: USGS 7.5' Quads: Redlands and Harrison Mtn. (1988), CA; ESRI Streetmap, 2013.

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Appendix G – Jurisdictional Delineation Report (2017)

JURISDICTIONAL DELINEATION

BASELINE BRIDGE AT CITY CREEK REPLACEMENT PROJECT
CITY OF HIGHLAND
SAN BERNARDINO COUNTY, CALIFORNIA

LSA

January 2017

JURISDICTIONAL DELINEATION

BASELINE BRIDGE AT CITY CREEK REPLACEMENT PROJECT

CITY OF HIGHLAND

SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:

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LSA Project No. AEM1603

LSA

January 2017

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A: WETLAND DETERMINATION DATA FORMS

INTRODUCTION

The City of Highland, in cooperation with the California Department of Transportation (Caltrans), District 8, proposes to improve the Baseline Bridge over City Creek. The site is located within Sections 33 and 34 of Township 1 North, Range 3 West, and Sections 3 and 4 of Township 1 South, Range 3 West, as shown on the *Redlands, California* 7.5-minute series U.S. Geological Survey (USGS) topographic map (Figure 1).

This report presents the results of a delineation of potential wetland and nonwetland waters of the United States subject to jurisdiction of the United States Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB) as part of the evaluation for potential permit requirements under Section 404 of the Federal Clean Water Act (CWA) and certification under Section 401 of the CWA, and streambeds and associated riparian habitat subject to the jurisdiction of the California Department of Fish and Wildlife (CDFW) for Streambed Alteration Agreement processing under Section 1600 et seq. of the California Fish and Game Code. This jurisdictional delineation is also an important source of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) information for the evaluation of potential impacts associated with the proposed bridge replacement project.

The findings and conclusions presented in this report, including the locations and extent of waters of the United States and CDFW jurisdictional streambeds and associated riparian habitat, represent the professional opinion of the consultant biologists. These findings and conclusions should be considered preliminary until verified by the USACE, CDFW, and RWQCB.

SITE DESCRIPTION

The biological study area (BSA) includes City Creek and adjacent upland areas in the vicinity of the existing Baseline Bridge. Elevations of the project area vary between approximately 1,290 and 1,325 feet above mean sea level. Land cover consists of developed areas and ornamental plantings, Riversidean alluvial fan sage scrub, willow scrub, and non-native grassland. There are also areas of unvegetated stream channel. According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (www.websoilsurvey.sc.egov.usda.gov) soils in the BSA are mapped as “Soboba stony loamy sand (SpC) (2 to 9 percent slopes),” and “psamments, fluvents and frequently flooded soils.”

REGULATORY BACKGROUND

United States Army Corps of Engineers

The USACE regulates discharges of dredged or fill material into waters of the United States. These waters include wetland and nonwetland bodies of water that meet specific criteria. USACE regulatory jurisdiction pursuant to Section 404 of the CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters (TNWs) used in interstate or foreign commerce) or may be indirect (through a nexus identified in USACE regulations). The following definition of waters of the U.S. is taken from the discussion provided at 33 Code of Federal Regulations (CFR) 328.3:

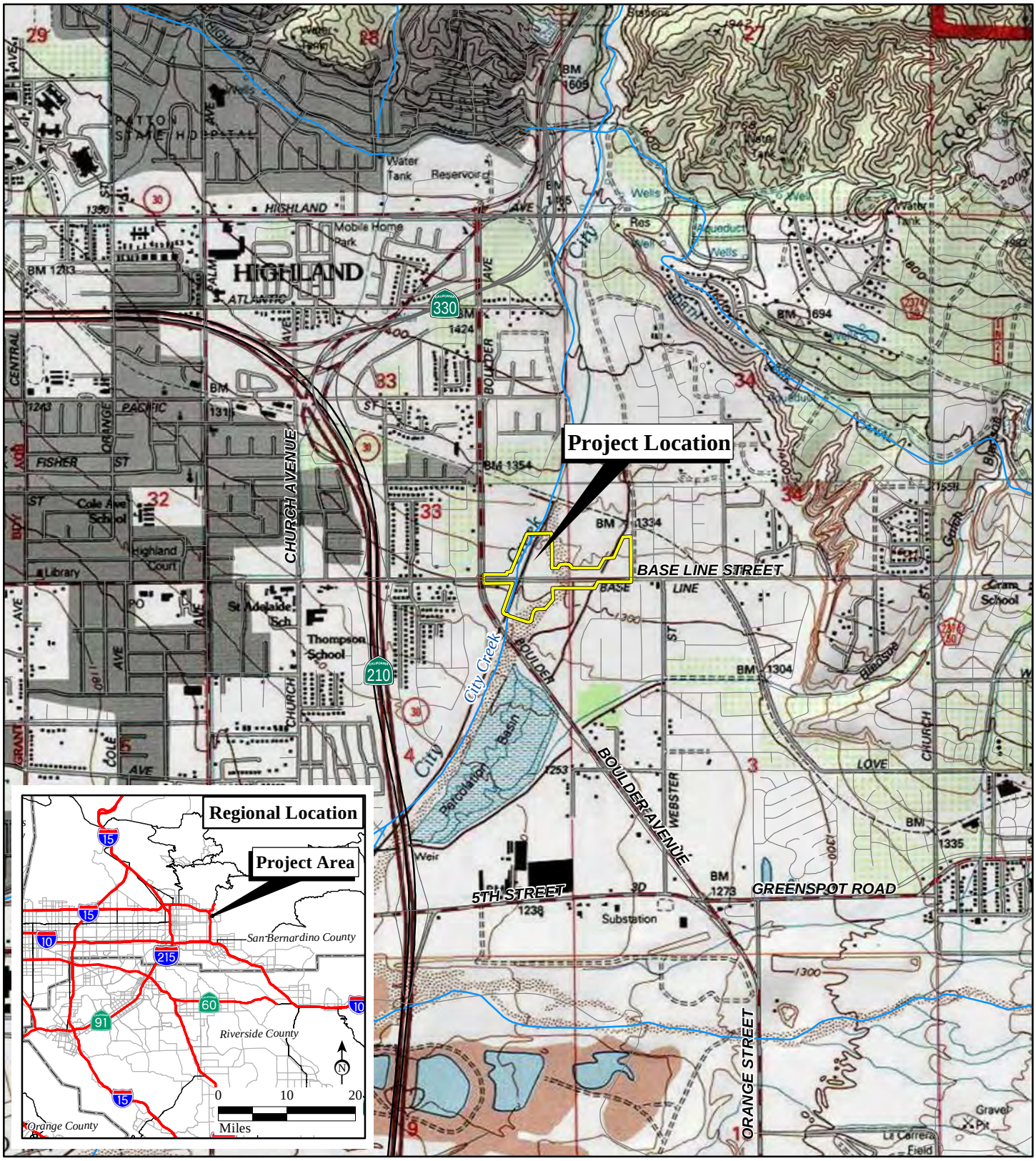


FIGURE 1

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SOURCE: USGS 7.5' Quads: Redlands and Harrison Mtn. (1988), CA; ESRI Streetmap, 2013.

Base Line Bridge Over City Creek (Replace)
Jurisdictional Delineation

Regional and Project Location

08-SBd-0-HIGH
EA 08-925035

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"The term waters of the United States means:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce …;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams) … the use, degradation or destruction of which could affect interstate or foreign commerce …;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition; and

(5) Tributaries of waters defined in paragraphs (a) (1)–(4) of this section."

The USACE typically considers any body of water displaying an ordinary high water mark (OHWM) for designation as waters of the U.S., subject to guidance derived from Supreme Court decisions. USACE jurisdiction over nontidal waters of the U.S. extends laterally to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present (33 CFR 328.4). The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3). Jurisdiction typically extends upstream to the point where the OHWM is no longer perceptible.

As discussed above, USACE regulatory jurisdiction under Section 404 of the CWA is founded on a connection between the water body in question and interstate commerce. In the past, an indirect nexus could potentially be established if isolated waters provided habitat for migratory birds, even in the absence of a surface connection to a navigable water of the U.S. The 1984 rule that enabled the USACE to expand jurisdiction over isolated waters of this type became known as the Migratory Bird Rule. However, on January 9, 2001, the U.S. Supreme Court narrowly limited USACE jurisdiction of "nonnavigable, isolated, intrastate" waters based solely on the use of such waters by migratory birds and, particularly, the use of indirect indicators of interstate commerce (e.g., use by migratory birds that cross state lines) as a basis for jurisdiction. The Court's ruling derives from the case *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, No. 99-1178 (SWANCC). The Supreme Court determined that the USACE had exceeded its statutory authority by asserting CWA jurisdiction over an abandoned sand and gravel pit in northern Illinois, which provides habitat for migratory birds.

In 2006, the U.S. Supreme Court further considered USACE jurisdiction of "waters of the United States" in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208), collectively referred to as *Rapanos*. The Supreme Court concluded that wetlands are "waters of the United States" if they significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as navigable. On June 5, 2007, the USACE issued guidance regarding the *Rapanos* decision. After consideration of public comments and agencies' experience, revised guidance was issued on December 2, 2008. This guidance states that the USACE will continue to assert jurisdiction over TNWs, wetlands adjacent to TNWs, relatively permanent nonnavigable tributaries that have a continuous flow at least seasonally (typically three months), and wetlands that directly abut relatively permanent tributaries. The USACE will determine jurisdiction

over waters that are nonnavigable tributaries that are not relatively permanent and wetlands adjacent to nonnavigable tributaries that are not relatively permanent only after making a significant nexus finding. According to the guidance, the USACE generally will not assert jurisdiction over the following features: swales or erosional features (e .g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

Furthermore, the preamble to USACE regulations (Preamble Section 328.3, Definitions) states that the USACE does not generally consider the following waters to be waters of the U.S. The USACE does, however, reserve the right to regulate these waters on a case-by-case basis.

- Nontidal drainage and irrigation ditches excavated on dry land;
- Artificially irrigated areas that would revert to upland if irrigation ceased;
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons; and
- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for purposes of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the U.S.

Waters found to be isolated and not subject to CWA regulation may still be regulated by the RWQCB under the State Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Wetlands

Wetland delineations for Section 404 purposes must be conducted according to the *Regional Supplement to the Corps Wetland Delineation Manual: Arid West Region* (*Regional Supplement*) (USACE 2008) and the USACE *1987 Wetland Delineation Manual* (*1987 Manual*) (Environmental Laboratory 1987). Where there are differences between the two documents, the *Regional Supplement* takes precedence over the *1987 Manual*.

The USACE and United States Environmental Protection Agency (EPA) define wetlands as follows:

> "Those 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 to life in saturated soil conditions."

In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met. Several indicators may be analyzed to determine whether the criteria are satisfied.

Hydrophytic vegetation and hydric soils indicators provide evidence that episodes of inundation have lasted more than a few days or have occurred repeatedly over a period of years, but do not confirm that an episode has occurred recently. Conversely, wetland hydrology indicators provide evidence that an episode of inundation or soil saturation occurred recently, but do not provide evidence that episodes have lasted more than a few days or have occurred repeatedly over a period of years. Because of this, if an area lacks one of the three characteristics under normal circumstances, the area is considered nonwetland under most circumstances.

Determination of wetland limits may be obfuscated by a variety of natural environmental factors or human activities, collectively called "difficult wetland situations," including cyclic periods of drought and flooding or highly ephemeral stream systems. During periods of drought, for example, bank return flows are reduced and water tables are lowered. This results in a corresponding lowering of ordinary high water and invasion of upland plant species into wetland areas. Conversely, extreme flooding may create physical evidence of high water well above what might be considered ordinary and may allow the temporary invasion of hydrophytic species into nonwetland areas. In the highly ephemeral systems typical of Southern California, these problems are encountered frequently. In these situations, professional judgment based on years of practical experience and extensive knowledge of local ecological conditions comes into play in delineating wetlands. The *Regional Supplement* provides additional guidance for difficult wetland situations.

Hydrophytic Vegetation. Hydrophytic vegetation is plant life that grows and is typically adapted for life in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub, herb, and woody vine layers) are considered hydrophytic. Hydrophytic species are those included on the National Wetland Plant List (Lichvar et al. 2016).

Each species on the list is rated according to a wetland indicator category, as shown in Table A. To be considered hydrophytic, the species must have wetland indicator status (i.e., be rated as OBL, FACW, or FAC).

Table A: Hydrophytic Vegetation

Category		Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability > 99 percent)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67–99 percent)
Facultative	FAC	Equally likely to occur in wetlands and nonwetlands (estimated probability 34–66 percent)
Facultative Upland	FACU	Usually occur in nonwetlands (estimated probability 67–99 percent)
Obligate Upland	UPL	Almost always occur in nonwetlands (estimated probability > 99 percent)

The delineation of hydrophytic vegetation is typically based on the most dominant species from each vegetative stratum (strata are considered separately); when more than 50 percent of these dominant species are hydrophytic (i.e., FAC, FACW, or OBL), the vegetation is considered hydrophytic. In particular, the USACE recommends the use of the "50/20" rule (also known as the dominance test) from the *Regional Supplement* for determining dominant species. Under this method, dominant species are the most abundant species that immediately exceed 50 percent of the total dominance

measure for the stratum, plus any additional species composing 20 percent or more of the total dominance measure for the stratum. In cases where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test, the prevalence index must be used. The prevalence index is a weighted average of all plant species within a sampling plot. The prevalence index is particularly useful when communities only have one or two dominants, where species are present at roughly equal coverage, or when strata differ greatly in total plant cover. In addition, USACE guidance provides that morphological adaptations may be considered when determining hydrophytic vegetation when indicators of hydric soil and wetland hydrology are present (USACE 2006). If the plant community passes either the dominance test or prevalence index after reconsideration of the indicator status of any plant species that exhibit morphological adaptations for life in wetlands, then the vegetation is considered hydrophytic.

Hydric Soils.[1] Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.[2] Soils are considered likely to meet the definition of a hydric soil when one or more of the following criteria are met:

1. All Histels except Folistels and Histosols except Folists;
2. Soils that are frequently ponded for a long duration or very long duration[3] during the growing season; or
3. Soils that are frequently flooded for a long duration or very long duration during the growing season.

Hydric soils develop under conditions of saturation and inundation combined with microbial activity in the soil that causes a depletion of oxygen. While saturation may occur at any time of year, microbial activity is limited to the growing season, when soil temperature is above biologic zero (the soil temperature at a depth of 50 centimeters [cm], below which the growth and function of locally adapted plants are negligible). Biogeochemical processes that occur under anaerobic conditions during the growing season result in the distinctive morphologic characteristics of hydric soils. Based on these criteria, a National List of Hydric Soils was created from the National Soil Information System (NASIS) database and is updated annually.

The *Regional Supplement* has a number of field indicators that may be used to identify hydric soils. The NRCS (2003) has also developed a number of field indicators that may demonstrate the presence of hydric soils. These indicators include hydrogen sulfide generation, the accumulation of organic matter, and the reduction, translocation, and/or accumulation of iron and other reducible elements. These processes result in soil characteristics that persist during both wet and dry periods. Separate indicators have been developed for sandy soils and for loamy and clayey soils.

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1 The hydric soil definition and criteria included in the 1987 Manual are obsolete. Users of the Manual are directed to the United States Department of Agriculture (USDA) Natural Resources Conservation Service website for the most current information on hydric soils.

2 Current definition as of 1994 (FR July 13, 1994).

3 A long duration is defined as a single event ranging from 7 to 30 days; a very long duration is defined as a single event that lasts longer than 30 days.

Wetland Hydrology. Under natural conditions, development of hydrophytic vegetation and hydric soils is dependent on a third characteristic: wetland hydrology. Areas with wetland hydrology are those where the presence of water has an overriding influence on vegetation and soil characteristics due to anaerobic and reducing conditions, respectively (Environmental Laboratory 1987). The wetland hydrology parameter is satisfied if the area is seasonally inundated or saturated to the surface for a minimum of 14 consecutive days during the growing season in most years (USACE 2006).

Hydrology is often the most difficult criterion to measure in the field due to seasonal and annual variations in water availability. Some of the indicators that are commonly used to identify wetland hydrology include visual observation of inundation or saturation, watermarks, recent sediment deposits, surface scour, and oxidized root channels (rhizospheres) resulting from prolonged anaerobic conditions.

Deepwater Aquatic Habitat. Deepwater aquatic habitats are areas that are permanently inundated at mean annual water depths greater than 6.6 feet or permanently inundated areas greater than 6.6 feet in depth that do not support rooted-emergent or woody plant species.[1] Deepwater aquatic waters do not qualify as wetland waters due to the lack of hydrophytic terrestrial vegetation. Deepwater aquatic waters are recognized as having a high habitat value due to their use as a fish and wildlife resource and limited distribution in the arid west.

California Department of Fish and Wildlife

The CDFW, through provisions of the California Fish and Game Code (Sec. 1600 et seq.), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks and at least an intermittent flow of water. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW.

The CDFW has various definitions and descriptions of the terms “channel bed” and “banks.” The following definitions are taken from Appendix C: Legal Opinions of the CDFW’s *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600–1607 California Fish and Game Cod*e to characterize the bed and bank:

> The extent of a stream bed and banks can be measured by several means: (1) flood plain, depending on the return frequency considered and if the riparian vegetation is present in the flood plain; (2) the outer edge of riparian vegetation used as a line of demarcation; (3) the bank, channel, or levee that confines flows; and (4) the extent of riparian vegetation outside of a levee.

The following concepts are also described in *A Field Guide to Lake and Streambed Alteration Agreements* prepared by the CDFW Environmental Services Division in January 2004:

[1] Areas < 6.6 feet mean annual depth that support only submergent aquatic plants are vegetated shallows, not wetlands.

> Streams can include intermittent ephemeral streams, dry washes, canals, aqueducts, irrigation ditches if they support aquatic life, riparian vegetation, or seasonally stream-dependent terrestrial wildlife, such as amphibians.
>
> Natural attributes or biological components of a stream include aquatic and riparian vegetation, and all aquatic animals, including fish, amphibians, reptiles, invertebrates, and terrestrial species, which derive benefits from the stream system.

The CDFW regulates wetland areas only to the extent that those wetlands are a part of a river, stream, or lake as defined by the CDFW. CDFW jurisdiction typically extends beyond the stream bed/banks to the limits of the riparian vegetation (if present) associated with streams, rivers, or lakes. The CDFW defines riparian as:

> On, or pertaining to, the banks of a stream. As riparian vegetation or riparian woodland. Vegetation which occurs in and/or adjacent to a watercourse. For the purpose of administering Code Section 1600, et seq., this should be expanded to vegetation adjacent to lakes as well.[1]

An artificial waterway is considered natural if the landowners and the community regard the ditch as a natural drainage course and normal circumstances, as having existed over 7 years ("Departmental Jurisdiction Over Waterways," CDFW memo dated October 17, 1988, and "Jurisdictional Issues in the Application of Fish and Game Code Sections 1601 and 1603," CDFW memo dated July 2, 1990). Other Legal Advisor recommendations to amend the CDFW Operating Manual include the following treatment of resources:

> Artificial waterways are jurisdictional if that constructed drainage now has attributes similar to a natural stream bed and that artificial channels or ditches without natural attributes are not subject to Fish and Game Code provisions.

In obtaining CDFW agreements, the limits of wetlands are not typically determined. The reason for this is that the CDFW generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, mule fat, and other vegetation typically associated with the banks of a stream or lake shorelines and may not be consistent with USACE definitions. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas and may include additional areas that do not meet USACE criteria for soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream, away from frequently saturated soils).

Regional Water Quality Control Board

The RWQCBs are responsible for the administration of Section 401 of the CWA. Typically, the areas subject to RWQCB jurisdiction coincide with those of the USACE (i.e., waters of the U.S., including any wetlands). The RWQCB may also assert authority over waters of the State under waste discharge requirements pursuant to the Porter-Cologne Act of 2014.

[1] *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600–1607 California Fish and Game Code*, January 1994.

METHODOLOGY

The fieldwork for this evaluation was conducted by consulting biologists Denise Woodard and Claudia Bauer on June 17, 2016. The project area was surveyed on foot for both Federal and State jurisdictional areas.

Areas supporting species composition of the plant community that were potentially indicative of wetlands were evaluated according to routine wetland delineation procedures described in the *Regional Supplement*, to the best extent feasible. Three representative sample plots were selected and examined in the field in areas where wetland jurisdiction was in question or needed to be confirmed. At each sample plot location, the dominant and subdominant plant species were identified and their wetland indicator statuses noted (Lichvar 2016). A small pit (approximately 12–24 inches deep) was dug in order to examine soil characteristics and composition. Soil matrix colors were classified according to the Munsell Soil Color Charts (Munsell Color 2000). Hydrological conditions, including any surface inundation, saturated soils, groundwater levels, and/or other wetland hydrology indicators were also noted. General site characteristics were also noted throughout all potential jurisdictional areas. Standard data forms were completed for the sample plots. Copies of the data forms are provided as Appendix A, Wetland Determination Data Forms.

Areas of potential jurisdiction were evaluated according to USACE and CDFW criteria. The boundaries of the potential jurisdictional areas were observed in the field and mapped on a series of aerial photographs (scale, 1 inch = approximately 200 feet), which together show the entire survey area. Measurements of Federal and State jurisdictional areas mapped during the course of the field investigation were determined by a combination of direct measurements taken in the field and measurements derived from the aerial photographs. The OHWM was determined through direct observation of indicators such as water staining, scouring, and shelving. Because City Creek within the study area is a low-gradient, alluvial perennial creek, the OHWM for City Creek was evaluated according to USACE *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008).

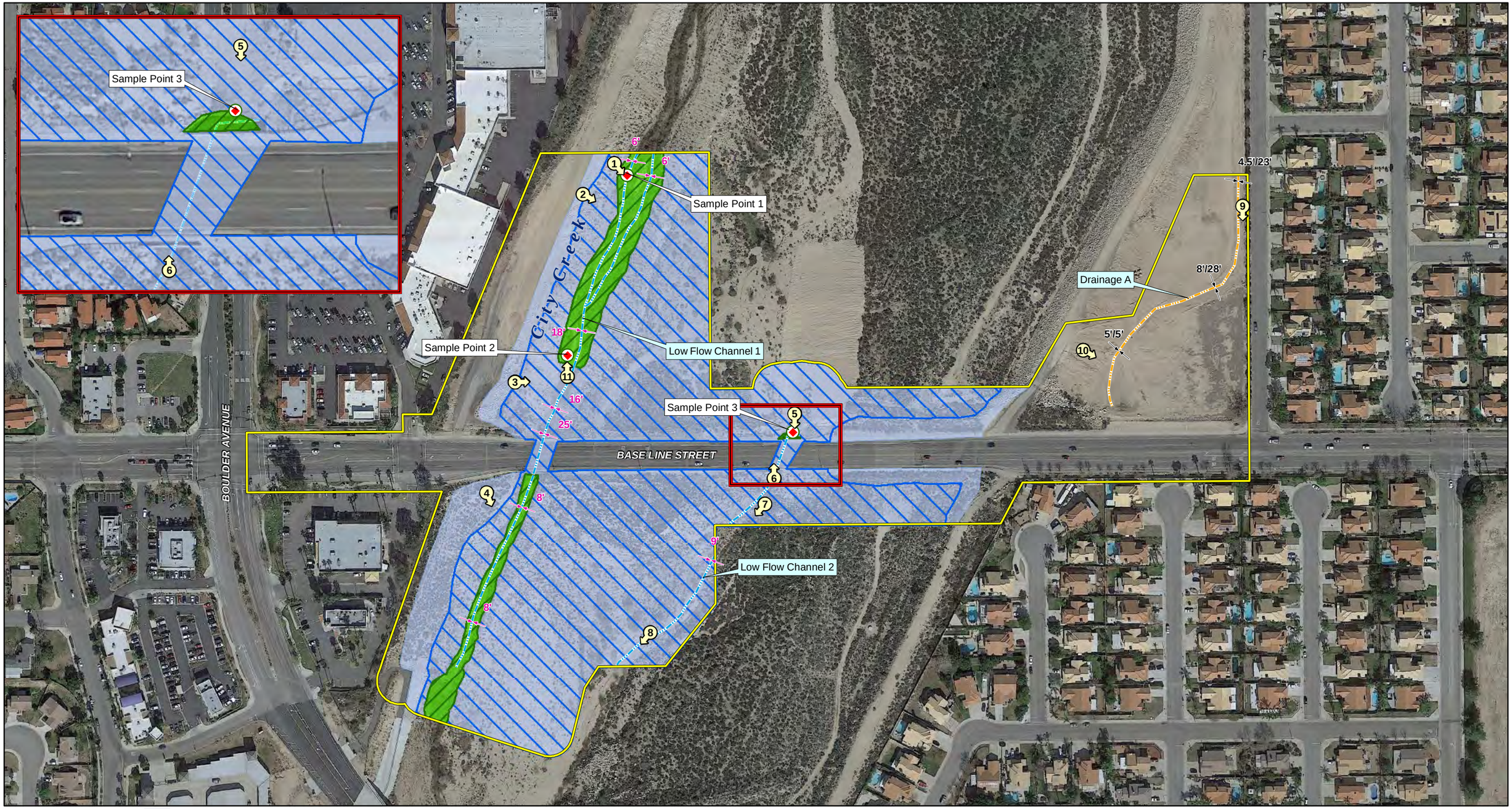
The locations of the potential jurisdictional areas are shown in Figure 2. Representative site photographs are provided in Figure 3.

RESULTS

Potential Jurisdictional Areas

City Creek. City Creek is leveed, with a low gradient and is considered perennial within the BSA. City Creek conveys flows south, under Baseline Road and into the Santa Ana River, that ultimately conveys flows into the Pacific Ocean. The soils within the river are mapped by the NRCS as "Soboba stony loamy sand (SpC) (2 to 9 percent slopes)," and "psamments, fluvents and frequently flooded soils." Psamments, fluvents and frequently flooded soils are on the NRCS 2015 National Hydric Soils List (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/).

Because City Creek is perennial within the BSA, it will likely meet the USACE definition of a relatively permanent water (RPW) body. Thus, the creek is considered to be a potential jurisdictional water regulated by the USACE.



Biological Study Area (26.12 Ac)
8'/28' Drainage Widths (ACOE/CDFW)
8' USACE OHWM
Sample Point
Photo Location

Low Flow Channel
Potential USACE Non-jurisdictional Waters/Potential CDFW Streambed
CDFW Riparian (1.20 Ac)
CDFW Streambed (14.65 Ac)
USACE Wetland Waters (1.20 Ac)
USACE Non-wetland Waters (12.61 Ac)

N

0 100 200
FEET

SOURCE: Google Earth, 2016

I:\AEM1603(LIM0801)\Reports\JuriDel\fig2_JuriDelFloodplain.mxd (9/19/2017)

FIGURE 2

Base Line Bridge Over City Creek (Replace)
Jurisdictional Delineation

Potential Jurisdictional Waters

08-SBd-0-HIGH
EA 08-925035

Photograph 1:
View of Sample Point 1.





Photograph 2:
View facing southeast, across northern portion of the study area.



Photograph 3:
View facing east across City Creek. Base Line Bridge is visible on the right.

LSA

FIGURE 3A

Base Line Bridge Over City Creek (Replace)
Jurisdictional Delineation
Site Photographs
08-SBd-0-HIGH
EA 08-925035



Photograph 4:
View facing southeast, across the southern portion of the study area. Base Line Bridge is visible on the left.



Photograph 5:
View facing south at the concrete square culvert under Base Line Street related to Low Flow Channel 2. Sample Point 3 is visible in the foreground. Four foot round culvert adjacent to Base Line Street is visible on the left.

LSA

FIGURE 3B

Base Line Bridge Over City Creek (Replace)
Jurisdictional Delineation
Site Photographs
08-SBd-0-HIGH
EA 08-925035

Photograph 6:
View facing north at the concrete square culvert under Base Line Street related to Low Flow Channel 2.





Photograph 7:
View facing southwest along Low Flow Channel 2 near Base Line Street.



Photograph 8:
View facing southwest along the southern portion of Low Flow Channel 2.

LSA

FIGURE 3C

Base Line Bridge Over City Creek (Replace)
Jurisdictional Delineation
Site Photographs
08-SBd-0-HIGH
EA 08-925035

Photograph 9:
View facing south along Drainage A.





Photograph 10
View facing southeast at the terminus of Drainage A.



Photograph 11:
View of Sample Point 2.

LSA

FIGURE 3D

Base Line Bridge Over City Creek (Replace)
Jurisdictional Delineation
Site Photographs
08-SBd-0-HIGH
EA 08-925035

City Creek is generally bounded by commercial/industrial development on the west and single-family residences on the east. These upland areas are dominated by ornamental vegetation. City Creek bears evidence of disturbance due to historical vegetation removal activities and channel contouring, which was confirmed through review of Google Earth aerial imagery.

City Creek contains a primary perennial low-flow channel within the BSA and is identified in in Figure 2 as "Low Flow Channel 1" located along the western bank of the larger floodplain. This channel is contained by a berm that was created after a large storm event in 2011. The low-flow channel is vegetated by willow scrub, while Riversidean alluvial fan sage scrub and non-native grasslands dominate the remainder of the floodplain.

Two wetland sample plots (LSA Sample Points 1 and 2) were analyzed along City Creek's Low Flow Channel 1. Wetland vegetation and hydrology indicators were present at the locations of the two sample points. The soils within this portion of City Creek are mapped by the NRCS as "psamments, fluvents and frequently flooded soils," which are on the NRCS 2015 National Hydric Soils List (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/). Based on the presence of an OHWM and the presence of all three USACE wetland indicators at the two sample point locations, it is LSA's opinion that the portions of City Creek associated with the low-flow channel meet the USACE definition of wetlands. Based on the presence of streambed and bank, and riparian habitat (willow scrub), the creek would be subject to the regulatory authority of the CDFW.

A secondary low-flow channel, identified as "Low Flow Channel 2" in Figure 2 and Figure 3, photograph 5, is located along the east levee bank of the larger floodplain. Low Flow Channel 2 primarily receives flows from a 4-foot diameter pipe that is aligned parallel to the north side of Base Line Road. It also receives localized surface runoff from the east bank of the levee and adjacent areas. Low Flow Channel 2 conveys flows under Base Line Road by way of an 8-foot by 4-foot concrete box culvert. Low Flow Channel 2 conveys flows southwest to converge with Low Flow Channel 1 south of the BSA. Low Flow Channel 2 is considered ephemeral.

A wetland sample point (LSA Sample Point 3) was excavated near the outlet of the aforementioned 4-foot diameter pipe due to the presence of ponded water. The dominant vegetation observed within the vicinity of Sample Point 3 was Canada horseweed (*Erigeron canadensis*), a FACW wetland indicator species. The soils within the tributary are mapped by the NRCS as "psamments, fluvents and frequently flooded soils." In addition to the ponded water, signs of hydrology observed in the area included water marks, sediment deposits, and drift deposits. The OHWM was determined by the presence of these hydrological features. However, hydric vegetation was absent from the portion of Low Flow Channel 2 south of Baseline Road. Low Flow Channel 2 south of Baseline Road is dry and vegetated primarily by Riversidean alluvial fan sage scrub species and non-native grasslands species. Low Flow Channel 2 hydrology south of Baseline Road was determined by the presence shelving and scouring.

The ponded area north of Baseline Road within Low Flow Channel 2 possesses all three USACE wetland indicators, resulting in this localized area being considered jurisdictional wetland waters of the U.S. However, the segment of Low Flow Channel 2 south of Baseline Road would be considered jurisdictional non-wetland water of the U.S., given the lack of hydrophytic vegetation.

Based on the presence of streambed and bank, Tributary A would be subject to the regulatory authority of the CDFW.

Drainage A. Drainage A is an earthen channel at the eastern edge of the BSA. It parallels the west side of Yarnell Road and terminates in a low earthen area north of Baseline Road. The drainage is situated in an upland area east of the City Creek floodplain and is considered ephemeral. It conveys localized runoff from the developed areas north of the BSA.

The OHWM was determined by the presence shelving and scouring. The dominant soils are mapped by the NRCS as "Soboba stony loamy sand (2 to 9 percent slopes)." Drainage A is unvegetated within BSA, does not have any connectivity to City Creek, and is considered isolated. Because the USACE typically does not assert jurisdiction over non-tidal drainages and ditches that are excavated on dry land and drain adjacent upland areas, Drainage A is considered to be a USACE non-jurisdictional drainage feature.

Based on the presence of a defined bed and banks, Drainage A within the study area would likely be subject to the jurisdiction of the CDFW. As indicated previously, no riparian habitat is associated with Drainage A within the BSA.

CONCLUSIONS

As shown in Table B, the BSA contains 12.61 acres of potential non-wetland waters of the United States and 1.20 acres of wetland waters of the United States that could be regulated by the USACE. Additionally, there are 15.85 acres potentially jurisdictional to the CDFW within the BSA.

Table B: Potential Jurisdictional Features within the BSA

Drainage Feature	Length (linear feet)	Potential Waters of the United States (acres)		*Potential CDFW Jurisdictional Streambed (acres)
		Non-Wetland	Wetland	
City Creek	1,542	12.61	1.20	15.59
Drainage A	637	0	0	0.26
Total	**2,179**	**12.61**	**1.20**	**15.85**

*Includes acreage of Potential CDFW Riparian (Willow Scrub) Habitat

The USACE regulatory authority over these potential jurisdictional areas would have to be determined through the formal Jurisdictional Determination process or, if the areas delineated as jurisdictional waters in this report are assumed to be waters of the U.S., then the abbreviated Preliminary Jurisdictional Determination process is applicable.

Since there is no public guidance on determining RWQCB jurisdictional areas, jurisdiction was determined based on the Federal definition of wetlands (three-parameter) and other waters of the U.S. (OHWM) as recommended by the September 2004 Workplan. Since there are areas within the project area subject to USACE and CDFW jurisdiction, RWQCB jurisdiction in this case is coincident with USACE jurisdiction for purposes of Section 401 certification. The total area of potential RWQCB jurisdiction within the BSA is 12.61 acres, which is synonymous with the total area of potential waters of the United States, i.e., USACE jurisdiction.

Please note the findings and conclusions presented in this report, including the locations and extent of wetlands and other waters subject to regulatory jurisdiction, represent the professional opinion of the

consultant biologists. These findings and conclusions should be considered preliminary until verified by the USACE, CDFW, and RWQCB.

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APPENDIX A

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Project | City/County: Highland/San Bernardino | Sampling Date: June 17, 2016

Applicant/Owner: City of Highland | State: CA | Sampling Point: #1

Investigators: Denise Woodard, Claudia Bauer | Section, Township, Range: S33/ T01N/ R03W

Landform (hillslope, terrace, etc.): Flat land | Local relief (concave, convex, none): none | Slope (%): <1

Subregion (LRR): C | Lat: 482229.8 | Long: 3775796.5 | Datum: UTM

Soil Map Unit Name: Psamments, Fluvents and Frequently flooded soils | NWI classification: Riverine

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? **No** Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ Soil ___ or Hydrology ___ naturally problematic? **No** (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Yes X	No ___	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ___
Hydric soil present?	Yes X	No ___		
Wetland Hydrology present?	Yes X	No ___		

Remarks: Hydric soil indicators were not present, however, soils for the area are mapped as hydric, and thus considered as such for this wetland determination.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 10ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix exigua	10	Y	FACW
2. Tamarix chinensis	10	Y	FAC
3. Salix lasiolepis	2	N	FACW
4. Salix gooddingii	2	N	FACW
Total Cover:	24		
Sapling/Shrub Stratum (Plot size: 10ft.)			
1. Baccharis salicifolia	60	Y	FAC
2. Nerium oleander	1	N	UPL
3.			
4.			
5.			
Total Cover:	61		
Herb Stratum (Plot size: 10ft.)			
1. Lactuca serriola	1	Y	FACU
2. Polypogon interruptus	1	Y	FACW
3. Cyperus involucratus	1	Y	FACW
4. Lantana camara	1	Y	FACU
5.			
6.			
7.			
8.			
Total Cover:	4		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 30 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percentage of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	× 1 =	0
FACW species	16	× 2 =	32
FAC species	70	× 3 =	210
FACU species	2	× 4 =	8
UPL species	1	× 5 =	5
Column Totals:	89 (A)		255 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

X Dominance Test is > 50%

X Prevalence Test is ≤ 3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

	Matrix		Redox Features					
Depth (inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16”	10 YR 3/2	100%					Course sand with gravel component	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) (**LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** X* **No** ___

Remarks:
*Despite the absence of redox feature and hydric soil indicators at this Sample Pit, the area is mapped as ‘Psamments, Fluvents and Frequently flooded soils’ associated with City Creek, and will be considered hydric based on the soil mapping.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- X Sediment Deposits (B2) **Riverine)**
- X Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquatard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology Present? Yes __X__ No _____**	
Water Table Present?	Yes ___	No X	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Project | City/County: Highland/San Bernardino | Sampling Date: June 17, 2016

Applicant/Owner: City of Highland | State: CA | Sampling Point: #2

Investigators: Denise Woodard, Claudia Bauer | Section, Township, Range: S33/ T01N/ R03W

Landform (hillslope, terrace, etc.): Flat land | Local relief (concave, convex, none): none | Slope (%): <1

Subregion (LRR): C | Lat: 482189.9 | Long: 3775679.4 | Datum: UTM

Soil Map Unit Name: Psamments, Fluvents and Frequently flooded soils | NWI classification: Riverine

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? **No** Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ Soil ___ or Hydrology ___ naturally problematic? **No** (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Yes	X	No	
Hydric soil present?	Yes	X	No	
Wetland Hydrology present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes** X **No** ___

Remarks: Hydric soil indicators were not present, however, soils for the area are mapped as hydric, and thus considered as such for this wetland determination.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 10ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tamarix chinensis	10	Y	FAC
2. Salix sp.	2	N	FACW
Total Cover:	12		

Sapling/Shrub Stratum (Plot size: 10ft.)			
1. Baccharis salicifolia	80	Y	FAC
2.			
3.			
4.			
5.			
Total Cover:	80		

Herb Stratum (Plot size: 10ft.)			
1. Polypogon interruptus	5	Y	FACW
2. Cyperus involucratus	2	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	7		

Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percentage of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	× 1 =	0
FACW species	9	× 2 =	18
FAC species	90	× 3 =	270
FACU species	0	× 4 =	0
UPL species	0	× 5 =	0
Column Totals:	99 (A)		288 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

X Dominance Test is > 50%

X Prevalence Test is ≤ 3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: Bare ground is synonymous with the dry streambed.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16”	10 YR 3/3	100%					Sandy with large cobble & coarse gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) (**LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** X* **No** ___

Remarks:
Despite the absence of redox feature and hydric soil indicators at this Sample Pit, the area is mapped as ‘Psamments, Fluvents and Frequently flooded soils’ associated with City Creek, and will be considered hydric based on the soil mapping.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- X Sediment Deposits (B2) **Riverine)**
- X Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquatard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology Present? Yes __X__ No _____**	
Water Table Present?	Yes ___	No X	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Project | City/County: Highland/San Bernardino | Sampling Date: June 17, 2016

Applicant/Owner: City of Highland | State: CA | Sampling Point: #3

Investigators: Denise Woodard, Claudia Bauer | Section, Township, Range: S33/ T01N/ R03W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): none | Slope (%): <1

Subregion (LRR): C | Lat: 482336.3 | Long: 3775627.8 | Datum: UTM

Soil Map Unit Name: Psamments, Fluvents and Frequently flooded soils | NWI classification: Riverine

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? **No** Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ Soil ___ or Hydrology ___ naturally problematic? **No** (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Yes X	No ___	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ___
Hydric soil present?	Yes X	No ___		
Wetland Hydrology present?	Yes X	No ___		

Remarks: Sample pit was dug at outlet of 4' diameter concrete culvert. Hydric soil indicators were not present, however, soils for the area are mapped as hydric, and thus considered as such for this wetland determination.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 20ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (Plot size: 20ft.)			
1. Nicotiana glauca	1	Y	FAC
2.			
3.			
4.			
5.			
Total Cover:	1		
Herb Stratum (Plot size: 20ft.)			
1. Erigeron canadensis	30	Y	FACW
2. Lactuca serriola	3	N	FACU
3. Cyperus involucratus	2	N	FACW
4. Hirschfeldia incana	3	N	UPL
5. Salsola tragus	1	N	FACU
6. Bromus sp.	2	N	UPL
7. Melilotus albus	1	N	FACU
8.			
Total Cover:	42		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percentage of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	× 1 =	0
FACW species	32	× 2 =	64
FAC species	1	× 3 =	3
FACU species	5	× 4 =	20
UPL species	3	× 5 =	15
Column Totals:	41 (A)		102 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

X Dominance Test is > 50%

X Prevalence Test is ≤ 3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

	Matrix		Redox Features					
Depth (inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10 YR 3/2	100%					Sandy with some cobble	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) (**LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ___
Depth (inches): ___

Hydric Soil Present? **Yes** X* **No** ___

Remarks:
Soil was moist at pit location. Despite the absence of redox feature and hydric soil indicators at this Sample Pit, the area is mapped as '*Psamments, Fluvents and Frequently flooded soils*' associated with City Creek, and will be considered hydric based on the soil mapping.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water Marks (B1) **(Riverine)**
- X Sediment Deposits (B2) **(Riverine)**
- X Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquatard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): ___
Water Table Present?	Yes	___	No	X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Wetland Hydrology Present? **Yes** __X__ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Ponded water at base of 4' culvert outlet and neighboring 7'x4' square culvert under Baseline.

Appendix H – List of Plant and Animal Species Observed

LIST OF PLANT AND ANIMAL SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
PINOPHYTA	**GYMNOSPERMS**
Cupressaceace	**Cypress family**
Juniperus californica	California juniper
Pinaceae	**Pine family**
Pinus sp.	Pines
MAGNOLIOPHYTA: MAGNOLIOPSIDA	**DICOT FLOWERING PLANTS**
Anacardiaceae	**Sumac family**
Rhus ovata	Sugar bush
Schinus molle (non-native species)	Peruvian peppertree
Apiaceae	**Carrot family**
Cyclospermum leptophyllum (non-native species)	Ciclospermum
Asteraceae	**Sunflower family**
Artemisia californica	California sagebrush
Artemisia douglasiana	Mugwort
Baccharis pilularis	Coyote brush
Baccharis salicifolia	Mule fat
Bebbia juncea	Sweetbush
Bidens pilosa (non-native species)	Common beggar's tick
Brickellia californica	California brickellbush
Centaurea melitensis (non-native species)	Tocalote
Cotula australis (non-native species)	Australian brass-buttons
Encelia farinosa	Brittlebush
Erigeron canadensis	Canadian horseweed
Helianthus annuus	Common sunflower
Heterotheca grandiflora	Telegraph weed
Heterotheca sessiliflora	Golden aster
Hypochaeris glabra (non-native species)	Smooth cat's-ear
Lactuca serriola (non-native species)	Prickly lettuce
Lepidospartum squamatum	Scalebroom
Logfia filaginoides	California cottonrose
Pseudognaphalium beneolens	Fragrant rabbit-tobacco
Pseudognaphalium biolettii	Two-color rabbit-tobacco
Pseudognaphalium microcephalum	San Diego rabbit-tobacco
Pseudognaphalium stramineum	Cottonbatting plant
Senecio vulgaris (non-native species)	Common groundsel
Sonchus asper (non-native species)	Prickly sow thistle
Sonchus oleraceus (non-native species)	Common sow thistle
Xanthium strumarium	Rough cocklebur
Boraginaceae	**Borage family**
Cryptantha intermedia	Common cryptantha
Cryptantha muricata	Pointed cryptantha

LIST OF PLANT AND ANIMAL SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
Emmenanthe penduliflora	Whispering bells
Eriodictyon trichocalyx	Yerba santa
Phacelia brachyloba	Shortlobe phacelia
Phacelia distans	Distant phacelia
Phacelia minor	Wild Canterbury bells
Phacelia ramosissima	Branching phacelia
Brassicaceae	**Mustard family**
Hirschfeldia incana (non-native species)	Shortpod mustard
Lepidium oblongum	Peppergrass
Nasturtium officinale	Watercress
Sisymbrium orientale (non-native species)	Indian hedgemustard
Cactaceae	**Cactus family**
Opuntia littoralis	Coastal prickly pear
Caryophyllaceae	**Pink family**
Loeflingia squarrosa	Spreading pygmyleaf
Polycarpon tetraphyllum (non-native species)	Fourleaf manyseed
Chenopodiaceae	**Saltbush family**
Chenopodium berlandieri	Pitseed goosefoot
Convolvulaceae	**Morning-glory family**
Calystegia macrostegia	Morning-glory
Crassulaceae	**Stonecrop family**
Crassula connata	Sand pygmyweed
Euphorbiaceae	**Spurge family**
Croton californicus	California croton
Euphorbia maculata (non-native species)	Spotted spurge
Ricinus communis (non-native species)	Castor bean
Fabaceae	**Pea family**
Acmispon glaber	Deerweed
Lupinus hirsutissimus	Stinging lupine
Lupinus sparsiflorus	Coulter's lupine
Melilotus albus (non-native species)	White sweetclover
Spartium junceum (non-native species)	Spanish broom
Vicia villosa (non-native species)	Winter vetch
Fagaceae	**Beech family**
Quercus chrysolepis (non-native species)	Canyon live oak
Geraniaceae	**Geranium family**
Erodium cicutarium (non-native species)	Redstem stork's bill
Lamiaceae	**Mint family**
Lamium amplexicaule (non-native species)	Henbit deadnettle
Marrubium vulgare (non-native species)	Horehound
Salvia apiana	White sage

LIST OF PLANT AND ANIMAL SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
Salvia columbariae	Chia
Salvia mellifera	Black sage
Malvaceae	**Mallow family**
Malacothamnus fasciculatus	Chaparral mallow
Montiaceae	**Miner's lettuce family**
Calyptridium monandrum	Coastal pussy paws
Myrsinaceae	**Myrsine family**
Anagallis arvensis (non-native species)	Scarlet pimpernel
Myrtaceae	**Myrtle family**
Melaleuca sp. (non-native species)	Bottlebrush
Oleaceae	**Olive family**
Fraxinus velutina	Velvet ash (Modesto ash)
Onagraceae	**Evening primrose family**
Camissoniopsis bistorta	Southern suncup
Camissoniopsis sp.	Camissoniopsis
Clarkia purpurea	Winecup clarkia
Epilobium ciliatum	Green willow herb
Eulobus californicus	Mustard-like evening primrose
Oenothera elata ssp. *hookeri*	Hooker's evening-primrose
Papaveraceae	**Poppy family**
Dendromecon rigida	California bush poppy
Ehrendorferia chrysantha	Golden eardrops
Eschscholzia californica	California poppy
Phrymaceae	**Monkey-flower family**
Mimulus aurantiacus	Red bush monkey-flower
Mimulus guttatus	Yellow monkey-flower
Penstemon spectabilis	Royal penstemon
Platanaceae	**Sycamore family**
Platanus racemosa	California sycamore
Polemoniaceae	**Phlox family**
Eriastrum sapphirinum	Sapphire woollystar
Polygonaceae	**Buckwheat family**
Eriogonum elongatum	Long-stemmed eriogonum
Eriogonum fasciculatum	California buckwheat
Eriogonum gracile	Slender buckwheat
Eriogonum thurberi	Thurber's buckwheat
Persicaria spp.	Smartweed
Salicaceae	**Willow family**
Populus fremontii	Fremont cottonwood
Salix exigua	Narrowleaf willow
Salix laevigata	Red willow

LIST OF PLANT AND ANIMAL SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
Salix lasiolepis	Arroyo willow
Sapindaceae	**Soapberry family**
Koelreuteria bipinnata (non-native species)	Chinese flame tree
Scrophulariaceae	**Figwort family**
Verbascum thapsus (non-native species)	Common mullein
Simaroubaceae	**Quassia family**
Ailanthus altissima (non-native species)	Tree of heaven
Solanaceae	**Nightshade family**
Datura wrightii	Sacred thorn-apple
Nicotiana glauca (non-native species)	Tree tobacco
Tamaricaceae	**Tamarisk family**
Tamarix ramosissima (non-native species)	Mediterranean tamarisk
MAGNOLIOPHYTA: LILIOPSIDA	**MONOCOT FLOWERING PLANTS**
Agavaceae	**Agave family**
Hesperoyucca whipplei	Chaparral yucca
Arecaceae	**Palm family**
Washingtonia robusta (non-native species)	Mexican fan palm
Cyperaceae	**Sedge family**
Cyperus involucratus (non-native species)	Umbrella plant
Poaceae	**Grass family**
Avena barbata (non-native species)	Slender wild oat
Bromus diandrus (non-native species)	Ripgut brome
Bromus madritensis (non-native species)	Foxtail chess
Bromus tectorum (non-native species)	Cheatgrass
Cynodon dactylon (non-native species)	Bermuda grass
Festuca myuros (non-native species)	Rat-tail fescue
Festuca perennis (non-native species)	Ryegrass
Hordeum murinum (non-native species)	Mouse barley
Pennisetum setaceum (non-native species)	African fountain grass
Phalaris minor (non-native species)	Littleseed canary grass
Polypogon interruptus (non-native species)	Ditch rabbitsfoot grass
Polypogon monspeliensis (non-native species)	Annual rabbitsfoot grass
Polypogon viridis (non-native species)	Water bentgrass
Schismus barbatus (non-native species)	Common Mediterranean grass
Stipa miliacea (non-native species)	Smilo grass
REPTILIA	**REPTILES**
Iguanidae	**Iguanas and their allies**
Uta stansburiana	Common side-blotched lizard
Phrynosoma coronatum	Coast horned-lizard
Teiidae	**Whiptails and Racerunners**
Aspidoscelis tigris munda	California whiptail

LIST OF PLANT AND ANIMAL SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
Colubridae	**Colubrids**
Masticophis flagellum	Coachwhip
AVES	**BIRDS**
Anatidae	**Swans, Geese, and Ducks**
Anas platyrhynchos	Mallard
Accipitridae	**Kites, Hawks, and Eagles**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	Red-tailed hawk
Charadriidae	**Plovers and Lapwings**
Charadrius vociferus	Killdeer
Columbidae	**Pigeons and Doves**
Zenaida macroura	Mourning dove
Apodidae	**Swifts**
Aeronautes saxatalis	White-throated swift
Trochilidae	**Hummingbirds**
Archilochus alexandri	Black-chinned hummingbird
Calypte anna	Anna's hummingbird
Calypte costae	Costa's hummingbird
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	Black phoebe
Tyrannus verticaulis	Western kingbird
Vireonidae	**Vireos**
Vireo bellii pusillus	Least Bell's vireo
Corvidae	**Crows and Ravens**
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Hirundinidae	**Swallows**
Stelgidopteryx serripennis	Northern rough-winged swallow
Aegithalidae	**Bushtits**
Psaltriparus minimus	Bushtit
Troglodytidae	**Wrens**
Salpinctes obsoletus	Rock wren
Thryomanes bewickii	Bewick's wren
Mimidae	**Mockingbirds and Thrashers**
Mimus polyglottos	Northern mockingbird
Ptilogonatidae	**Silky flycatchers**
Phainopepla nitens	Phainopepla
Geothlypis trichas	Common yellowthroat
Cardellina pusilla	Wilson's warbler
Emberizidae	**Emberizines**
Pipilo maculatus	Spotted towhee

LIST OF PLANT AND ANIMAL SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
Melozone crissalis	California towhee
Melospiza melodia	Song sparrow
Aimophila ruficeps canescens	Southern rufous-crowned sparrow
Amphispiza belli	Bell's sage sparrow
Cardinalidae	**Cardinals, Grosbeaks, and Allies**
Passerina caerulea	Blue grosbeak
Icteridae	**Blackbirds, Orioles and Allies**
Icterus cucullatus	Hooded oriole
Fringillidae	**Finches**
Carpodacus mexicanus	House finch
Spinus psaltria	Lesser goldfinch
Phasianidae	**Quails and Pheasants**
Callipepla californica	California quail
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and Hares**
Sylvilagus audubonii	Desert cottontail
Sciuridae	**Squirrels**
Spermophilus beecheyi	California ground squirrel
Geomyidae	**Pocket Gophers**
Thomomys bottae	Botta's pocket gopher
Heteromyidae	**Pocket Mice and Kangaroo Rats**
Dipodomys merriami parvus	San Bernardino kangaroo rat
Chaetodipus fallax fallax	San Diego pocket mouse
Muridae	**Mice, Rats and Voles**
Peromyscus maniculatus	Deer mouse
Neotoma lepida intermedia	San Diego desert woodrat
Canidae	**Foxes, Wolves and Dogs**
Canis latrans	Coyote

APPENDIX B-1

AMENDED BIOLOGICAL ASSESSMENT

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
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March 11, 2025

Mr. Craig Wentworth, Senior Environmental Planner
California Department of Transportation, District 08
464 West 4th Street
San Bernardino California 92401

Subject: Base Line Bridge at City Creek Biological Assessment Amendment (LSA Project No. AEM1603)

Dear Mr. Wentworth:

This letter serves to amend the Base Line Bridge at City Creek Biological Assessment (*Base Line Bridge at City Creek, City of Highland California, Federal Project Number BR-NBIL 5449(505), 08-SBd-0-HIGH/EA 08-925035*, November 2017; Amended September 2018) pursuant to changes in the project description and additional impacts to San Bernardino kangaroo rat habitat.

BACKGROUND

Since the September 2018 submission, the project description has been amended and changes to the project footprint have resulted in adjusted impacts to San Bernardino Kangaroo Rat (SBKR) habitat. The following is addressed in this amendment:

- An updated project description.
- Changes to impacts to SBKR habitat and provision of proposed mitigation at a 1:1 ratio for 0.49 acres of permanent impacts to SBKR habitat. Temporary impacts to 15.95 acres of SBKR habitat would be restored following construction.
- Changes to impacts to jurisdictional waters.

UPDATED PROJECT DESCRIPTION

The purpose of the project is to replace the existing bridge and eliminate the low-water crossing over City Creek, replacing it with a raised bridge with adequate clearance for the creek to flow underneath and to maintain safe all-weather access through the project area on a roadway that meets adopted City standards.

Project Need

Upstream of Base Line, during normal flow conditions, flows are contained within piled-up channel side slopes and pass under the existing bridge. During major flood events, breaches have been observed at multiple locations in the piled-up channel side slopes. As a result of these breaches, flows are diverted to the low-water crossing through a secondary flow path where the existing box culvert is inadequate to convey such large flows. Consequently, the flows overtop the roadway, thus

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creating a need to replace the existing structure with a raised bridge with adequate clearance for the creek to flow underneath. Major storm events that occurred in December 2005 and 2010 resulted in significant flows within City Creek, causing the overtopping of a number of roadways and culverts within Highland, including Base Line.

Existing Facility

Base Line Bridge is 0.4 mile east of State Route 210 (SR-210) between Boulder Avenue and Yarnell Road, in Highland, San Bernardino County, California (see Figure 1, all figures are provided in Attachment A). As constructed, the facility is 72 feet wide and 42 feet long and is a four-lane roadway over City Creek. Eastbound and westbound traffic lanes are separated by a striped center median. Six-foot sidewalks are provided on each side of the roadway. Sidewalks are not separated from vehicular traffic lanes by concrete barrier railing.

Base Line Bridge is carried over the main flow channel of City Creek on a single-span, precast, concrete, voided, slab bridge 42 feet in length and 72 feet in width and conveys runoff from precipitation events under the roadway. Between the bridge on the west levee and the culvert to the east, the roadway is nearly at grade with City Creek. During storm events with high flows, a secondary flow path develops upstream of Base Line and flows across the high terrace area east of the main flow channel. A 4-foot by 8-foot box culvert is located where the secondary flow path intersects Base Line. High storm flows generally carry large amounts of debris downstream, which can block the culvert and cause stormwater to flow over the top of Base Line. As City Creek flows out of San Bernardino National Forest, hydrological flows are channelized by levees, which originate at Highland Avenue and extend downstream to the channel's confluence with the Santa Ana River. With the construction of the Base Line Bridge across the channel, hydrological flows have become further confined to a narrow strip of City Creek adjacent to the west levee. This has led to aggradation during moderate- and large-scale precipitation events resulting in the deposition of large amounts of aggregate material that has accumulated adjacent to the northern, upstream edge of Base Line. In the absence of aggregate not being removed between events, subsequent large-scale flood events have resulted in water and aggregate overtopping the existing roadway, creating a public safety hazard and impeding natural fluvial processes.

Description of Work

The City, in cooperation with Caltrans, District 8, and the Federal Highway Administration (FHWA), proposes a replacement bridge for the Base Line Bridge (State Bridge Number 54C0035) on Base Line at City Creek, 0.4 mile east of SR-210. The proposed replacement bridge would accommodate four lanes of vehicular traffic with dedicated space for pedestrians and bicyclists in accordance with current federal, State, and applicable local geometric standards. The proposed project would include two 14-foot-wide and two 12-foot-wide traffic through lanes (one of each on both sides of the bridge), a 12-foot-wide striped median, two 8-foot shoulders that double as Class II bike lanes, and two dedicated 6-foot pedestrian corridors separated from vehicle lanes by a concrete barrier along the length of the bridge. The proposed striped median would become a left-turn lane as it approaches the Highland Village Plaza intersection to the west and the Yarnell Road intersection to the east. The new bridge would measure 98 feet wide and 600 feet long and replace the existing 72-foot-wide and 42-foot-long bridge. The 98-foot bridge width comprises the following widths:

- Two 1-foot outside barriers.
- Two 6-foot sidewalks.
- Two 2-foot interior barriers.
- Two 8-foot shoulders (Class II bike lanes).
- Two 14-foot-wide traffic lanes, two 12-foot-wide traffic lanes and one 12-foot-wide striped median.
- Pedestrian overlook on the south side of the new bridge at the location of bent 3, which spans 54 feet from pedestal to pedestal and has a radius of 30 feet at the edge of the deck.
    - The overlook would extend a maximum of 10 feet from the typical edge of the bridge deck.

Both the northern and southern edges of the proposed bridge deck would extend past their current locations to accommodate standard shoulders and the pedestrian corridors. Compared to existing conditions, the replacement bridge profile will be raised to accommodate current roadway design standards and will allow vertical clearance for water flows to pass beneath Base Line Bridge. The project also includes the construction of street improvements including pavement widening, curbs, gutters, sidewalks, street lighting, and the relocation of utilities, as needed.

Project Design Considerations

In developing the project, both roadway and bridge design were taken into consideration. The vertical profile of the roadway and bridge has been designed for a speed of 55 miles per hour (mph; 45 mph posted speed). The bridge will provide a minimum freeboard of 2.5 feet over maximum water surface elevation and a minimum vertical clearance of 12 feet over the creek bed.

The following are the major considerations in setting the roadway/bridge profile:

- Design flow volume and minimum freeboard requirements of FHWA and San Bernardino County Flood Control District (SBCFCD);
- Maintain a design speed of 55 mph (posted speed 45 mph);
- Maintain access to nearby driveways to commercial/retail centers; and
- Replacement of the existing bridge and low-water crossing with a new bridge structure.

Taking into consideration the above, a road profile was developed that eliminates the existing bridge and low-water crossing, matches existing street elevations at the retail center driveways, provides the required freeboard clearances, and provides the necessary sight distances for the design speed. The change from a low-water crossing to an all-weather road resulted in raising the road profile up to a maximum of 6 feet above existing grade, particularly on the east end of the existing bridge. The majority of the road profile realignment would be on the east end of the proposed bridge due to several conditions and constraints including:

- Critical channel water surface elevations and freeboard requirements;

- Existing secondary flow path intersecting Base Line about 500 feet east of the existing bridge structure; and
- The existing roadway profile east of the secondary flow path.

Horizontally, the Base Line roadway across the SBCFCD right-of-way of City Creek is improved with curb and gutter and sidewalk and is striped for four travel lanes. The current cross-section with a 60-foot curb-to-curb width does not meet the City's Major Highway standard of 80 feet curb-to-curb. The Major Highway cross-section would include four travel lanes, a striped median, Class II bike lanes, barriers to separate pedestrians from vehicular traffic, and sidewalks. The roadway would not add any travel lanes and, therefore, would not be a capacity-enhancing improvement. The improvements would provide some improvement in the traffic flow by eliminating horizontal lane transitions for motorists traveling through the various road cross-sections.

City Multi-Use Trail Master Plan

The City's Multi-Use Trail Master Plan shows a proposed multi-use trail along the City Creek, at the west side of the Base Line Bridge with a planned major trail node connection near Boulder Avenue, approximately 700 feet southwest of the project. The Multi-Use Trail Master Plan shows the proposed trail extending south along City Creek from the planned major trail node, intersecting with the proposed Streater Avenue trail connection and undercrossing SR-210, eventually connecting to another planned major trail node connection near the Santa Ana River Trail. The planned major trail node near Boulder Avenue would also extend the proposed multi-use trail to the east and head south along the east edge of City Creek to connect to another planned trail node connection adjacent to Boulder Avenue and south of Cherokee Rose Drive.

The previously approved 2018 Initial Study/Mitigated Negative Declaration (IS/MND) acknowledges and analyzes the City's Multi-Use Trail Master Plan and states that the bridge replacement project would "accommodate the future extension of a multifunction trail (pedestrian, cycle, and equestrian use) for possible future connection with the Santa Ana River Trail." However, the precise footprint of the planned future trail tie-in was not detailed in the original project figures or calculations referenced in the approved technical documentation.

The new design modifications based on the updated project plans now reflect that the trail would not be constructed as part of the project. The updated project plans would provide a horizontal dirt bench in the cast-in-place concrete slope paving to be placed at the western bridge abutment, which would accommodate a future trail connection.

Project Construction

The construction of the bridge and road widening will include the following:

Construction Staging

The first phase of construction would close the southern half of the existing roadway to traffic and construct the corresponding half of the new bridge. The proposed staging area would be at the east end of the project, east of City Creek on the northwest corner of Base Line and Yarnell Road. Once

the first phase is constructed, traffic would be moved to the southern half of the new bridge and the northern half of the existing bridge would be removed and replaced.

Disposal Sites

Excavated materials would be stockpiled within the proposed staging area north of Base Line. Any material that cannot be placed as backfill within the project limits will be disposed of off site. A noxious weed station would be constructed within the staging area for disposal of invasive species.

Grading

Prior to construction, clearing and grubbing will be required along the roadway, access roads, and under the bridge. All grading will take place within the project footprint, and concrete rock slope protection would be placed at abutment 7, located at the east end of the new bridge. Rock slope protection will be placed at the upstream and downstream ends of the concrete slope protection to be placed at abutment 1, at the west end of the bridge.

Construction Access

There are currently logical access routes into the creek that would be utilized to initiate each stage of construction. Once bridge removal and grading are underway, initial access locations will become unusable. The contractor will construct temporary access to the invert of City Creek to facilitate the advanced phases of construction. These temporary access roads would be used for accessing the washes, hauling materials with dump trucks, delivering materials and equipment, and performing other activities, including the erection of precast girders and the placement of reinforcing steel and concrete.

Detours

Detours are not planned for this bridge replacement project. Construction of the replacement bridge will be staged to maintain continuous access across City Creek on Base Line to minimize the impact on the community.

Utility Relocation

The existing utilities are in franchise agreement with the City, and the owners would be responsible for their relocation as required by the project. The project would cause temporary relocations for Southern California Edison (SCE) and East Valley Water District (EVWD). Both SCE and EVWD would be permanently relocated after Phase 1 of construction. AT&T, Frontier Communications, and Charter/Spectrum will be relocated prior to the beginning of Phase 2 of construction. As part of the project, SoCal Gas would de-energize their gas line prior to the beginning of Phase 2 of construction and would be permanently relocated near the end of Phase 2 of construction, once the bridge work is complete.

Construction Schedule

Construction is expected to take place between November 2025 and June 2028. Construction would take place year-round and is anticipated to be 31 months in duration. Construction duration within

the channel of the river is anticipated to be 29 months, and it is anticipated that there would be a total of 22 construction workers on site daily during construction.

IMPACTS TO SAN BERNARDINO KANGAROO RAT HABITAT

Temporary and permanent impact acreages to SBKR habitat have changed since the 2018 Biological Assessment Amendment. Previously, concrete rock slope protection had not been included as a permanent impact. Therefore, permanent impact acreage has increased to 0.49 acres to account for concrete rock slope protection. Temporary impacts have been adjusted to account for the entire proposed exclusionary fencing limits. Construction will be conducted in two phases, with the first phase of construction on the south side of the bridge, and the second phase of construction on the north side of the bridge. SBKR exclusionary fencing will be installed in phases to allow SBKR to use the portions of the project site that are not actively under phased construction. During the first phase of construction, 9.11 acres of SBKR habitat will be fenced off. During the second phase of construction 11.77 acres of SBKR will be fenced off. Total temporary impact acreage has increased to 15.95 acres to account for fencing limits. Impacts to SBKR habitat are shown on the attached Figure 1.

MITIGATION

The 2018 Biological Assessment Amendment indicated that terraces on the easterly portion of the project area would be enhanced to compensate for impacts to SBKR habitat. Due to land ownership constraints, it has been determined that this area would be unsuitable for mitigation. Instead, the City proposes to purchase 0.49 acres of SBKR habitat mitigation credits from an approved mitigation bank or through acquisition, protection, and perpetual management of 0.49 acres of SBKR habitat management lands. Planting for the restoration of 15.95 acres of temporarily impacted SKBR habitat on-site shall occur within 6 months of completing construction activities.

Additionally, the following measures have been proposed to minimize and mitigate impacts to SBKR. These measures incorporate the conservation measures described in the 2019 Biological Opinion for the project, but have been adapted based on impact acreages as well as to include additional measures requested by the California Department of Fish and Wildlife (CDFW) during review of the Incidental Take Permit Application in 2020.

General Provisions

CM 1 **Designated Biologist.** The City will retain a well-qualified biologist to function as the Designated Biologist for the duration of project-related activities and ensure the Designated Biologist position is maintained for the life of the project. The Designated Biologist shall have a Designated Biologist Assistant(s) to act on the Designated Biologist's behalf during times that the Designated Biologist may be unavailable to perform the construction monitoring duties and functions identified in the ITP. The Designated Biologist Assistant(s) would be knowledgeable and experienced in the biology, natural history, collecting, and handling of the SBKR and have CDFW and USFWS prior approval. The Designated Biologist will be present during all SBKR relocation work. The Designated Biologist or Designated Biologist Assistant(s) will be present during geotechnical activities, installation of avoidance

and minimization measures, initial vegetation clearing, grading and construction, and be present during project-related activities. The California Department of Transportation (Caltrans), the United States Fish and Wildlife Service (Service), and the California Department of Fish and Wildlife (CDFW) will periodically evaluate whether additional monitoring needs, if any, are required. In addition:

a. At least 15 days prior to the start of project-related activities, the City will submit to the Palm Springs Fish and Wildlife Office (PSFWO) and CDFW for review and approval the name(s), any permit numbers, and resumes of the Designated Biologist and Designated Biologist Assistant(s), in addition to other prospective biological monitors;

b. The Designated Biologist and Designated Biologist Assistant(s) will have expertise with federally listed species and their associated habitats within the project area;

c. The Designated Biologist and Designated Biologist Assistant(s) will ensure compliance with the project avoidance and minimizations measures, including Conservation Measures and Terms and Conditions identified in this document, and have the authority to halt/suspend all project related activities in non-compliance until appropriate corrective measures have been taken; and

d. The Designated Biologist or Designated Biologist Assistant(s) will report any non-compliance within 24 hours to the PSFWO and CDFW.

CM 2 **Restoration Specialist.** The City shall submit to CDFW, in writing, the name, qualifications, business address, and contact information of the Restoration Specialist at least 30 days before starting construction. The City shall obtain CDFW approval of the Restoration Specialist in writing before starting construction, and shall also obtain approval in advance, in writing, if the Restoration Specialist must be changed. Permittee shall ensure the Restoration Specialist implements all the habitat restoration and protection activities described. The Restoration Specialist or equivalent shall possess the following qualifications: (1) have knowledge and experience in the biology and natural history of the San Bernardino kangaroo rat (SBKR) and (2) have experience in the restoration and enhancement of alluvial fan sage scrub and alluvial fan ephemeral stream habitats. Permittee may utilize the Designated Biologist as the Restoration Specialist if the Designated Biologist possesses all the qualifications required for the Restoration Specialist.

CM 3 **Delineation of Property Boundaries and Habitat.** Prior to clearing or construction, highly visible barriers (e.g., orange construction fencing) will be installed under the supervision of the Designated Biologist to delineate the project's footprint. Following installation, project disturbance will not be permitted beyond the designated boundary. In areas adjacent to native vegetation, silt fence barriers will be installed to prevent accidental deposition of fill material beyond the designated boundary. The City shall clearly delineate habitat of SBKR within the Project Area

with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of SBKR habitat.

CM 4 **Education Program.** The City will develop a worker education/awareness program presented by the Designated Biologist to all project personnel. The program will include information such as a discussion of the biology and general behavior of SBKR; information about the distribution and habitat needs of SBKR; sensitivity of SBKR to human activities; its status pursuant to the California Endangered Species Act (CESA), including legal protection, recovery efforts, and penalties for violations; and project-specific protective measures. A fact sheet will be distributed for workers to carry in the project area. The training will be provided to each employee, contractor, or subcontractor involved in project construction (including temporary contractors and subcontractors). Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.

CM 5 **Weed Abatement Program.** A weed abatement program will be developed by the City of Highland to minimize the import of non-native plant material during and after construction.

CM 6 **Construction Monitoring.** The Designated Biologist or Designated Biologist Assistant(s) will monitor construction within the vicinity of natural vegetation communities for the duration of the project construction and ensure that vegetation removal, Best Management Practices (BMPs), Environmentally Sensitive Areas (ESAs), and conservation measures are properly implemented. The Designated Biologist or Designated Biologist Assistant(s) shall be on site daily when initial clearing and ground-disturbing activities occur within Covered Species habitat, and at least once weekly thereafter to conduct compliance monitoring. The Designated Biologist or Designated Biologist Assistant(s) shall prepare daily written observation and inspection records summarizing oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this Incidental Take Permit (ITP). The Designated Biologist or Designated Biologist Assistant(s) shall conduct compliance inspections a minimum of once weekly during periods of inactivity and after clearing, grubbing, and grading are completed.

CM 7 **Refuse Removal.** Spoils and rubble will be deposited within the identified limits of project footprint. Any excess material generated by the project, will be transported off site and disposed of at a City approved facility. Upon completion of construction, the contractor shall remove from the Project Area and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.

CM 8 **Project Access.** All construction-related activities by contractors, subcontractors or their agents, and equipment (including vegetation removal, grading, equipment laydown and storage, and contractor parking) will be restricted to the designated limits of construction.

CM 9 **Hazardous Waste.** All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated staging areas to prevent the release of hazardous substances into the project site. Any accidental spills will be immediately contained and properly disposed.

CM 10 **Trash Abatement.** To avoid attracting scavengers and predators, project generated trash will be stored in closed containers and removed from the construction site at the end of each construction day.

CM 11 **Recontouring.** Following construction, temporary disturbance areas will be recontoured and terraced to match existing topography within City Creek.

CM 12 **Lighting.** Following construction, all permanent lighting installed along the bridge and road will use wildlife-friendly lighting and be permanently shielded and directed onto the roadway or trail.

CM 13 **Time of Day Restriction.** Project related actions will be limited to daylight hours for any work that would result in soil disturbances.

CM 14 **Habitat Enhancement and Restoration Plan.** A Habitat Enhancement and Restoration Plan will be prepared to address temporary on-site impacts. A draft will be provided to the Service and CDFW prior to ground disturbing activities and include goals identified in the *Base Line Bridge at City Creek Biological Assessment Amendment* (Caltrans 2018).

CM 15 **Dust Control.** The City shall implement dust control measures during construction to facilitate visibility for monitoring of the SBKR by the Designated Biologist or Designated Biologist Assistant(s). The City shall keep the amount of water used to the minimum amount needed and shall not allow water to form puddles.

CM 16 **Erosion Control Materials.** The City shall prohibit use of erosion control materials potentially harmful to SBKR and other species, such as monofilament netting (erosion control matting) or similar material, in potential SBKR habitat. Any seed mix used for erosion control shall be submitted to CDFW for review and approval prior to use.

Species-Specific Conservation Measures

CM 17 **Exclusionary Fencing Plan.** Prior to the onset of ground disturbing activities, the City will submit an exclusionary fencing plan to the Service and CDFW for review and approval. The plan will identify design and installation, SBKR trapping/release

protocols, and assurances fencing will be monitored and maintained for the duration of the proposed project.

CM 18 **Phased SBKR Relocation.** The City shall perform a phased SBKR relocation using the below minimization measures.

a. Pre-Exclusionary Fencing – Burrow Mapping. Within 90 days prior to installing the exclusionary fencing, the Designated Biologist(s) shall identify and map all potential SBKR burrows within the Project Areas, and a 300-foot buffer surrounding the Project Area. The map of the SBKR burrows shall be provided to CDFW no less than 5 days prior to any work being performed, including exclusionary fence installation or other ground disturbing activities.

b. Pre-Exclusionary Fencing – Small Mammal Trapping. Within 90 days prior to erecting the exclusionary fencing, the Designated Biologist(s) shall design small mammal trapping grids/transects for CDFW review and approval. To achieve total coverage of SBKR suitable habitat, transects shall be used within narrow linear habitat and grids shall be used within larger areas of habitat. Transects and grids shall be established within the Project Areas and 300-foot buffer surrounding the Project Area. Trap locations shall be geographically indexed with latitude/longitude coordinates along with the datum used (e.g., degrees/ minutes/seconds, decimal degrees, etc.). The grids shall be permanent (e.g. capable of replication), with equal stratification to be representative of different qualities of suitable SBKR habitat and distributed throughout the Project Area and 300-foot buffer surrounding the Project Area. Once the permanent grids and transect locations are approved by CDFW, the Designated Biologist(s) shall trap the grids/transects for 5 consecutive nights within 60 days prior to installing the exclusionary fencing. The Designated Biologist(s) shall conduct trapping only if the nightly low temperature is forecasted to be 50 degrees Fahrenheit or above and if no extended periods of wind, rain, fog, or other inclement weather will occur to make conditions unsuitable for trapping or will unduly imperil the lives of the animals. To measure future SBKR survivorship and abundance/density estimates, as well as measure conspecific interactions, all captured SBKR shall be individually marked. Marking techniques shall include the use of ear tags with unique alphanumeric codes or passive integrated transponders (PIT tags). Trapping results shall include captured SBKR's age, gender, mass, trap location, new/recapture status, tag identification, and any burrow locations that are used upon release. Pre-exclusionary fencing trapping results shall be provided to CDFW no less than 5 days prior to installing the exclusionary fence.

c. Exclusionary Fencing Installation. The City will install a semi-permanent SBKR exclusionary fence constructed of ¼-inch mesh hardware cloth with a 6-inch one-side ledge at a 90-degree angle away from the constructed area. There will be no gaps larger than ½-inch at hinges, center post and between gate frame and existing ground. It should be noted that this SBKR exclusionary fence design

was successfully used for the State Route 210 project at Lytle Creek. Exclusionary fencing shall be erected around the South Project footprint no more than 15 days before the initiation of any work within City Creek south of the Base Line Bridge. Likewise, fencing shall be placed to exclude SBKR within the North Project no more than 15 days prior to the start of work within City Creek north of Base Line Bridge. The Designated Biologist(s) shall be present during exclusionary fence installation. Once clearing and grubbing is completed, the Designated Biologist(s) or Designated Biologist Assistant(s) shall inspect the site at least once weekly and be available to respond immediately should the on-site representative identify any non-compliance with the ITP measures.

d. Post-Exclusionary Fencing Installation–Relocation. Within 7 days following the installation of the exclusionary fence, the Designated Biologist(s) shall coordinate with CDFW to remove SBKR to outside the excluded Project Area. The relocation sites will be dependent on the number of SBKR captured and the need for intra/inter spatial distribution. Designated Biologist(s) shall perform the relocation activities as follows:

    i. Small Mammal Trapping within the Exclusionary Fence Area. The Designated Biologist(s) shall conduct small mammal trapping for a minimum of 5 consecutive nights, with at least 3 consecutive nights of no SBKR captures. If the exclusionary fence is damaged (e.g., cut, removed, knocked down, etc.) for more than 24 hours and may have resulted in SBKR reentry into the exclusion area, CDFW will be immediately notified to determine if modification of and/or an extension to the trapping requirements is needed. The Designated Biologist(s) shall place either a PIT or ear tag to each captured SBKR.

    ii. Data Marking and Recordation. The Designated Biologist(s) shall place either a PIT or ear tag to each captured SBKR and record age, gender, reproductive status, mass, trap location, new/recapture status, and tag identification for all captured kangaroo rats before placing into a standard rodent carrier.

    iii. Data and Map Submittals. Prior to any SBKR being relocated, the City shall provide CDFW for review and approval (1) a spatial map of where all SBKR were trapped both within the exclusionary fence and adjacent 300-foot buffer surrounding the Project Area, (2) all captured SBKR information, as described in Condition of Approval 8.1.2, and (3) a spatial map of proposed relocation area(s) that includes individual spatial grouping.

    iv. SBKR Holding. The Designated Biologist(s) shall hold all captured SBKR until trapping within the exclusionary fence(s) is complete (after 3 consecutive nights of no SBKR captures) and CDFW approves the proposed relocation areas. Following CDFW approval of the relocation

locations, the Designated Biologist(s) shall perform a soft release of all SBKR as described below.

v. SBKR Lactating Females and Pups. If a SBKR lactating female is captured, she shall be released and followed to determine where her burrow is located. A fiber-optic scope or mini camera shall be immediately used within the located burrow or, if not found, all SBKR burrows within a 20-meter (66 feet) radius. If no SBKRs are observed within the burrow, it shall be hand excavated to ensure no occupancy. If SBKR pups are observed, CDFW shall be notified at once, and the pups shall be captured and placed in a rodent carrier with the female. All juveniles and non-lactating females captured shall be soft released. If a previously tagged juvenile or non-lactating female is captured, the Designated Biologist(s) shall consult previous capture locations inform the release location. If the animal was previously captured outside of the exclusion zone, that animal shall be soft released within 24 hours, at the last-known capture location outside of the exclusionary fence. If the animal had not been previously trapped or was previously trapped only inside the exclusion fence area, the Designated Biologist(s) shall hold the animal until trapping within the exclusionary fence is complete (after 3 consecutive nights of no SBKR captures) and CDFW approves the proposed relocation site.

vi. SBKR Males. Males captured within the exclusion fence shall be evaluated as candidates to receive transmitters based on weight. If males are captured within the exclusionary fence and will be moved into, or out of, the Restoration Areas, the candidate males shall be held in individual cages in a temperature-controlled location where daylight is excluded until transmitters can be fitted on the individuals. A Designated Biologist(s) with previous experience fitting and assessing harness functionality and impact (e.g., Dr. Shier or other similarly qualified, CDFW-approved person) shall place or oversee the placement of Very High Frequency (VHF) radio transmitters (e.g., Holohil Systems [model BD- 2C]) with a backpack harness, created from a modified figure 8 design used for small passerine birds (10-200 g) (Rappole and Tipton 1991) on male SBKR so that movements and survival can be monitored after release. The loops of the figure 8 wrap around the animal's front legs and the transmitter sits across the animals back (Shier and Swaisgood 2012). The release procedures for any males not slated to receive transmitters shall follow the soft release approach, whereby any previously tagged males previously captured outside of the exclusion zone shall be soft released at the last-known capture location outside of the exclusionary fence. If the animal had not been previously trapped or was previously trapped only inside the exclusion fence area, the Designated Biologist(s) shall hold the animal until trapping within the

exclusionary fence is complete (after 3 consecutive nights of no SBKR captures) and CDFW approves the proposed relocation site.

e. Soft Release. To limit dispersal and allow SBKR to acclimate to relocation, the Designated Biologist(s) shall perform a soft release at CDFW-approved locations as follows:

i. Retention Cage Construction. The Designated Biologist(s) shall construct above-ground wire mesh retention cage using 6.4 millimeters (mm) (1/4 inch) hardware cloth, each measuring about 90 × 60 centimeters (cm) (23.6 x 35.4 inches) and closed on the top and open on the bottom.

ii. Burrow Construction. The Designated Biologist(s) shall dig burrows into the ground using a soil auger that is approximately the same diameter as a SBKR burrow (i.e., 45 mm) at roughly a 30 degree angle to a length of 1 meter (3.3 feet). To maintain the integrity of the created burrow, cardboard mailing tubes, or other structural material shall be placed in the burrow, as required. The burrows shall be established outside of the exclusionary fencing in the same approximate neighbor relationship as trapped, and as approved by CDFW. Holes should be close to natural size.

iii. Retention Cage Installation. The Designated Biologist(s) shall place each retention cage over the burrow. The sides of the cage shall be buried to an approximate depth of 20 cm (8 inches) to discourage animals from digging out. The retention cages/burrows shall be placed at least 15 meters apart to avoid aggressive interactions when the retention cage is removed, unless trapping and burrow mapping suggests otherwise.

iv. Spatial Arrangement. The Designated Biologist(s) shall move SBKR from the Project Areas to outside of the exclusionary fencing in the same approximate neighbor relationship as trapped and approved by CDFW.

v. Wildlife Cameras. The Designated Biologist(s) shall install remote infrared wildlife cameras at 10 percent of the enclosures, or 10 cameras, whichever is greater, to video record activity during acclimation and for 30 days following removal of the cage. If, after placing one camera at each enclosure, there are cameras remaining from the 10 total cameras, the additional cameras shall be placed strategically. The Designated Biologist shall make every attempt to conceal the camera to discourage theft or damage. If tampering occurs, CDFW shall be notified within 48 hours of discovery. If alternative practices (e.g., movement to another secure location, concealment, etc.) prove to be ineffective in deterring additional vandalism, the City shall not be responsible for replacing the camera(s). If theft occurs, the City shall not be responsible for replacing the camera(s).

vi. Retention Cage Process. The Designated Biologist(s) shall place each relocated SBKR into its own retention cage for up to 10 days to allow acclimation to the release site and dampen dispersal. The burrow entrance shall be manually plugged during the day and unplugged each night to allow the SBKR to enter into the cage if one has not been created by the animal.

vii. Feeding. The Designated Biologist(s) shall feed SBKR a combination of romaine lettuce, inoculated finch seed mix, and plant seeds native to the release site daily while in the retention cage/burrow. Seed shall be microwaved for 1-3 minutes before broadcast at the release site to prevent seed germination and alteration of the native vegetation community.

viii. Retention Cage Removal. The Designated Biologist(s) shall use their experience and professional judgement in determining the timing of retention cage removal. The Designated Biologist(s) shall consider all factors (e.g. acclimation, stress/injury from cage) relevant to the health and well-being of the individuals in the decision-making process.

ix. Reporting. The Designated Biologist(s) shall provide CDFW daily updates on the status of SBKR during, and 30 days following, the soft release, including any camera data information (activity period, behaviors, physical trauma, predation attempts), daily monitoring summary, and any vandalism issues.

f. Post Release Supplemental Feeding. The City shall complete supplemental feeding, as follows, for each soft release session (i.e., at the initial release following the exclusion fence installation and trapping). Seed shall be broadcast at the release sites 3 evenings per week for the first month following the removal of the retention cages and one evening each week thereafter for the next 3 months. Seed shall be microwaved for 1-3 minutes before being broadcast at the release site to prevent seed germination and alteration of the native vegetation community.

g. Post Soft Release - Relocation Monitoring. Following the removal of the retention cages, the Designated Biologist(s) shall conduct small mammal trapping, as follows, for each “soft” release session (i.e., at the initial release following the exclusion fence installation and trapping). Small mammal trapping shall occur within 30 days and then approximately every 3 months for the first year following the relocation (4 times total within the Project Areas, and a 300-foot buffer surrounding the Project Area). In addition, small mammal trapping shall occur annually following the first year of construction for the duration of the project. The Designated Biologist(s) shall individually mark all captured SBKR using either a PIT or ear tag and record age, gender, mass, trap location, new/recapture status, and tag identification of all captured kangaroo rats. A

report of the relocation monitoring findings shall be submitted to CDFW annually for the duration of the project.

CM 19 **Habitat Restoration and Monitoring Plan.** No less than 3 months prior to the commencement of construction, the City shall submit to CDFW for review and approval, a Habitat Restoration and Monitoring Plan (HRMP) to facilitate restoration of 15.95 acres of temporarily impacted SBKR habitat within the Project Area. The Permittee shall integrate the methods, results, and findings from the SBKR Report (2006–2011) within similar habitat types (alluvial fan sage scrub early stage and alluvial fan sage scrub intermediate stage) into the HRMP by including, at a minimum, the following: (1) a quantitative description of the existing pre-project habitat and a plan to adequately sample ongoing restoration efforts at randomly distributed locations (plots, nearest neighbor, transects) to measure: (a) substrate, including (i) sediment depth measurements (driving a 48-inch long, 1/2 inch thick piece of rebar into the soil until first refusal), (ii) percent cover, where sand (< 2 mm), gravel (3–64 mm), cobble (65–256 mm), and boulder; (b) vegetation, including (i) perennial shrub percent cover, (ii) perennial/annual forb percent cover, (iii) perennial/annual grass canopy percent cover, (iv) vegetation composition, and (v) average height at each strata; (c) restoration impacts to SBKR (e.g., survivorship, demographics, intra/inter competition) and population trends, distribution, and occupancy, using small mammal trapping sampling and methodology; and (d) photo station locations; (2) vegetation removal/thinning methods to achieve and maintain percent annual (forbs and grasses) cover less than 35 percent cover (*Bromus madritensis* ssp. *rubens* presence can be excluded from the calculated percent cover) and 25 percent perennial shrub cover, including (a) the dates of the thinning/removal treatments; (b) location (map or global positioning system [GPS] coordinates) where treatment occurred; (c) type of treatment (e.g., grazing, hand tools, percent concentration of herbicide used, and volume of mix used by date and species, etc.); (d) the name(s) of species treated; (e) before, during, and after photographs; and (f) GIS shapefiles and illustrations depicting vegetation distribution; (3) techniques to contour, distribute, deposit, and decompact streambed and floodplain substrate and ASS habitat to pre-impact or better condition to achieve 10 percent or less of cobble and boulders and an average soil depth between 20–25 cm/7.9–9.9 inches including (a) locations of substrate source/deposit, (b) stockpiling and protection of native topsoil, (c) grading plans, (d) stream profile/elevation maps; (4) a planting plan with a California native local plant palette and/or seed mix appropriate for ASS and application methods if necessary; (5) performance criteria based on quantitative vegetative description of existing habitat (e.g., recruitment, diversity, abundance, and vegetation and substrate coverage) and small mammal data (e.g., number of SBKR greater than pre construction/restoration conditions, recruitment, etc.); (6) contingency measures if performance criteria are not met (e.g., limiting trespassing, planting of container plants, irrigation plan, etc.); and (7) maintenance and monitoring schedule. The City shall ensure that the HRMP is successfully implemented by the Restoration Specialist.

CM 20 **SBKR Construction Monitoring.** The Designated Biologist(s) or Designated Biologist Assistant(s) shall perform daily visual surveys during initial substrate disturbance, vegetation clearing, and grubbing, and during all occurrences of pile driving within the Project Area, including stockpiles, equipment storage areas, and buffers for exclusionary fencing, SBKR burrows, signs, and individuals prior to the start of construction.

a. Exclusionary Fence Maintenance. The Designated Biologist(s) or Designated Biologist Assistant(s) shall inspect SBKR exclusionary fencing during weekly construction monitoring. The City's on-site representative would inspect SBKR exclusionary fencing, signs, and stakes at the beginning and end of each workday to ensure that it is in place and properly maintained for the duration of Covered Activities. The Designated Biologist(s) or Designated Biologist Assistant(s) shall be immediately notified to inspect any breaches to the integrity of the exclusionary fencing and ensure that repairs are made promptly and adequately. The fence shall be repaired within 24 hours and any signs of vandalism that compromise the integrity of the fence shall be reported to CDFW, including, but not limited to the location and length that was affected, duration, and how it was repaired.

b. Project Access. Should any work occur beyond the fenced or otherwise demarcated limits of disturbance, the biological monitor will request that the resident engineer halt work until the problem has been remedied. The Designated Biologist or Designated Biologist Assistant(s) will also notify the City, the Service, and CDFW of the problem within 24 hours of the incident.

c. Trenches. Unfilled holes or trenches will be inspected for trapped SBKR each morning. Any individuals discovered will be removed from the trench or hole by the Designated Biologist or Designated Biologist Assistant(s) and released outside of the limits of construction. Unburied pipes or conduit laid in trenches overnight will be capped. If SBKR or other small mammals are discovered inside the construction area, the exclusion fence will be examined for breaches and repaired if necessary.

d. Pipes and Conduit. All pipes or conduits with a bore-diameter of 1.5 inches or greater stored overnight within the construction site for one or more nights will be thoroughly inspected for the presence of SBKR before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If SBKR are discovered inside a pipe, the Designated Biologist or Designated Biologist Assistant(s) will supervise movement or relocation of the pipe until the animal has been removed and released.

e. Soil and Fill. All soil and fill piles will be surrounded by silt fence or similar exclusionary materials to prevent creating an attractive nuisance to SBKR and burrowing animals.

f. Burrows. If construction occurs within 125 feet of any SBKR burrow, the Designated Biologist(s) or Designated Biologist Assistant(s) shall conduct the following:

i. Monitor. The Designated Biologist(s) or Designated Biologist Assistant(s) shall monitor the burrow(s) for disturbance a minimum of 3 times daily.

ii. Project Adjustments. If a burrow shows evidence of disturbance, the Designated Biologist(s) or Designated Biologist Assistant(s) shall immediately make adjustments to the location, type, and/or frequency of the construction occurring to preclude further potential impacts and increase monitoring of the burrow to ensure the adjustments were effective. The Designated Biologist(s) or Designated Biologist Assistant(s) shall use their best professional judgement regarding the monitoring period and adjustment of the work buffer surrounding the burrow.

iii. Stop Work. If impacts beyond those described are identified or suspected, Permittee shall cease the Covered Activities potentially responsible for those impacts and notify CDFW immediately.

iv. Weekly Reporting. The Designated Biologist(s) or Designated Biologist Assistant(s) shall provide CDFW the results of the burrow monitoring, including photographs and a brief assessment, the type of activity occurring (e.g. drilling, grading, falsework, etc.), distance from the burrow, impacts measured/noted, and any buffer adjustment made on a weekly basis. In the event the City must stop work or the take or injury of SBKR occurs, reporting timeframes within those Conditions shall apply.

CM 21 **Lighting Minimization.** During nighttime construction in areas that will not result in soil disturbances, the City shall implement the following measures within 500 feet of SBKR habitat:

a. Designated Biologist. The Designated Biologist(s) or Designated Biologist Assistant(s) shall be present at all times.

b. Speed Limit. Vehicles and equipment shall not exceed 5 miles per hour.

c. Lighting. All construction related lighting shall avoid causing significant illumination beyond the immediate work area. Shielding techniques may include, but should not be limited to, the use of fence slats, netting, mesh, or tarps; and all construction lighting used shall be yellow or orange lighting.

CM 22 **Covered Species Injury.** If SBKR is injured as a result of project-related activities, the Designated Biologist or Designated Biologist Assistant(s) shall immediately take it to

a CDFW-approved wildlife rehabilitation or veterinary facility. The City shall identify the facility before starting construction. The City shall bear any costs associated with the care or treatment of such injured SBKR. The City shall notify CDFW and the Service of the injury to the SBKR immediately by telephone and e-mail followed by a written incident report. Notification shall include the name of the facility where the animal was taken.

CM 23 **SBKR Mortality.** Any personnel who inadvertently kills an SBKR will immediately report the incident to the Designated Biologist or Designated Biologist Assistant(s), who will contact the Service and CDFW via electronic or hardcopy correspondence within one working day. Notification must include the date, time, and location of the incident, or of the finding of a dead animal, as well as any other pertinent information.

CM 24 **Restoration of Temporary Impact Areas.** The 15.95 acres of SBKR habitat temporarily impacted on-site shall be restored within 6 months of completing construction activities. The 15.95 acres of temporarily impacted habitat shall be restored to pre-project or better conditions. Restoration activities shall include (1) recontouring and decompaction of the stream, floodplain, and ASS habitats to pre-impact grade; (2) placement of collected topsoil/substrate and/or seeds; (3) removal of nonnative species; (4) limiting unwanted activities (e.g. flood maintenance, trespassing); and (5) if necessary to meet performance criteria, planting of local, native ASS species by installing container plants and/or broadcasting seeds. Permittee shall maintain and monitor the restored habitat for a minimum of 3 years, or until CDFW determines the restoration effort is successful. Permittee shall submit an Annual Status Report to CDFW each year that restoration activities occur and a Final Mitigation Report when the restoration has been completed.

CM 25 **Compensatory Mitigation.** Compensatory mitigation for permanent impact areas would be achieved through purchasing 0.49 acres of credits from a CDFW-approved mitigation or conservation bank or through acquisition, protection, and perpetual management of 0.49 acres of SBKR habitat management lands.

Thank you, and please contact me by email at jessica.lieuw@lsa.net or by phone at (909) 680-2288 if you require further information.

Sincerely,

LSA ASSOCIATES, INC.



Jessica Lieuw
Biologist

Attachment A: Figures

ATTACHMENT A

FIGURES

Figure 1: Regional and Project Location
Figure 2: Impacts to San Bernardino Kangaroo Rat Critical Habitat

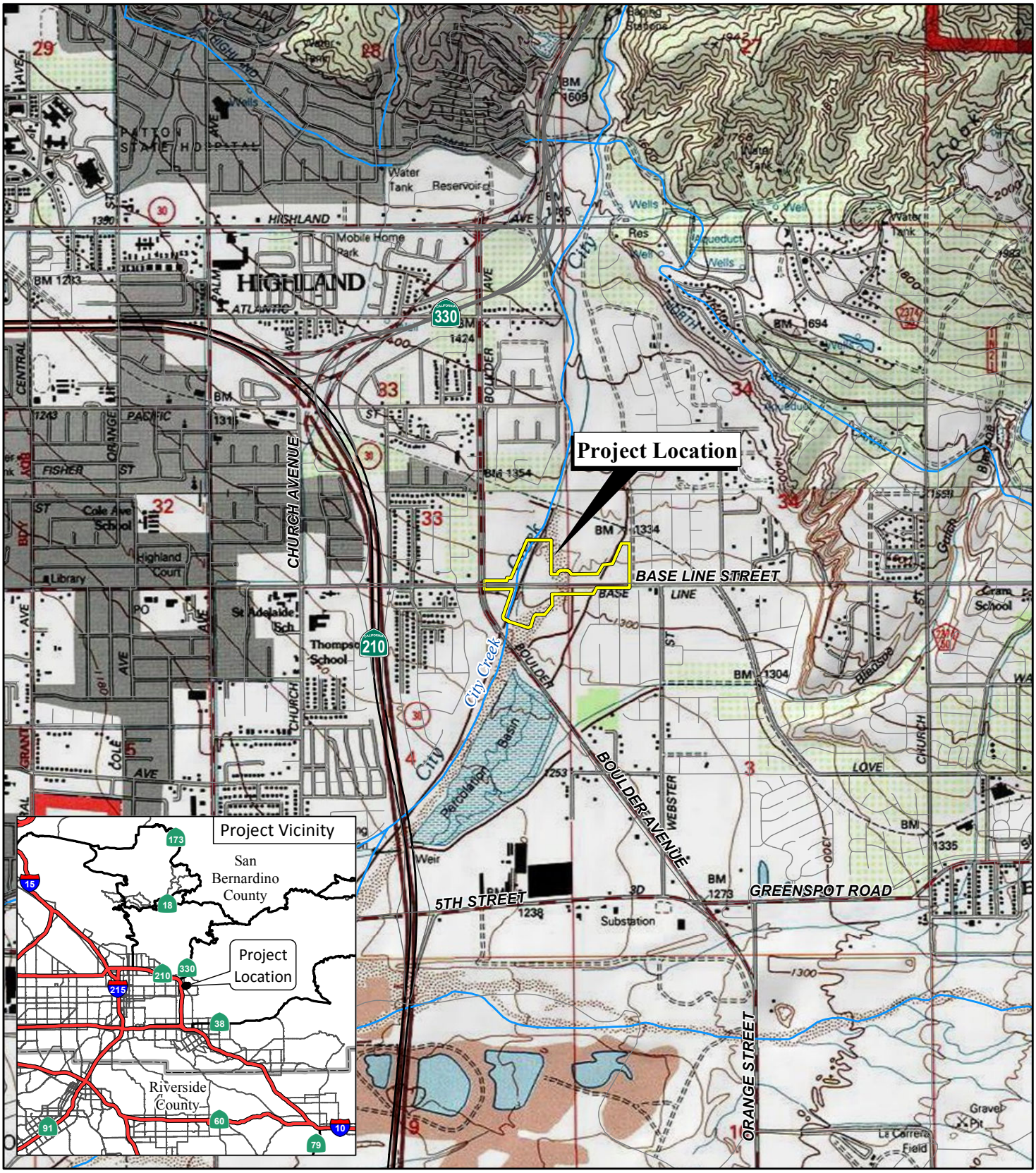


FIGURE 1

LEGEND

Project Location

0 1000 2000

FEET

SOURCE: USGS 7.5' Quads: Redlands and Harrison Mtn. (1988), CA

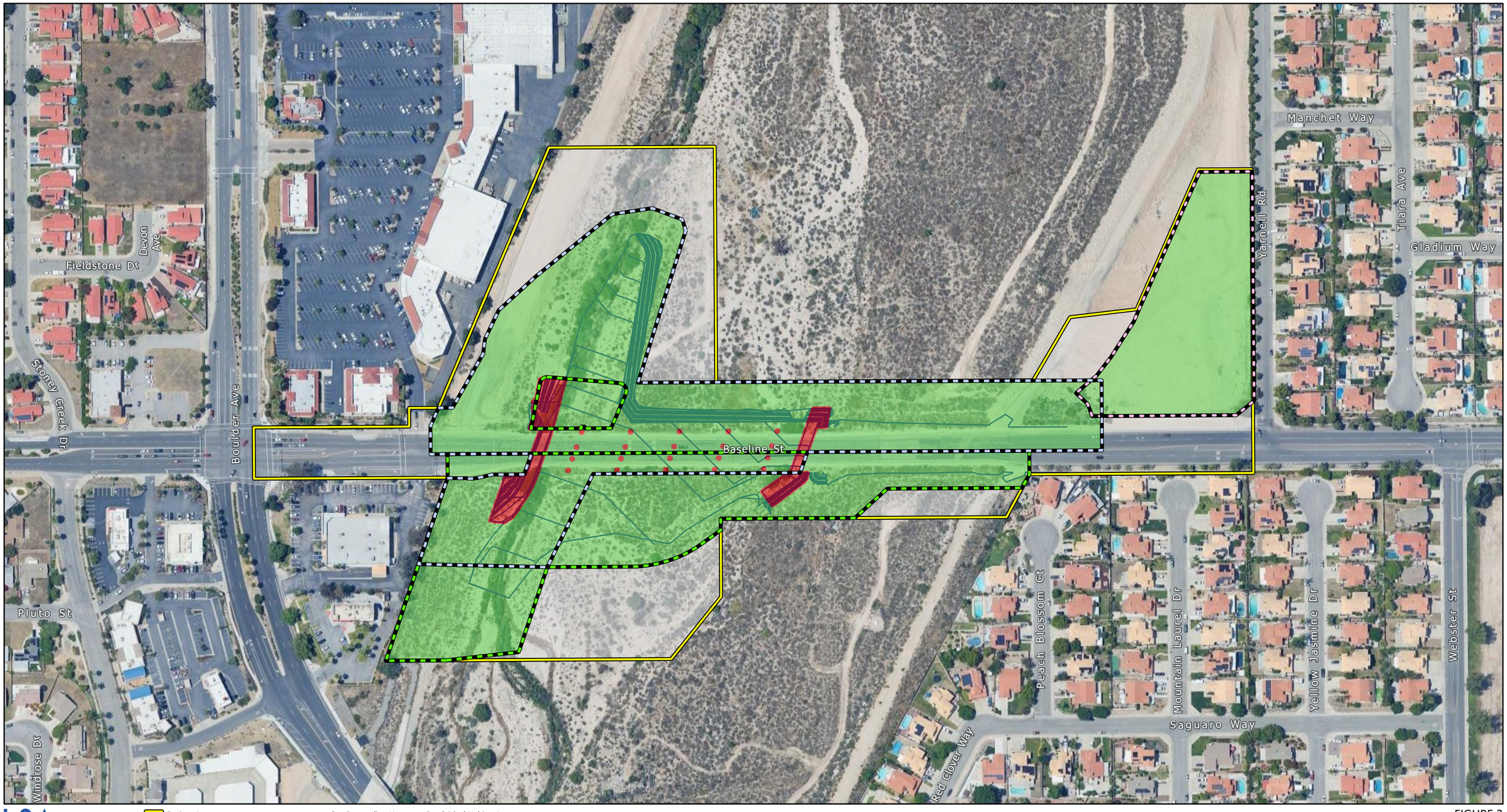
I:\AEM1603(LIM0801)\Reports\BA\Proj_Loc.mxd (2/12/2020)

Base Line Bridge Over City Creek (Replace)

Regional and Project Location

08-SBd-0-HIGH

EA 08-925035



LSA

Project Area
Staging Area Fencing (Duration of Project)
Phase 1 Fencing
Phase 2 Fencing
Proposed Plans

San Bernardino Kangaroo Rat Critical Habitat Impacts
No Impact (5.50 ac)
Permanent Impact (0.49 ac)
Temporary Impact (15.95 ac)

0 100 200
FEET

SOURCE: Bing (2018); Critical Habitat Federal Registry, 2002, AECOM (2022).

I:\A\AEM1603A\GIS\Pro\AEM1603A\AEM1603A.aprx (1/17/2025)

FIGURE 2

Baseline Bridge Replacement Project

Impacts to SBKR Critical Habitat

08-SBd-0-HIGH

EA 08-925035

APPENDIX B-2

UPDATED JURISDICTIONAL DELINEATION REPORT

JURISDICTIONAL DELINEATION REPORT

BASE LINE BRIDGE REPLACEMENT PROJECT

HIGHLAND, SAN BERNARDINO COUNTY, CALIFORNIA

LSA

December 2024

JURISDICTIONAL DELINEATION REPORT

BASE LINE BRIDGE REPLACEMENT PROJECT

HIGHLAND, SAN BERNARDINO COUNTY, CALIFORNIA

Submitted to:

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LSA

December 2024

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LIST OF ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
1987 Manual	*Corps of Engineers 1987 Wetland Delineation Manual*
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	United States Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
JDSA	Jurisdictional Delineation Study Area
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate Wetland
OHWM	ordinary high water mark
Procedures	*State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*
project	Water Replenishment Pipeline Access Valves Project
Rapanos	2006 United States Supreme Court decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States*
Regional Supplement	*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*
RWQCB	Regional Water Quality Control Board
Sackett	2023 United States Supreme Court decision in the case *Sackett v. Environmental Protection Agency*
SWRCB	State Water Resources Control Board
TNW	traditionally navigable water

UPL	Obligate Upland
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOTS	waters of the State
WOTUS	waters of the United States

INTRODUCTION

This Jurisdictional Delineation Report presents the results of a delineation for the Base Line Bridge Replacement Project (project). The City of Highland, in cooperation with the California Department of Transportation, District 8, proposes to improve the Base Line Bridge over City Creek. The project site is within Sections 33 and 34 of Township 1 North, Range 3 West, and Sections 3 and 4 of Township 1 South, Range 3 West, as shown on the *Redlands, California* 7.5-minute series United States Geological Survey (USGS) topographic map (see Figure 1; all figures are provided in Appendix A).

The purpose of this delineation report is to determine the extent of both State of California and federal jurisdiction within the Jurisdictional Delineation Study Area (JDSA). This includes the potential jurisdiction of the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA); the Regional Water Quality Control Board (RWQCB), Santa Ana River Basin, under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act; and the California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code. This report has been prepared to inform the environmental planning and review process.

REGULATORY BACKGROUND

UNITED STATES ARMY CORPS OF ENGINEERS

The CWA provides the primary means for the protection of "waters of the United States" (WOTUS) including wetlands. Under Section 404 of the CWA, the USACE, under the Environmental Protection Agency (EPA), regulates the discharge of dredged and fill material into "waters of the U.S., including wetlands"

The CWA addresses "navigable waters," defined in the statute as WOTUS. The USACE has further refined the definition through various Clean Water Rules, including wetlands as a subset of WOTUS. Wetlands are those areas that are inundated or saturated by surface water 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 (33 Code of Federal Regulations [CFR] 328.3[b]; 40 CFR 230.3[t]). Wetlands generally contain three distinct parameters: hydrophytic vegetation, hydric soils, and wetland hydrology.

WOTUS generally not considered to be USACE jurisdictional include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds excavated on dry land used for irrigation or stock watering, small artificial waterbodies such as swimming pools, and water-filled depressions (51 *Federal Register* 41, 217 1986). In addition, a Supreme Court ruling (South Waste Agency of North Cook County vs. USACE, January 9, 2001) determined that the USACE exceeded its statutory authority by asserting CWA jurisdiction over "an abandoned sand and gravel pit in northern Illinois, which provides habitat for migratory birds." Based solely on the use of such waters by migratory birds, the Supreme Court's holding was strictly limited to waters that are "non-navigable, isolated, and intrastate."

The Supreme Court further addressed the extent of the USACE's jurisdiction in the consolidated cases Rapanos v. United States (No. 04-1034) and Carabell v. United States (No. 04-1384 (USACE and EPA 2007), referred to as "Rapanos." In Rapanos, a sharply-divided Court issued multiple opinions, none of which garnered the support of a majority of justices. This created substantial uncertainty as to which jurisdictional test should be used in routine jurisdictional determinations. The Ninth Circuit Court of Appeal, which encompasses California, answered this in Northern California River Watch v. City of Healdsburg (August 11, 2006). In this case, the Court held that Justice Kennedy's opinion in Rapanos provided the controlling rule of law. Under that rule, wetlands or other waters that are not navigable are subject to USACE jurisdiction if they have "a significant nexus to waters that are navigable in fact." As Justice Kennedy explained, whether a "significant nexus" exists in any given situation will need to be decided on a case-by-case basis, depending on site-specific circumstances. The EPA and the USACE subsequently developed an instructional guidebook on how to apply these rulings for all future jurisdictional determinations (USACE and EPA 2007) as well as a memorandum providing guidance to implement the United States Supreme Court's decision in Rapanos (Grumbles and Woodley 2007).

On January 18, 2023, the USACE published in the *Federal Register* the final Revised Definition of "Waters of the United States (88 *Federal Register* 2004). On March 25, 2023, the United States Supreme Court modified the January 2023 definition of WOTUS in Sackett v. Environmental Protection Agency (598 U. S. 651, 2023) hereafter referred to as Sackett. Specifically, the Supreme Court considered the "significant nexus" standard established under Rapanos to be inconsistent with the CWA while upholding the plurality standard that the USACE jurisdiction is limited to WOTUS that are "relatively permanent, standing or continuously flowing bodies of water" that can be described in ordinary parlance as "streams, oceans, rivers, and lakes." The Supreme Court further affirmed that wetlands can be considered WOTUS when a continuous surface connection to bodies that are WOTUS is present and that no clear boundary exists between WOTUS and wetlands. Sackett further revised the CWA by removing wetlands from consideration as WOTUS simply because they cross or form a portion of state boundaries.

On September 8, 2023, the USACE published a final rule conforming the January 2023 rule with the Sackett decision, removing the "significant nexus" standard. The amended rule is operative in California.

Features currently included in the definition of WOTUS per 33 CFR 328.3(b) include:

(1) Waters which are:

  (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

  (ii) The territorial seas; or

  (iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water

(4) Wetlands adjacent to the following waters

  (i) Waters identified in paragraph (a)(1) of this section, or

  (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies

of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section

Features currently excluded from identification as WOTUS include:

- Interstate wetlands
- Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act
- Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA
- Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water
- Artificially irrigated areas that would revert to dry land if the irrigation ceased
- Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons
- Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States
- Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow

On July 24, 2020, the USACE and the EPA issued a joint memorandum superseding Regulatory Guidance Letter 07-02 and clarifying that the construction and maintenance of irrigation ditches and for the maintenance of drainage ditches is excluded from regulation under CWA Section 404.

Given the substantial changes in operable definitions that have occurred and are likely to continue considering recent regulatory revisions and court actions, it is not possible to predict the regulations that will be in place at the time of a particular jurisdictional determination by the USACE. This jurisdictional delineation focuses on identifying the boundaries of potentially jurisdictional waterbodies, using methods for determining the locations of the ordinary high water mark (OHWM) and wetland boundaries as described below. These methods for determining the boundaries of

waterbodies in general have not substantially changed over the years and are not likely to change with any revised regulations. This delineation can then be used in combination with a companion jurisdictional analysis to determine which of the identified waterbodies are actually jurisdictional, based on the definition that is in effect at the time of a jurisdictional determination by the USACE.

The USACE typically considers any body of water displaying an OHWM for designation as WOTUS, subject to the applicable definition of WOTUS. USACE jurisdiction over non-tidal WOTUS extends laterally to the OHWM or beyond the OHWM to the limit of any contiguous wetlands, if present.

The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3). Jurisdiction typically extends upstream to the point where the OHWM is no longer perceptible.

Waters found to be isolated and not subject to CWA regulation may still be regulated by the RWQCB under the State's Porter-Cologne Water Quality Control Act.

Non-Wetland Waters of the United States

Non-wetland WOTUS are features that contain elements described above under USACE jurisdiction but do not possess the three wetland characteristics required to be considered a wetland WOTUS as described below: hydrophytic vegetation, hydric soils, and wetland hydrology.

Wetland Waters of the United States

Wetland delineations for Section 404 purposes must be conducted according to the geographically specific regional supplement, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (Regional Supplement) (USACE 2008), and the Corps of Engineers 1987 Wetland Delineation Manual (1987 Manual) (USACE 1987). Where there are differences between the two documents, the Regional Supplement takes precedence over the 1987 Manual.

The USACE and the EPA define wetlands as:

> Those 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 to life in saturated soil conditions.

To be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied for that particular wetland characteristic to be met. Several indicators may be analyzed to determine whether the criteria are satisfied.

Hydrophytic vegetation and hydric soil indicators provide evidence that episodes of inundation have lasted more than a few days or have occurred repeatedly over a period of years, but do not confirm that an episode has occurred recently. Conversely, wetland hydrology indicators provide evidence that an episode of inundation or soil saturation occurred recently but do not provide evidence that episodes lasted more than a few days or occurred repeatedly over a period of years. Because of this, if an area lacks one of the three characteristics under normal circumstances, the area is considered non-wetland under most circumstances.

Determination of wetland limits may be obfuscated by a variety of natural environmental factors or human activities, collectively called difficult wetland situations, including cyclic periods of drought and flooding, or in areas recently altered by anthropogenic activities. During periods of drought, for example, bank return flows are reduced and water tables are lowered. This results in a corresponding lowering of ordinary high water and invasion of upland plant species into wetland areas. Per the *Sackett v. Environmental Protection Agency* United States Supreme Court ruling, wetlands must have a continuous surface connection to another WOTUS to be considered an adjacent wetland.

Conversely, extreme flooding may create physical evidence of high water well above what might be considered ordinary and may allow the temporary invasion of hydrophytic species into non-wetland areas. In highly ephemeral systems typical of Southern California, these problems are encountered frequently. In these situations, professional judgment based on years of practical experience and extensive knowledge of local ecological conditions comes into play in delineating wetlands. The Regional Supplement provides additional guidance for difficult wetland situations.

Hydrophytic Vegetation

Hydrophytic vegetation is plant life that grows and is typically adapted for life in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub, herb, and woody vine layers) are considered hydrophytic. Hydrophytic species are those included on the National Wetland Plant List published by the USACE (2022). Each species on the list is rated according to a wetland indicator category, as shown below in Table A.

To be considered hydrophytic, the species must have wetland indicator status (i.e., be rated Obligate Wetland [OBL], Facultative Wetland [FACW], or Facultative [FAC]).

Table A: Hydrophytic Vegetation Ratings

Category	Rating[1]	Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability greater than 99 percent)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67–99 percent)
Facultative	FAC	Equally likely to occur in wetlands and non-wetlands (estimated probability 34–66 percent)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67–99 percent)
Obligate Upland	UPL	Almost always occur in non-wetlands (estimated probability greater than 99 percent)

Source: United States Army Corps of Engineers (2008).

[1] Species not currently rated (N/L) are considered obligate upland (UPL).

The delineation of hydrophytic vegetation is typically based on the most dominant species from each vegetative stratum (strata are considered separately); when more than 50 percent of these dominant species are hydrophytic (i.e., FAC, FACW, or OBL), the vegetation is considered hydrophytic. In particular, the USACE recommends the use of the "50/20" rule (also known as the dominance test) from the Regional Supplement for determining dominant species. Under this method, dominant species are the most abundant species that immediately exceed 50 percent of the total dominance measure for the stratum, plus any additional species comprising 20 percent or more of the total dominance measure for the stratum. In cases where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test, the prevalence index must be used.

The prevalence index is a weighted average of all plant species within a sampling point. The prevalence index is particularly useful when communities only have one or two dominants, where species are present at roughly equal coverage, or when strata differ greatly in total plant cover. In addition, USACE guidance provides that morphological adaptations may be considered when determining hydrophytic vegetation when indicators of hydric soil and wetland hydrology are present (USACE 2008). If the plant community passes either the dominance test or prevalence index after reconsidering the indicator status of any plant species that exhibits morphological adaptations for life in wetlands, then the vegetation is considered hydrophytic.

Hydric Soils

Hydric soils[1] are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.[2] Soils are considered likely to meet the definition of a hydric soil when they meet one or more of the following criteria:

1. All Histels except Folistels and Histosols except Folists;

2. Soils that are frequently ponded for a long duration or very long duration[3] during the growing season; and/or

3. Soils that are frequently flooded for a long duration or very long duration during the growing season.

Hydric soils develop under conditions of saturation and inundation combined with microbial activity in the soil that causes a depletion of oxygen. Although saturation may occur at any time of year, microbial activity is limited to the growing season, when soil temperature is above biologic zero (the soil temperature at a depth of 50 centimeters [19.7 inches], below which the growth and function of locally adapted plants are negligible). Biogeochemical processes that occur under anaerobic conditions during the growing season result in the distinctive morphologic characteristics of hydric

1 The hydric soils definition and criteria included in the 1987 Manual are obsolete. Users of the 1987 Manual are directed to the United States Department of Agriculture's Natural Resources Conservation Service website for the most current information on hydric soils.

2 Current definition as of 1994 (*Federal Register,* July 13, 1994).

3 "Long duration" is defined as a single event ranging from 7 to 30 days; "very long duration" is defined as a single event that lasts longer than 30 days.

soils. Based on these criteria and on information gathered from the National Soil Information System database, the United States Department of Agriculture's Natural Resources Conservation Service (NRCS) created a Soil Data Access Hydric Soils List that is updated annually.

The Regional Supplement has a number of field indicators that may be used to identify hydric soils. The NRCS (NRCS 2024a) has also developed a number of field indicators that may demonstrate the presence of hydric soils. These indicators include hydrogen sulfide generation, accumulation of organic matter, and the reduction, translocation, and/or accumulation of iron and other reducible elements. These processes result in soil characteristics that persist during both wet and dry periods. Separate indicators have been developed for sandy soils and for loamy and clayey soils.

Wetland Hydrology

Under natural conditions, development of hydrophytic vegetation and hydric soils is dependent on a third characteristic: wetland hydrology. Areas with wetland hydrology are those where the presence of water has an overriding influence on vegetation and soil characteristics due to anaerobic and reducing conditions, respectively (USACE 1987). The wetland hydrology criterion is satisfied if the area is seasonally inundated or saturated to the surface for a minimum of 14 consecutive days during the growing season in most years (USACE 2008).

Hydrology is often the most difficult criterion to measure in the field due to seasonal and annual variations in water availability. Some of the indicators commonly used to identify wetland hydrology include visual observation of inundation or saturation, watermarks, recent sediment deposits, surface scour, and oxidized root channels (rhizospheres) resulting from prolonged anaerobic conditions.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW, through provisions of the California Fish and Game Code (Section 1600 et seq.), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks and at least a periodic or intermittent flow of water. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW.

In obtaining CDFW agreements, the limits of wetlands are not typically determined. This is because the CDFW generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, mule fat, and other vegetation typically associated with the banks of a stream or lake shorelines and may not be consistent with USACE definitions. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas and may include additional areas that do not meet USACE criteria for soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream, away from frequently saturated soils).

REGIONAL WATER QUALITY CONTROL BOARD

Non-Wetland Waters of the State

The Porter-Cologne Water Quality Control Act of the California Water Code (Section 13000 et seq.) established nine RWQCBs to oversee water quality on a day-to-day basis at the local and/or regional level. Their duties include preparing and updating water quality control plans and associated requirements and issuing water quality certifications under Section 401 of the CWA. The CWA grants ultimate authority to the State Water Resources Control Board (SWRCB) over State water rights and water quality policy. Under the Porter-Cologne Water Quality Control Act, the RWQCBs (or the SWRCB for projects that cross multiple RWQCB jurisdictions) are responsible for issuing National Pollutant Discharge Elimination System permits for point-source discharges and waste discharge requirements for non-point source discharges into jurisdictional waters of the State (WOTS).

The definition of waters under the jurisdiction of the State is broad and includes any surface water or groundwater, including saline waters within the boundaries of the State. Waters that meet the definition of WOTUS are also considered WOTS, but the jurisdictional limits of WOTS may extend beyond the limits of WOTUS. Isolated waters that may not be subject to regulations under federal law are considered to be WOTS and regulated accordingly.

Although there is no formal statewide guidance for the delineation of non-wetland WOTS, jurisdiction generally corresponds to the surface area of aquatic features that are at least seasonally inundated and all areas within the banks of defined rivers, streams, washes, and channels, including associated riparian vegetation. Currently, each RWQCB reserves the right to establish criteria for the regulation of non-wetland WOTS.

Non-wetland WOTS contain elements described above under RWQCB jurisdiction but do not possess the two or three wetland characteristics, depending on the presence/absence of vegetation, required to be considered a wetland WOTS, as described below.

Wetland Waters of the State

On August 28, 2019, the California Office of Administrative Law approved the SWRCB proposed *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures). The Procedures, effective on May 28, 2020, apply to discharges of dredged or fill material to WOTS. The Procedures consist of four major elements: (1) a wetland definition, (2) a framework for determining whether a feature that meets the wetland definition is a water of the State, (3) wetland delineation procedures, and (4) procedures for the submission, review, and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities.

The SWRCB and RWQCBs define a wetland as:

> An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause

anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The RWQCB will rely on the final aquatic resource report verified by the USACE for determining the extent of wetland WOTUS. However, if it is not delineated in a final aquatic report, the procedures will use the USACE 1987 Manual and the Regional Supplement to determine whether the area meets the State definition of a wetland. As described in the 1987 Manual and the Regional Supplement, an area "lacks vegetation" if it has less than 5 percent areal coverage of plants at the peak of the growing season. The methods shall be modified only to allow for the fact that the lack of vegetation does not prevent the determination of such an area that meets the State definition of wetland.

SITE DESCRIPTION AND SETTING

The JDSA is at the intersection of Base Line Street Bridge and City Creek in Highland. Elevations of the project area vary between 1,290 and 1,325 feet above mean sea level. The JDSA is bounded by City Creek to the north and south, and residential/commercial development on the east and west. The topography of the JDSA gently slopes from north to south with elevations ranging from 1,290 and 1,325 feet above mean sea level. The JDSA is within City Creek (Hydrologic Unit Code 180702030504). The climate in Highland is classified as Semi-Arid (i.e., arid climate with hot, dry summers and moderately mild, wet winters). According to Weather Spark, over the course of the year, the temperature typically varies from 41 degrees Fahrenheit (°F) to 96°F and is rarely below 34°F or above 103°F. (Weather Spark n.d.). Highland experiences significant seasonal variation in monthly rainfall. The rainy period of the year lasts for 5.3 months, from November 2 to April 12, with a sliding 31-day rainfall of at least 0.5 inch. The month with the most rain in Highland is February, with an average rainfall of 2.1 inches.

Vegetation within the study area consists of Riversidean alluvial fan sage scrub and southern willow scrub. Dominant alluvial fan sage scrub species identified include California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), yerba santa (*Eriodictyon trichocalyx*), and scalebroom (*Lepidospartum squamatum*). Dominant southern willow scrub species identified include arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*), Fremont cottonwood (*Populus fremontii*), and mule fat (*Baccharis salicifolia*).

METHODOLOGY

Prior to conducting delineation fieldwork, LSA reviewed the following literature and materials:

- Historic and current aerial photographic imagery and topographic maps (Google Earth Pro 2024; NETR 2024)
- Historic and current USGS topographic maps (USGS 2024)
- United States Fish and Wildlife Service National Wetlands Inventory (NWI) wetland mapper (USFWS 2024)
- United States Department of Agriculture, Natural Resources Conservation Service Web Soil Survey (NRCS 2024b).

LSA biologists Denise Woodard and Carla Cervantes conducted the fieldwork for a jurisdictional delineation on August 18, 2023, and August 2, 2024. They evaluated all potential jurisdictional features within the JDSA according to the current federal and/or State regulatory criteria and guidance, which included the recently enacted State wetland definition and delineation procedures (SWRCB 2019). The boundaries of potentially jurisdictional features were identified and mapped using methods for determining the locations of the OHWM and wetland boundaries. Generally, these methods have not substantially changed over the years and are not likely to change with any revised regulations. This allows the delineation to be used in combination with a companion jurisdictional analysis to determine which of the identified waterbodies are actually jurisdictional, based on the definition that is in effect at the time of a jurisdictional determination by the USACE.

The JDSA was visually surveyed on foot. All features within the JDSA were evaluated according to the most current federal and/or State regulatory criteria and guidance and mapped using aerial photographs. This included the State wetland definition and delineation procedures recently enacted by the SWRCB and the current USACE regulations pertaining to jurisdictional WOTUS, which are consistent with the pre-2015 regulatory regime until further notice. In addition, the general conditions and characteristics associated with each drainage feature were noted and photographed.

Areas of potential jurisdiction observed within the JDSA during the fieldwork were mapped on ESRI's Field Maps mobile application showing the JDSA. The widths and lengths of the features mapped during the course of the field investigation were determined by direct measurements taken in the field and/or using geographic information system software.

Areas supporting species composition of the plant community that were potentially indicative of wetlands were evaluated according to routine wetland delineation procedures described in the Regional Supplement, to the extent feasible. USACE routine delineation procedures were adapted for use in evaluating the RWQCB Procedures definition for two-parameter (hydric soils and hydrology) wetlands. A representative sample plot was selected and examined in the field in an area where wetland jurisdiction was in question or needed to be confirmed. At the sample plot, the dominant and subdominant plant species were identified, and their wetland indicator status noted (USACE

2008). A small pit (approximately 12–24 inches deep) was dug to examine soil characteristics and composition. Soil matrix colors were classified according to the Munsell Soil Color Charts (Munsell Color 2000). Hydrological conditions, including any surface inundation, saturated soils, groundwater levels, and/or other wetland hydrology indicators, were also noted. General site characteristics were also noted throughout all potential jurisdictional areas. USACE Wetland Determination Data Forms – Arid West were completed for each sample plot. Copies of the data forms are provided in Appendix B.

RESULTS

DATABASE SEARCHES

National Wetlands Inventory

The NWI query identifies one wetland classification, Riverine, within the JDSA as shown on Figure 2.

USDA Soil Survey

Soils within the JDSA were mapped using the United State Department of Agriculture NRCS Web Soil Survey classifications (USDA, Natural Resources Conservation Service Web Soil Survey Version 3.4.0 [NRCS 2024b]). Table B provides soil series and classifications within the BSA (refer to Figure 3):

Table B: Mapped Soil Classifications

Soil (Map Unit Symbol)	Drainage Class	Frequency of Flooding	Frequency of Ponding	Hydric Soil Rating
Psamments, Fluvents, Frequently flooded soils	Excessively drained	Frequent	None	Predominantly hydric
Soboba stony loamy sand. 2 to 9 percent slopes	Excessively drained	Rare	None	No
Tujunga gravelly loamy sand, 0 to 9 percent slopes	Somewhat excessively drained	Rare	None	No

Source: USDA (2024).
USDA = United States Department of Agriculture

DESCRIPTIONS OF DELINEATED FEATURES

Features delineated within the JDSA in include is City Creek and one drainage feature, identified as Drainage A as detailed below. Delineated features are shown on Figure 4 and site photographs are shown on Figure 5.

City Creek

City Creek is leveed, with a low gradient, and contains low flow channel(s) that are considered perennial within the JDSA. Riparian vegetation occurs along the primary low flow channel(s). The majority of City Creek is vegetated by Riversidean alluvian fan sage. A 48-inch-diameter, concrete, storm drain discharges flows into a low flow channel within City Creek on the northeastern end of the BSA. The storm drain was discharging minor flows during the August 2024 field survey.

City Creek exhibited OHWMs and defined bed and banks. OHWMs included scour, sediment deposition and sorting, and drift deposits. This feature ranges from 165 feet wide at its narrowest point to approximately 430 feet wide at its widest and is 1,147 feet long.

Drainage A

Drainage A is outside the confines of City Creek within the eastern portion of the JDSA. This drainage feature is ephemeral and unvegetated. Drainage A appears to catch localized stormwater runoff from areas east of the City Creek levee. This feature drains overland into the Base Line Road curb and gutter, where it is likely directed into an underground stormwater collection system. Drainage A appears to be maintained during large storm events based on evidence of ground disturbance and lack of vegetation within and adjacent to this feature.

Drainage A exhibited an OHWM and defined bed and banks. OHWMs included scour and sediment deposition and sorting.

JURISDICTIONAL CONCLUSIONS

The regulatory basis for the determination of jurisdictional status of the delineated features (see Figures 4 and 5) within the JDSA is described below under the applicable regulatory agency.

United States Army Corps of Engineers

City Creek is considered perennial and is tributary to the Santa Ana River approximately 2 miles downstream of the JDSA. The Santa Ana River is tributary to the Pacific Ocean, both of which are USACE traditionally navigable waters (TNWs). No wetlands were identified within City Creek (see Appendix B - USACE Wetland Determination Data Forms). City Creek is a perennial tributary to a TNW and will likely meet the USACE definition of a relatively permanent water that would be regulated by the USACE as a WOTUS. City Creek comprises 8.49 acres of nonwetland WOTUS within the JDSA (see Table C).

Drainage A is a nonwetland, unvegetated ephemeral drainage feature that collects localized stormwater runoff. This drainage feature ultimately drains onto Base Line Road and into an underground stormwater collection system that likely drains into City Creek a tributary of the Santa Ana River, a TNW. Drainage A comprises 0.06 acre of nonwetland WOTUS within the JDSA. The USACE generally does not assert jurisdiction over drainage features that do not carry a relatively permanent flow of water. Drainage A is not expected to be regulated by the USACE as a WOTUS. However, the USACE reserves the right to regulate these types of waters on a case-by-case basis.

California Department of Fish and Wildlife

In accordance with Section 1602 of the California Fish and Game Code, CDFW asserts jurisdiction over rivers, streams, and lakes, as well as any riparian vegetation associated with those features. City Creek contains 9.46 acres streambed (bank to bank) and 1.37 acres of riparian habitat. Drainage A comprises 0.06 acre of Streambed (bank to bank) for a total of 9.52 acres of streambed/riparian that would be subject to the regulatory authority of CDFW under Section 1600 et seq. of the California Fish and Game Code (see Table C).

Regional Water Quality Control Board

All areas determined to be WOTUS under both current and historic USACE definitions and guidelines, as identified above, are also considered to be WOTS. City Creek comprises 8.49 acres of nonwetland

WOTS and Drainage A comprises 0.06 acre of nonwetland WOTS within the JDSA for a total of 8.55 acres subject to the regulatory authority of the RWQCB.

Table C, below summarizes the delineation results.

Table C: Delineation Results

Feature	Non-Wetland WOTUS USACE/WOTS RWQCB (acres)	CDFW Streambed (acres)	CDFW Riparian (acres)	Linear Feet	Cowardin Type	Location (decimal degrees)
City Creek	8.49	9.46	1.37	1,147	Riverine	34.121194°/ -117.192707°
Drainage A	0.06	0.06	0	636.69	None	34.121991°/ -117.189084°
Total	**8.55**	9.52	**1.37**	17.83.69		

Source: Compiled by LSA (2024).
CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = Waters of the State
WOTUS = Waters of the United States

DISCLAIMER

The findings and conclusions presented in this report, including the locations and extents of features subject to regulatory jurisdiction (or lack thereof), represent the professional opinion of the consultant biologists. These findings and conclusions should be considered preliminary until verified by the appropriate regulatory agencies.

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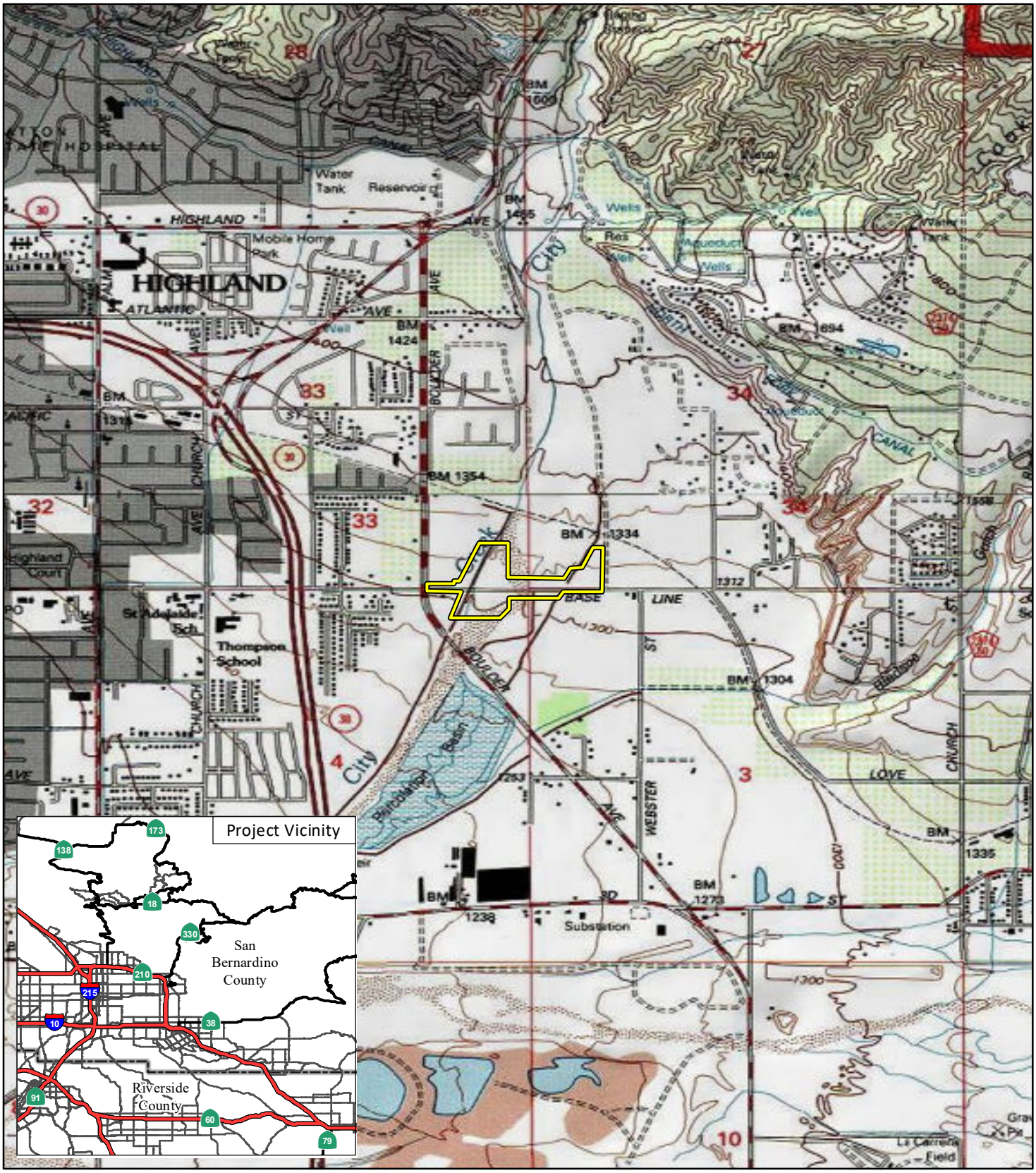
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APPENDIX A

FIGURES

Figure 1: Project Location
Figure 2: National Wetlands Inventory
Figure 3: Soils
Figure 4: Jurisdictional Delineation Results
Figure 5: Site Photographs



LSA

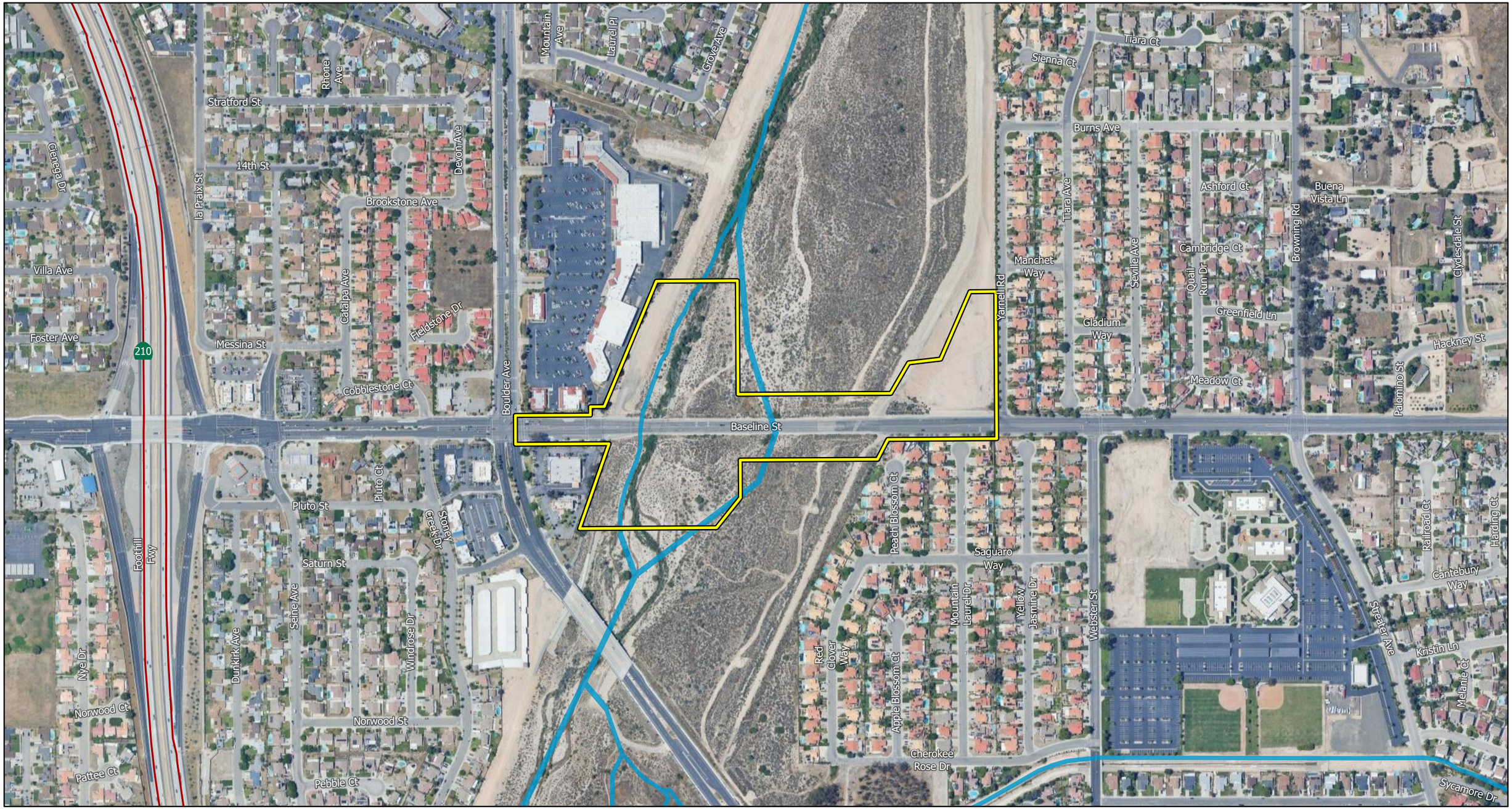
FIGURE 1

Base Line Bridge Replacement Project

Project Location

SOURCE: USGS 7.5' Quad - *Harrison Mtn* (1988) and *Redlands* (1988), CA

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LSA

0 250 500
FEET

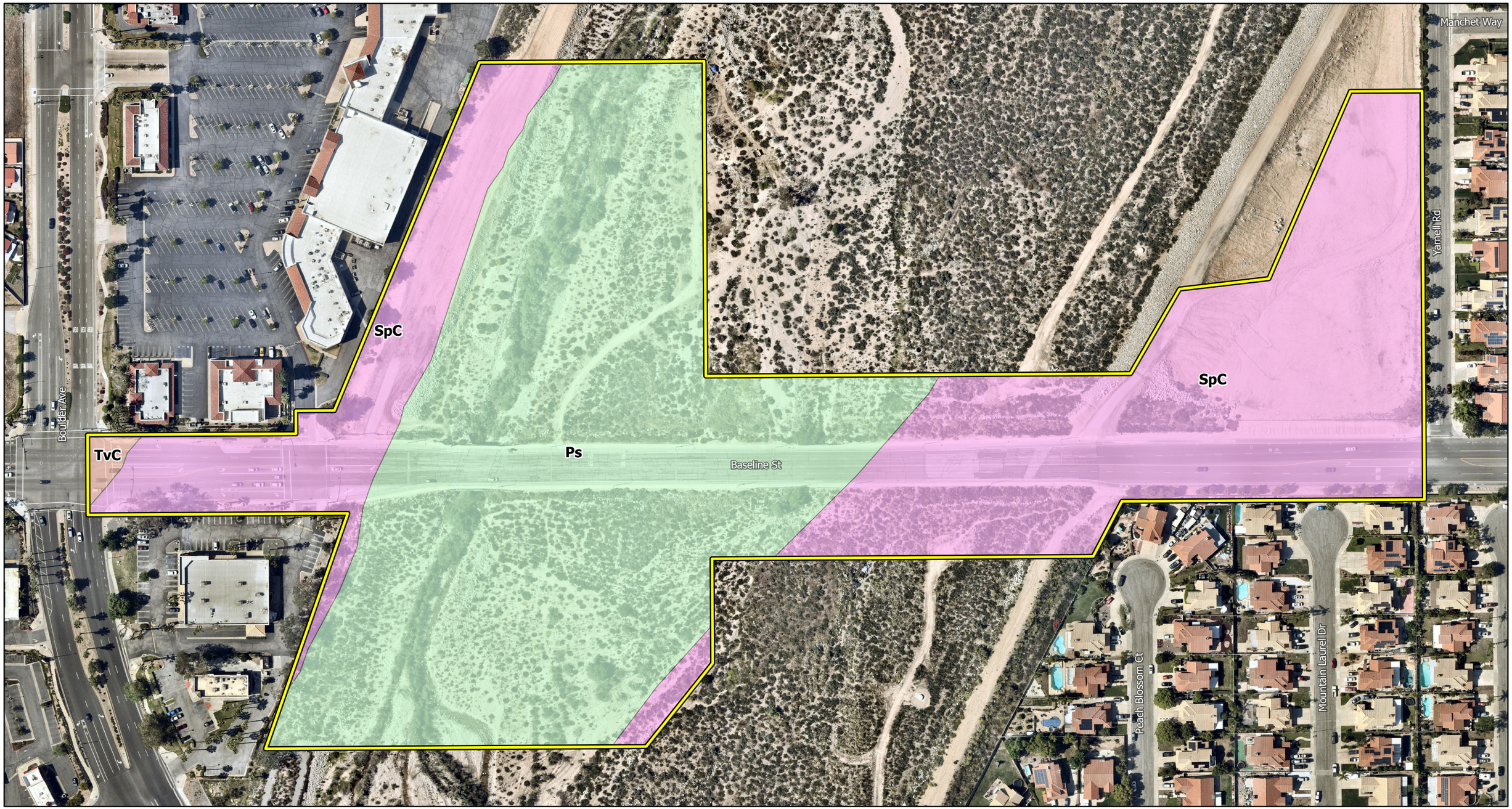
SOURCE: Nearmap (5/13/2023)

J:\AEM1603A\GIS\Pro\AEM1603A\AEM1603A.aprx (5/8/2024)

FIGURE 2

Base Line Bridge Geotechnical Investigation

National Wetlands Inventory



LSA

Project Boundary

Soils

Ps - Psamments, Fluvents and Frequently flooded soils

SpC - Soboba stony loamy sand, 2 to 9 percent slopes

TvC - Tujunga gravelly loamy sand, 0 to 9 percent slopes

0 75 150
FEET

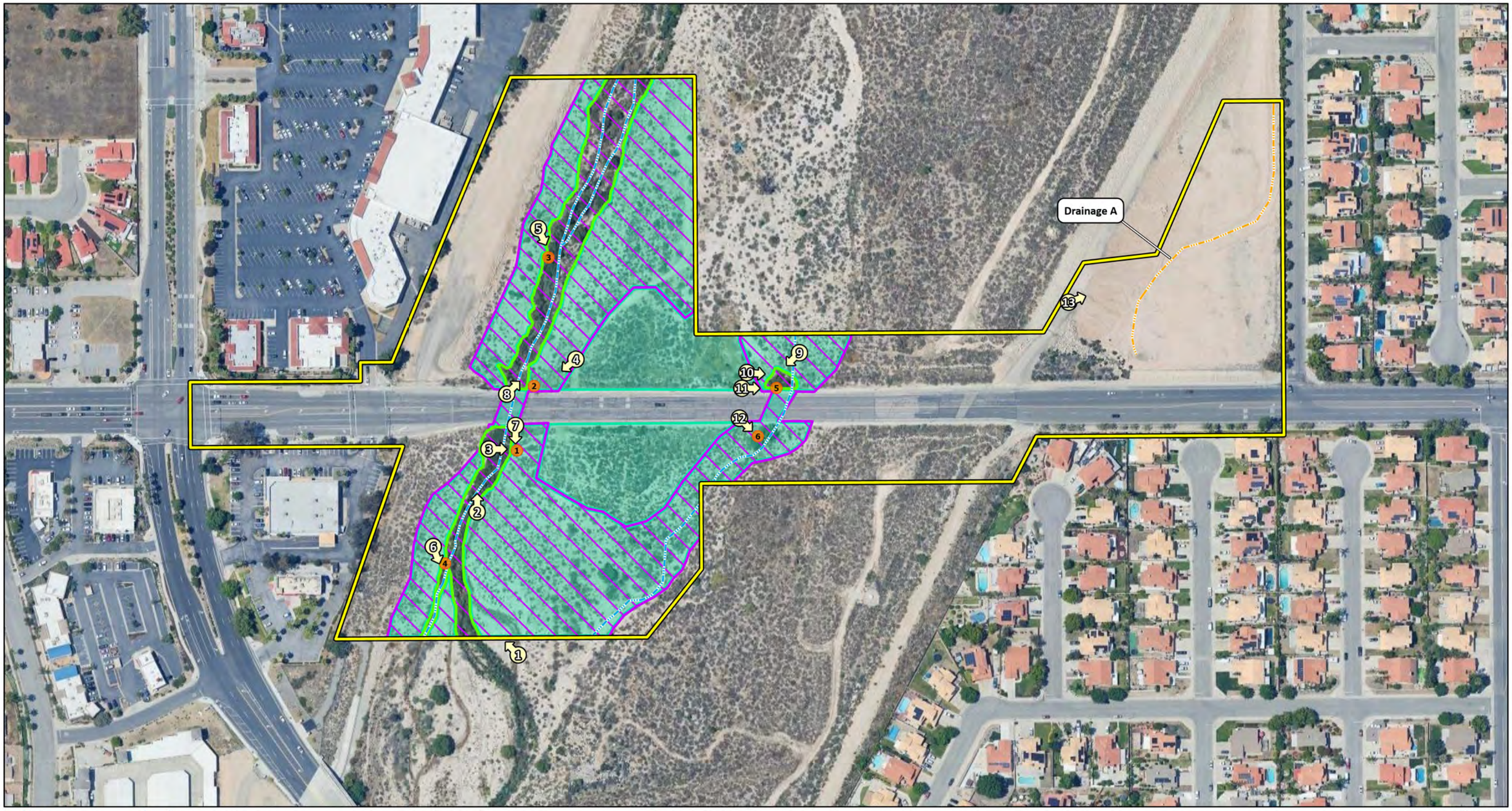
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FIGURE 3

Base Line Bridge Geotechnical Investigation

Soils



LSA

Biological Study Area

Photo Location

Sample Points

Delineation Results

CDFW Riparian (1.37 acres)

CDFW Streambed (9.46 acres)

USACE and RWQCB Non-Wetlands (8.49 acres)

Low Flow Channel

USACE Non-Jurisdictional/RWQCB Non-Wetlands/CDFW Streambed (0.06 acres)

N

0 100 200

FEET

SOURCE: Google Imagery (2023)

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FIGURE 4

Base Line Bridge Replacement Project

Jurisdictional Delineation Results

08-SBd-0-HIGH

EA 08-925035



Photo 1: View of low flow channel. Photograph taken August 18, 2023.



Photo 2: View of low flow channel. Photograph taken August 18, 2023.



Photo 3: View of sample point 1 within riparian vegetation. Photograph taken August 18, 2023.



Photo 4: View of sample point 2. Photograph taken August 18, 2023.

Baseline Bridge at City Creek Replacement Project
Representative Site Photographs



Photo 5: View of sample point 3. Photograph taken August 2, 2024.



Photo 6: View of sample point 4. Photograph taken August 2, 2024.



Photo 7: View of City Creek taken from the existing Baseline Bridge. Photograph taken August 18, 2023.



Photo 8: View of City Creek taken from the existing Baseline Bridge. Photograph taken August 18, 2023.

Baseline Bridge at City Creek Replacement Project
Representative Site Photographs



Photo 9: View of sample point 5. Photograph taken August 2, 2024.



Photo 10: View of drainage A. Photograph taken August 18, 2023.



Photo 11: View of storm drain that flows into City Creek. Photograph taken August 2, 2024.



Photo 12: View of sample point 6. Photograph taken August 2, 2024.

Baseline Bridge at City Creek Replacement Project
Representative Site Photographs

APPENDIX B

USACE WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Replacment Project City/County: San Bernardino Sampling Date: August 18, 2023

Applicant/Owner: City of Highaland State: CA Sampling Point: 1

Investigator(s): Denise Woodard and Carla Cervantes Section, Township, Range: 33/1-North/3-West

Landform (hillslope, terrace, etc.): Floodplain - mild slope to south Local relief (concave, convex, none): leveed concave Slope (%): _____

Subregion (LRR): C Lat: 34.121021 N Long: -117.193515 W Datum: Decimal Degrees

Soil Map Unit Name: Psamments, Fluvents and Frequenty Flooded Soils NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	Y	FACW
2. Populus fremontii	< 1	N	FAC
3. Tamarix sp.	<1	N	FAC
4.			
	102	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x10')			
1.			
2.			
3.			
4.			
5.			
	1	= Total Cover	
Herb Stratum (Plot size: 10'x10')			
1. Cyperus eragrostis	<1		FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	<1	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	-	-	-	-	-	-	Coarse sand, gravel, rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- X Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water in adjacent low flow channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Replacment Project City/County: San Bernardino Sampling Date: August 18, 2023

Applicant/Owner: City of Highaland State: CA Sampling Point: 2

Investigator(s): Denise Woodard and Carla Cervantes Section, Township, Range: 33/1-North/3-West

Landform (hillslope, terrace, etc.): Floodplain - mild slope to south Local relief (concave, convex, none): leveed concave Slope (%): _____

Subregion (LRR): C Lat: 34.121021 N Long: -117.193515 W Datum: Decimal Degrees

Soil Map Unit Name: Psamments, Fluvents and Frequenty Flooded Soils NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix exigua	40	Y	FACW
2. Salix lasiolepis	20	Y	FACW
3. Alnus sp.	5	N	FACW
4.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x10')			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	-	-	-	-		-	Coarse sand, gravel, rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- X Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water in adjacent low flow channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Replacment Project City/County: San Bernardino Sampling Date: August 2, 2024

Applicant/Owner: City of Highaland State: CA Sampling Point: 3

Investigator(s): Denise Woodard and Carla Cervantes Section, Township, Range: 33/1-North/3-West

Landform (hillslope, terrace, etc.): Floodplain - mild slope to south Local relief (concave, convex, none): leveed concave Slope (%): _____

Subregion (LRR): C Lat: 34.122039 N Long: -117.193092W Datum: Decimal Degrees

Soil Map Unit Name: Psamments, Fluvents and Frequenty Flooded Soils NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	Y	FACW
2.			
3.			
4.			
	102	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	-	-	-	-	-	-	roots	
4-16	-	-	-	-	-	-	Coarse sand, gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- X Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water in adjacent low flow channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Replacment Project City/County: San Bernardino Sampling Date: August 2, 2024

Applicant/Owner: City of Highaland State: CA Sampling Point: 4

Investigator(s): Denise Woodard and Carla Cervantes Section, Township, Range: 33/1-North/3-West

Landform (hillslope, terrace, etc.): Floodplain - mild slope to south Local relief (concave, convex, none): leveed concave Slope (%): _____

Subregion (LRR): C Lat: 34.120393 N Long: -117.193780W Datum: Decimal Degrees

Soil Map Unit Name: Psamments, Fluvents and Frequenty Flooded Soils NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus racemosa	25	Y	FAC
2.			
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Baccharis salicifolia	75	Y	FAC
2.			
3.			
4.			
5.			
	75 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Cyperus eragrostis	< 1	N	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	< 1 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	-	-	-	-	-	-	Fine sand	
3-16	-	-	-	-	-	-	Coarse sand, gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- X Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water in adjacent low flow channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Replacment Project City/County: San Bernardino Sampling Date: August 2, 2024

Applicant/Owner: City of Highaland State: CA Sampling Point: 5

Investigator(s): Denise Woodard and Carla Cervantes Section, Township, Range: 33/1-North/3-West

Landform (hillslope, terrace, etc.): Floodplain - mild slope to south Local relief (concave, convex, none): leveed concave Slope (%): _____

Subregion (LRR): C Lat: 34.121325 N Long: -117.191621W Datum: Decimal Degrees

Soil Map Unit Name: Psamments, Fluvents and Frequenty Flooded Soils NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sp.	100	Y	FACW
2.			
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	-	-	-	-	-	-	Coarse sand with roots	
6-16	-	-	-	-	-	-	Coarse sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- X Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Low flow channel contained water and is being fed by adjacent storm drain outlet. Storm drain emitting minor flows.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Baseline Bridge at City Creek Replacment Project City/County: San Bernardino Sampling Date: August 2, 2024

Applicant/Owner: City of Highaland State: CA Sampling Point: 6

Investigator(s): Denise Woodard and Carla Cervantes Section, Township, Range: 33/1-North/3-West

Landform (hillslope, terrace, etc.): Floodplain - mild slope to south Local relief (concave, convex, none): leveed concave Slope (%): _____

Subregion (LRR): C Lat: 34.121325 N Long: -117.191621W Datum: Decimal Degrees

Soil Map Unit Name: Psamments, Fluvents and Frequenty Flooded Soils NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix gooddingii	40	Y	FACW
2. Callistemon sp.	25	Y	None
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Cyperus eragrostis	10	N	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 50	x 2 = 100
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 50 (A)	100 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	-	-	-	-	-	-	Fine sand with roots	
4-16	-	-	-	-	-	-	Coarse sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- X Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water in low flow channel from storm drain discharge upstream.

APPENDIX C

2018 IS/MND HISTORIC PROPERTY SURVEY REPORT

State of California Transportation Agency Department of Transportation

SUPPLEMENTAL HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route	Post Miles	Unit	E-FIS Project Number	Phase

District	*County*	*Federal Project. Number. (Prefix, Agency Code, Project No.)*	*Location*
08	SBd	EA 08-925035	Highland

Project Description:

This Supplemental Historic Property Survey Report (SHPSR) supplements the previous HPSR prepared for this project by LSA (dated September 28, 2010). The City of Highland (City), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), proposes to improve the existing Base Line over City Creek Crossing, a four-lane low-water crossing. The four-lane roadway sections approaching the bridge from both the east and the west will be elevated to meet the proposed raised bridge profile. The existing four-lane low-water crossing will be replaced by the four-lane bridge. The proposed action will include, but is not limited to, the following improvements:

1) Replace the Base Line low-water crossing over City Creek with a raised bridge. The raised bridge will span 240 feet across City Creek and will be 95.5 feet wide.
2) Construct roadway approaches, approximately 130 feet to the west of the proposed bridge and approximately 860 feet to the east, to tie into the existing four-lane roadway section.
3) Construction of street improvements including utility construction, pavement widening, curbs, gutters, sidewalks, and street lighting and the relocation of utilities as needed.
4) Construct a 16 × 10-foot box culvert to replace the existing 8 × 4-foot low-flow box culvert east of the proposed bridge.
5) Accommodate the construction of a north to southwestern trending multi-purpose trail along the western bank of City Creek (to be locally funded by the City of Highland at a later date).

Other miscellaneous improvements include channel grading in City Creek to divert flows under the new bridge. In addition, two temporary test pits approximately 15 × 4 feet (L × W), with a maximum depth of 15 feet are proposed to be excavated during the Design Phase as part of geotechnical investigation to ascertain the suitability of using pile foundations at abutments and pier.

The following changes were made to the project design:

1) Replace the existing precast prestressed approximately 72-foot long by 42-foot wide single-span bridge with a raised bridge measuring approximately 600 feet

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long and 96 feet wide. The bridge will contain six piers.

2) Remove an existing 8 × 4-foot low-flow single box culvert at low-water crossing; the proposed bridge structure will span this crossing and the box culvert will no longer be needed.
3) Construct roadway approaches, approximately 170 feet to the west of the existing bridge and approximately 540 feet to the east of end of the existing reinforced concrete box culvert, to tie into the existing four-lane roadway section.
4) Construction of street improvements includes approach guard rails, drainage improvements including permanent BMPs, and decorative street lighting.
5) Other miscellaneous improvements.

The proposed project would not require the acquisition of new right-of-way (ROW). Project Vicinity, Project Location, and APE Maps are attached to this SHPSR as Attachment A (Maps 1, 2, and 3, respectively).

2. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the project was established in consultation with Gary Jones, Principal Investigator, Prehistoric Archaeology (PQS); and Steven Nguyen, Caltrans Local Assistance Engineer, on September 28, 2010. The APE map is Map 3 of Attachment A in this Supplemental Historic Property Survey Report. The APE includes the areas of direct and indirect effects. These include the horizontal and vertical areas proposed for (1) direct effects associated with ground-disturbing activities, including temporary and permanent construction easements, proposed sound and retaining walls, and staging areas; and (2) indirect effects that are the result of visual, noise, or other effects. The area of indirect effects generally includes all developed properties that are adjacent to the proposed direct effects unless those effects are limited to minor improvements, such as pavement striping, that have no potential to indirectly impact adjacent properties.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

✓ Native American Tribes, Groups and Individuals

- A request for a list of potentially interested Native American Groups and a search of the Sacred Lands File (SLF) was emailed to the Native American Heritage Commission (NAHC) on June 1, 2009. The NAHC responded with a list of Native American Groups on June 3, 2009, and indicated that there were no Native American cultural resources documented in the SLF in or adjacent to the project area. Consultation was performed with five individuals representing three Native American groups: Ann Brierty and James Ramos (San Manuel Band of Mission Indians), Goldie Walker (Serrano Nation of Indians), and Michael Contreras and Ernest Siva (Morongo Band of Mission Indians). All

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individuals/groups were contacted via certified mail and follow-up telephone calls from July to September 2009. Ann Brierty (San Manuel Band of Mission Indians) recommended that all laws and regulations be followed in the event of the discovery of human remains and requested information from the City regarding a previously documented archaeological resource in City Creek north of Highland Avenue (more than one mile north of the current project) and further consultation in the event of the discovery of human remains. The City conducted a search of its records and attempted to contact Ms. Brierty during October through December 2009. No other concerns or requests were expressed by those contacted regarding the project. (See Attachment C for NAHC correspondence, representative examples of the form letters sent to designated individuals/groups in June 2009, related email correspondence, and a summary record of the Section 106 consultation.)

✓ Native American Heritage Commission

- NAHC was contacted on June 1, 2009, and it responded on June 3, 2009.

4. SUMMARY OF IDENTIFICATION EFFORTS

✓ National Register of Historic Places
✓ California Register of Historical Resources
✓ California Inventory of Historic Resources
✓ California Historical Landmarks
✓ California Points of Historical Interest
✓ California Historical Resources Information System (CHRIS)
✓ Caltrans Historic Highway Bridge Inventory

✓ Results:

- The records search and literature review indicated that 33 cultural resources studies have been previously conducted within a 1-mile (1.6 km) radius of the APE. Six of these studies included portions of the APE, but none documented cultural resources within it; Base Line itself (36-015497/CHPI-12) is documented as a historic resource. An additional 20 resources have been documented within the 1-mile (1.6 km) radius. These include a prehistoric milling feature (36-013440), a prehistoric isolate (P36-012194), a painted rock (36-060201), historic archaeological sites (CA-SBR-7350H and CA-SBR-6847H), a historic district (36-015474), historic buildings (36-012352, 36-012353, 36-013758, 36-013759, 36-013760, 36-013761, 36-0154574, 36-0154575 and 36-019706), historic agricultural complexes (CA-SBR-6548, 36-012193, and 36-004220H), and water conveyance systems (CA-SBR-6544H, CA-SBR-6848H, and CA-SBR-11474H). Of the resources documented within the 1-mile (1.6 km) radius, one is a National Register Historic District (P36-015474, Boulder Park) and two are California Points of Historic Interest (SBR-015497/CHPI-12, Base Line and CA-SBR-

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4220H/CHPI-SBR-31, the Cram Ranch). None of the other resources within the 1-mile (1.6 km) radius was listed in any of the registers, directories, or historic property databases at the SBAIC.

- Three other undocumented/potential historic cultural resources ('pending resources') are noted within the study area on SBAIC maps: the Baseline Ditch (PSBR-32), a historic-period residence (P-1063-87H), and an agricultural resource (P-1072-99H) thought to be associated with the Cram Ranch (36-004220). The pending resources are unique to the SBAIC and represent unconfirmed possible resources; therefore, they are not included in the inventory (count) of study area resources above.

5. PROPERTIES IDENTIFIED

✓ Riordan Goodwin, who meets the Professionally Qualified Staff Standards in Section 106 Programmatic Agreement (Section 106 PA) Attachment 1 as Co-principal Investigator, Prehistoric and Historic archaeology, has determined that the only other properties present within the APE meet the criteria for Section 106 PA Attachment 4 (**Properties Exempt from Evaluation**).

✓ Bridges listed as Category 5 in the Caltrans Historic Highway Bridge Inventory are present within the APE. Appropriate pages from the Caltrans Historic Bridge Inventory are attached.

- City Creek (# 54C0035)

6. HPSR to District File

✓ Caltrans, pursuant to Section 106 Programmatic Agreement Stipulation VIII.B, has determined that there are no cultural resources present in the APE and/or there are properties within the APE that are exempt from evaluation; see Section 5.

7. HPSR to SHPO

✓ Not applicable.

8. HPSR to CSO

✓ Not applicable.

9. Findings for State-Owned Properties

Findings to District File

✓ Not applicable; project does not involve Caltrans right-of-way or there are no Caltrans-owned cultural resources within the APE.

Findings to SHPO

✓ Not applicable.

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Findings to CSO

✓ Not applicable.

10. CEQA Considerations

✓ Not applicable; Caltrans is not the lead agency under CEQA.

11. List of Attached Documentation

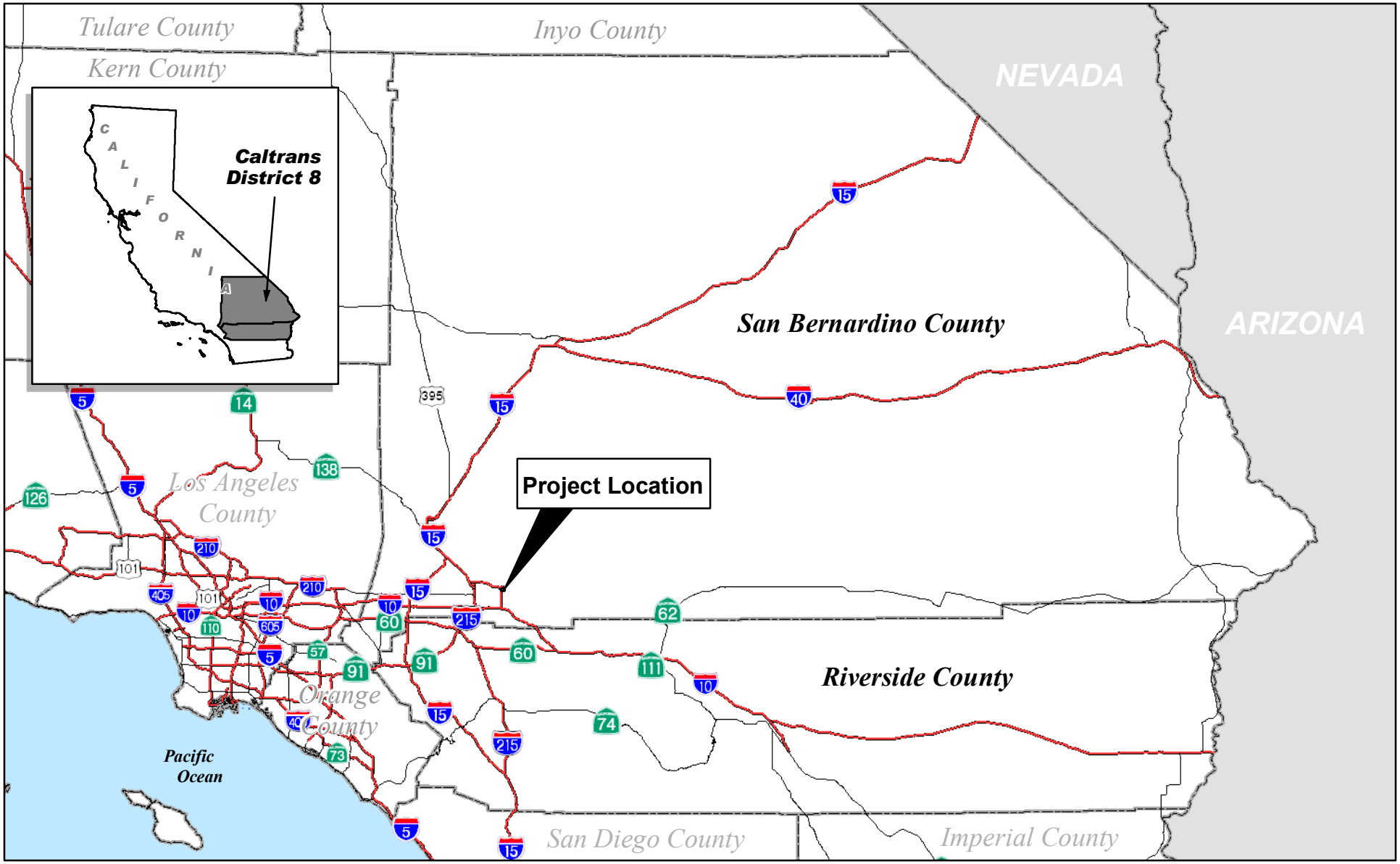
✓ Project Vicinity, Location, and APE Maps (Attachment A)

12. HPSR Preparation and Caltrans Approval

Prepared by District 8 Caltrans PQS:	PQS level and discipline]	Date
Prepared by:	Riordan Goodwin	January 18, 2017
Consultant / discipline:	Riordan L Goodwin, Co-Principal Investigator, Prehistoric and Historic Archaeology	Date
Affiliation	LSA	
Reviewed for approval by:	Gary Jones	3-16-17
District 8 Caltrans PQS discipline/level:	Gary Jones, Principal Investigator – Prehistoric Archaeology	Date
Approved by: (sign on line)	for	3/16/17
District 8 EBC:	Gabrielle Duff, Environmental Branch Chief	Date

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ATTACHMENT A: VICINITY, PROJECT LOCATION, AND APE MAPS

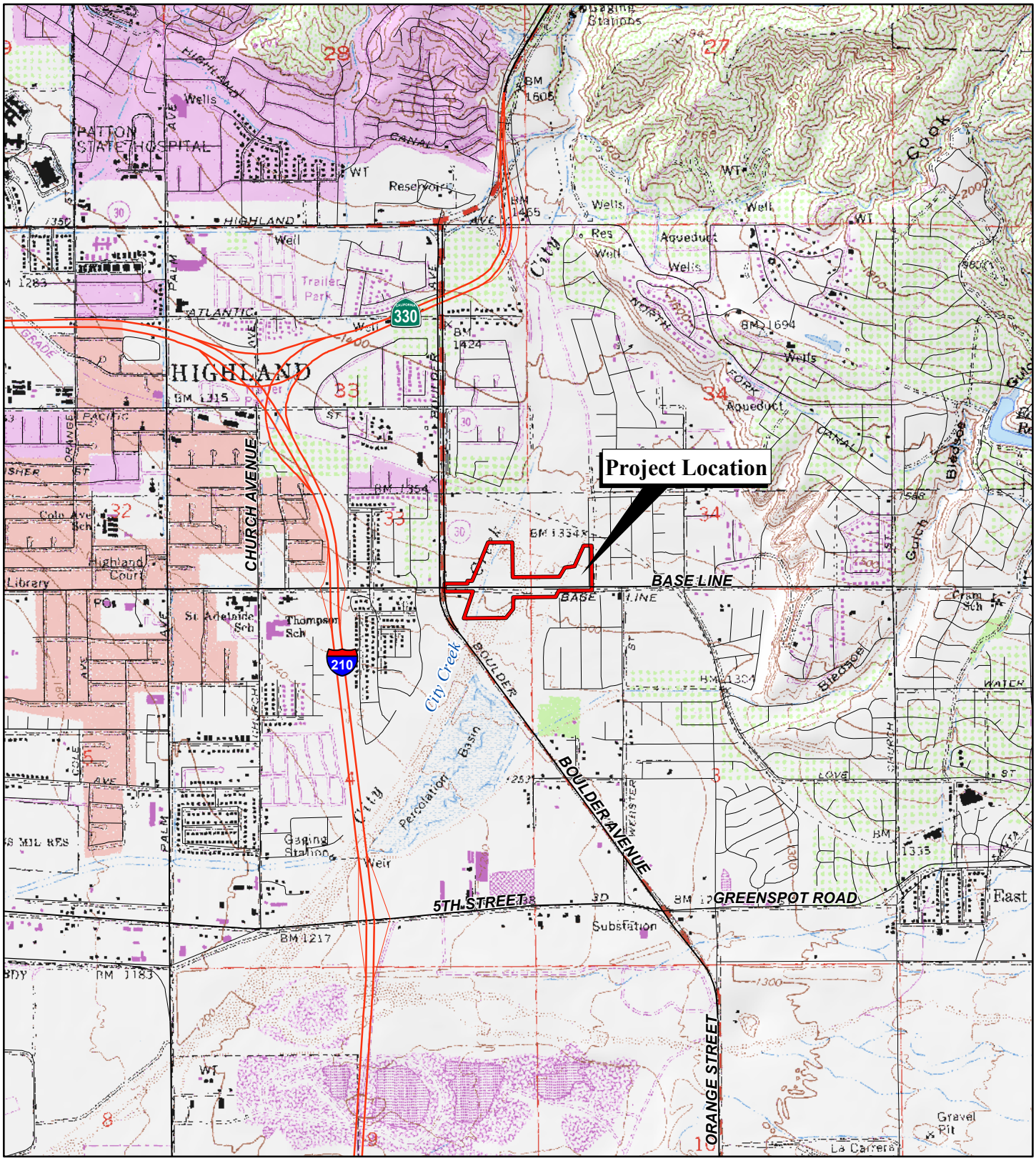


MAP 1

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)

Vicinity Map

I:\LIM0801\Reports\Cultural\Map_1.mxd (04/29/10)



MAP 2

0 1,000 2,000 FEET

0 304.8 609.6 METERS

SOURCE: USGS 7.5' Quads: Redlands and Harrison Mtn. (1988), CA; Thomas Bros., 2009.

I:\LIM0801\Reports\Cultural\Map_2.mxd (04/29/10)

08-SBd-0-HIGH
EA 08-925035
Base Line Bridge Over City Creek (Replace)

Project Location



0 50 100 150 300 450

SCALE: 1" = 150'

NOTE:
ALL STATIONS AND OFFSETS SHOWN ARE MEASURED FROM ℄ BASE LINE

S—Y 3/16/2017
Caltrans District 8 Local Assistance Engineer Date

Dany Jones 3-16-17
Caltrans District 8 Principal Investigator—Prehistoric Archaeology (PQS) Date

LEGEND

- AREA OF POTENTIAL EFFECTS LIMIT
- EXISTING CITY R/W
- EXISTING BRIDGE
- PROPOSED BRIDGE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED STRIPING
- EXISTING PROPERTY LINE
- BOULDER AVE TRAIL
- PROPOSED CHANNEL WALL WORK
- 1201-131-000 PARCEL NUMBER
- PROPOSED 15' x 4' TEST PIT (TP)

08-SBd-0-HIGH

CITY OF HIGHLAND
BASE LINE BRIDGE OVER CITY CREEK (REPLACE)
BR-NBIL(505)
AREA OF POTENTIAL EFFECTS

APPENDIX D

2018 IS/MND INITIAL SITE ASSESSMENT

A Report Prepared for:

AECOM
999 Town & Country Road
Orange, California 92868

INITIAL SITE ASSESSMENT
BASE LINE BRIDGE AT CITY CREEK
HIGHLAND, CALIFORNIA
FEDERAL PROJECT NUMBER: BR NBIL-5449(505)

Project No. 2016-035

by



Clint Isa
Civil Engineer 76470



Somadevan Niranjanan
Geotechnical Engineer 2819

Diaz•Yourman & Associates
1616 East 17th Street
Santa Ana, CA 92705
(714) 245-2920

April 17, 2017

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LIST OF ABBREVIATIONS AND ACRONYMS

AAI	All appropriate inquiry
AC	asphalt concrete
ACM	asbestos containing materials
ADL	aerially deposited lead
AST	aboveground storage tank
ASTM	ASTM International
AT&SF	Atchison Topeka & Santa Fe Railroad
AUL	activity and use limitation
BEP	Bond Expenditure Plan
CA FID	California WQCB Facility Index
CA HAULERS	California database of registered waste tire haulers
CDL	clandestine drug labs
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHMIRS	California Hazardous Materials Incident Reporting System
CORRACTS	Corrective Action Tracking System
CREC	Controlled Recognized Environmental Condition
DOGGR	California Division of Oil, Gas, and Geothermal Resources
DOQQ	Digital Orthophoto Quarter Quads
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
DYA	Diaz•Yourman & Associates
EDR	Environmental Database Resources
EIR	Environmental Impact Report
ENF	State of California Water Resources Control Board database of previous enforcement actions
EnviroStor	Site Mitigation and Brownfield Reuse Program database



EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response and Notification Systems
FINDS	Facility Index System
HIST UST	historic underground storage tanks
HREC	Historical Recognized Environmental Condition
HWP	California Hazardous Waste Permit
HWT	hazardous waste transporters
ID	identification
ISA	Initial Site Assessment
kg	kilogram
LBP	lead-based paint
LQG	Large Quantity Generator
LUST	leaking underground storage tanks
MGP	manufacture gas plant
MSL	mean sea level
NAIP	USDA National Agriculture Imagery Program
NEPA	National Environmental Policy Act
NFRAP	No Further Remedial Action Planned
NonGen	Non Generator
NPL	EPA National Priority List
OES	Office of Emergency Services
PCB	polychlorinated biphenyls
Project	Base Line Bridge over City Creek Replacement
PE	Professional Engineer
RCRA	Resource Conservations and Recovery Act
REC	Recognized Environmental Condition
ROW	right-of-way
RWQCB	California Regional Water Quality Control Board
SBCFCD	San Bernardino County Flood Control District
SBCFD	San Bernardino County Fire Department
SBVMWD	San Bernardino Valley Municipal Water District
SCH	California School Sites
SLIC	Spills, Leaks, Investigation, and Cleanup

SQG	Small Quantity Generator
SR	California State Route
SWEEPS	Statewide Evaluation and Environmental Planning System
SWF/LF	solid waste facilities and landfill
SWRCB	State of California Water Resources Control Board
SWRCY	solid waste recycling facility
TSDF	treat, store, or dispose facility
US ENG	U.S. Engineering Controls
US INST	U.S. Institutional Controls
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
UST	underground storage tank
VCP	DTSC Voluntary Cleanup Program
WDS	Waste Discharge System
WMUDS/SWAT	California Waste Management Unit Database System

EXECUTIVE SUMMARY

This updated report presents the results of our Phase I hazardous waste initial site assessment (ISA) performed for the proposed Base Line Bridge over City Creek Replacement project (Project) in Highland, California. The purpose of the Project is to replace the existing at-grade, low-water crossing of Base Line at City Creek with a raised bridge to reduce the impact of design flood events on the creek crossing. The proposed Project will consist of replacing the existing bridge, which is approximately 46 feet long and 72 feet wide, with a raised bridge that will be approximately 600 feet long and 96 feet wide. The Project will also include improvements to the City Creek channel; construction of a multi-use trail that will tie to the trail constructed as part of the nearby Boulder Avenue Bridge replacement project; and adjusting grades and alignments at the east and west approaches to the subject crossing.

The ISA was performed in general conformance with the scope and limitation of ASTM International, Inc. (ASTM) Practice E 1527-13 for the Project limits. Any exceptions to, or deletions from, this practice are described in Section 1.1 of this report. This assessment did not reveal evidence of recognized environmental concerns (RECs) in connection with this Project limits except for the following, which should be addressed as part of a Phase II site investigation:

- Soils adjacent to paved areas within the Project limits might contain aerially deposited lead (ADL) from vehicle exhaust.
- The bearing pad and the hinge and joint seal materials at the existing Base Line Bridge hinge, which might contain asbestos-containing materials (ACM).
- Existing utility pipelines located within the Project right-of-way that will be disturbed during construction might have coatings with ACM.
- Existing graffiti and/or bridge coatings might contain lead-based paint (LBP).

DYA also identified the following RECs, which can be addressed using Caltrans Standard Specifications (2015a) and Standard Special Provisions (2015b, 2015c, and 2016):

- Lead and other heavy metals, such as chromium, which might be present within yellow thermoplastic paint markings on the pavement and the existing bridge coatings.

Note that DYA prepared a Phase I ISA report (2010) for a previous iteration of the Project, which we understand was reviewed by Caltrans without comment. After DYA's report (2010) was issued, the Project was put on hold. The purpose of this Phase I ISA report is to update the findings of our previous report based on the 2013 ASTM E1527 and updated environmental data resources.

1 INTRODUCTION

1.1 PURPOSE

Diaz•Yourman & Associates (DYA) prepared this Phase I Hazardous Waste Initial Site Assessment (ISA) for the proposed Base Line Bridge Replacement over City Creek project (Project) in Highland, California, for AECOM. AECOM authorized this work on March 28, 2016.

The intent of this ISA is to provide a planning document in general compliance with California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) guidelines for evaluating environmental impacts due to hazardous waste during construction and to identify recognized environmental conditions (RECs), historical recognized environmental conditions (HRECs), and controlled recognized environmental conditions (CRECs). The U.S. Environmental Protection Agency (EPA) "All Appropriate Inquiry" (AAI) was used as a basis of general procedures followed in preparation of this ISA, but was not explicitly applied. The AAI references the ASTM International (ASTM) Designation E1527, "Standard Practice for Environmental Project Site Assessments: Phase I Environmental Property Assessment Process," for conducting the AAI. The purpose of the Phase I environmental property assessment, according to ASTM, is to identify RECs with regard to a commercial real estate transaction of a specific parcel of land. In contrast, the purpose of this assessment was limited to the identification of potential impacts of hazardous substances during the construction of the Project improvements.

RECs are defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to any release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. A de minimis condition is defined as a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis conditions are neither RECs nor CRECs (ASTM, 2013).

CREC is defined as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting

risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls; ASTM, 2013).

An HREC is defined as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls; ASTM, 2013).

1.2 PROJECT LOCATION AND DESCRIPTION

The Project is located in the City of Highland along Base Line approximately ½ mile east of State Route 30, as shown on the Vicinity Map, Figure 1. The purpose of the Project is to replace the existing at-grade, low-water crossing of Base Line at City Creek with a raised bridge to reduce the impact of design flood events on the creek crossing. The Project will include the following improvements:

- Replacing the existing pile-supported bridge measuring approximately 46 feet long and 72 feet wide with a raised bridge measuring approximately 600 feet long and 96 feet wide that will be supported on shallow foundations.
- Constructing City Creek channel improvements.
- Constructing roadway approaches approximately 170 feet to the west of the beginning of the existing Bridge and approximately 540 feet to the east of the end of the existing reinforced concrete box culvert to connect to the existing four-lane roadway section.
- Constructing street improvements includes utility construction, pavement widening, curbs, gutters, sidewalks, approach guardrails, drainage improvements that include permanent best management practices, and decorative street lightings.
- Relocating of utilities as needed.
- Other miscellaneous improvements.

A conceptual site plan illustrating the proposed Project features is provided in Appendix A. Based on the conceptual plans, we understand that construction of the proposed improvements

will disturb the onsite soils primarily within the footprint of the existing City Creek, where excavations ranging from approximately 4 feet to 13 feet are planned. Locally, deeper excavations within the footprint of City Creek will be required to construct the shallow foundations for the proposed bridge. In areas where the existing bridge's pile foundations will conflict with the construction of foundations for the new bridge, we understand that the existing pile foundations will be removed. Based on discussions with AECOM, removing the existing pile foundations will not likely require excavations.

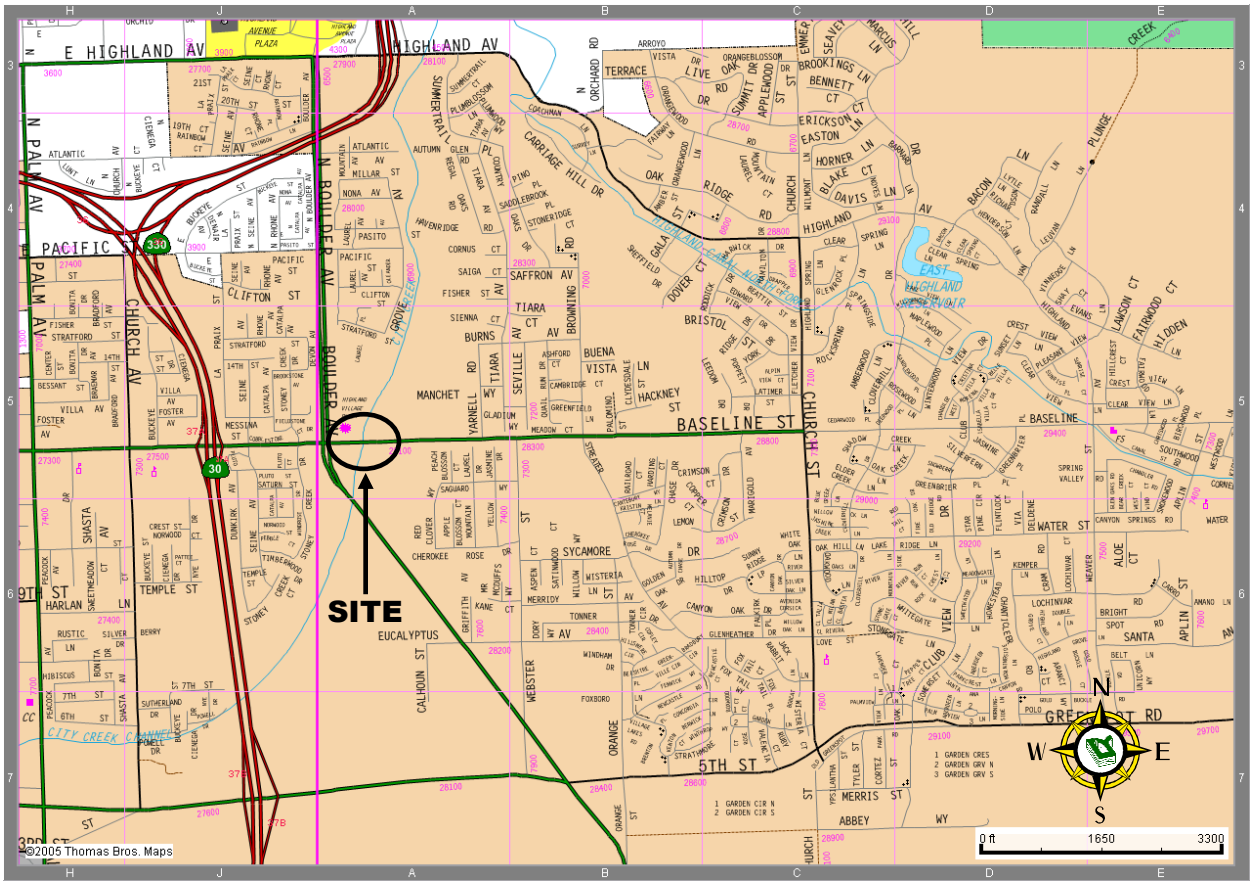


Figure 1 - VICINITY MAP

It is our understanding that minor acquisitions of additional right-of-way (ROW) within the existing San Bernardino County Flood Control District (SBCFCD) property might be required to accommodate the proposed improvements. Based on communication with the project team, we understand that the proposed ROW acquisitions will not involve the acquisitions of any structures at or adjacent to the Project site. Once the locations and extents of the ROW property acquisitions have been finalized, site-specific ASTM Phase I ISAs should be performed

for each of the acquired properties. Collective site-specific ASTM Phase I ISAs can be performed for adjoining acquired properties.

1.3 SCOPE

The scope of services to accomplish this assessment generally consisted of:

- Performing a site reconnaissance.
- Conducting historical research related to the use, storage, disposal, or release of hazardous materials or petroleum hydrocarbons based on property records, public records, aerial photographs, and interviews.
- Reviewing environmental databases and regulatory agency information available to the public for the Project and neighboring properties.
- Preparing this report.

No inhabited structures are planned within the Project area and, therefore, vapor intrusion was not evaluated.

2 SITE DESCRIPTION

2.1 EXISTING RIGHT-OF-WAY

The Project ROW consisted of the current alignment of Base Line at the City Creek crossing in Highland, California. The Base Line ROW is owned and maintained by the City of Highland, and portions of City Creek immediately north and south of Base Line are property of the SBCFCD. Base Line at City Creek was an asphalt concrete (AC)-paved, four-lane arterial street, consisting of two lanes in both eastbound and westbound directions. On the eastern and western limits of the Project site, Base Line widens to three lanes in each direction. An approximately 72-foot-long, single-span concrete bridge structure currently crosses City Creek near the western end of the Project site, while a smaller, single-box culvert crossing is located near the center of the site. Concrete sidewalks, curbs, and gutters were observed along the Project ROW on both the north and south sides of Base Line. Underground natural gas lines were noted behind the existing sidewalk on the north and south of Base Line. Above-ground portions of these utility lines were observed at the western concrete culvert crossing.

2.2 ADJACENT LAND USE

During DYA's site reconnaissance on October 24, 2016, property use adjacent to the Project was observed as follows:

North and South: City Creek consisted of a natural stream bed that had been diverted into main and secondary streams north of the Project site. These streams generally flow southwest and cross underneath Base Line at two locations. The main stream, which crosses Base Line at the existing bridge structure, is separated from a secondary stream located near the center of the site by naturally vegetated areas of limited seasonal grasses and occasional dense shrubbery. Similar vegetation was observed east of the secondary stream. Relief to the north and south of Base Line was typically low, with the exception of steep banks along the edges of the main and secondary streams/channels of City Creek and several smaller hills north of Base Line at the eastern Project extent. An additional levee was observed at the eastern limit of the Project ROW, which provided a barrier between the adjacent residential developments and City Creek. The levee generally extended parallel to the flow of City Creek with large boulders along the levee faces. Much of the area within the creek limits remained in its natural state, with the

exception of the west bank, where an embankment providing an access road along the creek was observed.

East: Properties east of the Project ROW are residential.

West: Two commercial plazas are located north and south of Base Line west of the Project site. The smaller plaza south of Base Line consists of a Walgreen's pharmacy and a fast-food restaurant. The larger plaza to the north of Base Line consists of an Albertson's supermarket, Long's Drug Store, several restaurants, and small retail stores. Beyond these commercial plazas are residential buildings to the west.

3 PHYSICAL SETTING

3.1 TOPOGRAPHY

The United States Geological Service (USGS) 7.5-minute quadrangle composite of Redlands and Harrison Mountain, California, Quadrangles, both dated 2012 (Environmental Database Resources [EDR], 2016c), is provided in Appendix B. Elevations across the Project areas range from approximately 1,290 feet above mean sea level (MSL) at the west end of the Project site to 1,305 feet above MSL at the east end. The topography of the area is generally characterized by a surface gradient sloping gently to the southwest. Locally, 10- to 20-foot-high levees forming the eastern and western banks of City Creek descend into the creek at moderate inclinations. Behind the levees, the surface gradient generally slopes upward and away from City Creek at mild inclinations. Other topographical features of note include the main and secondary streams of City Creek crossing Base Line. Depths of these features relative to adjacent grades along Base Line range from approximately 7 feet at the secondary stream to 20 feet at the main stream.

3.2 SURFACE WATER

Surface water drainage in the Project area consisted mainly of surface flow into gutters and drains to the current underground municipal storm drain system in the streets. Surface water also drains into City Creek in the undeveloped areas adjacent to the existing crossing, as was observed during DYA's previous site reconnaissance (DYA, 2010) and during DYA's site reconnaissance performed for this ISA.

3.3 GEOLOGY

The Project lies within the Transverse Ranges Geomorphic Province of California, characterized by a band of east-west-trending mountains and basins across Southern California. According to the Geologic Map of California, 1:250,000 Series, San Bernardino Quadrangle, (California Geologic Survey (CGS), formerly California Division of Mines and Geology [CDMG], 1986), the Project area and the surrounding central portion of the Project were mapped as quaternary younger alluvial fan deposits, characterized as sand and gravel with cobbles and boulders, associated with sediments derived from the San Bernardino Mountains north of the Project area.

According to USGS Water Supply Paper 1419, Geologic and Hydrologic Features of the San Bernardino Area (USGS, 1963), alluvial sediments form an alluvial fan bajada along the base of the San Bernardino Mountains over 1,000 feet thick in the Project area.

3.4 GROUNDWATER

California Department of Water Resources (DWR) Bulletin 118 (DWR; 2004) indicates that the Project site is located within the Bunker Hill sub-basin of the Upper Santa Ana Valley groundwater basin. Within the Bunker Hill sub002Dbasin, as many as two aquifers ranging in thickness from 350 feet to 650 feet are present that yield water via wells.

Groundwater in the Project area is at a depth of approximately 150 to 200 feet below surface and flows to the west-southwest. According to groundwater data included in the EDR database report (2016a) in Appendix C, shallow perched groundwater in the Project area is at a depth of approximately 150 feet and the flow direction varies. Given the geologic conditions, shallow groundwater flow is expected to generally conform to the topographic surface.

4 USER-PROVIDED INFORMATION

4.1 QUESTIONNAIRES

An environmental questionnaire was submitted to the City of Highland to assist with identifying sources of RECs to the Project that might not be available in the database records reviewed for this ISA. The questionnaire was completed by Mr. Dennis Barton on December 20, 2016, and returned to DYA on January 5, 2017; a copy of the questionnaire is presented in Appendix D. Based on their responses to the questionnaire, the City of Highland is unaware of any previous or existing environmentally hazardous conditions at or near the Project site that could adversely impact the proposed construction. While the City of Highland did indicate that it has knowledge of environmentally related activity and use limitations (AUL) for the property, in subsequent email correspondence, the City of Highland indicated that the AULs were not a result of hazardous material concerns; a copy of the email correspondence with the City of Highland is included in Appendix D.

Environmental questionnaires should also be submitted by the City of Highland to tenants and property owners located adjacent to the Project site after potential ROW acquisitions have been finalized. Responses to the environmental questionnaires will assist with identifying sources of RECs to the Project that may not be available in the database records reviewed for this ISA. A blank copy of the questionnaire completed by the City of Highland is included in Appendix D for reference.

4.2 ENVIRONMENTAL LIEN/ACTIVITY AND USE LIMITATIONS

DYA did not perform searches for environmental liens or AULs for the Project. The locations of potential property acquisitions are unknown at this time and will be identified in future phases of the Project. Individual ISAs should be performed for properties to be acquired and should include a search for environmental liens on the properties and reports that may disclose AULs.

5 INTERVIEWS

The objective of interviews is to obtain information indicating RECs in connection with the property.

5.1 ON-SITE INTERVIEWS

Because areas of ROW acquisition have yet to be finalized, on-site interviews with owners/leaseholders of properties located within the areas of potential ROW acquisitions noted in Section 1.2 were not performed at this time. Interviews should be performed as part of parcel-specific ISAs after the locations of ROW acquisition have been finalized.

5.2 INTERVIEW WITH CURRENT OWNERS

DYA conducted an interview with representatives from the City of Highland to supplement information gathered during other portions of this Phase I ISA. The interview was performed at 10 o'clock AM via telephone on Tuesday, December 20, 2016, and included the following participants:

- Mr. Dennis Barton, City of Highland (Key Site Manager)
- Ms. Kim Stater, City of Highland Planner
- Mr. Todd Dudley, AECOM Project Manager
- Mr. Clint Isa, DYA Project Environmental Lead

Because Mr. Dennis Barton had completed the environmental questionnaire presented in Appendix D, the telephone interview focused primarily on items not covered by the questionnaire (e.g., site use history, site development and maintenance, and knowledge of hazardous materials at the site). A summary of the items discussed is presented below.

- Parties with knowledge of the original grading and construction of the existing Base Line crossing at City Creek are either no longer employed by the City of Highland or are deceased.
- Periodic maintenance grading operations have occurred within City Creek at the Base Line crossing since the original crossing's construction. According to Mr. Barton, the maintenance grading operations have typically been performed by SBCFCD and have

consisted of exporting sediment that had accumulated within City Creek. Mr. Barton was unsure of the exact dates when the maintenance grading had occurred, but judged that they were most recently performed in 2003 and 2010.

- Based on recent experience during construction of similar improvements for the Boulder Avenue Bridge at City Creek, the City of Highland judged that asbestos-containing materials (ACM) could potentially be present in the existing Base Line Bridge bearing pads. Coating for some of the existing utility pipelines discussed in Section 2.1 and Section 8.5 could also contain asbestos.
- The City of Highland indicated that lead-based paint (LBP) is likely not present in the existing bridge coatings or in the existing thermoplastic striping along Base Line; however, additional discussion regarding LBP is provided in Section 10.2.
- The City of Highland did not have any knowledge of hazardous material spills or releases at the Project site.
- The City of Highland indicated that recent environmental impact reports (EIRs) had been prepared by ESA (2015, 2016) for the San Bernardino Valley Municipal Water District (SBVMWD) Sterling Natural Resource Center project. The improvements associated with the Sterling Natural Resource Center project included treated wastewater pipelines and a discharge outlet that would be located at or near the Project site. The City of Highland provided DYA with the reports prepared by ESA (2015, 2016) for our use in preparing this ISA. A summary of our review of the reports prepared by ESA is presented in Section 6.3.

At the request of the Client, interviews with the owner of properties to be acquired were not conducted as part of this Phase I ISA.

5.3 INTERVIEW WITH OTHERS

At the request of the Client and current Project owner, interviews with others (owners of neighboring or nearby properties) were not conducted.



6 REGULATORY AGENCY FILE AND RECORDS REVIEW

6.1 ENVIRONMENTAL DATABASE REVIEW

The purpose of the environmental database review is to obtain and review public records to identify activities at the Project site or surrounding properties that could indicate significant potential for RECs impacting the Project. The database information was obtained for this report by DYA through EDR (2016a) and is presented in Appendix C. Due to the large volume of supporting data, the detailed description of the database information for the sites identified was reproduced from the EDR report (2016a) on a compact disc (Adobe reader format) in Appendix C for the "hard" copy of the report. The entire EDR report (2016a) is provided in Appendix C for the electronic version of this report.

In some cases, location information supplied by the database provider was insufficient to allow map-coded facility locations. These facilities are listed under the unmappable section within the EDR report (2016a). A review of the unmappable facilities indicated that some of these facilities are within the research distance from the Project. These facilities are discussed under the appropriate database heading below

6.2 PUBLIC AGENCY REVIEW

DYA reviewed local and state agencies' records to identify any current or previous records of hazardous substance use, storage, and/or unauthorized releases that may have impacted the subject property and surrounding properties.

6.2.1 California Regional Water Quality Control Board

DYA reviewed the online GeoTracker data and report resource for regulated environmental cases provided by the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) on the Internet at geotracker.swrcb.ca.gov. According to GeoTracker, no records of active environmental cases were found for the subject property or adjacent areas.

6.2.2 California Department of Toxic Substance Control

DYA reviewed the online EnviroStor investigation data and report resource for cleanup and hazardous waste permitted facilities provided by the California Department of Toxic Substance Control (DTSC). According to EnviroStor, no records of active environmental cases were found

for the Project alignment. However, one record of active environmental cases for properties in the vicinity of the Project alignment that may have impacted the subject property was found. Data and site information was obtained for this case as described in Section 9.3 of this report.

6.2.3 California Department of Conservation, Division of Oil, Gas, and Geothermal Resources

According to the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) Well Finder (California Department of Conservation, 2016), there are no known oil wells in the immediate vicinity of the Project. No existing oil wells or facilities were observed in the Project area.

6.3 PREVIOUS REPORTS

DYA reviewed our ISA report (2010) for a previous iteration of the proposed Project. DYA's report indicated that RECs to the previous iteration of the Project consisted of aerially deposited lead (ADL) in the soils adjacent to Base Line. DYA's 2010 report also noted our ISA report for similar improvements to the Boulder Avenue bridge over City Creek (DYA, 2007), which is located approximately 600 feet downstream (south). No environmental issues were identified for the Boulder Avenue project. DYA requested other previous ISA reports related to the Project from the Project team. We understand that the Project team was either unaware of other previous ISA reports, or such reports were not available.

The City of Highland did provide DYA with draft and final EIRs (ESA; 2015, 2016) for the San Bernardino Valley Municipal Water District (SBVMWD) Sterling Natural Resource Center project. Based on our review of the EIRs, portions of the Sterling Natural Resource Center project would be constructed within and adjacent to the proposed Project footprint, such as:

- A treated wastewater pipeline that would be constructed along Base Line from Webster Street to the existing levee that forms the eastern boundary of City Creek. The pipeline alignment would then continue south along the levee for approximately 250 feet before bearing to the west to a discharge structure.
- A discharge structure that will serve as an outlet for the treated wastewater into City Creek. The discharge structure would be located approximately 200 feet south of Base Line at a location that is downgradient and downstream from the Project site.

Based on our review, ESA (2015, 2016) did not identify the potential presence of hazardous materials along the Sterling Natural Resource Center project alignment that could impact the proposed Base Line crossing improvements. If the Sterling Natural Resource Center project is constructed prior to the proposed Base Line crossing improvements, we judge that its operation is not likely to impact construction of the proposed Project because of the distance from the Project to the discharge structure and because the discharge point is downgradient and downstream of the Project.

A listing of the previous reports reviewed by DYA for this Phase I ISA is included in Section 14, Bibliography.

7 HISTORICAL USE

The objective of consulting historical sources is to develop a history of previous uses of the subject property and surrounding area to assist in identifying the likelihood of past uses having led to RECs in connection with the subject property (ASTM, 2013).

7.1 HISTORICAL TOPOGRAPHIC MAPS

The USGS Topographic Maps listed in Table 1 were used to assess the land use and topographic history of the Project alignment and surrounding areas.

Table 1 - HISTORICAL TOPOGRAPHIC MAPS

QUADRANGLE	MAP YEAR	SCALE
Redlands	1899	1 : 62,500
Redlands	1901	1 : 62,500
Redlands[1]	1943	1 : 31,680
Harrison Mountain	1953,1954	1 : 24,000
Redlands	1954	1 : 62,500
Redlands and Harrison Mountain	1967	1 : 24,000
Redlands and Harrison Mountain	1973	1 : 24,000
Redlands and Harrison Mountain	1980	1 : 24,000
Redlands and Harrison Mountain	1988	1 : 24,000
Redlands and Harrison Mountain	1996	1 : 24,000
Redlands and Harrison Mountain	2012	1 : 24,000

Notes:
1. Obtained from Geosearch (2008c).

The historical topographic maps reviewed for this ISA were obtained from EDR (2016c). To help fill in data gaps, DYA also reviewed some of the historical topographic maps obtained from Geosearch (2008c) during our ISA for the previous iteration of the Project (DYA, 2010); maps obtained from Geosearch (2008c) are denoted as such in Table 1. Copies of the historical topographic maps reviewed for this ISA are provided in Appendix B. A summary of the land use and topographic history presented in the historical topographic maps for the Project site is presented below.

1899: Limited information can be obtained with regard to the land usage of the Project site from this map because of the scale. Base Line and other major streets in Highland and the surrounding cities are shown. The Project site is depicted as an alluvial fan bajada region, with a moderate gradient descending to the southwest away from the



base of the San Bernardino Mountains. The only structures depicted in the general area appear to be sparsely scattered residences. The Southern California Railroad is shown crossing City Creek north of the Project site.

1901: Site topography and development in the surrounding areas remains relatively unchanged from the 1899 map.

1943: Site topography remains relatively unchanged from the 1901 map. The number of residences in the vicinity of the Project site has increased, particularly to the west of the Project site. Land usage at the Project site and surrounding areas remains primarily rural agricultural or vacant.

1953: Site topography remains relatively unchanged from the 1943 map. Residential usage of the properties west of the site has continued along Base Line to the north and south. Land usage at the site and adjacent areas remained primarily agricultural or vacant. The extension of Boulder Avenue crossing City Creek south of Base Line had been constructed. The Southern California Railroad had been renamed the Atchison Topeka & Santa Fe (AT&SF) Railroad.

1954: Site topography remains relatively unchanged from the 1953 map.

1967: Site topography remained relatively unchanged from the 1954 map. Residential development in the areas approximately ¼ mile west of the Project site continued; areas approximately ½ to 1 mile west of the Project site had been largely built out. Otherwise, general land usage in the vicinity of the Project site remained primarily agricultural orchards or vacant land with scattered residences. A percolation basin was identified south of Boulder Avenue along the east bank of City Creek.

1973: Site topography and general land usage remained relatively unchanged from the 1967 map. Residential development in the areas north and northwest of the Project site continued.

1980: Site topography remained relatively unchanged from the 1973 map. The majority of the properties to the north, northeast, and west of the Project site were shown as residential developments. Agricultural land usage was limited to the areas east of the Project site and a few smaller parcels west of the Project site. Much of the land to the south of the Project site remained vacant.

1988: Site topography and land usage remained relatively unchanged from the 1980 map. Residential development of the properties east of the Project site continued. The AT&SF Railroad appears to have been removed or abandoned.

1996: Site topography and land usage remained relatively unchanged from the 1988 map. State Route (SR)-330 was constructed approximately ⅓-mile west of the Project site.

2012: Site topography remained relatively unchanged from the 1996 map. Residential land usage at the eastern end of the Project site had increased significantly from the 1996 map. Some slight improvements to the nearby portions of SR-330 (on-ramps, off-ramps) had been constructed approximately ⅓ mile west of the Project site.

7.2 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs obtained from EDR (2016e) were reviewed for the project alignment land use history; to help fill in data gaps, DYA also reviewed some of the historical aerial photographs obtained from Geosearch (2008b) during our ISA for the previous iteration of the Project (DYA, 2010). The dates, scale, and source of the photos reviewed are shown in Table 2. A summary of the review of the aerial photographs is presented below. Copies of the aerial photographs reviewed for this ISA are provided in Appendix E.

Table 2 - AERIAL PHOTOS

FLIGHT YEAR	SCALE	SOURCE
1930[1]	1 inch = 700 feet	Fairchild
1938	1 inch = 500 feet	USDA
1949	1 inch = 500 feet	USDA
1953	1 inch = 500 feet	USDA
1959	1 inch = 500 feet	USDA
1966	1 inch = 500 feet	USGS
1968	1 inch = 500 feet	USDA
1975	1 inch = 500 feet	USGS
1977[1]	1 inch = 700 feet	Teledyne
1980[1]	1 inch = 700 feet	Aerial Map Industries
1985	1 inch = 500 feet	USDA
1989	1 inch = 500 feet	USDA
1994	1 inch = 500 feet	USGS/DOQQ
1994[1]	1 inch = 700 feet	USGS
2005	1 inch = 500 feet	USDA/NAIP
2006	1 inch = 500 feet	USDA/NAIP
2009	1 inch = 500 feet	USDA/NAIP
2010	1 inch = 500 feet	USDA/NAIP
2012	1 inch = 500 feet	USDA/NAIP

Notes:
1. Obtained from Geosearch (2008b).
- USDA = U.S. Department of Agriculture
- DOQQ = Digital Orthophoto Quarter Quads
- NAIP = USDA National Agriculture Imagery Program

1930: Base Line crosses City Creek at the current location. Land usage in the vicinity of the Project was agricultural orchards, natural stream drainage, or vacant land. Areas immediately adjacent to the Project site were primarily undeveloped, with the exception of the properties northwest of the site, which were used for agricultural purposes.

1938: Land usage in the surrounding areas of the Project remained agricultural orchards, natural stream drainage, or vacant from 1930 to 1938. No significant changes were observed from the 1930 photograph.

1949: No significant changes to the Project site had occurred since the 1938 photograph. A few scattered residences appeared to have been constructed approximately 500 feet west of the Project site, and the present-day alignment of Boulder Avenue

(including the bridge crossing at City Creek) appeared to have been constructed starting from approximately 1,000 feet north of its intersection with Base Line.

1953: No significant changes to the Project site were observed from the 1949 photograph. Residential development had increased in the surrounding areas.

1959: Evidence of the grading of access roads and levees flanking the east and west banks of City Creek and within City Creek was observed between the AT&SF Railroad and Boulder Avenue. A parcel located at the southwest corner of the intersection of Base Line and City Creek (site of the existing Walgreen's Pharmacy) appeared to have been developed. Residential development of several parcels of land west of the intersection of Base Line and Boulder Avenue was observed. Land usage in other areas surrounding the Project had generally remained unchanged from the 1953 photograph.

1966: No significant changes were observed at the Project site from the 1959 photograph.

1968: No significant changes were observed at the Project site from the 1966 photograph. Residential development of the areas west of the Project site increased between 1966 and 1968, particularly in the area bounded by the AT&SF Railroad, Boulder Avenue, Base Line, and the present-day alignment of SR-330; land usage to the north and east of the Project site remained primarily agricultural. Land south of the Project site remained undeveloped.

1975: No significant changes were observed at the Project site from the 1968 photograph. Residential development continued west of the site. Construction of the residential tract shown in the 1968 photograph at the southwest corner of the intersection of Boulder Avenue and the AT&SF Railroad had been completed. Some grading appeared to have been performed along the boundaries of City Creek to the north of the AT&SF Railroad.

1977: No significant changes were observed at the Project site from the 1975 photograph.

1980: No significant changes were observed at the Project site and surrounding areas from the 1977 photograph. Water was present in City Creek at the time of the aerial photograph. Residential development of areas north of the Project site continued.

1985: No significant changes were observed at the Project site and surrounding areas from the 1980 photograph.

1989: No significant changes were observed at the Project site from the 1985 photograph. Residential development had increased slightly from the 1985 photograph in the areas north and west of the Project site and significantly in the areas east and south of the Project site.

1994: No significant changes were observed at the Project site from the 1989 photograph. The commercial plaza development immediately northwest of the site had been constructed. Residential development continued to the south and east of the site, which included construction of a facility at the southeast corner of the intersection of Base Line and Webster Street. Grading of a residential tract appeared to have been in progress at the southwest corner of the intersection of Base Line and Boulder Avenue. California SR-330 had been constructed approximately ⅓ mile west of the Project site.

2005: The Project site and surrounding areas remained similar to the 1994 photograph, including the commercial development of the Walgreen's Pharmacy and other businesses located southwest of the Project site. The commercial plaza development immediately northwest of the site appeared to be in the process of expanding towards the north. Construction of the residential tract at the southwest corner of the intersection of Base Line and Boulder Avenue had been completed.

2006: No significant changes were observed at the Project site and surrounding areas from the 2005 photograph, except for the completion of the expansion to the commercial plaza development adjacent to the Project site.

2009: No significant changes were observed at the Project site and surrounding areas from the 2006 photograph, except for the construction of a small commercial plaza near the southwest corner of the intersection of Base Line and Boulder Avenue.

2010: No significant changes were observed at the Project site and surrounding areas from the 2009 photograph.

2012: No significant changes were observed at the Project site from the 2010 photograph. The adjacent areas also remained primarily unchanged from the 2010 photograph,

except for the City Creek crossing at Boulder Avenue, which appears to have been demolished at the time of the photograph.

7.3 HISTORICAL CITY DIRECTORIES

DYA reviewed historical city directories compiled by EDR (2016d) along Base Line and Boulder Avenue in the vicinity of the Project site to help evaluate past usage history; to help supplement the city directory information compiled by EDR, DYA also reviewed some of the historical city directories obtained from Geosearch (2008a) along Base Line during our ISA for the previous iteration of the Project (DYA, 2010). A summary of the years researched and the city directory sources is provided in Table 3. The EDR City Directory Image Report (2016d) and excerpts from the historical city directories obtained from Geosearch (2008a) are presented in Appendix F.

Table 3 - SUMMARY OF CITY DIRECTORY SEARCH

YEAR	SOURCE
1975	Haines Criss-Cross Directory
1980	Haines Criss-Cross Directory
1984[1]	Haines Criss-Cross Directory
1985	Haines Criss-Cross Directory
1992	Cole Information Services
1995	Cole Information Services
1999	Cole Information Services
2003	Cole Information Services
2008	Cole Information Services
2013	Cole Information Services

Notes:
1. City directories obtained only for Base Line.

From 1975 to 2013, properties along Base Line and Boulder Avenue within approximately ½ mile of the Project have primarily been used for residential purposes with the exception of the properties listed in Table 4. Comments are provided in Table 4 regarding properties with potential for environmental impacts to the Project.

Table 4 - SUMMARY OF NON-RESIDENTIAL CITY DIRECTORY LISTINGS

ADDRESS	LISTING	DIRECTORY YEARS	COMMENTS
27457 Base Line	Stadelaide Church	1975, 1980, 1985	
27555 Base Line	United Methodist Church	1975, 1980, 1985, 1990, 1995, 1999, 2003, 2013	
27595 Base Line	Cute Nails	2008	
27615 Base Line	Starbucks	2008, 2013	
27617 Base Line	Popeye's Restaurant	2008, 2013	
27627 Base Line	El Rancho Shell Gas Station and Car Wash	2003, 2008, 2013	Not identified in EDR database report (2016a) discussed in Sections 6 or 9, in online searches through GeoTracker (Section 6.2.1) or EnviroStor (Section 6.2.2 and Section 9.3). No history of release.
	A1 Auto Repair	2008, 2013	
27718 Base Line	Steamatic of Arizona and California	1980, 1984	
27767 Base Line	Valero Gas Station	2013	See discussion in Section 8.6.
27774 Base Line	McDonald's	2003, 2008	
27879 Base Line	Wendy's	2003, 2008	
27880 Base Line	Victorian House Vintage Auto Sales	2003, 2008	
	Hair FX, Landmax, Stylish Nails	2013	
27925 Base Line	Blockbuster Video	2003, 2008	
27951 Base Line	Walgreens Drug Store	2003, 2008	See discussion in Section 9.2.2.
28355 Base Line	HMH Construction, Immanuel Baptist Church	1995	HMH Construction listing likely temporary and associated with construction of Immanuel Baptist Church observed in 1994 aerial photograph discussed in Section 7.2.
6962 Boulder Avenue	JB Contractors	1985	
	Henderson Entrepreneurs	1992	Address also listed in 2003 directory as "occupant unknown".
	Hinkley & Associates, Inc.	2008, 2013	
7000 Boulder Avenue	Beaver Medical Group	1999, 2003, 2008, 2013	
7191 through 7219 Boulder Avenue (odd numbers)	Various commercial tenants	1995, 1999, 2003, 2008, 2013	
7221 Boulder Avenue	McCleaners	1995, 1999, 2003, 2013	See discussion in Section 9.5.
7223 through 7235 Boulder Avenue (odd numbers)	Various commercial tenants	1995, 1999, 2003, 2008, 2013	
7241 Boulder Avenue	Long's Drugs	1992, 1995, 1999, 2003, 2008, 2013	2003 listing identified as "occupant unknown". Renamed CVS Pharmacy in 2013 listing. See discussion in Section 9.2.2.
7243 through 7285 Boulder Avenue (odd numbers)	Various commercial tenants	1995, 1999, 2003, 2008, 2013	

Table 4 – SUMMARY OF NON-RESIDENTIAL CITY DIRECTORY LISTINGS (cont.)

ADDRESS	LISTING	DIRECTORY YEARS	COMMENTS
7291 Boulder Avenue	Arrow West Health Center, Highland Smoke Shop, Highland Village Dentistry, Inland Healthcare Group	1999, 2003, 2008, 2013	
7347 Boulder Avenue	KFC	2003, 2008, 2013	
	Taco Bell	2008	
7404 Boulder Avenue	Highland Self Storage, Stoney Creek Self Storage	2013	

7.4 HISTORICAL SANBORN MAPS

There are no Historical Sanborn Fire Insurance Maps available for the Project alignment (EDR, 2016b).

7.5 HISTORICAL SUMMARY

Base Line has existed as a roadway crossing City Creek since the early 1900s. Grading of the existing embankments appeared to have occurred in the late 1950s, with the soils used to form the embankments being generated from the adjacent areas of City Creek. The surrounding area was vacant land or orchards, with scattered rural residences from the 1930s through the 1940s. There was increasing residential development and decreasing agricultural use from the 1950s until the 1990s, when residential development became similar to existing conditions. Existing commercial development of the properties north and south of Base Line immediately west of the Project site began during the mid-1990s.



8 SITE RECONNAISSANCE

8.1 VISUAL OBSERVATIONS

To supplement the previous site reconnaissance observations documented in Section 6 of DYA's previous Phase I ISA for proposed improvements (DYA, 2010), Mr. Saul Cuautle performed a visual reconnaissance of the Project site and adjacent areas on October 26, 2016. Photographs taken during the visit are presented in Appendix G. The weather was sunny and clear with temperatures between 26 and 29 Celsius (80 and 85 degrees Fahrenheit). Conditions were visually observed during the supplemental site visit. Notes and photographs of items/conditions of particular interest were taken to document the reconnaissance; copies of the photographs are provided in Appendix G. Limitations encountered during the supplemental site visit primarily included substantial terrain relief along the banks of City Creek north and south of the western culvert, as described in Section 2.2, and dense shrubbery and vegetation in the native areas north and south of the Base Line alignment.

8.2 HAZARDOUS SUBSTANCES

No evidence of hazardous substances was observed within or adjacent to the Project alignment during the site reconnaissance.

8.3 UNDERGROUND AND ABOVE GROUND STORAGE TANKS

No underground storage tanks (USTs) or aboveground storage tanks (ASTs) were observed within the Project ROW. Evidence of USTs and ASTs observed in the Project vicinity during the supplemental site reconnaissance is described below.

- Evidence of USTs was observed at the gas stations located at the southeast and southwest corners of the intersection of Base Line and Seine Avenue. The USTs appeared to be more than 30 feet from Base Line.
- One AST was observed at each of the gas stations located at the southeast and southwest corners of the intersection of Base Line and Seine Avenue. The ASTs appeared to be in good repair with no surficial evidence of leaks.
- A concrete-slab-mounted 50-gallon diesel fuel AST was observed approximately 1,000 feet north of the Project behind the shopping center located at the northeast corner of the intersection of Boulder Avenue and Base Line. The AST appeared to be in good

repair with no surficial evidence of leaks. An approximately 6-inch-high berm consisting of a concrete curb surrounded the AST. A shallow puddle of water contained by the berm was observed around the AST. We judge that the puddle was likely attributed to recent rainfall in the area of the Project site. No discernable sheen indicating the potential presence of diesel fuel was observed on the surface of the water.

Photographs of USTs and ASTs observed in the vicinity of the Project site are included in Appendix G.

8.4 PCB-CONTAINING EQUIPMENT

No potential poly chlorinated biphenyl (PCB)-containing equipment, such as electrical transformers, was observed on the Project or adjacent to the site.

8.5 PIPELINES

Pipelines that were observed adjacent to or crossing the Project site consisted primarily of fire-water pipelines and conduits for electrical street lighting. Underground natural gas lines were noted behind the existing sidewalk on the north and south of Base Line. Above-ground portions of the natural gas utility lines were observed at the western concrete culvert crossing. No evidence of oil pipelines was observed at or adjacent to the Project site.

8.6 OTHER OBSERVATIONS

Other observations made during visits to the Project site include:

- Roadwork construction along Base Line was observed from approximately SR-30 to Boulder Avenue. Construction was generally limited the street median and sidewalks.
- Construction of the gas station that was noted in Section 6 of DYA's previous ISA report for the Project site (2010) was complete and the gas station was in service.
- Miscellaneous trash and debris were observed at the Project site and the in main flow of City Creek. Photographs documenting these items are presented in Appendix G.
- Two cellular towers and stations were observed approximately 1,000 feet north of the Project site behind the existing Albertson's Grocery Store. Photographs documenting these items are presented in Appendix G.

9 DISCUSSIONS OF FINDINGS

Information collected from the public agency file review the EDR report (2016a) is incorporated in the discussion of the sites of concern.

A general search radius of 1 mile beyond the Project footprint was specified by DYA for EDR's use in identifying nearby sites registered under hazardous waste databases that could potentially impact the Project. To screen the listings in the EDR report (2016a), a search radius measured from the Project footprint was defined by DYA for each database based on the distance at which listings could potentially impact the Project (i.e., databases with larger search radii are generally associated with hazardous material releases that impact larger areas, and databases with smaller search radii are generally associated with hazardous material releases that impact smaller areas). The search radius used for each database identified in Section 9.2 through Section 9.5 was selected based on engineering judgment and the findings of Mace, Fisher, Welch, and Parra (1997). Only the EDR report listings within the search radius defined for each database were considered for the purpose of this assessment.

9.1 PROJECT ROW

The Project was not listed as a site within the database search.

9.2 FEDERAL HAZARDOUS WASTE DATABASES

9.2.1 NPL, CERCLIS and CERCLIS/NFRAP Sites

The National Priority List (NPL) is the US EPA database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. The Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) list contains sites that are either proposed to or on the NPL, and sites that are in the screening and assessment phase for possible inclusion on the NPL. If the EPA determines that a site will no longer be listed on the NPL, then the site will be removed and archived from the CERCLIS inventory. These sites are then listed on the CERCLIS NFRAP site list. This does not necessarily mean that there are no hazards present.

No NPL, CERCLIS or CERCLIS/NFRAP sites were listed on the database within the 1-mile search radius of the Project site.

9.2.2 Resource Conservation and Recovery Act Facilities

Regulated hazardous waste activity is tracked under the Resource Conservation and Recovery Act (RCRA). RCRA facilities that have had a release of hazardous waste or constituents into the environment, for which the government is requiring corrective action, are tracked in the Corrective Action Tracking System (CORRACTS) database. These violations can be the result of paperwork problems and are not necessarily related to releases of hazardous material.

Hazardous waste treatment, storage, or disposal facilities (TSDF) are tracked in the RCRA-TSDF database. Facilities that generate at least 1,000 kilograms (kg; 2,200 pounds)/month of nonacutely hazardous waste or at least 1 kg (2 pounds)/month of acutely hazardous waste are tracked in the RCRA-Large Quantity Generator (LQG) database. Those facilities that generate between 100 kg (220 pounds) and 1,000 kg (2,200 pounds)/month of non-acutely hazardous waste are tracked in the RCRA-Small Quantity Generator (SQG) database. Facilities that generate less than 100 kg (220 pounds)/month of non-acutely hazardous waste or less than 1 kg (2 pounds)/month of acutely hazardous waste are tracked in the RCRA-Conditionally Exempt Small Quantity Generator (CESQG) database. Facilities that do not currently generate hazardous waste are tracked in the RCRA-Non-Generators (NonGen) database.

No RCRA CORRACTS or RCRA-TSDF facilities were listed within the respective 1-mile and ½-mile search radii of the Project site.

One RCRA-LQG, one RCRA-SQG, one RCRA-CESQG, and one RCRA-NonGen site were identified within the ¼-mile search radius of the Project site. The RCRA-LQG listing (CVS Pharmacy located at 7241 Boulder Avenue) and RCRA-CESQG listing (Walgreens Pharmacy located at 27951 Base Line) are not listed under other databases indicating releases and are, therefore, not considered RECs to the Project. The RCRA-SQG listing (McCleaners located at 7221 Boulder Avenue) is discussed under Section 9.5. The RCRA-NonGen listing (Arco Facility No. 59 located at 27727 Base Line) is discussed in Section 9.4.

9.2.3 Institutional and Engineering Controls Registries

Sites that have institutional or engineering procedures or controls in place to contain, treat, or prevent the release of, or exposure to regulated substances are listed in the US Engineering (ENG) and Institutional (INST) controls registries. No sites listed in the US ENG and US INST controls registries were within the ½-mile search radius from the Project site.



9.2.4 Hazardous Release Incidents

The Emergency Response and Notification System (ERNS) is a national database containing records of releases of oil and hazardous substances reported to the EPA, U.S. Coast Guard, National Response Center, and Department of Transportation since 1986. No sites listed in the ERNS database were found adjacent to the Project site.

9.3 STATE HAZARDOUS WASTE SITE DATABASES

The DTSC produces the following databases:

- Bond Expenditure Plan (BEP) list of Hazardous Substance Cleanup Bond sites with funding.
- Site Mitigation and Brownfield Reuse Program (EnviroStor) database of sites that have known contamination or sites for which there may be reasons to investigate further.
- The Response list, which identifies high-priority, high potential risk confirmed release sites where the DTSC is involved in remediation.
- The California RWQC, Los Angeles Region, provides a database of sites with current or historic unauthorized discharges in the Spills, Leaks, Investigation and Cleanup (SLIC) database.
- Historic CAL-SITES list of sites previously investigated currently under investigation that could be actually or potentially contaminated and presenting a possible threat to human health and the environment.
- Voluntary Cleanup Program (VCP) sites of low threat level properties, with either confirmed or unconfirmed releases, where the project proponents have requested that DTSC oversee investigation and/or cleanup activities.
- The California Hazardous Waste Permit (HWP) database is compiled by DTSC for permitted hazardous waste and corrective action ("cleanups") tracked in EnviroStor. Only those HWP sites located adjacent to the Project site where a release has occurred are considered RECs to the Project.
- The California Hazardous Waste Transporters (HWT) database is compiled by the DTSC for companies that transport hazardous materials. Only those HWT sites located adjacent to the Project site where a release has occurred are considered RECs to the Project.

- HAZNET is a database tracked by DTSC of hazardous waste manifests received each year. Facilities listed on the database store and/or ship hazardous materials.
- The Facility Index System (FINDS) contains information on facilities that may store hazardous materials.

The ASTM database search guidelines also include the historic State CORTESE database of hazardous substances release sites compiled from various other State agencies prepared by the State Office of Environmental Protection, Office of Hazardous Materials.

One EnviroStor site (the former Chemical Commodities Agency, Inc., located at 27447 Pacific Avenue) was identified approximately ¾ mile to the northwest of the Project site. Based on a letter from the San Bernardino County Fire Department (SBCFD; 2000) to the California EPA, the SBCFD had entered into an agreement with Chemical Commodities Agency, Inc., to oversee the investigation and remediation of unknown contaminants that had been released at the site. We judge that the former Chemical Commodities Agency, Inc. site is not considered a REC to the Project based on its distance to the Project site; the generally deep groundwater conditions in the Project area; and because the site is cross-gradient from the Project site.

No BEP, Response, or Historic Cal-Sites sites were listed within the 1-mile search radius.

No SLIC of VCP sites were identified within the ½-mile search radius.

No HWP sites were identified within the 1-mile search radius.

No HWT sites were identified within the ¼-mile search radius.

No HAZNET or FINDS sites were identified within the Project alignment.

No historic CORTESE sites were identified in the database search within the ½-mile search radius.

9.4 STATE AND TRIBAL HAZARDOUS WASTE DATABASES

9.4.1 Storage Tank Sites

The state UST database is an inventory of regulated USTs, and the AST database is a listing of ASTs. The leaking UST (LUST) database is a listing of confirmed or suspected releases from regulated USTs that were reported to the SWRCB. Similar inventories for USTs and LUSTs



located on Indian land are tracked under the Indian UST and Indian LUST databases. The WRCB California Facility Index (CA FID) database contains active and inactive UST locations. In addition, the Historic UST (HIST UST) list and the Statewide Evaluation and Environmental Planning System (SWEEPS) UST list including historic USTs are provided by EDR.

USTs tracked in the databases listed above that have not reported a release are generally not considered a significant environmental concern unless they are immediately adjacent to the Project alignment. LUST cases are generally not considered a significant environmental concern unless they are within approximately ¼ mile of the Project alignment.

No ASTs, Indian USTs, CA FID USTs, or HIST USTs were listed in the database within the ¼-mile search radius. No LUST or Indian LUST sites were identified in the database search within ½ mile of the Project site.

One UST listing (Arco Facility No. 59 located at 27727 Base Line), which corresponded to the SWEEPS UST listing, was identified within the search radius of ¼ mile of the Project site. The site corresponding to the UST listing is not directly adjacent to the Project site, there is no history of release at the site, and groundwater has typically been deeper than 250 feet below the ground surface at the site. Therefore, the UST listing is not considered a REC to the Project.

9.4.2 Landfill/Solid Waste Disposal Sites

Inventories of active, closed, and inactive solid waste disposal facilities and landfills (SWF/LF), and/or open dumps that failed to meet RCRA Section 4004 criteria are found in the Solid Waste Information System database. Waste Management Unit Database System (CA WMUDS/SWAT) is used by SWRCB staff and the RWQCB for program tracking and inventory of waste management units. The Solid Waste and Recycling Facilities (SWRCY) database is a list of solid waste recycling facilities compiled by SWRCB. SWRCB Waste Discharge System (WDS) provides a list of WDS permitted sites that may use subsurface hazardous substances drainage and clarifier systems.

No sites listed on the SWF/LF or WMUD/SWAT databases were identified within the ½-mile search radius. No WDS sites were identified directly adjacent to the Project site.

One SWRCY listing (Replanet, LLC located at 7201 Boulder Avenue) was identified within the ½-mile search radius from the Project site. The SWRCY site generally handles small quantities



of hazardous materials, there is no history of release at the site, and the site appeared to be well-maintained based on our observations during the site reconnaissance discussed in Section 8. Therefore, the SWRCY listing is not considered a REC to the Project.

9.5 EDR PROPRIETARY AND SUPPLEMENTAL LISTS

The EDR report (2016a) includes several EDR exclusive databases of potential historical environmental high-risk sites and additional non-ASTM California databases that may contain sites that could impact the Project Area. These databases include manufactured gas plants (MGP), dry cleaners and possible historical dry cleaner sites, and possible historical auto service stations compiled from EPA identification (ID) Numbers, historical city directories, and Standard Industrial Codes. The non-ASTM research includes PCB activity and underground control injection wells.

A list of dry cleaners was compiled from EPA ID Numbers and Standard Industrial Codes. EDR compiles a list of potential historical dry cleaners under the EDR Hist Cleaners database. One dry cleaner (McCleaners located at 7221 Boulder Avenue) was identified within the ⅛-mile search radius. This dry cleaner is also listed under the EDR Hist Cleaners database. We judge that the McCleaners is not a REC to the Project based on the following considerations: it is located cross-gradient and more than 200 feet from the portions of the Project site where soils will be disturbed; groundwater at the Project site has typically been greater than 250 feet deep; and there is no history of release at the site. The remaining dry cleaner (Prestige Carpet Care Cleaning located at 7259 Boulder Avenue), which was noted under the EDR Hist Cleaner database for 2008, was listed at an address that has generally corresponded to a restaurant since at least 1995 in the city directories discussed in Section 7.3. Because of the generally deep groundwater conditions in the Project area, the site use history at the address of the cleaner, and its proximity to the portions of the Project where soil will be disturbed, we judge that the listing is not considered a REC to the Project.

The existence and location of MGP or “Coal Gas” is provided by the EDR database search. No former Coal Gas sites were identified within the 1-mile search radius.

A list of historical automobile stations (Hist Auto) was compiled by EDR from historic business directories and may include EDR proprietary data about the potential past usages of sites that may create environmental concerns. One Hist Auto listing (Variety Auto Brokers located at 7231 Boulder Avenue) was identified within the ⅛-mile search radius from 2005 to 2006. City



directory listings (Section 7.3) in 2003 and 2008 do not indicate that Variety Auto Brokers occupied that address at those times. Because of the distance of the listing to the portions of the Project site where soil will be disturbed and because of the generally deep groundwater conditions in the Project area, we judge that the Hist Auto listing is not a REC to the Project.

The State of California Hazardous Materials Incident Reporting System (CHMIRS) database contains information on hazardous materials releases and spills. The listing is maintained by the California Office of Emergency Services (OES). Incidents listed in this database are typically considered to be of potential concern to a Project only when they occur within the Project footprint and involve significant release quantities. No CHMIRS listings were identified within the Project footprint

A list of proposed and existing California School Sites (SCH) under evaluation for possible hazardous materials contamination is compiled by the DTSC. No SCH sites were identified in the ¼-mile search radius.

Clandestine drug labs (CDL) database includes a listing of potential drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there and does not constitute a determination that the location either requires or does not require additional cleanup work. Only CDL sites that are directly adjacent to the Project site are considered to have the potential to impact a project site. No CDL listings were identified directly adjacent to the Project site.

The Water board has a database of previous enforcement actions (ENF) filed against property owners. No ENF sites were identified in the database search.

The California Haulers (CA HAULERS) database provides a listing of registered waste tire haulers. Only CA HAULERS sites that are directly adjacent to the Project site are considered to have the potential to impact a project site. No CA HAULERS sites were identified as being adjacent to the Project site.

10 NON-ASTM SCOPE CONSIDERATIONS

10.1 PRELIMINARY ASBESTOS EVALUATION

ACM were not directly observed within the existing Project ROW. However, based on our interview with the City of Highland (see Section 5.2), we understand that ACM could potentially be present in the existing Base Line Bridge bearing pads and hinge and joint seal materials. Coating for some of the existing utility pipelines discussed in Section 2.1 and Section 8.5 could also contain asbestos.

We also understand that the proposed project will not involve the acquisition of any structures at or adjacent to the project site. If the Project scope changes so that final construction alternative will involve the acquisition of land with structures, then the structures should be evaluated for suspect ACM.

DYA did not encounter current or previous evidence of railroad ROW at the site during our data review and site reconnaissance. Therefore, ACM generated from brake pads historically used on trains is not considered a REC to the Project.

10.2 LEAD BASED PAINT AND AERIALLY DEPOSITED LEAD

LBP might be present in the coatings on the existing structures at the site (including the bridge and single box culvert) and could also be present in bridge graffiti and/or paint used to cover bridge graffiti over time. As noted in Section 1.2, we understand that the proposed Project will not involve the acquisition of any structures at or adjacent to the project site. If the Project scope changes so that final construction alternative will involve the acquisition of land with structures, then the structures should be evaluated for suspect LBP.

Based on our interview with the City of Highland (see Section 5.2), we also understand that the yellow thermoplastic paint markings on the existing pavements at the site were placed approximately after 1990, and are not likely to contain lead or other heavy metals. However, we are unaware of how the existing thermoplastic striping was placed (i.e., we do not know if the previous striping was removed prior to placing the existing striping). Therefore, it is possible that older thermoplastic striping containing LBP and heavy metals might be present below the striping placed after 1990.



Based on our review of historical topographic maps and aerial photographs (Section 7.1 and Section 7.2, respectively), much of the Project site had been constructed prior to the prohibition of vehicular leaded fuels. Therefore, soils adjacent to paved areas within the Project limits may contain ADL from vehicle exhaust.

11 CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I ISA in conformance with the scope and limitations of ASTM Practice E1527-13 of the proposed Base Line Bridge Over City Creek Replacement project. Any exceptions to or deletions from this practice are described in Section 12 of this report. This assessment revealed no evidence of RECs in connection with the subject property with the exception of those listed in Section 11.1. No HRECs, CRECs, or de minimis conditions have been identified for the subject property.

11.1 CONCLUSIONS

Conclusions and recommendations regarding RECs within the existing Project ROW that were identified in previous sections of this report are summarized in Table 5.

Table 5 - PROJECT ROW REC SUMMARY

REC SOURCE/ LOCATION	CONTAMINANTS OF POTENTIAL CONCERN	POTENTIALLY AFFECTED MEDIA	REPORT SECTION(S)	RECOMMENDATION
Existing Base Line Bridge; Project footprint	ACM, LBP	Existing bridge bearing pad, hinge and joint seal materials; existing utility pipeline coatings	Section 5.2, Section 10.1 and 10.2	A Phase II site investigation is recommended to check the existing bridge bearing pads and hinge and joint seal materials and existing utility pipelines for potential ACM. The Phase II site investigation should also include checking the paint on the bridge for potential LBP.
Project footprint	LBP, Heavy Metals	Yellow thermoplastic striping	Section 10.2	Yellow thermoplastic striping materials should be handled in accordance with Caltrans Standard Specifications (Caltrans, 2015a) and the corresponding Standard Special Provision (SSP; Caltrans, 2015c).
Project footprint	ADL	Soil	Section 10.2	Unpaved soils adjacent to the existing roadway should be sampled and tested for ADL during a Phase II site investigation according to Caltrans ADL testing guidelines. The ADL study should include Title 22 testing of surface soils to evaluate the potential presence of other metals that may have been transported by storm water runoff. If ADL concentrations are detected in existing soils, such soils will be handled in accordance with the Caltrans Standard Specifications (Caltrans, 2015a) and the corresponding special provisions (Caltrans, 2015b).



11.2 DATA GAPS

A data gap is the inability to obtain information required by ASTM E1527-13 by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including but not limited to, site reconnaissance (for example, an inability to conduct the site visit) and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.). The following data gaps were identified:

- Some of the intervals between documented sources (e.g., historical topographic maps and historical aerial photographs) exceeded 10 years.
- Access to the City Creek creek bed was impeded because of dense vegetation overgrowth and/or difficult terrain.
- Interviews with the owners of adjacent properties that might be acquired during later phases of the Project were not performed.

Based on our professional experience and the information obtained while preparing this report, we judge that these data gaps are not likely to alter the conclusions of this assessment. As noted in Section 1.1, the purpose of this ISA was limited to the identification of potential impacts of hazardous substances during the construction of the Project improvements; site-specific ASTM Phase I ISAs should be performed for properties that will be acquired during later phases of the Project, if any. While the noted data gaps are not likely to affect the conclusions of this ISA, they should be addressed during site-specific ASTM Phase I ISAs performed prior to property acquisition, as appropriate.

11.3 DEVIATIONS

No deviations from ASTM E1527-13 were noted during this Phase I ISA except for those noted previously in Section 1.1 of this report.

12 LIMITATIONS

This report is an instrument of service of DYA and includes research of environmental records and documents in accordance with the standard of care for a typical Phase I ISA, a review of specified and reasonable ascertainable listings, and a site reconnaissance to identify RECs.

This report was prepared in general compliance with the CEQA and NEPA guidelines for evaluating environmental impacts due to hazardous waste during construction. ASTM E1527 was used as a basis of general procedures followed in preparation of this ISA but was not explicitly applied. The purpose of this assessment is limited to identification of the potential impacts of hazardous substances during construction of a transportation alignment.

REC are defined under ASTM standards as: “the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property.” These standards and this report do not address other environmental conditions such as geologic or geotechnical hazards. DYA’s ISA was performed in accordance with generally accepted practices of the profession undertaken in similar studies at the same time and in the same geographical area; DYA observed a degree of care and skill generally exercised by those of the profession under similar circumstances and conditions.

This study and report has been prepared on behalf of and for the exclusive use of the Client solely for its use and reliance in the environmental assessment of this Project site. The Client is the only party to which DYA has explained the risks involved and which has been involved in the shaping of the scope of services needed to satisfactorily manage those risks, if any, from the Client’s point of view. Accordingly, reliance on this report by any other party may involve assumptions whose extent and nature lead to a distorted meaning and impact of the findings and opinions related herein. DYA’s findings and opinions related in this report may not be relied upon by any party except the Client. With the consent of DYA and the Client, DYA may be available to contract with other parties to develop findings and opinions related specifically to such other parties’ unique risk management concerns related to the Project site.

13 QUALIFICATIONS OF PREPARER

This assessment was performed by Mr. Clint Isa, PE, under the supervision of Mr. S. Niranjanan, PE, GE, who has over ten years of experience managing environmental assessments and mitigation. Mr. Isa's and Mr. Niranjanan's resumes are presented in Appendix H.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental professional as defined in §312.10 of 40 Code of Federal Regulations (CFR) §312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the AAIs in conformance with the standards and practices set forth in 40 CFR Part 312.

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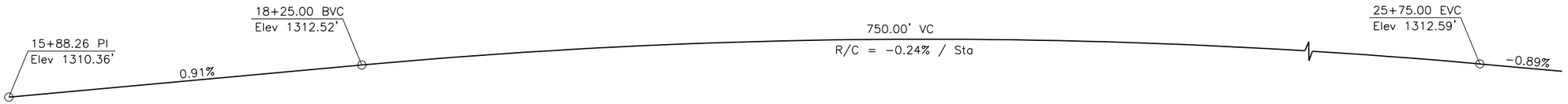
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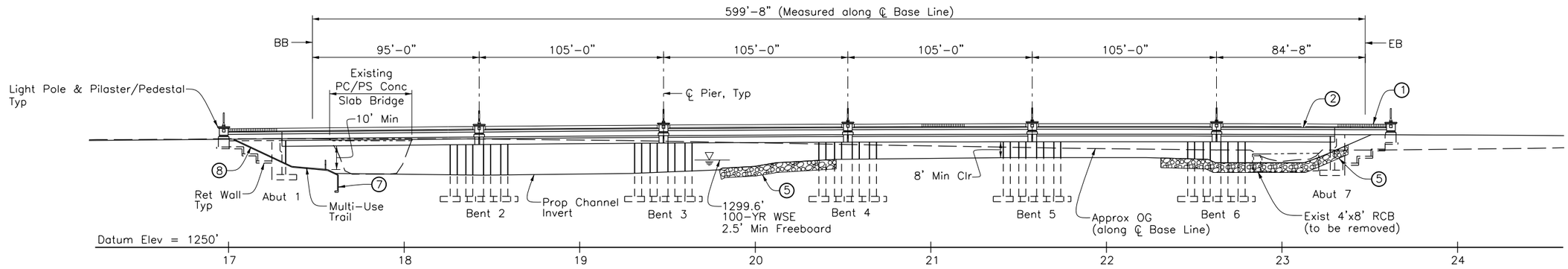
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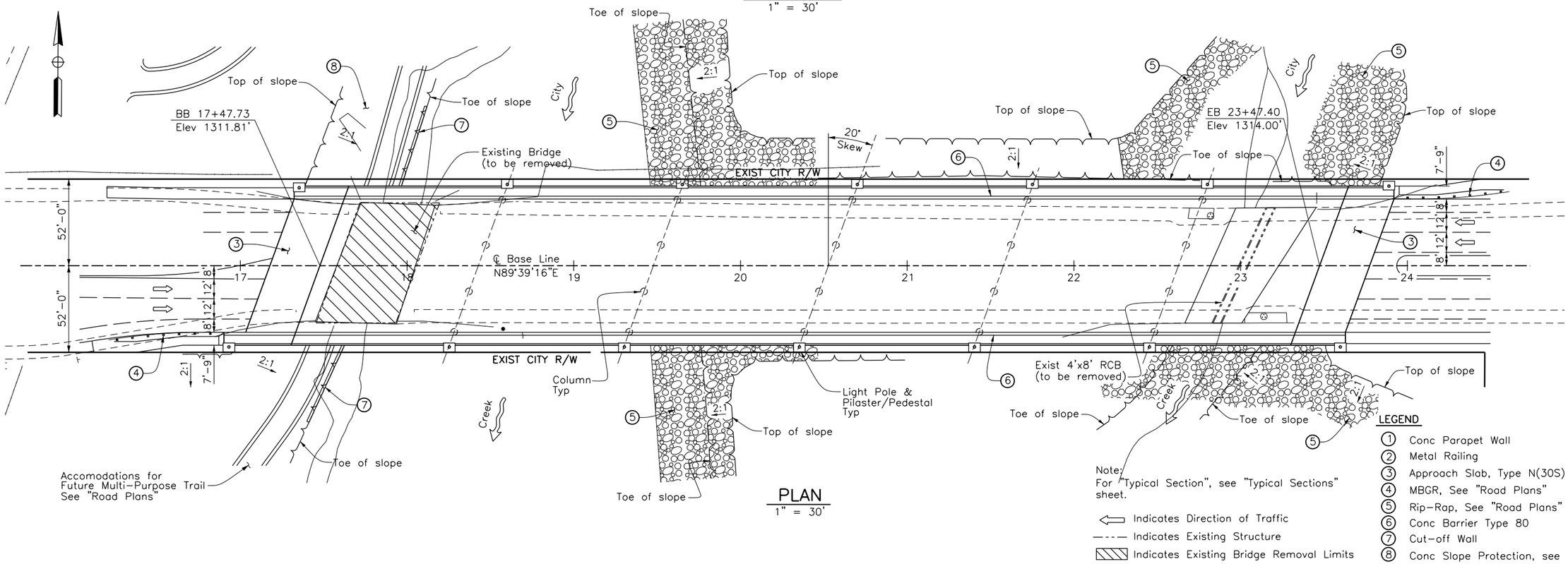
APPENDIX A -
CONCEPTUAL PROJECT DRAWINGS



PROFILE
No Scale



ELEVATION
1" = 30'



PLAN
1" = 30'

LEGEND
1. Conc Parapet Wall
2. Metal Railing
3. Approach Slab, Type N(30S)
4. MBGR, See "Road Plans"
5. Rip-Rap, See "Road Plans"
6. Conc Barrier Type 80
7. Cut-off Wall
8. Conc Slope Protection, see "Road Plans"

BENCHMARK

S.P.S.N. 00586
6"x 6" CONC POST WITH DRIVE PIN LOCATED 1 MILE S.E. ALONG S.F.RR FROM RR CROSSING AT BOULDER AVE., AT SOUTH END OF ST. HWY R/W FENCE, 23.5 FT. NORTH OF NORTH RAIL OF RR, 41 FT. EAST OF BOULDER AVE., NORTHBOUND TRAFFIC LANE, 12 FT. NORTH OF CULVERT HEADWALL.
ELEV. = 1353.459'

REGISTERED PROFESSIONAL ENGINEER
TODD W. DUDLEY
No. C 39514
Exp. 12/31/17
CIVIL
STATE OF CALIFORNIA

SUBMITTED BY: _____ DATE: _____

PLANS PREPARED BY:
AECOM
901 VIA PIEMONTE, 5TH FLOOR
ONTARIO, CALIFORNIA 91764

REVISIONS

MARK	DESCRIPTION	APPR.	DATE

CITY OF HIGHLAND

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
AS/KG	RA	MC/TD	

SUBMITTED BY

RECOMMENDED BY

TODD W. DUDLEY R.C.E. 39514 EXP. 12-31-17 DATE

ERNEST WONG, CITY ENGINEER R.C.E. 37413 EXP. 6-30-18 DATE

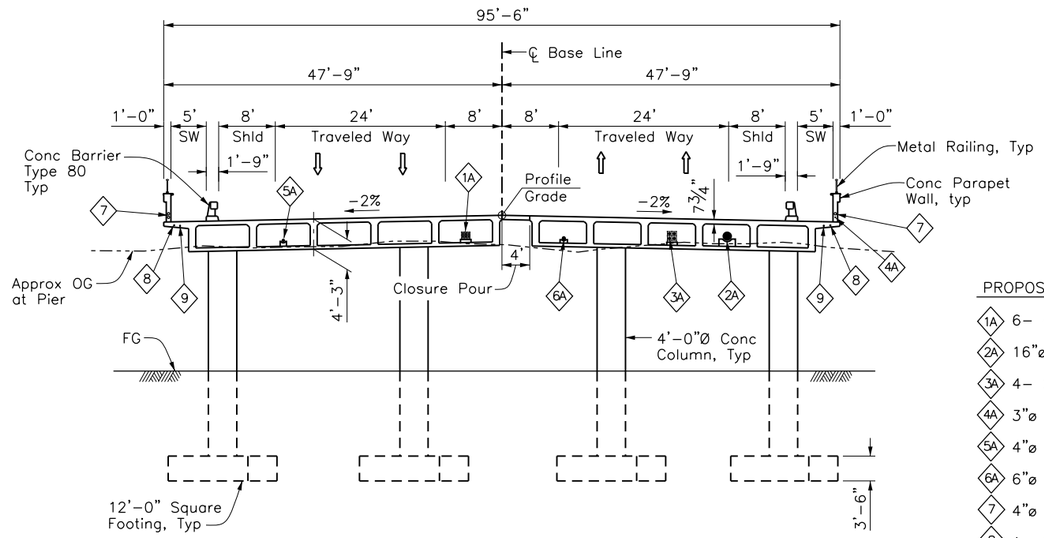
BASE LINE BRIDGE OVER CITY CREEK (REPLACEMENT)

GENERAL PLAN

DRAWER NO.

SHEET OF

PREFERRED ALTERNATIVE



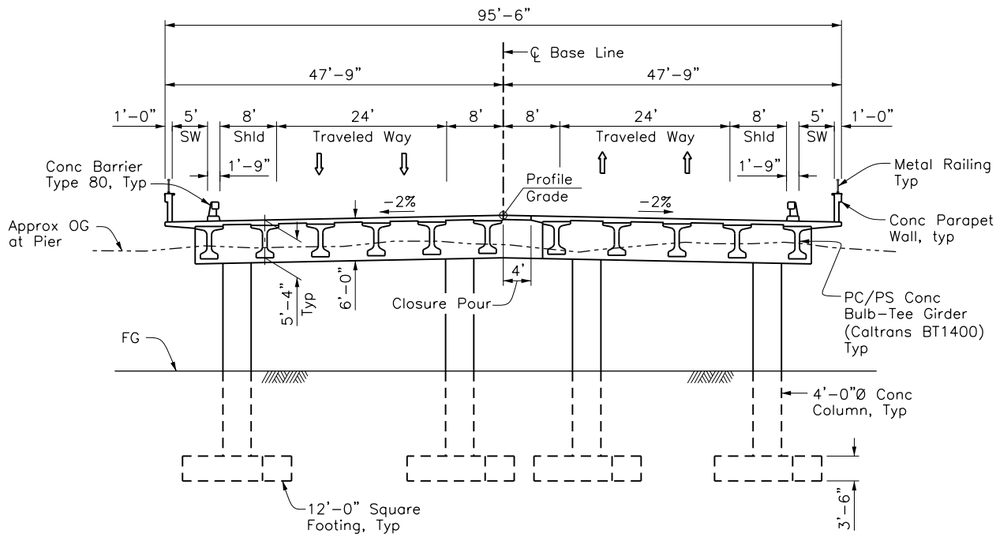
CIP BOX GIRDER – TYPICAL SECTION

1" = 10'

PROPOSED UTILITY LEGEND

- 1A 6– 4"ø Telephone Conduits (SBC)
- 2A 16"ø Water line in 28"ø Casing (EVWD)
- 3A 4– 6"ø Electric Conduits (SCE)
- 4A 3"ø Communication Conduit
- 5A 4"ø Communication Conduit (Verizon)
- 6A 6"ø Gas Line (SCG) in 12"ø Casing
- 7 4"ø Future Utility Conduits
- 8 1– 2"ø Conduit (Street Lighting)
- 9 1– 2"ø Future Utility Conduit

ALTERNATIVE 2

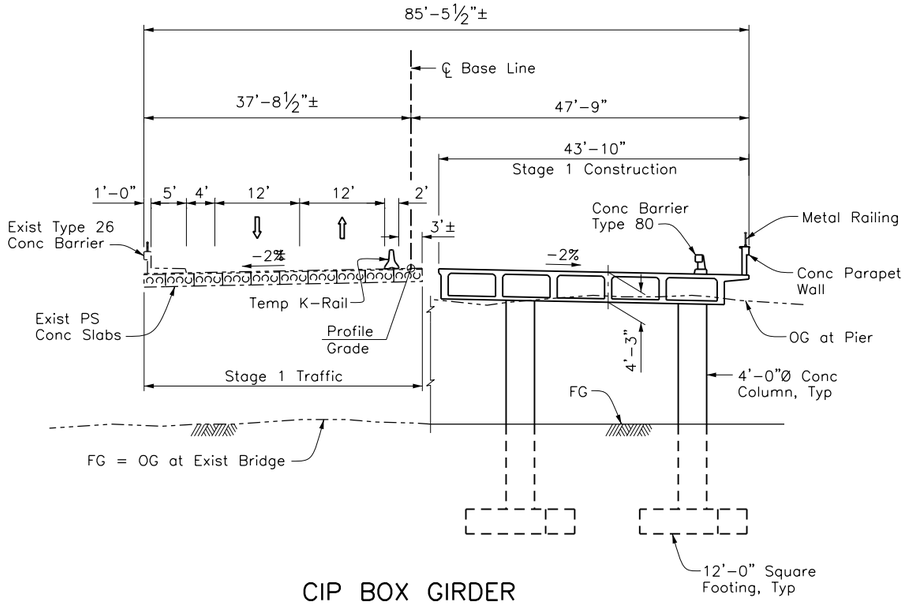


PRECAST GIRDER – TYPICAL SECTION

1" = 10'

(Utilities not shown)

FINAL LANE CONFIGURATION

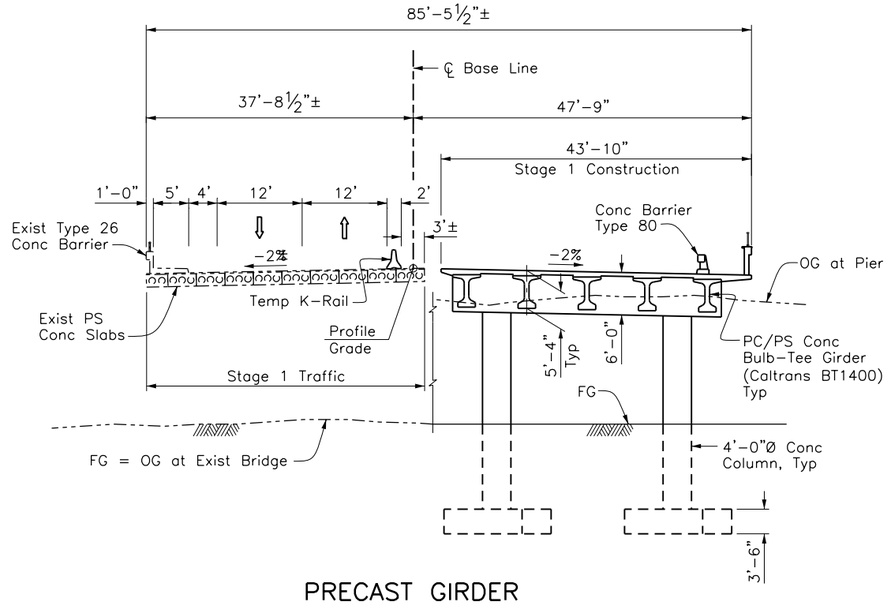


CIP BOX GIRDER
STAGE CONSTRUCTION

1" = 10'

(Utilities not shown)

TEMPORARY LANE CONFIGURATION



PRECAST GIRDER
STAGE CONSTRUCTION

1" = 10'

(Utilities not shown)

BENCHMARK

S.P.S.N. 00586
6'x 6' CONC POST WITH DRIVE PIN LOCATED
1 MILE S.E. ALONG S.F.RR FROM RR CROSSING
AT BOULDER AVE., AT SOUTH END OF ST. HWY
R/W FENCE, 23.5 FT. NORTH OF NORTH RAIL OF RR,
41 FT. EAST OF BOULDER AVE., NORTHBOUND
TRAFFIC LANE, 12 FT. NORTH OF CULVERT HEADWALL.
ELEV. = 1353.459'

REGISTERED PROFESSIONAL ENGINEER
TODD W. DUDLEY
No. C 39514
Exp. 12/31/17
CIVIL
STATE OF CALIFORNIA

SUBMITTED BY:

DATE:

PLANS PREPARED BY:

AECOM

901 VIA PIEMONTE, 5TH FLOOR
ONTARIO, CALIFORNIA 91764

REVISIONS

MARK	DESCRIPTION	APPR.	DATE

CITY OF HIGHLAND

DESIGNED BY	DRAWN BY	CHECKED BY
AS/KG	RA	MC/TD

SUBMITTED BY

RECOMMENDED BY

TODD W. DUDLEY DATE
R.C.E. 39514 EXP. 12-31-17

APPROVED BY

ERNEST WONG, CITY ENGINEER DATE
R.C.E. 37413 EXP. 6-30-18

BASE LINE BRIDGE OVER CITY CREEK (REPLACEMENT)

TYPICAL SECTIONS

DRAWER NO.

SHEET OF

Hydrologic & Hydraulic Data Summary			
Description	Base Flood	Design Flood	Overtopping/ Record Flood
Frequency (Years)	100	100	N/A
Discharge (cfs)	10,000	15,500	N/A
W.S. Elevation (ft)	1281.15	1282.84	N/A

Floodplain data are based upon information available when the plans were prepared. The accuracy of said information is not warranted by the City of Highland or the Engineering Consultants. Any interested for affected parties should make their own investigations.

SPREAD FOOTING DATA TABLE

SUPPORT LOCATION	Working Stress Design (WSD)		Load and Resistance Factor Design (LRFD)		
	Permissible Gross Contact Stress (Settlement) (ksf)	Allowable Gross Bearing Capacity (ksf)	Service: Permissible Net Contact Stress (Settlement) (ksf)	Strength: Factored Gross Nominal Bearing Resistance ϕ_b = 0.45 (ksf)	Extreme Event: Factored Gross Nominal Bearing Resistance ϕ_b = 1.00 (ksf)
Abut 1	–	4	N/A	N/A	N/A
Bent 2	N/A	N/A	10.5	19	50
Bent 3	N/A	N/A	10.5	19	50
Bent 4	N/A	N/A	10.5	19	50
Bent 5	N/A	N/A	10.5	19	50
Bent 6	N/A	N/A	10.5	19	50
Abut 7	–	5	N/A	N/A	N/A

Notes:

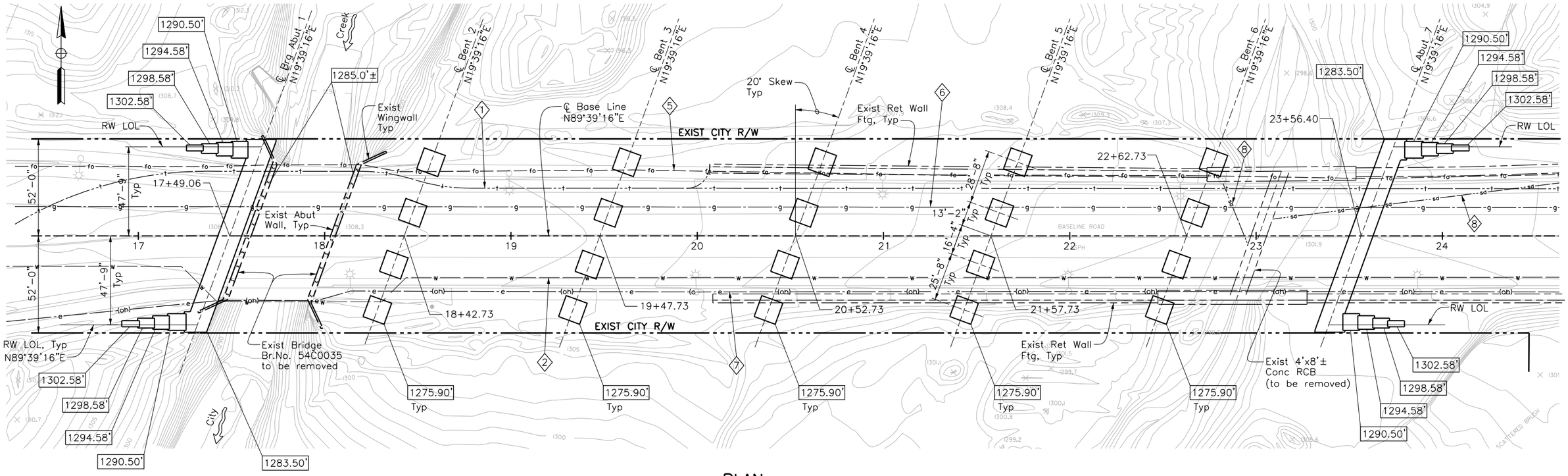
1. Existing piles, not in conflict with new construction, shall be cut off to a minimum scour depth (Elev 1250.0') or removed completely.
2. Existing piles in conflict with new construction shall be removed completely.
3. Remove existing retaining wall footing in conflict with proposed footings, see "Demolition Details" sheet.

EXISTING UTILITY LEGEND

1. Exist 6– 4"Ø± Telephone Conduits (SBC)
2. Exist 16"Ø± Water line (EVWD)
5. Exist 4"Ø± Fiber Optic Conduit
6. Exist 6"Ø± Gas Line (SCG)
7. Exist Overhead Electric Line
8. Exist Storm Drain

LEGEND

- Indicates Bottom of Footing elevation
- Indicates Existing Structure
- Indicates Direction of Flow



PLAN
1" = 25'

BENCHMARK

S.P.S.N. 00586
6'x 6' CONC POST WITH DRIVE PIN LOCATED 1 MILE S.E. ALONG S.F.RR FROM RR CROSSING AT BOULDER AVE., AT SOUTH END OF ST. HWY R/W FENCE, 23.5 FT. NORTH OF NORTH RAIL OF RR, 41 FT. EAST OF BOULDER AVE., NORTHBOUND TRAFFIC LANE, 12 FT. NORTH OF CULVERT HEADWALL.
ELEV. = 1353.459'

REGISTERED PROFESSIONAL ENGINEER — TODD W. DUDLEY — No. C 39514 — Exp. 12/31/17 — CIVIL — STATE OF CALIFORNIA

SUBMITTED BY: DATE:

PLANS PREPARED BY:

AECOM
901 VIA PIEMONTE, 5TH FLOOR
ONTARIO, CALIFORNIA 91764

REVISIONS

MARK	DESCRIPTION	APPR.	DATE

CITY OF HIGHLAND

DESIGNED BY	DRAWN BY	CHECKED BY
AS/KG	RA	MC/TD

SUBMITTED BY

RECOMMENDED BY

TODD W. DUDLEY R.C.E. 39514 EXP. 12-31-17 DATE

APPROVED BY

ERNEST WONG, CITY ENGINEER R.C.E. 37413 EXP. 6-30-18 DATE

BASE LINE BRIDGE OVER CITY CREEK (REPLACEMENT)

FOUNDATION PLAN

DRAWER NO.

SHEET OF

APPENDIX B -
HISTORICAL TOPOGRAPHIC MAPS

Baseline Road Bridge Project

Baseline Road

Highland, CA 92346

Inquiry Number: 4743402.4

October 03, 2016

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/03/16

Site Name:

Baseline Road Bridge Project
Baseline Road
Highland, CA 92346
EDR Inquiry # 4743402.4

Client Name:

Diaz-Yourman & Associates
1616 E. Seventeenth Street
Santa Ana, CA 92705
Contact: Somadevan Niranjanan

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Diaz-Yourman & Associates were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 2016-035
Project: Baseline Road Bridge Project

Coordinates:

Latitude:	34.121175 34° 7' 16" North
Longitude:	-117.192072 -117° 11' 31" West
UTM Zone:	Zone 11 North
UTM X Meters:	482287.78
UTM Y Meters:	3775608.41
Elevation:	1307.31' above sea level

Maps Provided:

2012
1996
1988
1980
1973
1967
1954
1953, 1954
1901
1899

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Redlands
2012
7.5-minute, 24000



Harrison Mountain
2012
7.5-minute, 24000

1996 Source Sheets

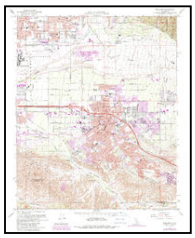


Redlands
1996
7.5-minute, 24000
Aerial Photo Revised 1994
Edited 1996



Harrison Mountain
1996
7.5-minute, 24000
Aerial Photo Revised 1994
Edited 1996

1988 Source Sheets



Redlands
1988
7.5-minute, 24000
Photo Revised 1988
Aerial Photo Revised 1985



Harrison Mtn.
1988
7.5-minute, 24000
Photo Revised 1988
Aerial Photo Revised 1985

1980 Source Sheets



Harrison Mtn.
1980
7.5-minute, 24000
Photo Revised 1980
Aerial Photo Revised 1978



Redlands
1980
7.5-minute, 24000
Photo Revised 1980
Aerial Photo Revised 1978

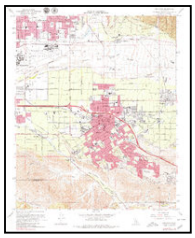
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1973 Source Sheets



Harrison Mtn
1973
7.5-minute, 24000
Photo Revised 1973
Aerial Photo Revised 1973

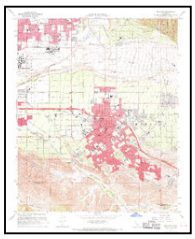


Redlands
1973
7.5-minute, 24000
Photo Inspected 1973
Aerial Photo Revised 1973

1967 Source Sheets



Harrison Mtn.
1967
7.5-minute, 24000
Aerial Photo Revised 1966



Redlands
1967
7.5-minute, 24000
Aerial Photo Revised 1966

1954 Source Sheets



Redlands
1954
15-minute, 62500
Aerial Photo Revised 1952

1953, 1954 Source Sheets



Harrison Mtn.
1953
7.5-minute, 24000
Aerial Photo Revised 1952

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1901 Source Sheets



Redlands
1901
15-minute, 62500

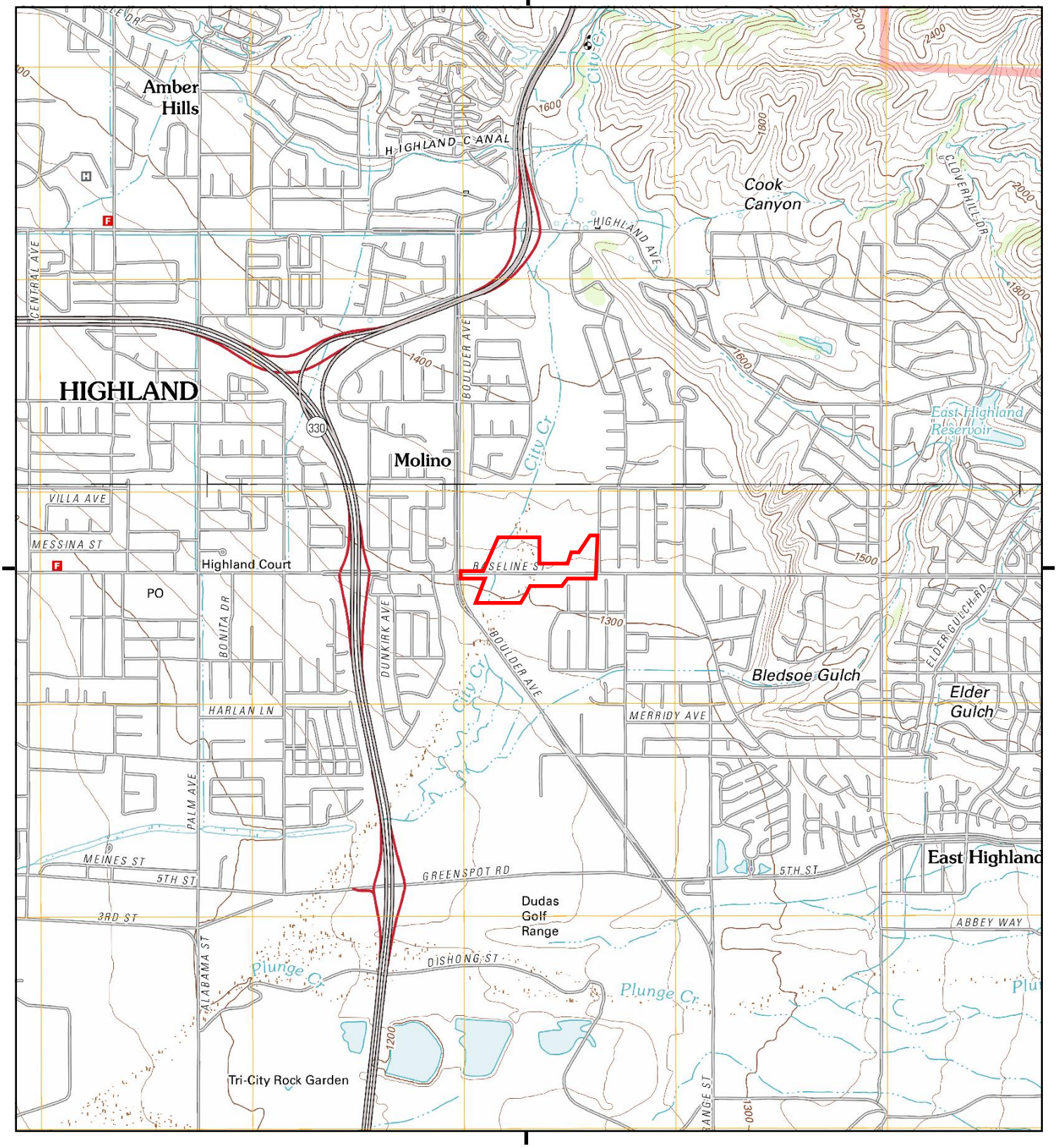
1899 Source Sheets



Redlands
1899
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

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NW N NE
W E
SW S SE

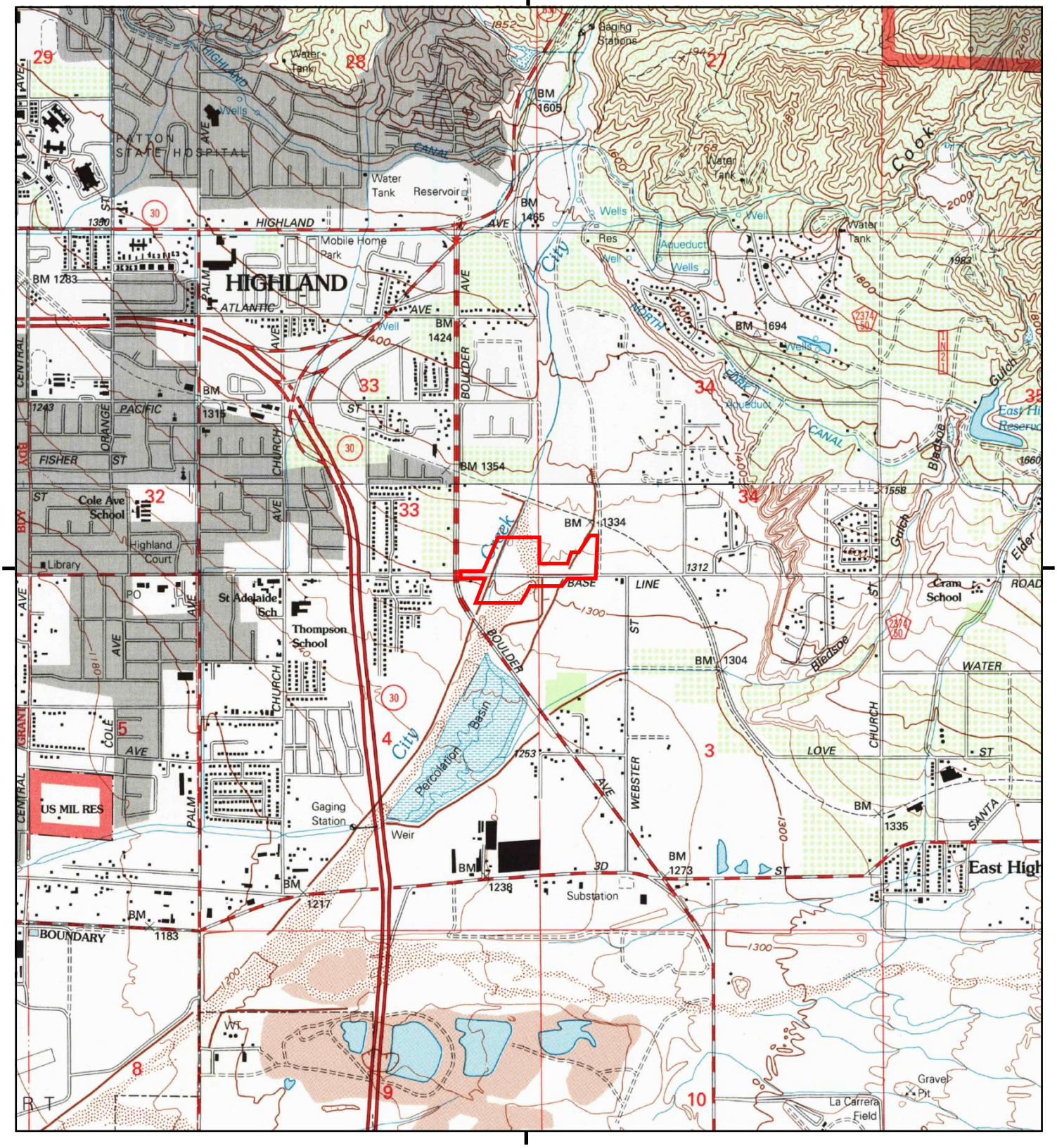
TP, Redlands, 2012, 7.5-minute
N, Harrison Mountain, 2012, 7.5-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N

Historical Topo Map

1996



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

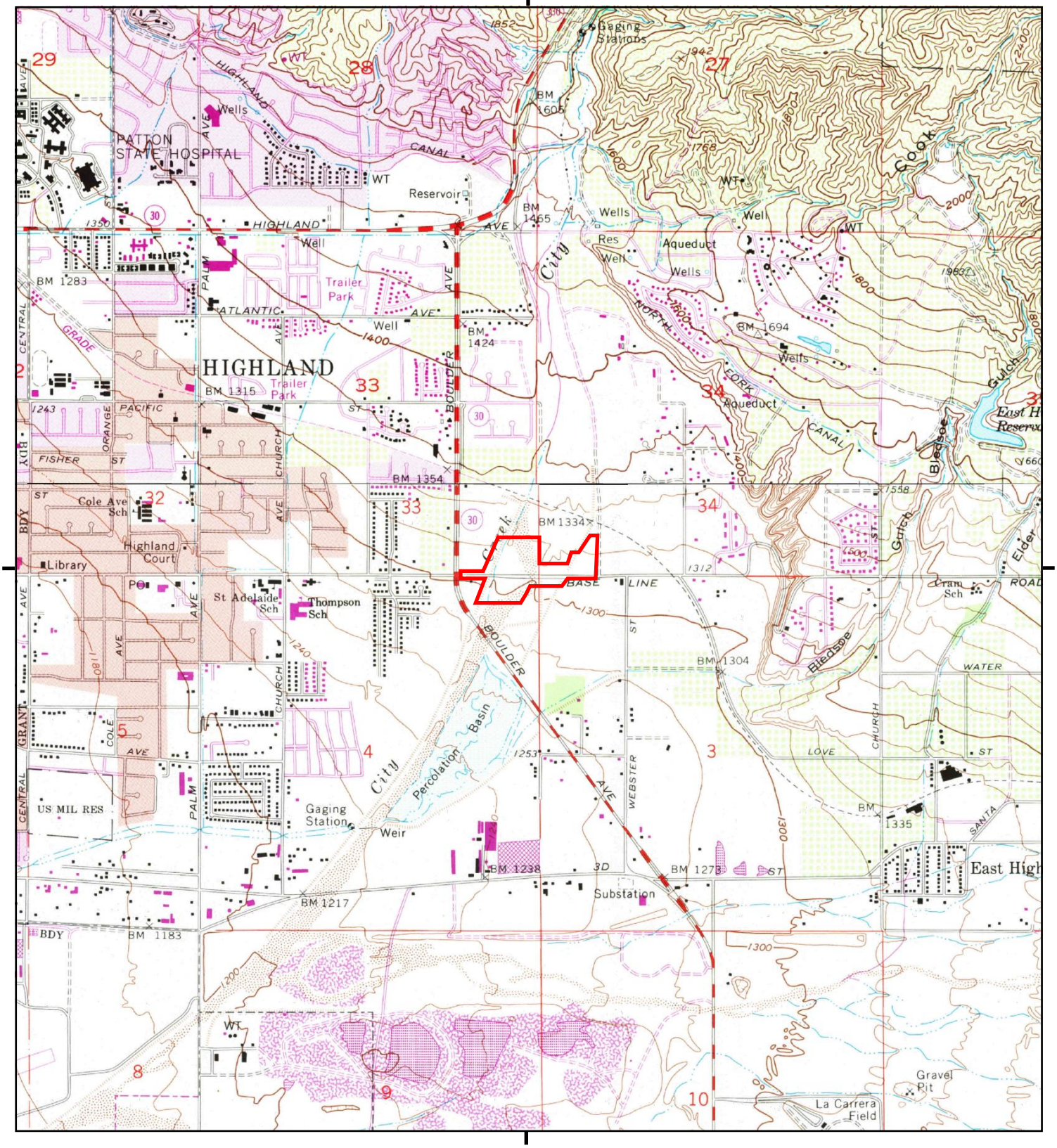
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N, Harrison Mountain, 1996, 7.5-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N

Historical Topo Map

1988



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

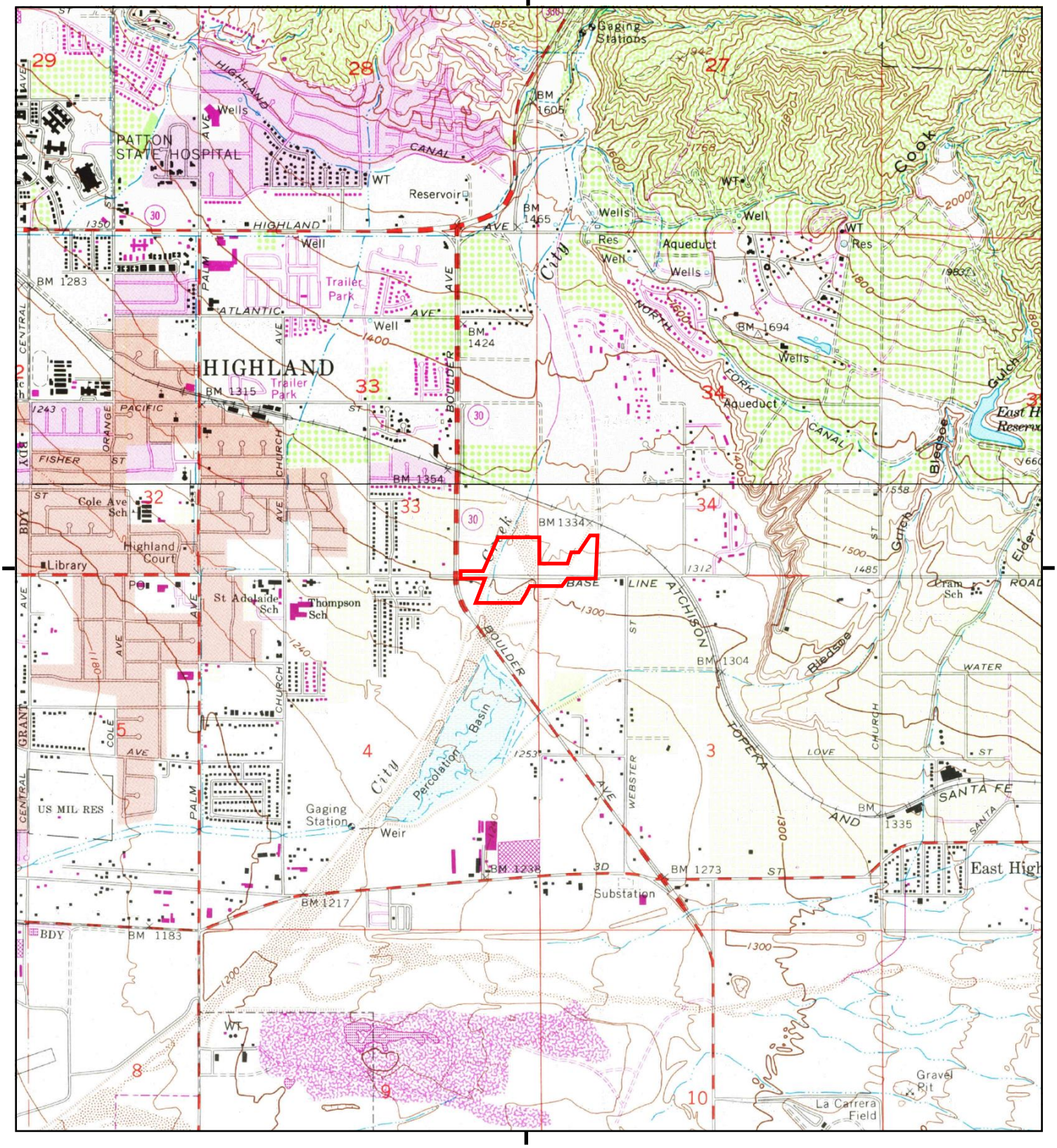
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N, Harrison Mtn., 1988, 7.5-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N

Historical Topo Map

1980



This report includes information from the following map sheet(s).

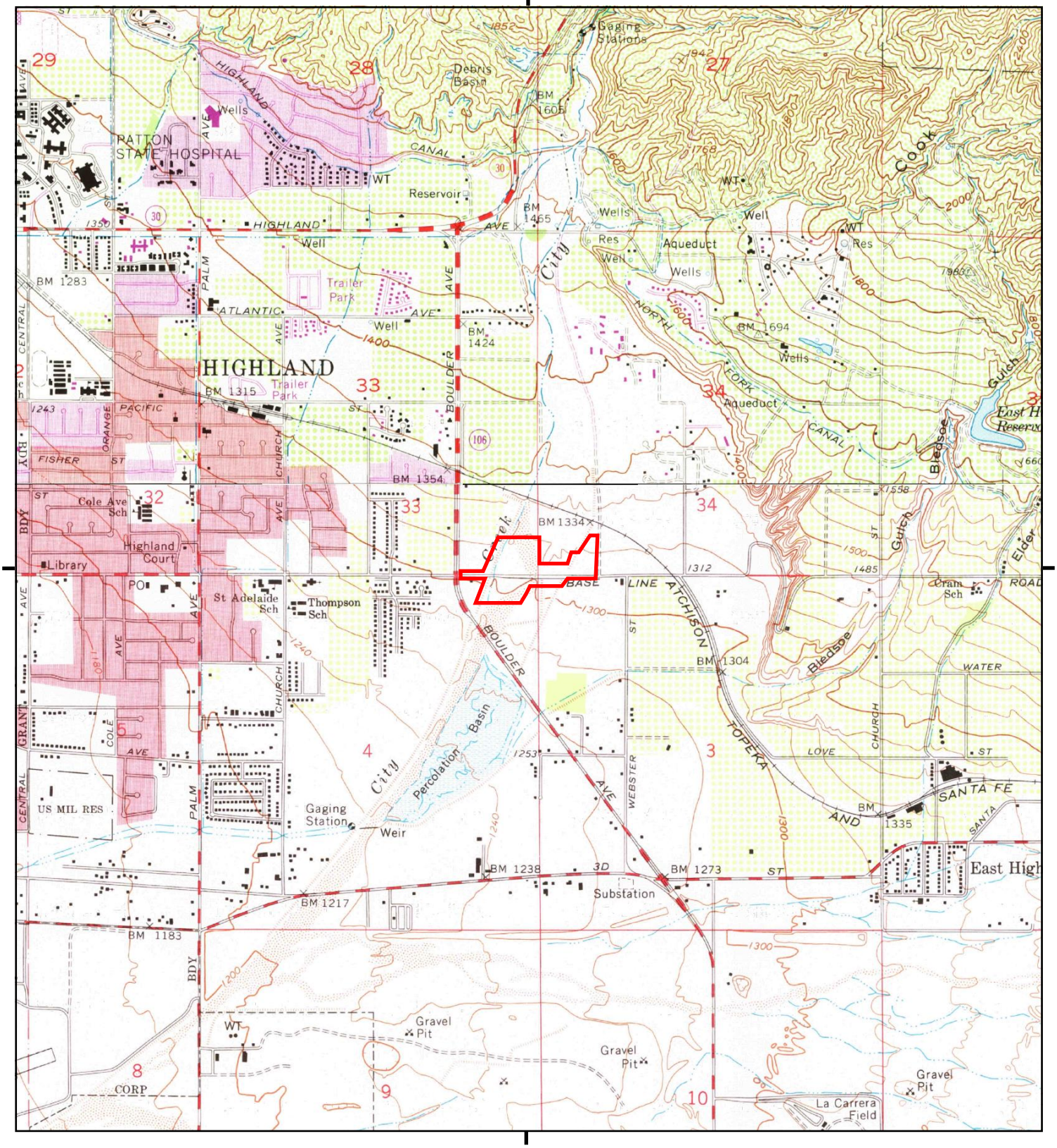
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Redlands, 1980, 7.5-minute
N, Harrison Mtn., 1980, 7.5-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N



This report includes information from the following map sheet(s).

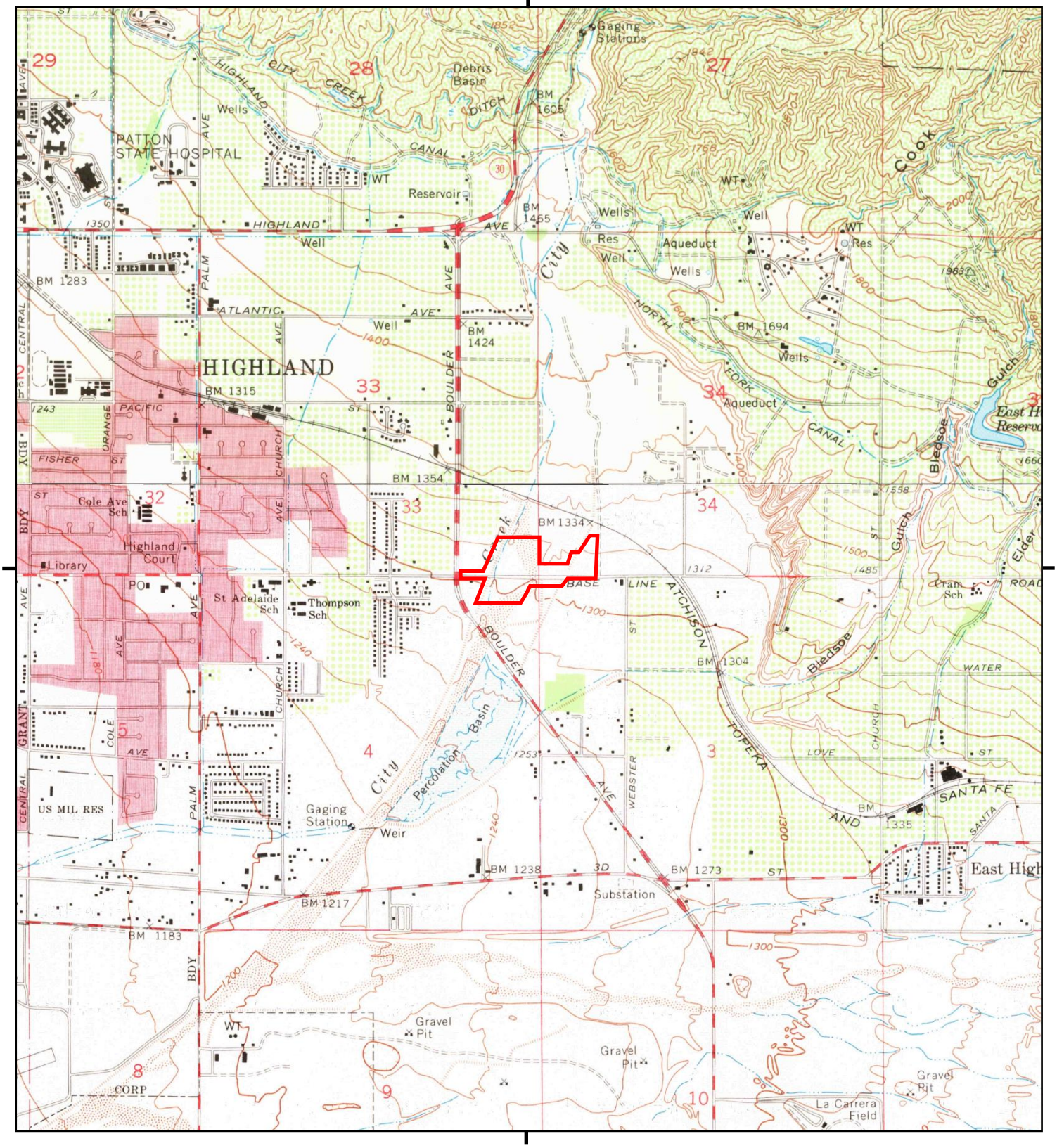
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Redlands, 1973, 7.5-minute
N, Harrison Mtn, 1973, 7.5-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N



This report includes information from the following map sheet(s).

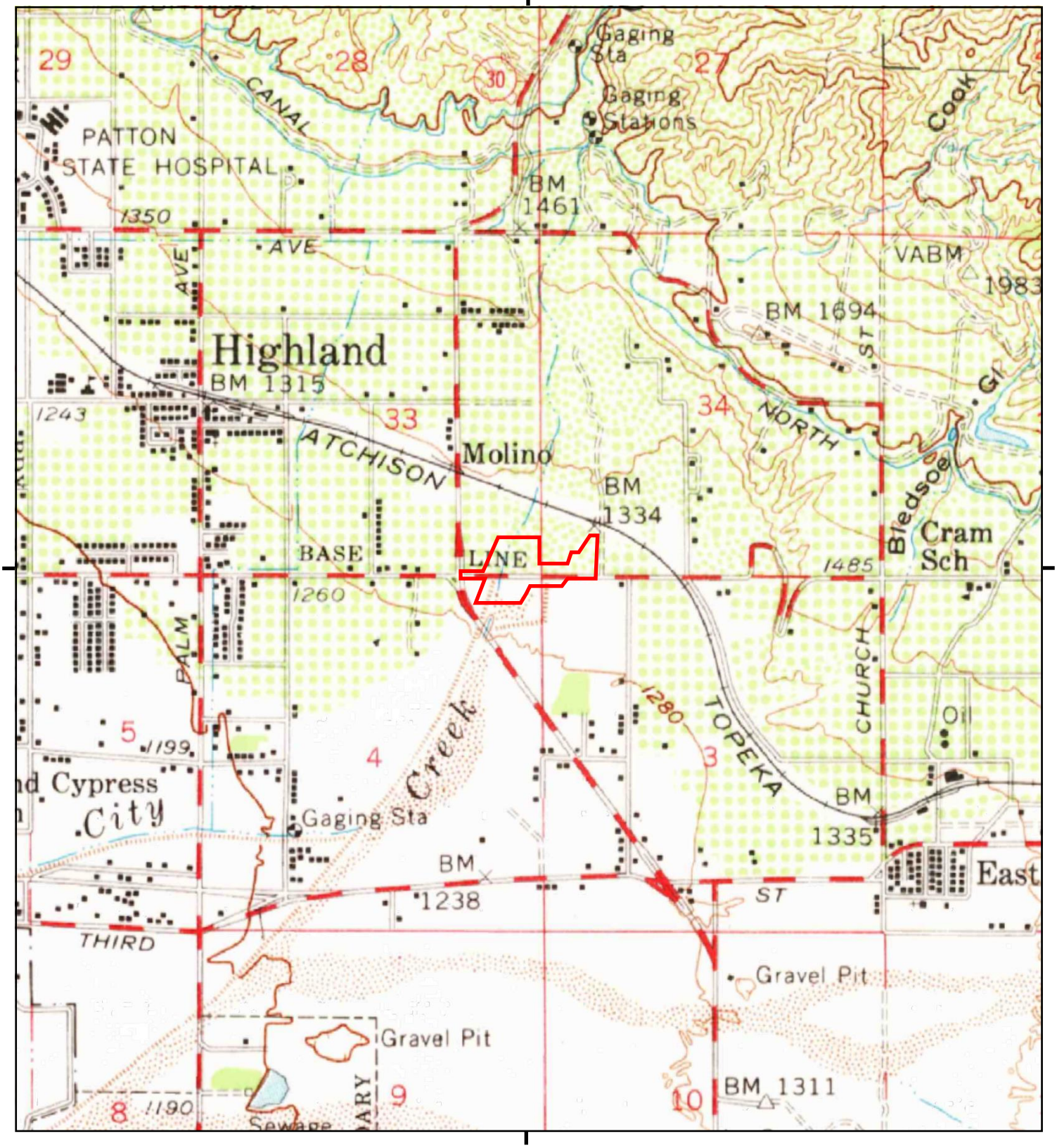
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Redlands, 1967, 7.5-minute
N, Harrison Mtn., 1967, 7.5-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

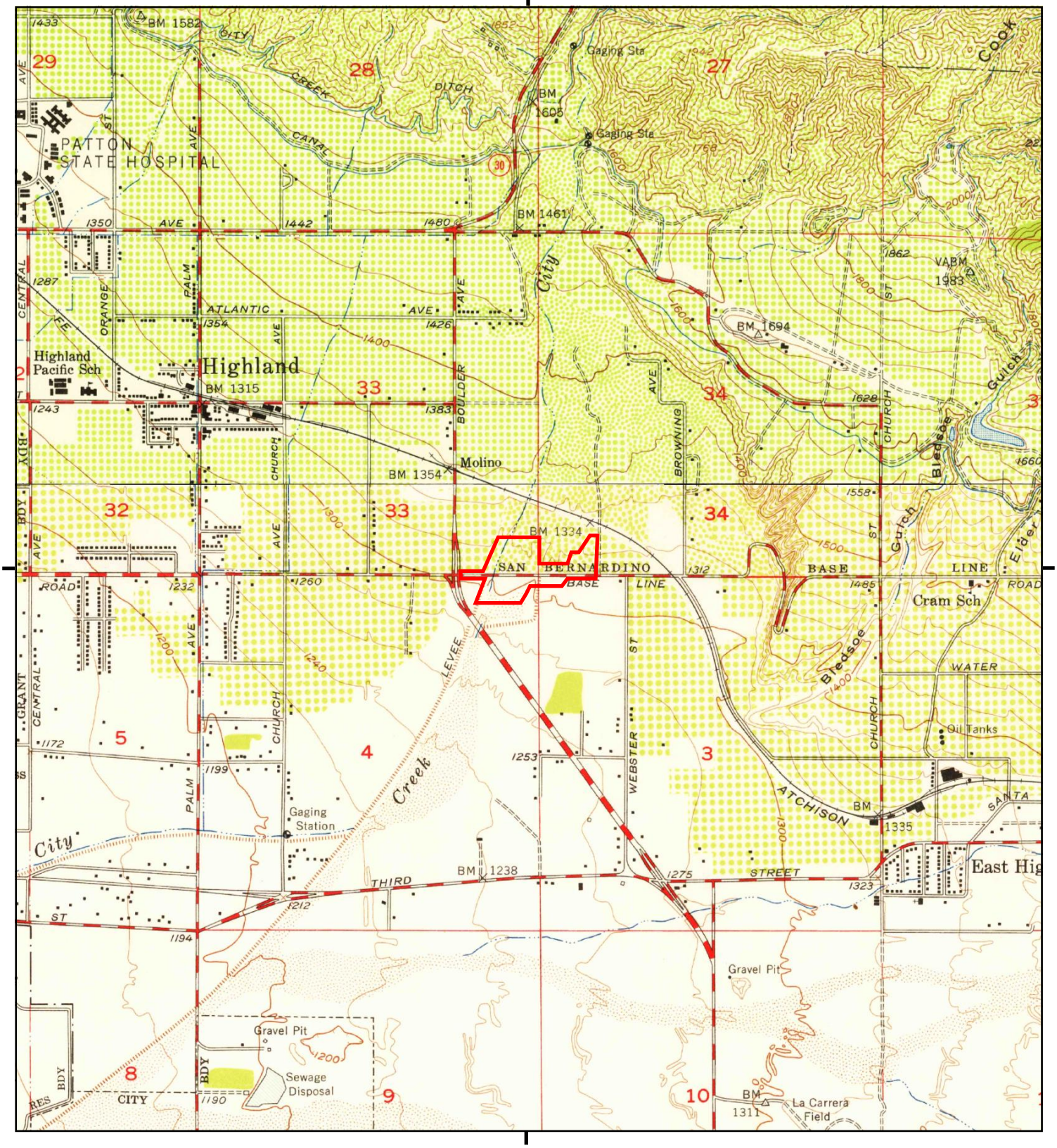
TP, Redlands, 1954, 15-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N

Historical Topo Map

1953, 1954



This report includes information from the following map sheet(s).

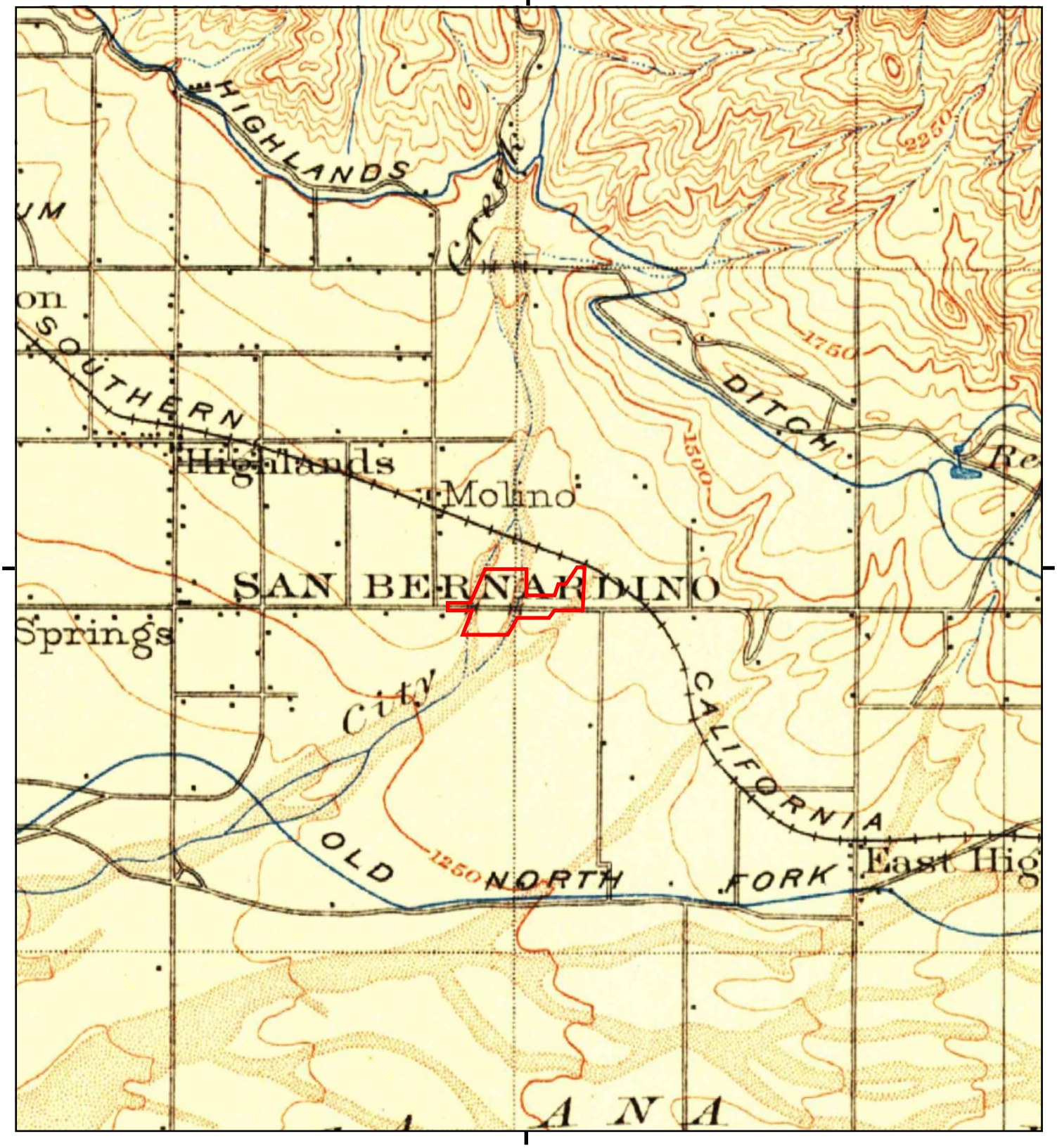
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Redlands, 1954, 7.5-minute
N, Harrison Mtn., 1953, 7.5-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N



This report includes information from the following map sheet(s).

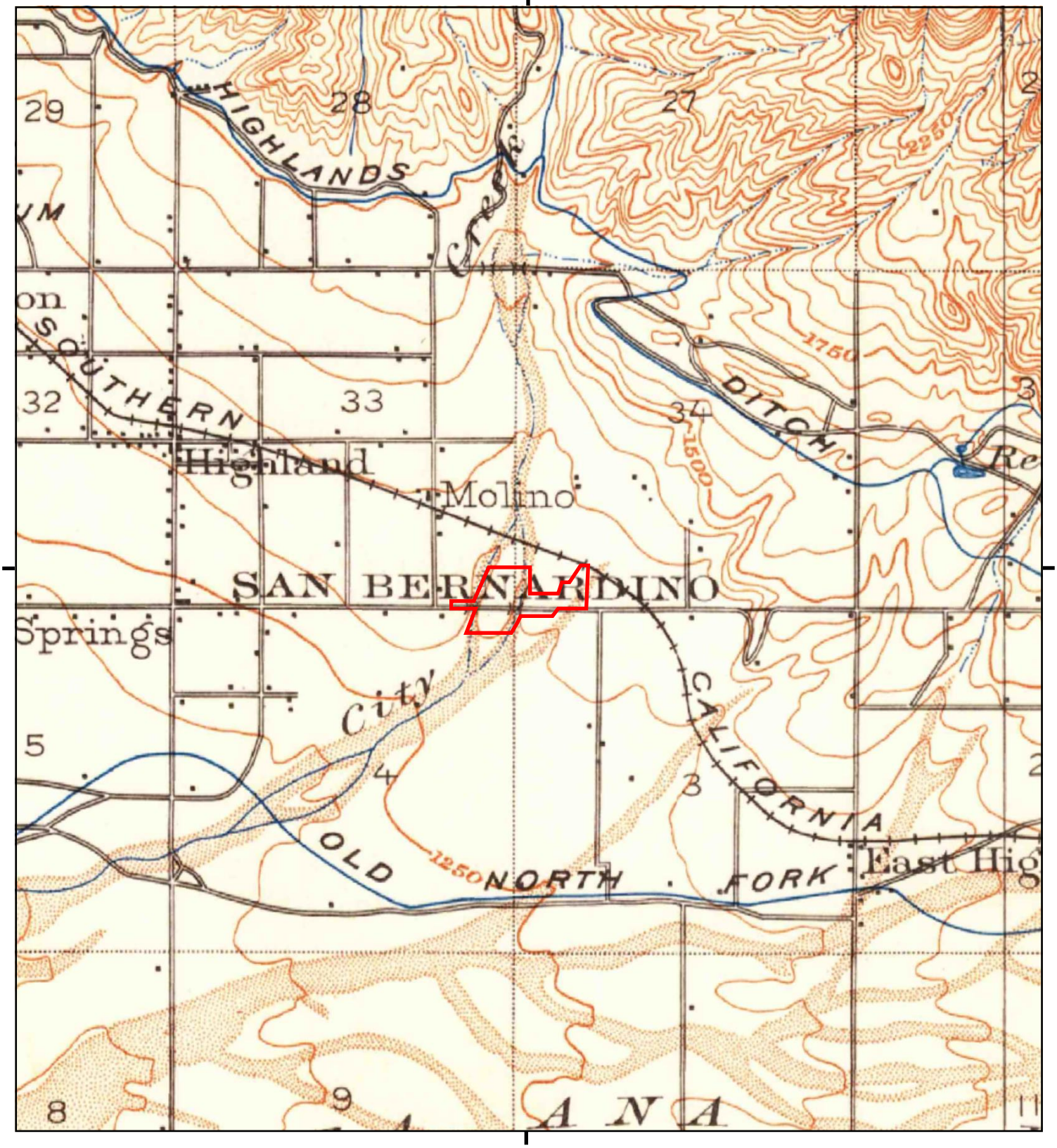
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Redlands, 1901, 15-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N



This report includes information from the following map sheet(s).

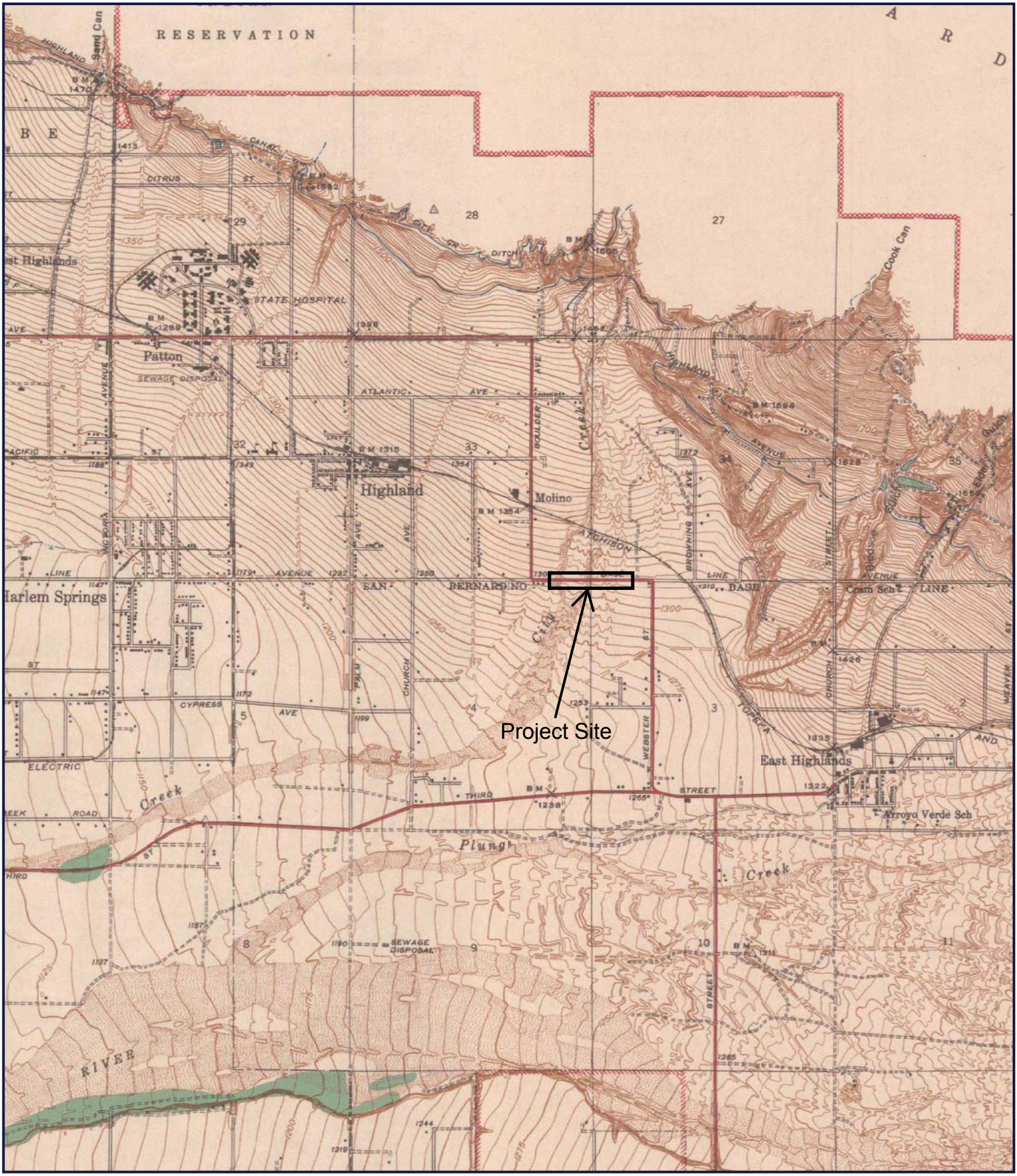
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Redlands, 1899, 15-minute

SITE NAME: Baseline Road Bridge Project
ADDRESS: Baseline Road
Highland, CA 92346
CLIENT: Diaz-Yourman & Associates

N



N
W E
S

JOB #: 1632 - 12/10/2008

SITE: BASE LINE BRIDGE AT CITY CREEK
QUAD: REDLANDS & VICINITY, CA
DATE: 1943
SCALE: 1 - 31,680

GeoSearch

APPENDIX C -
ENVIRONMENTAL DATABASE REPORT

Baseline Road Bridge Project
Baseline Road
Highland, CA 92346

Inquiry Number: 4743402.2s
October 03, 2016

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

BASELINE ROAD
HIGHLAND, CA 92346

COORDINATES

Latitude (North):	34.1211750 - 34° 7' 16.23''
Longitude (West):	117.1920720 - 117° 11' 31.45''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	482287.4
UTM Y (Meters):	3775413.5
Elevation:	1307 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5630631 REDLANDS, CA
Version Date:	2012
North Map:	5630615 HARRISON MOUNTAIN, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140529, 20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
BASELINE ROAD
HIGHLAND, CA 92346

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	WALGREENS #5300	27951 BASELINE RD	San Bern. Co. Permit	Lower	113, 0.021, WSW
A2	WALGREENS #5300	27951 BASELINE ST	RCRA-CESQG	Lower	113, 0.021, WSW
B3	SUBWAY #38953	7275 BOULDER AVE STE	San Bern. Co. Permit	Higher	174, 0.033, WNW
C4	CVS PHARMACY #9313	7241 BOULDER AVE	RCRA-LQG	Higher	220, 0.042, NW
C5	CVS PHARMACY #9313	7241 BOULDER AVE	San Bern. Co. Permit	Higher	220, 0.042, NW
6	DOLLAR CITY	7199 BOULDER AVE 1 &	San Bern. Co. Permit	Higher	363, 0.069, NNW
B7	EMPIRE ROCK INC		US MINES	Higher	408, 0.077, WNW
B8	AGGTECH, INC.		US MINES	Higher	408, 0.077, WNW
B9	REPLANET LLC	7201 BOULDER AVE	SWRCY, HAZNET, San Bern. Co. Permit	Higher	446, 0.084, WNW
D10	RFG OIL, INC. DBA VA	7354 STONEY CREEK UN	San Bern. Co. Permit	Lower	508, 0.096, WSW
D11	MANUEL'S AUTO CARE R	7354 STONEY CRK UNIT	San Bern. Co. Permit	Lower	508, 0.096, WSW
E12	CARL'S JR #7652/623	7261 BOULDER AVE	San Bern. Co. Permit	Higher	545, 0.103, NW
13		7259 STONEY CREEK D	EDR Hist Cleaner	Higher	556, 0.105, WNW
E14	PETLAND, INC.	7257 BOULDER AVE	San Bern. Co. Permit	Higher	590, 0.112, NW
E15		7231 BOULDER AVE	EDR Hist Auto	Higher	632, 0.120, NW
E16		7221 BOULDER AVE	EDR Hist Cleaner	Higher	649, 0.123, NW
E17	MCCLEANERS	7221 BOULDER HWY	RCRA-SQG, FINDS, DRYCLEANERS, San Bern. Co....	Higher	649, 0.123, NW
E18	1 HOUR PROCESSING &	7217 BOULDER	San Bern. Co. Permit	Higher	656, 0.124, NW
E19	AT&T MOBILITY-HIGHLA	7187 1/2 BOULDER AVE	San Bern. Co. Permit	Higher	716, 0.136, NW
F20	HAVE A SNACK VALERO	27767 BASELINE	San Bern. Co. Permit	Lower	995, 0.188, West
F21	THRIFTY PETROLEUM IN	27727 BASELINE ST	HAZNET, San Bern. Co. Permit	Lower	1258, 0.238, West
F22	ARCO AM PM #5913	27727 BASELINE ST	UST	Lower	1258, 0.238, West
F23	ARCO FACILITY NO 059	27727 BASELINE RD	RCRA NonGen / NLR, FINDS, ECHO	Lower	1258, 0.238, West
F24	ARCO AM PM #5913	27727 BASE LINE ST	SWEEPS UST	Lower	1258, 0.238, West
25	CHEMICAL COMMODITIES	27447 PACIFIC AVENUE	ENVIROSTOR	Higher	3933, 0.745, WNW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

LUST ---------- Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
SLIC ---------- Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP ---------- Voluntary Cleanup Program Properties
INDIAN VCP ---------- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ---------- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ---------- Waste Management Unit Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
HIST Cal-Sites ---------- Historical Calsites Database
SCH ---------- School Property Evaluation Program
CDL ---------- Clandestine Drug Labs
Toxic Pits ---------- Toxic Pits Cleanup Act Sites
US CDL ---------- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

HIST UST ---------- Hazardous Substance Storage Container Database
CA FID UST ---------- Facility Inventory Database

Local Land Records

LIENS ---------- Environmental Liens Listing

LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations
FUSRAP ---- Formerly Utilized Sites Remedial Action Program
UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
FINDS ---- Facility Index System/Facility Registry System
UXO ---- Unexploded Ordnance Sites
DOCKET HWC ---- Hazardous Waste Compliance Docket Listing
CA BOND EXP. PLAN ---- Bond Expenditure Plan
Cortese ---- "Cortese" Hazardous Waste & Substances Sites List
CUPA Listings ---- CUPA Resources List
EMI ---- Emissions Inventory Data
ENF ---- Enforcement Action Listing
Financial Assurance ---- Financial Assurance Information Listing
HAZNET ---- Facility and Manifest Data
HIST CORTESE ---- Hazardous Waste & Substance Site List
HWP ---- EnviroStor Permitted Facilities Listing

HWT Registered Hazardous Waste Transporter Database
MINES Mines Site Location Listing
MWMP Medical Waste Management Program Listing
NPDES NPDES Permits Listing
PEST LIC Pesticide Regulation Licenses Listing
PROC Certified Processors Database
Notify 65 Proposition 65 Records
UIC UIC Listing
WASTEWATER PITS Oil Wastewater Pits Listing
WDS Waste Discharge System
WIP Well Investigation Program Case List
ICE ICE
ECHO Enforcement & Compliance History Information
FUELS PROGRAM EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 06/21/2016 has revealed that there is 1

RCRA-LQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CVS PHARMACY #9313	7241 BOULDER AVE	NW 0 - 1/8 (0.042 mi.)	C4	10

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/21/2016 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MCCLEANERS	***7221 BOULDER HWY***	***NW 0 - 1/8 (0.123 mi.)***	***E17***	***30***

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 06/21/2016 has revealed that there is 1 RCRA-CESQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WALGREENS #5300	27951 BASELINE ST	WSW 0 - 1/8 (0.021 mi.)	A2	8

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 05/02/2016 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CHEMICAL COMMODITIES Facility Id: 36510001	27447 PACIFIC AVENUE	WNW 1/2 - 1 (0.745 mi.)	25	39

Status: Refer: 1248 Local Agency

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ARCO AM PM #5913	27727 BASELINE ST	W 1/8 - 1/4 (0.238 mi.)	F22	35
Database: UST, Date of Government Version: 06/13/2016				
Facility Id: 94031169				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: A listing of recycling facilities in California.

A review of the SWRCY list, as provided by EDR, and dated 06/13/2016 has revealed that there is 1 SWRCY site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
REPLANET LLC	***7201 BOULDER AVE***	***WNW 0 - 1/8 (0.084 mi.)***	***B9***	***25***
Cert Id: RC157123.001				

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ARCO AM PM #5913	27727 BASE LINE ST	W 1/8 - 1/4 (0.238 mi.)	F24	37
Status: A				
Tank Status: A				
Comp Number: 31169				

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 06/21/2016 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ARCO FACILITY NO 059	***27727 BASELINE RD***	***W 1/8 - 1/4 (0.238 mi.)***	***F23***	***36***

US MINES: Mines Master Index File. The source of this database is the Dept. of Labor, Mine Safety and Health Administration.

A review of the US MINES list, as provided by EDR, has revealed that there are 2 US MINES sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
EMPIRE ROCK INC Database: US MINES, Date of Government Version: 08/05/2016		WNW 0 - 1/8 (0.077 mi.)	B7	16
AGGTECH, INC. Database: US MINES, Date of Government Version: 08/05/2016		WNW 0 - 1/8 (0.077 mi.)	B8	19

DRYCLEANERS: A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the DRYCLEANERS list, as provided by EDR, and dated 06/02/2016 has revealed that there is 1 DRYCLEANERS site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MCCLEANERS EPA Id: CAD983612433	***7221 BOULDER HWY***	***NW 0 - 1/8 (0.123 mi.)***	***E17***	***30***

San Bern. Co. Permit: San Bernardino County Fire Department Hazardous Materials Division.

A review of the San Bern. Co. Permit list, as provided by EDR, and dated 06/09/2016 has revealed that there are 14 San Bern. Co. Permit sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SUBWAY #38953 Facility Status: INACTIVE Facility Id: FA0011616	7275 BOULDER AVE STE	WNW 0 - 1/8 (0.033 mi.)	B3	10
CVS PHARMACY #9313	7241 BOULDER AVE	NW 0 - 1/8 (0.042 mi.)	C5	15

Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0007759				
DOLLAR CITY Facility Status: INACTIVE Facility Id: FA0014622	7199 BOULDER AVE 1 &	NNW 0 - 1/8 (0.069 mi.)	6	16
REPLANET LLC Facility Status: ACTIVE Facility Id: FA0007496	***7201 BOULDER AVE***	***WNW 0 - 1/8 (0.084 mi.)***	***B9***	***25***
CARL'S JR #7652/623 Facility Status: INACTIVE Facility Id: FA0012357	7261 BOULDER AVE	NW 0 - 1/8 (0.103 mi.)	E12	29
PETLAND, INC. Facility Status: ACTIVE Facility Id: FA0003805	7257 BOULDER AVE	NW 0 - 1/8 (0.112 mi.)	E14	29
MCCLEANERS Facility Status: ACTIVE Facility Id: FA0004630	***7221 BOULDER HWY***	***NW 0 - 1/8 (0.123 mi.)***	***E17***	***30***
1 HOUR PROCESSING & Facility Status: INACTIVE Facility Id: FA0007403	7217 BOULDER	NW 0 - 1/8 (0.124 mi.)	E18	33
AT&T MOBILITY-HIGHLA Facility Status: INACTIVE Facility Id: FA0012624	7187 1/2 BOULDER AVE	NW 1/8 - 1/4 (0.136 mi.)	E19	33

Lower Elevation	**Address**	**Direction / Distance**	**Map ID**	**Page**
WALGREENS #5300 Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0007214	27951 BASELINE RD	WSW 0 - 1/8 (0.021 mi.)	A1	8
RFG OIL, INC. DBA VA Facility Status: INACTIVE Facility Id: FA0011321	7354 STONEY CREEK UN	WSW 0 - 1/8 (0.096 mi.)	D10	27
MANUEL'S AUTO CARE R Facility Status: INACTIVE Facility Status: ACTIVE Facility Id: FA0014811	7354 STONEY CRK UNIT	WSW 0 - 1/8 (0.096 mi.)	D11	28
HAVE A SNACK VALERO Facility Status: ACTIVE Facility Id: FA0011665	27767 BASELINE	W 1/8 - 1/4 (0.188 mi.)	F20	33
THRIFTY PETROLEUM IN Facility Status: ACTIVE Facility Id: FA0001030	***27727 BASELINE ST***	***W 1/8 - 1/4 (0.238 mi.)***	***F21***	***34***

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	7231 BOULDER AVE	NW 0 - 1/8 (0.120 mi.)	E15	29

EDR Hist Cleaner: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there are 2 EDR Hist Cleaner sites within approximately 0.125 miles of the target property.

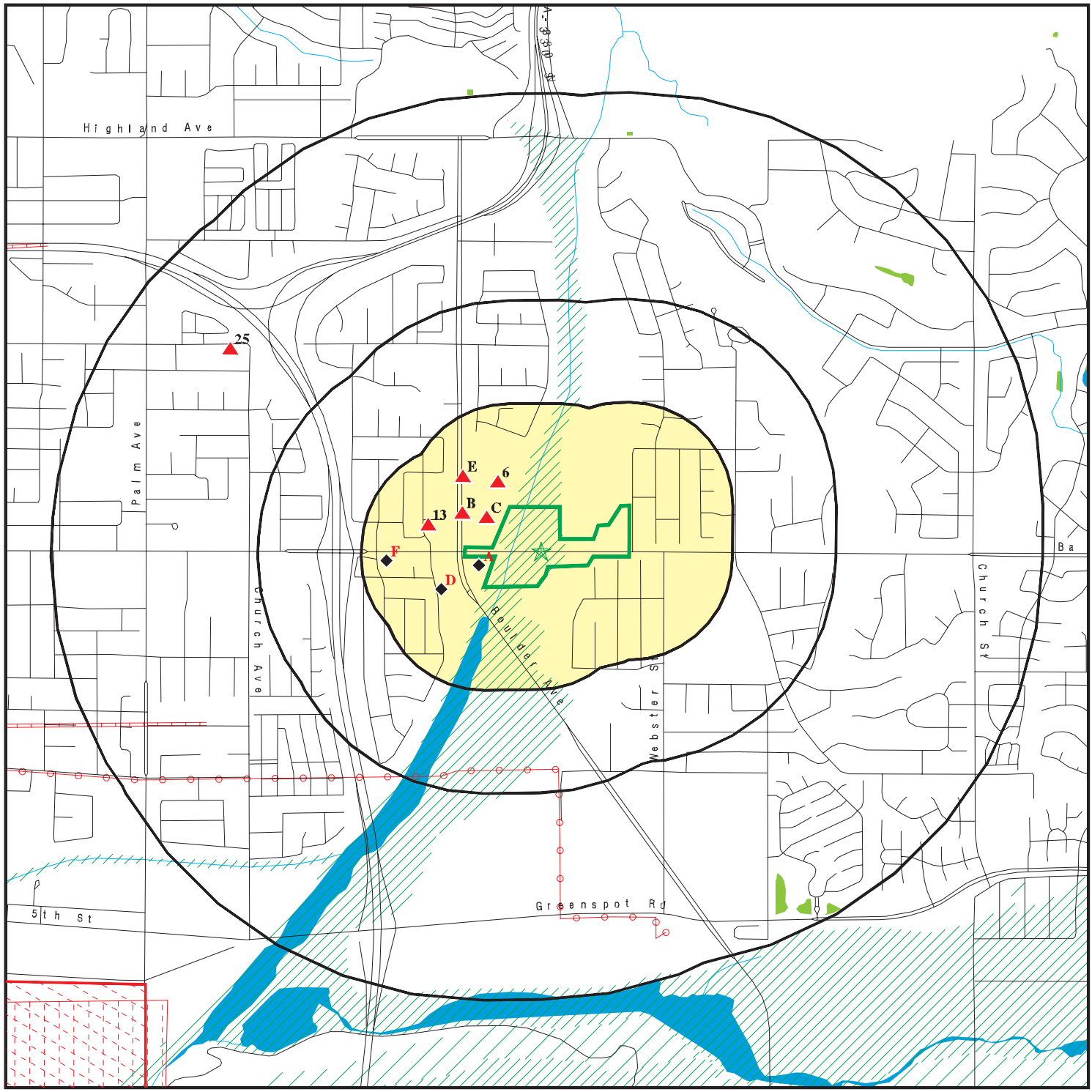
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	7259 STONEY CREEK D	WNW 0 - 1/8 (0.105 mi.)	13	29
Not reported	7221 BOULDER AVE	NW 0 - 1/8 (0.123 mi.)	E16	30

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name	Database(s)
HIGHLAND FIFTH-ORANGE PARTNERS, LL	ENVIROSTOR, VCP
CRAFTON-REDLANDS AREA	CA BOND EXP. PLAN
NEW HIGH SCHOOL NO.3	ENVIROSTOR, SCH

OVERVIEW MAP - 4743402.2S



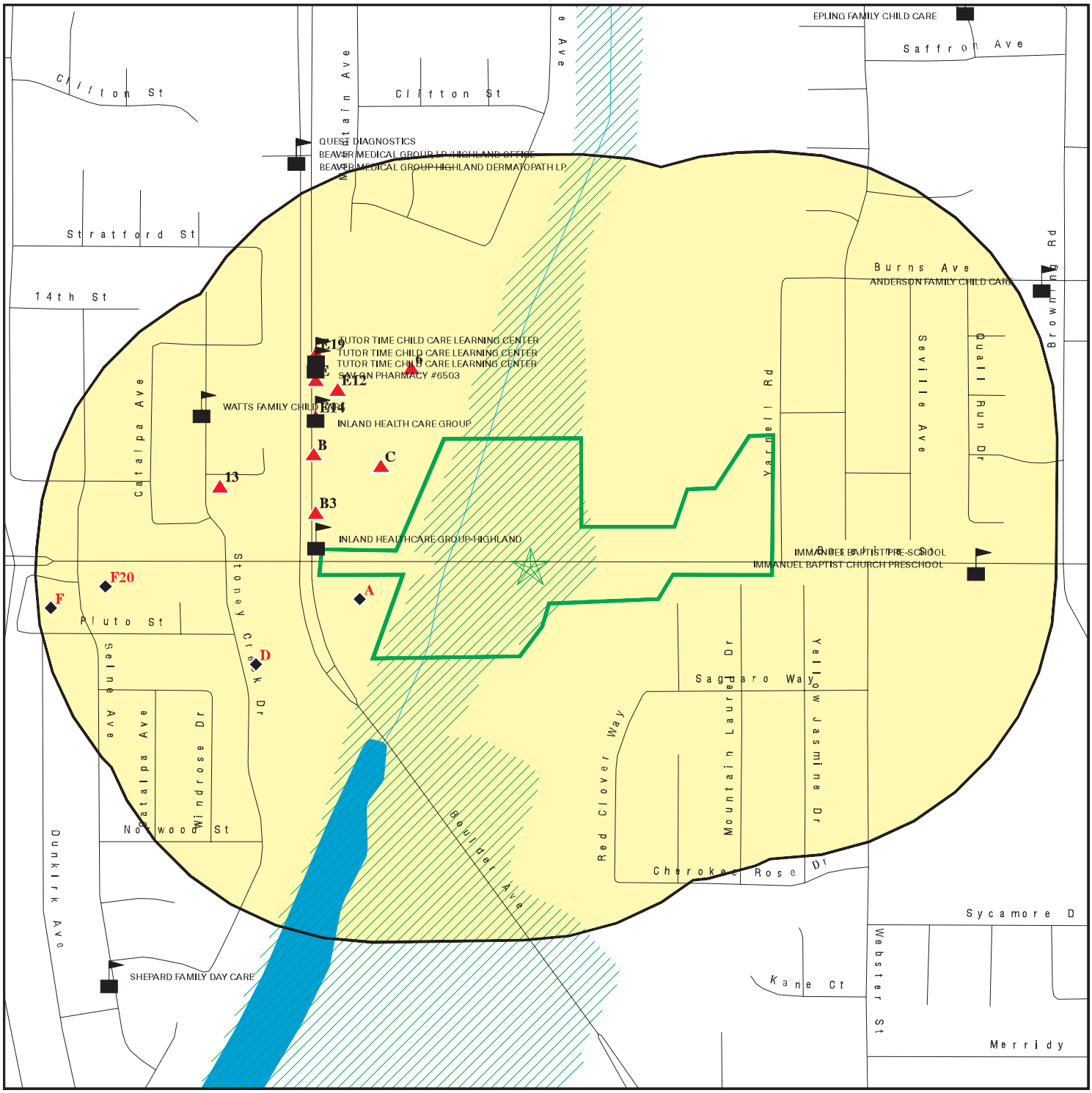
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Baseline Road Bridge Project	CLIENT: Diaz-Yourman & Associates
ADDRESS: Baseline Road Highland CA 92346	CONTACT: Somadevan Niranjanan INQUIRY #: 4743402.2s
LAT/LONG: 34.121175 / 117.192072	DATE: October 03, 2016 4:04 pm

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DETAIL MAP - 4743402.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

100-year flood zone

500-year flood zone

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Baseline Road Bridge Project	CLIENT:	Diaz-Yourman & Associates
ADDRESS:	Baseline Road Highland CA 92346	CONTACT:	Somadevan Niranjanan
LAT/LONG:	34.121175 / 117.192072	INQUIRY #:	4743402.2s
		DATE:	October 03, 2016 4:06 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		1	0	NR	NR	NR	1
RCRA-SQG	0.250		1	0	NR	NR	NR	1
RCRA-CESQG	0.250		1	0	NR	NR	NR	1
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	1	NR	NR	NR	1
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		1	0	0	NR	NR	1
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	1	NR	NR	NR	1
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		2	0	NR	NR	NR	2
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		1	0	NR	NR	NR	1
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MINES	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
San Bern. Co. Permit	0.250		11	3	NR	NR	NR	14
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ICE	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		1	NR	NR	NR	NR	1
EDR Hist Cleaner	0.125		2	NR	NR	NR	NR	2
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	21	6	0	1	0	28

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
WSW
< 1/8
0.021 mi.
113 ft.

WALGREENS #5300
27951 BASELINE RD
HIGHLAND, CA 92346

San Bern. Co. Permit

S104905276
N/A

Site 1 of 2 in cluster A

Relative:
Lower

Actual:
1301 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0007214
Owner:	Walgreen Co.
Permit Number:	PT0001238
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status:	ACTIVE
Expiration Date:	03/31/2017

Region:	SAN BERNARDINO
Facility ID:	FA0007214
Owner:	Walgreen Co.
Permit Number:	PT0019743
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status:	INACTIVE
Expiration Date:	03/31/2014

A2
WSW
< 1/8
0.021 mi.
113 ft.

WALGREENS #5300
27951 BASELINE ST
HIGHLAND, CA 92346

RCRA-CESQG

1016954291
CAL000323399

Site 2 of 2 in cluster A

Relative:
Lower

Actual:
1301 ft.

RCRA-CESQG:

Date form received by agency:	03/01/2014
Facility name:	WALGREENS #5300
Facility address:	27951 BASELINE ST HIGHLAND, CA 92346
EPA ID:	CAL000323399
Mailing address:	GREY HAWK CT STE 200 CARLSBAD, CA 92010
Contact:	KARINA E ROMERO
Contact address:	GREY HAWK CT STE 200 CARLSBAD, CA 92010
Contact country:	Not reported
Contact telephone:	(760) 602-8887
Contact email:	KROMERO@3ECOMPANY.COM
EPA Region:	09
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

WALGREENS #5300 (Continued) **1016954291**

Owner/Operator Summary:
Owner/operator name: WALGREEN CO
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/25/2001
Owner/Op end date: Not reported

Owner/operator name: BASELINE LLC
Owner/operator address: SORRENTO DRIVE
LONG BEACH, CA 90803
Owner/operator country: Not reported
Owner/operator telephone: (562) 433-1776
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/05/2001
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D024
. Waste name: M-CRESOL

WALGREENS #5300 (Continued) **1016954291**

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

. Waste code: U165
. Waste name: NAPHTHALENE

Violation Status: No violations found

B3
WNW
< 1/8
0.033 mi.
174 ft.

SUBWAY #38953 **San Bern. Co. Permit** **S109117912**
7275 BOULDER AVE STE 3A **N/A**
HIGHLAND, CA 92346

Site 1 of 4 in cluster B

Relative:
Higher

Actual:
1314 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0011616
Owner: GORE, AVTAR
Permit Number: PT0020067
Permit Category: BULK CO2 AT RETAIL FOOD FACILITIES
Facility Status: INACTIVE
Expiration Date: 05/31/2010

C4
NW
< 1/8
0.042 mi.
220 ft.

CVS PHARMACY #9313 **RCRA-LQG** **1015740209**
7241 BOULDER AVE **CAR000228841**
HIGHLAND, CA 92346

Site 1 of 2 in cluster C

Relative:
Higher

Actual:
1322 ft.

RCRA-LQG:
Date form received by agency: 03/01/2014
Facility name: CVS PHARMACY #9313
Facility address: 7241 BOULDER AVE
HIGHLAND, CA 92346
EPA ID: CAR000228841
Mailing address: CVS DR 23062A
WOONSOCKET, RI 02895
Contact: WENDY L BRANT
Contact address: CVS DR 23062A
WOONSOCKET, RI 02895
Contact country: Not reported
Contact telephone: (401) 770-7457
Contact email: WENDY.BRANT@CVSCAREMARK.COM
EPA Region: 09
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any

CVS PHARMACY #9313 (Continued) **1015740209**

residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	GREENSPOT RANCH INVESTORS
Owner/operator address:	30317 CANWOOD ST NO B AGOURA HILLS, CA 91301
Owner/operator country:	US
Owner/operator telephone:	818-597-7510
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	07/28/2005
Owner/Op end date:	Not reported

Owner/operator name:	LONGS DRUG STORES CALIFORNIA LLC
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	10/22/2008
Owner/Op end date:	Not reported

Owner/operator name:	GREENSPOT RANCH INVESTORS
Owner/operator address:	CANWOOD ST #B AGOURA HILLS, CA 91301
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	07/28/2005
Owner/Op end date:	Not reported

Owner/operator name:	LONGS DRUG STORES CALIFORNIA LLC
Owner/operator address:	PALMER DR CAMERON PARK, CA 95682
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	10/22/2008
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No

CVS PHARMACY #9313 (Continued) **1015740209**

Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D024
. Waste name: M-CRESOL

. Waste code: D027
. Waste name: 1,4-DICHLOROBENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

CVS PHARMACY #9313 (Continued) **1015740209**

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P012
. Waste name: ARSENIC OXIDE AS2O3 (OR) ARSENIC TRIOXIDE

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: P081
. Waste name: 1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R)

. Waste code: P188
. Waste name: BENZOIC ACID, 2-HYDROXY-, COMPD. WITH (3AS-CIS)-1,2,3,3A,8,8A-HEXAHYDRO-1,3A,8-TRIMETHYLPYRROLO[2,3-B]INDOL--YL METHYLCARBAMATE ESTER (1:1) (OR) PHYSOSTIGMINE SALICYLATE

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U010
. Waste name: AZIRINO [2',3':3,4]PYRROLO[1,2-A]INDOLE-4,7-DIONE, 6-AMINO-8-[[(AMINOCARBONYL)OXY]METHYL]-1,1A,2,8,8A,8B-HEXAHYDRO-8A-METOXY-5-METHYL-, [1AS-(1AALPHA, 8BETA, 8AALPHA, 8BALPHA)]- (OR) MITOMYCIN C

. Waste code: U031
. Waste name: 1-BUTANOL (I) (OR) N-BUTYL ALCOHOL (I)

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

. Waste code: U035
. Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) CHLORAMBUCIL

. Waste code: U044
. Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-

. Waste code: U058
. Waste name: 2H-1,3,2-OXAZAPHOSPHORIN-2-AMINE, N,N-BIS(2-CHLOROETHYL)TETRAHYDRO-, 2-OXIDE (OR) CYCLOPHOSPHAMIDE

. Waste code: U059
. Waste name: 5,12-NAPHTHACENEDIONE, 8-ACETYL-10-[(3-AMINO-2,3,6-TRIDEOXY)-ALPHA-L-LYXO-HEXOPYRANOSYL)OXY]-,8,9,10-TETRAHYDRO-6,8,11-TRIHYDROXY-1-METHOXY-, (8S-CIS)- (OR) DAUNOMYCIN

. Waste code: U070
. Waste name: BENZENE, 1,2-DICHLORO- (OR) O-DICHLOROBENZENE

CVS PHARMACY #9313 (Continued) **1015740209**

. Waste code: U072
. Waste name: BENZENE, 1,4-DICHLORO- (OR) P-DICHLOROBENZENE

. Waste code: U089
. Waste name: DIETHYLSTILBESTEROL (OR) PHENOL, 4,4'-(1,2-DIETHYL-1,2-ETHENEDIYL)BIS, (E)-

. Waste code: U122
. Waste name: FORMALDEHYDE

. Waste code: U129
. Waste name: CYCLOHEXANE, 1,2,3,4,5,6-HEXACHLORO-, (1ALPHA, 2ALPHA, 3BETA, 4ALPHA, 5ALPHA, 6BETA)- (OR) LINDANE

. Waste code: U132
. Waste name: HEXACHLOROPHENE (OR) PHENOL, 2,2'-METHYLENEBIS[3,4,6-TRICHLORO-

. Waste code: U150
. Waste name: L-PHENYLALANINE, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) MELPHALAN

. Waste code: U151
. Waste name: MERCURY

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

. Waste code: U165
. Waste name: NAPHTHALENE

. Waste code: U188
. Waste name: PHENOL

. Waste code: U200
. Waste name: RESERPINE (OR) YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXYBENZOYL)OXY]-, METHYL ESTER, (3BETA, 16BETA, 17ALPHA, 18BETA, 20ALPHA)-

. Waste code: U201
. Waste name: 1,3-BENZENEDIOL (OR) RESORCINOL

. Waste code: U204
. Waste name: SELENIOUS ACID (OR) SELENIUM DIOXIDE

. Waste code: U205
. Waste name: SELENIUM SULFIDE (OR) SELENIUM SULFIDE SES2 (R,T)

. Waste code: U206
. Waste name: D-GLUCOSE, 2-DEOXY-2-[[(METHYLNITROSOAMINO)-CARBONYL]AMINO]- (OR) GLUCOPYRANOSE, 2-DEOXY-2-(3-METHYL-3-NITROSOUREIDO)-,D- (OR) STREPTOZOTOCIN

. Waste code: U210
. Waste name: ETHENE, TETRACHLORO- (OR) TETRACHLOROETHYLENE

. Waste code: U279
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

CVS PHARMACY #9313 (Continued) **1015740209**

. Waste code: U411
. Waste name: PHENOL, 2-(1-METHYLETHOXY)-, METHYLCARBAMATE (OR) PROPOXUR

Historical Generators:
Date form received by agency: 09/04/2012
Site name: CVS PHARMACY NO 9313
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P042
. Waste name: 1,2-BENZENEDIOL, 4-[1-HYDROXY-2-(METHYLAMINO)ETHYL]-, (R)- (OR) EPINEPHRINE

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: P081
. Waste name: 1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R)

Violation Status: No violations found

C5 **CVS PHARMACY #9313** **San Bern. Co. Permit** **S105857379**
NW **7241 BOULDER AVE** **N/A**
< 1/8 **HIGHLAND, CA 92346**
0.042 mi.
220 ft. **Site 2 of 2 in cluster C**

Relative: Higher

Actual: 1322 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0007759
Owner: LONGS DRUG STORES CA LLC
Permit Number: PT0013374
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 04/30/2017

Region: SAN BERNARDINO
Facility ID: FA0007759
Owner: LONGS DRUG STORES CA LLC
Permit Number: PT0013375
Permit Category: HAZMAT HANDLER 11-25 EMPLOYEES
Facility Status: INACTIVE
Expiration Date: 04/30/2014

6
NNW
< 1/8
0.069 mi.
363 ft.

DOLLAR CITY
7199 BOULDER AVE 1 & 2
HIGHLAND, CA 92346

San Bern. Co. Permit **S112142742**
N/A

Relative:
Higher

Actual:
1332 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0014622
Owner: SALWANUS, SAMUEL
Permit Number: PT0025557
Permit Category: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status: INACTIVE
Expiration Date: 08/31/2013

B7
WNW
< 1/8
0.077 mi.
408 ft.

EMPIRE ROCK INC
SAN BERNARDINO (County), CA
Site 2 of 4 in cluster B

US MINES **1016469078**
N/A

Relative:
Higher

Actual:
1322 ft.

US MINES:
Mine ID: 0405569
SIC code(s): 144200 000000 000000 000000 000000 000000
Entity name: SAN BERNARDINO PLANT
Company: EMPIRE ROCK INC
Status: 4
Status date: 20110630
Operation Class: non-Coal Mining
Number of shops: 0
Number of plants: 0
Latitude: 34 07 21
Longitude: 117 11 42

Violations Details:
Violation Number: 8555402
Date Issued: 10/29/2009
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 11/02/2009
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 807.00
Paid Penalty: 807.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 807.00
Year: 2009

Violation Number: 8555403
Date Issued: 10/29/2009
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 11/05/2009
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 362.00

EMPIRE ROCK INC (Continued) **1016469078**

Paid Penalty: 362.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 362.00
Year: 2009

Violation Number: 8555404
Date Issued: 10/29/2009
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 10/29/2009
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 362.00
Paid Penalty: 362.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 362.00
Year: 2009

Violation Number: 8555405
Date Issued: 10/29/2009
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 11/05/2009
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 362.00
Paid Penalty: 362.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 362.00
Year: 2009

Violation Number: 8555406
Date Issued: 10/29/2009
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 11/05/2009
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2009

Violation Number: 6484931
Date Issued: 07/15/2009
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 09/03/2009

EMPIRE ROCK INC (Continued) **1016469078**

Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 108.00
Paid Penalty: 108.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 108.00
Year: 2009

Violation Number: 6484930
Date Issued: 07/14/2009
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 07/14/2009
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2009

Violation Number: 8555062
Date Issued: 04/21/2010
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 04/23/2010
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2010

Violation Number: 8555063
Date Issued: 04/21/2010
Mine Status: Abandoned
Status Date: 06/30/2011
Action Type: 104(a)
Date Abated: 04/23/2010
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2010

Violation Number: 8567322
Date Issued: 01/05/2011
Mine Status: Abandoned

EMPIRE ROCK INC (Continued) **1016469078**

Status Date:	06/30/2011
Action Type:	104(a)
Date Abated:	01/05/2011
Citation/Order:	Citation
Sig and Sub Designation:	Y
Proposed Penalty:	263.00
Paid Penalty:	263.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	263.00
Year:	2011

B8 **AGGTECH, INC.** **US MINES** **1014202567**
WNW **N/A**
< 1/8 **RIVERSIDE (County), CA**
0.077 mi.
408 ft. **Site 3 of 4 in cluster B**

Relative:
Higher

Actual:
1322 ft.

US MINES:

Mine ID:	0405802
SIC code(s):	144200 000000 000000 000000 000000 000000
Entity name:	PORTABLE PLANT #1
Company:	AGGTECH, INC.
Status:	1
Status date:	20100510
Operation Class:	non-Coal Mining
Number of shops:	0
Number of plants:	0
Latitude:	34 07 21
Longitude:	117 11 43

Violations Details:

Violation Number:	8697528
Date Issued:	12/04/2012
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	12/10/2012
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100
Paid Penalty:	100
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100
Year:	2012

Violation Number:	8697529
Date Issued:	12/04/2012
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	12/10/2012
Citation/Order:	Citation
Sig and Sub Designation:	Y
Proposed Penalty:	117
Paid Penalty:	117

AGGTECH, INC. (Continued) **1014202567**

Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 117
Year: 2012

Violation Number: 8788510
Date Issued: 11/20/2015
Mine Status: Active
Status Date: 05/10/2010
Action Type: 104(a)
Date Abated: 11/20/2015
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 127.00
Paid Penalty: 0.00
Assessment Status code: Printed
Assess. Case Status code: Proposed
Assessment Amount: 127.00
Year: 2015

Violation Number: 8788511
Date Issued: 11/20/2015
Mine Status: Active
Status Date: 05/10/2010
Action Type: 104(a)
Date Abated: 11/23/2015
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 285.00
Paid Penalty: 285.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 285.00
Year: 2015

Violation Number: 8788512
Date Issued: 11/20/2015
Mine Status: Active
Status Date: 05/10/2010
Action Type: 104(a)
Date Abated: 11/20/2015
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 127.00
Paid Penalty: 0.00
Assessment Status code: Printed
Assess. Case Status code: Proposed
Assessment Amount: 127.00
Year: 2015

Violation Number: 8560542
Date Issued: 11/09/2010
Mine Status: Active
Status Date: 05/10/2010
Action Type: 104(a)
Date Abated: 11/09/2010
Citation/Order: Citation

AGGTECH, INC. (Continued) **1014202567**

Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2010

Violation Number: 8560541
Date Issued: 11/09/2010
Mine Status: Active
Status Date: 05/10/2010
Action Type: 104(a)
Date Abated: 11/09/2010
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2010

Violation Number: 8560543
Date Issued: 11/09/2010
Mine Status: Active
Status Date: 05/10/2010
Action Type: 104(d)(1)
Date Abated: 11/23/2010
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 2,700.00
Paid Penalty: 2,700.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 2,700.00
Year: 2010

Violation Number: 8567484
Date Issued: 10/31/2011
Mine Status: Active
Status Date: 05/10/2010
Action Type: 104(a)
Date Abated: 11/01/2011
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2011

Violation Number: 8567483
Date Issued: 10/31/2011
Mine Status: Active
Status Date: 05/10/2010

AGGTECH, INC. (Continued) **1014202567**

Action Type:	104(a)
Date Abated:	10/31/2011
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100.00
Paid Penalty:	100.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100.00
Year:	2011

Violation Number:	8781898
Date Issued:	10/29/2014
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	10/29/2014
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100.00
Paid Penalty:	100.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100.00
Year:	2014

Violation Number:	8781899
Date Issued:	10/29/2014
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	10/29/2014
Citation/Order:	Citation
Sig and Sub Designation:	Y
Proposed Penalty:	117.00
Paid Penalty:	117.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	117.00
Year:	2014

Violation Number:	8698056
Date Issued:	10/28/2013
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	10/29/2013
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100
Paid Penalty:	100
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100
Year:	2013

Violation Number:	8698054

AGGTECH, INC. (Continued) **1014202567**

Date Issued:	10/28/2013
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	10/28/2013
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100
Paid Penalty:	100
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100
Year:	2013

Violation Number:	8698055
Date Issued:	10/28/2013
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	11/13/2013
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100
Paid Penalty:	100
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100
Year:	2013

Violation Number:	8788061
Date Issued:	08/28/2015
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	09/17/2015
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100.00
Paid Penalty:	100.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100.00
Year:	2015

Violation Number:	8788058
Date Issued:	08/27/2015
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	08/28/2015
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100.00
Paid Penalty:	100.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100.00

AGGTECH, INC. (Continued) **1014202567**

Year:	2015
Violation Number:	8788060
Date Issued:	08/27/2015
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	09/17/2015
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100.00
Paid Penalty:	100.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100.00
Year:	2015
Violation Number:	8788059
Date Issued:	08/27/2015
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	09/17/2015
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100.00
Paid Penalty:	100.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100.00
Year:	2015
Violation Number:	8788057
Date Issued:	08/27/2015
Mine Status:	Active
Status Date:	05/10/2010
Action Type:	104(a)
Date Abated:	08/28/2015
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	100.00
Paid Penalty:	100.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	100.00
Year:	2015

AGGTECH, INC. (Continued) **1014202567**

Click this hyperlink while viewing on your computer to access
20 additional US_MINES: record(s) in the EDR Site Report.

B9 **REPLANET LLC** **SWRCY S105697625**
WNW **7201 BOULDER AVE** **HAZNET N/A**
< 1/8 **HIGHLAND, CA 92346** **San Bern. Co. Permit**
0.084 mi.
446 ft. **Site 4 of 4 in cluster B**

Relative:
Higher

Actual:
1323 ft.

SWRCY:

Reg Id:	157123
Cert Id:	RC157123.001
Mailing Address:	800 N Haven Ave Suite 120
Mailing City:	Ontario
Mailing State:	CA
Mailing Zip Code:	91764
Website:	http://www.replanet.com
Email:	Not reported
Phone Number:	(951) 520-1700
Grand Father:	N
Rural:	N
Operation Begin Date:	05/01/2012
Aluminium:	Y
Glass:	Y
Plastic:	Y
Bimetal:	Y
Agency:	N/A
Monday Hours Of Operation:	CLOSED
Tuesday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Wednesday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Thursday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Friday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Saturday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Sunday Hours Of Operation:	CLOSED
Organization ID:	151891
Organization Name:	rePlanet LLC

HAZNET:

envid:	S105697625
Year:	2014
GEPAID:	CAL000384487
Contact:	JILL WASHBURN
Telephone:	2083953949
Mailing Name:	Not reported
Mailing Address:	PO BOX 20, DEPT 72405
Mailing City,St,Zip:	BOISE, ID 83726
Gen County:	San Bernardino
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0035
Cat Decode:	Alkaline solution without metals pH >= 12.5
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Bernardino

REPLANET LLC (Continued) **S105697625**

envid: S105697625
Year: 2014
GEPAID: CAL000384487
Contact: JILL WASHBURN
Telephone: 2083953949
Mailing Name: Not reported
Mailing Address: PO BOX 20, DEPT 72405
Mailing City,St,Zip: BOISE, ID 83726
Gen County: San Bernardino
TSD EPA ID: INR000110197
TSD County: Not reported
Waste Category: Liquids with pH <= 2
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.001
Cat Decode: Liquids with pH <= 2
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: S105697625
Year: 2014
GEPAID: CAL000384487
Contact: JILL WASHBURN
Telephone: 2083953949
Mailing Name: Not reported
Mailing Address: PO BOX 20, DEPT 72405
Mailing City,St,Zip: BOISE, ID 83726
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Pharmaceutical waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.001
Cat Decode: Pharmaceutical waste
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: S105697625
Year: 2014
GEPAID: CAL000384487
Contact: JILL WASHBURN
Telephone: 2083953949
Mailing Name: Not reported
Mailing Address: PO BOX 20, DEPT 72405
Mailing City,St,Zip: BOISE, ID 83726
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.031
Cat Decode: Unspecified solvent mixture
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery

REPLANET LLC (Continued) **S105697625**

(H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: S105697625
Year: 2014
GEPAID: CAL000384487
Contact: JILL WASHBURN
Telephone: 2083953949
Mailing Name: Not reported
Mailing Address: PO BOX 20, DEPT 72405
Mailing City,St,Zip: BOISE, ID 83726
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Liquids with pH <= 2
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.001
Cat Decode: Liquids with pH <= 2
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

Click this hyperlink while viewing on your computer to access
10 additional CA_HAZNET: record(s) in the EDR Site Report.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0007496
Owner: ALBERTSONS, LLC
Permit Number: PT0018494
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 11/30/2016

Region: SAN BERNARDINO
Facility ID: FA0007496
Owner: ALBERTSONS, LLC
Permit Number: PT0012804
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 11/30/2016

D10
WSW
< 1/8
0.096 mi.
508 ft.

Relative:
Lower

Actual:
1284 ft.

RFG OIL, INC. DBA VALVOLINE INSTANT OIL CHANGE **San Bern. Co. Permit** **S109598615**
7354 STONEY CREEK UNIT C **N/A**
HIGHLAND, CA 92346

Site 1 of 2 in cluster D

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0011321
Owner: RFG OIL INC.
Permit Number: PT0021607
Permit Category: APSA 1,320-10,000 GAL FAC CAPACITY
Facility Status: INACTIVE
Expiration Date: 05/31/2010

RFG OIL, INC. DBA VALVOLINE INSTANT OIL CHANGE (Continued) **S109598615**

Region: SAN BERNARDINO
Facility ID: FA0011321
Owner: RFG OIL INC.
Permit Number: PT0021608
Permit Category: HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status: INACTIVE
Expiration Date: 05/31/2011

Region: SAN BERNARDINO
Facility ID: FA0011321
Owner: RFG OIL INC.
Permit Number: PT0021606
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 05/31/2011

D11
WSW
< 1/8
0.096 mi.
508 ft.

MANUEL'S AUTO CARE REPAIR CENTER **San Bern. Co. Permit** **S113663459**
7354 STONEY CRK UNIT C **N/A**
HIGHLAND, CA 92346

Site 2 of 2 in cluster D

Relative:
Lower

Actual:
1284 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0014811
Owner: PEREZ, MANUEL
Permit Number: PT0025805
Permit Category: APSA 1,320-10,000 GAL FAC CAPACITY
Facility Status: INACTIVE
Expiration Date: 11/30/2013

Region: SAN BERNARDINO
Facility ID: FA0014811
Owner: PEREZ, MANUEL
Permit Number: PT0025803
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 11/30/2014

Region: SAN BERNARDINO
Facility ID: FA0014811
Owner: PEREZ, MANUEL
Permit Number: PT0025804
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 11/30/2013

E12
NW
< 1/8
0.103 mi.
545 ft.

CARL'S JR #7652/623
7261 BOULDER AVE
HIGHLAND, CA 92346

Site 1 of 7 in cluster E

Relative: Higher

Actual: 1331 ft.

San Bern. Co. Permit **S109598457**
N/A

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0012357
Owner: CLK, INC.
Permit Number: PT0021653
Permit Category: BULK CO2 AT RETAIL FOOD FACILITIES
Facility Status: INACTIVE
Expiration Date: 05/31/2010

13
WNW
< 1/8
0.105 mi.
556 ft.

7259 STONEY CREEK DR
HIGHLAND, CA 92346

Relative: Higher

Actual: 1314 ft.

EDR Hist Cleaner **1015091594**
N/A

EDR Historical Cleaners:
Name: PRESTIGE CARPET CARE CLEANING
Year: 2008
Address: 7259 STONEY CREEK DR

E14
NW
< 1/8
0.112 mi.
590 ft.

PETLAND, INC.
7257 BOULDER AVE
HIGHLAND, CA 92346

Site 2 of 7 in cluster E

Relative: Higher

Actual: 1328 ft.

San Bern. Co. Permit **S105298802**
N/A

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0003805
Owner: HIGHLAND VILLAGE PET HOSPITAL
Permit Number: PT0008064
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 02/28/2017

E15
NW
< 1/8
0.120 mi.
632 ft.

7231 BOULDER AVE
HIGHLAND, CA 92346

Site 3 of 7 in cluster E

Relative: Higher

Actual: 1330 ft.

EDR Hist Auto **1015616667**
N/A

EDR Historical Auto Stations:
Name: VARIETY AUTO BROKERS
Year: 2005
Address: 7231 BOULDER AVE

Name: VARIETY AUTO BROKERS
Year: 2006
Address: 7231 BOULDER AVE

E16
NW
< 1/8
0.123 mi.
649 ft.

7221 BOULDER AVE
HIGHLAND, CA 92346

Site 4 of 7 in cluster E

EDR Hist Cleaner **1015091306**
N/A

Relative:
Higher

Actual:
1331 ft.

EDR Historical Cleaners:

Name:	MCCLEANERS
Year:	2001
Address:	7221 BOULDER AVE
Name:	MCCLEANERS
Year:	2002
Address:	7221 BOULDER AVE
Name:	MCCLEANERS
Year:	2003
Address:	7221 BOULDER AVE
Name:	MCCLEANERS
Year:	2004
Address:	7221 BOULDER AVE
Name:	MCCLEANERS
Year:	2005
Address:	7221 BOULDER AVE
Name:	MCCLEANERS
Year:	2006
Address:	7221 BOULDER AVE
Name:	MC CLEANERS
Year:	2010
Address:	7221 BOULDER AVE
Name:	MCCLEANERS
Year:	2011
Address:	7221 BOULDER AVE
Name:	MC CLEANERS
Year:	2012
Address:	7221 BOULDER AVE

E17
NW
< 1/8
0.123 mi.
649 ft.

MCCLEANERS
7221 BOULDER HWY
HIGHLAND, CA 92346

Site 5 of 7 in cluster E

RCRA-SQG **1000597240**
FINDS **CAD983612433**
DRYCLEANERS
San Bern. Co. Permit
ECHO

Relative:
Higher

Actual:
1331 ft.

RCRA-SQG:

Date form received by agency:	11/07/1991
Facility name:	MCCLEANERS
Facility address:	7221 BOULDER HWY HIGHLAND, CA 92346
EPA ID:	CAD983612433
Mailing address:	BOULDER HWY HIGHLAND, CA 92346
Contact:	DAVID CHONG
Contact address:	7221 BOULDER HWY HIGHLAND, CA 92346

MCCLEANERS (Continued) **1000597240**

Contact country: US
Contact telephone: (714) 425-0565
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: MCFAM CORP
Owner/operator address: 28960 GLENROCK PL
HIGHLAND, CA 92346
Owner/operator country: Not reported
Owner/operator telephone: (714) 425-9665
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002864320

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

MCCLEANERS (Continued) **1000597240**

DRYCLEANERS:

EPA Id:	CAD983612433
NAICS Code:	81232
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7211
SIC Description:	Power Laundries, Family and Commercial
Create Date:	11/07/1991
Facility Active:	No
Inactive Date:	06/30/2015
Facility Addr2:	Not reported
Owner Name:	SANGHEE INC
Owner Address:	29011 HORNER LN
Owner Address 2:	Not reported
Owner Telephone:	9098620473
Contact Name:	DANIEL KONG
Contact Address:	29011 HORNER LN
Contact Address 2:	Not reported
Contact Telephone:	9094250565
Mailing Name:	Not reported
Mailing Address 1:	7221 BOULDER AVE
Mailing Address 2:	Not reported
Mailing City:	HIGHLAND
Mailing State:	CA
Mailing Zip:	923460000
Owner Fax:	4
Region Code:	0000000000

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0004630
Owner:	SANGHEE, INC.
Permit Number:	PT0013711
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	09/30/2016

Region:	SAN BERNARDINO
Facility ID:	FA0004630
Owner:	SANGHEE, INC.
Permit Number:	PT0005879
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	09/30/2016

ECHO:

Envid:	1000597240
Registry ID:	110002864320
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110002864320

E18 **1 HOUR PROCESSING & PORTR** **San Bern. Co. Permit** **S106911199**
NW **7217 BOULDER** **N/A**
< 1/8 **HIGHLAND, CA 92346**
0.124 mi.
656 ft. **Site 6 of 7 in cluster E**

Relative:
Higher

Actual:
1331 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0007403
Owner: 1 HOUR PROCESSING & PORTR
Permit Number: PT0001151
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 02/28/2003

Region: SAN BERNARDINO
Facility ID: FA0007403
Owner: 1 HOUR PROCESSING & PORTR
Permit Number: PT0001150
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 02/28/2003

E19 **AT&T MOBILITY-HIGHLAND VLG #85425** **San Bern. Co. Permit** **S110168952**
NW **7187 1/2 BOULDER AVE** **N/A**
1/8-1/4 **HIGHLAND, CA 92346**
0.136 mi.
716 ft. **Site 7 of 7 in cluster E**

Relative:
Higher

Actual:
1334 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0012624
Owner: NEW CINGULAR WIRELESS PCS, LLC
Permit Number: PT0022791
Permit Category: HAZMAT HANDLER 0-10 EMPLOYEES
Facility Status: INACTIVE
Expiration Date: 09/30/2012

F20 **HAVE A SNACK VALERO** **San Bern. Co. Permit** **S109849243**
West **27767 BASELINE** **N/A**
1/8-1/4 **HIGHLAND, CA 92346**
0.188 mi.
995 ft. **Site 1 of 5 in cluster F**

Relative:
Lower

Actual:
1294 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0011665
Owner: AYSAR HELO
Permit Number: PT0022217
Permit Category: UST OWNERSHIP/OPERATING PERMIT COMPLEX
Facility Status: ACTIVE
Expiration Date: 08/31/2016

Region: SAN BERNARDINO
Facility ID: FA0011665
Owner: AYSAR HELO
Permit Number: PT0022214
Permit Category: WASTE INCIDENTAL UST OPERATION ONLY

HAVE A SNACK VALERO (Continued) **S109849243**

Facility Status: ACTIVE
Expiration Date: 08/31/2016

Region: SAN BERNARDINO
Facility ID: FA0011665
Owner: AYSAR HELO
Permit Number: PT0022216
Permit Category: UST OWNERSHIP/OPERATING PERMIT COMPLEX
Facility Status: ACTIVE
Expiration Date: 08/31/2016

Region: SAN BERNARDINO
Facility ID: FA0011665
Owner: AYSAR HELO
Permit Number: PT0022215
Permit Category: HAZMAT HANDLER - UST ONLY
Facility Status: ACTIVE
Expiration Date: 08/31/2016

Region: SAN BERNARDINO
Facility ID: FA0011665
Owner: AYSAR HELO
Permit Number: PT0022218
Permit Category: UST OWNERSHIP/OPERATING PERMIT COMPLEX
Facility Status: ACTIVE
Expiration Date: 08/31/2016

F21 **THRIFTY PETROLEUM INC** **HAZNET** **S113113894**
West **27727 BASELINE ST** **San Bern. Co. Permit** **N/A**
1/8-1/4 **HIGHLAND, CA 92346**
0.238 mi.
1258 ft. **Site 2 of 5 in cluster F**

Relative:
Lower

Actual:
1287 ft.

HAZNET:
envid: S113113894
Year: 2002
GEPAID: CAL000225506
Contact: CARLOS RODRIGUEZ
Telephone: 7146705402
Mailing Name: Not reported
Mailing Address: PO BOX 6038
Mailing City,St,Zip: ARTESIA, CA 907026038
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Recycler
Tons: 3.96
Cat Decode: Aqueous solution with total organic residues less than 10 percent
Method Decode: Recycler
Facility County: San Bernardino

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0001030
Owner: THRIFTY PETROLEUM
Permit Number: PT0013704

THRIFTY PETROLEUM INC (Continued) **S113113894**

Permit Category: WASTE INCIDENTAL UST OPERATION ONLY
Facility Status: ACTIVE
Expiration Date: 01/31/2017

Region: SAN BERNARDINO
Facility ID: FA0001030
Owner: THRIFTY PETROLEUM
Permit Number: PT0010455
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 01/31/2017

Region: SAN BERNARDINO
Facility ID: FA0001030
Owner: THRIFTY PETROLEUM
Permit Number: PT0010454
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 01/31/2017

Region: SAN BERNARDINO
Facility ID: FA0001030
Owner: THRIFTY PETROLEUM
Permit Number: PT0010452
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 01/31/2017

Region: SAN BERNARDINO
Facility ID: FA0001030
Owner: THRIFTY PETROLEUM
Permit Number: PT0007037
Permit Category: HAZMAT HANDLER - UST ONLY
Facility Status: ACTIVE
Expiration Date: 01/31/2017

Region: SAN BERNARDINO
Facility ID: FA0001030
Owner: THRIFTY PETROLEUM
Permit Number: PT0010453
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 01/31/2017

F22 **ARCO AM PM #5913** **UST** **U004050849**
West **27727 BASELINE ST** **N/A**
1/8-1/4 **HIGHLAND, CA 92346**
0.238 mi.
1258 ft. **Site 3 of 5 in cluster F**

Relative:
Lower

Actual:
1287 ft.

UST:
Facility ID: 94031169
Permitting Agency: SAN BERNARDINO COUNTY
Latitude: 34.121981
Longitude: -117.198092

F23 **ARCO FACILITY NO 05913** **RCRA NonGen / NLR** **1004677995**
West **27727 BASELINE RD** **FINDS** **CAR000103796**
1/8-1/4 **HIGHLAND, CA 92346** **ECHO**
0.238 mi.
1258 ft. **Site 4 of 5 in cluster F**

Relative:
Lower

Actual:
1287 ft.

RCRA NonGen / NLR:

Date form received by agency:	02/19/2009
Facility name:	ARCO FACILITY NO 05913
Facility address:	27727 BASELINE RD HIGHLAND, CA 92346
EPA ID:	CAR000103796
Mailing address:	25971 TOWNE CENTRE DR FOOTHILL RANCH, CA 92610
Contact:	JACKIE DOUGHERTY
Contact address:	25971 TOWNE CENTRE DR FOOTHILL RANCH, CA 92610
Contact country:	US
Contact telephone:	949-460-5200
Contact email:	JACKIE@BELSHIRE.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	B P WEST COAST PRODUCTS LLC
Owner/operator address:	P O BOX 6038 ARTESIA, CA 90702
Owner/operator country:	Not reported
Owner/operator telephone:	(714) 690-2425
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	06/21/2002
Site name:	ARCO FACILITY NO 05913
Classification:	Small Quantity Generator

. Waste code: D000

ARCO FACILITY NO 05913 (Continued) **1004677995**

. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D018
. Waste name: BENZENE

Violation Status: No violations found

FINDS:

Registry ID: 110012191145

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ECHO:

Envid:	1004677995
Registry ID:	110012191145
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110012191145

F24
West
1/8-1/4
0.238 mi.
1258 ft.

Relative:
Lower

Actual:
1287 ft.

ARCO AM PM #5913 **SWEEPS UST** **S106922780**
27727 BASE LINE ST **N/A**
HIGHLAND, CA 92346

Site 5 of 5 in cluster F

SWEEPS UST:

Status:	Active
Comp Number:	31169
Number:	1
Board Of Equalization:	44-000506
Referral Date:	04-21-94
Action Date:	04-21-94
Created Date:	04-21-94
Owner Tank Id:	1-UNL
SWRCB Tank Id:	36-000-031169-000001
Tank Status:	A
Capacity:	10000
Active Date:	04-21-94
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	4

Status: Active

ARCO AM PM #5913 (Continued) **S106922780**

Comp Number: 31169
Number: 1
Board Of Equalization: 44-000506
Referral Date: 04-21-94
Action Date: 04-21-94
Created Date: 04-21-94
Owner Tank Id: 2-UNL
SWRCB Tank Id: 36-000-031169-000002
Tank Status: A
Capacity: 10000
Active Date: 04-21-94
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 31169
Number: 1
Board Of Equalization: 44-000506
Referral Date: 04-21-94
Action Date: 04-21-94
Created Date: 04-21-94
Owner Tank Id: 3-EC-1
SWRCB Tank Id: 36-000-031169-000003
Tank Status: A
Capacity: 10000
Active Date: 04-21-94
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 31169
Number: 1
Board Of Equalization: 44-000506
Referral Date: 04-21-94
Action Date: 04-21-94
Created Date: 04-21-94
Owner Tank Id: 4-EC-P
SWRCB Tank Id: 36-000-031169-000004
Tank Status: A
Capacity: 10000
Active Date: 04-21-94
Tank Use: M.V. FUEL
STG: P
Content: PRM UNLEADED
Number Of Tanks: Not reported

25
WNW
1/2-1
0.745 mi.
3933 ft.

CHEMICAL COMMODITIES (FORMER)
27447 PACIFIC AVENUE
HIGHLAND, CA 92346

ENVIROSTOR **S106893812**
N/A

Relative:
Higher

Actual:
1334 ft.

ENVIROSTOR:

Facility ID:	36510001
Status:	Refer: 1248 Local Agency
Status Date:	09/26/2000
Site Code:	Not reported
Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Cypress
Assembly:	40
Senate:	23
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not Applicable
Latitude:	34.12836
Longitude:	-117.2051
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	36510001
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	SB 1248 Notification
Completed Date:	09/20/2000
Comments:	SB 1248 San Bernardino County
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 3 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
HIGHLAND	S111345511	HIGHLAND FIFTH-ORANGE PARTNERS, LL	SOUTHEAST CORNER OF GREENSPOT	92346	ENVIROSTOR, VCP
REDLANDS	S107736878	NEW HIGH SCHOOL NO.3	TEXAS STREET/W. PIONEER AVENUE	92374	ENVIROSTOR, SCH
REDLANDS & VICINITY	S105960464	CRAFTON-REDLANDS AREA	BUNKER HILL GROUND WATER SUB-B	92374	CA BOND EXP. PLAN

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/13/2015
Date Data Arrived at EDR: 01/06/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 135

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/06/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 03/30/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 51

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/16/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 34

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/16/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 55
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69
Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 02/29/2016
Date Data Arrived at EDR: 03/07/2016
Date Made Active in Reports: 05/04/2016
Number of Days to Update: 58

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/21/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/05/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 05/10/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 06/07/2016
Date Data Arrived at EDR: 06/09/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 14

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 87

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/03/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/08/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 107

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 99

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 28

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/05/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Varies

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 51

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 48

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/27/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 54

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 04/25/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 49

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 10/14/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 58

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/23/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 56
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/11/2016
Date Data Arrived at EDR: 07/13/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 36
Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/16/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 36
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/16/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 02/12/2016
Date Data Arrived at EDR: 03/16/2016
Date Made Active in Reports: 06/13/2016
Number of Days to Update: 89
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/23/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 56

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 49

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 07/07/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/07/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List
Cupa Facility List

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/09/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 12

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 18

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 07/20/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 60

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 22

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 55

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/01/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 04/08/2016
Date Data Arrived at EDR: 05/03/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 50

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 75

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/13/2016
Date Data Arrived at EDR: 07/19/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 21

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/08/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 41

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 07/25/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/16/2016
Date Data Arrived at EDR: 05/20/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 80

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/27/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 26

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 04/26/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 51

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 08/19/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/05/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/18/2016
Date Data Arrived at EDR: 04/20/2016
Date Made Active in Reports: 06/01/2016
Number of Days to Update: 42
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/19/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 56
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/18/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/29/2016
Date Data Arrived at EDR: 04/06/2016
Date Made Active in Reports: 06/13/2016
Number of Days to Update: 68
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 34
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/23/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 28
Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/18/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 32

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 04/07/2016
Date Data Arrived at EDR: 04/26/2016
Date Made Active in Reports: 06/01/2016
Number of Days to Update: 36

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/17/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 32

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 21

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/24/2016
Date Data Arrived at EDR: 06/27/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 43

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 07/25/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53
Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/17/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 35
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/17/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 35
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/11/2016
Date Made Active in Reports: 06/01/2016
Number of Days to Update: 21
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/09/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

PLACER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/20/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 50
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/13/2016
Date Data Arrived at EDR: 04/15/2016
Date Made Active in Reports: 05/09/2016
Number of Days to Update: 24
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/13/2016
Date Data Arrived at EDR: 07/18/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 21
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 07/06/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 43
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/06/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 07/06/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 43
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/05/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/10/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 40

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/02/2016
Next Scheduled EDR Contact: 09/19/2016
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/20/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 49

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/23/2016
Date Data Arrived at EDR: 05/24/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 28

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 15

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 57

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/26/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 49

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 05/31/2016
Date Data Arrived at EDR: 06/02/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 19

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/14/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 57

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 55

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 07/10/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 28

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/01/2016
Date Data Arrived at EDR: 07/05/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 44

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 16

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 05/03/2016
Date Data Arrived at EDR: 05/10/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 38

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 06/28/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 54

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/26/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/05/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 35

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 04/29/2016
Date Data Arrived at EDR: 05/03/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 45

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/11/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/03/2016
Date Made Active in Reports: 09/09/2016
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/18/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 04/14/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

BASELINE ROAD BRIDGE PROJECT
BASELINE ROAD
HIGHLAND, CA 92346

TARGET PROPERTY COORDINATES

Latitude (North):	34.121175 - 34° 7' 16.23''
Longitude (West):	117.192072 - 117° 11' 31.46''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	482287.4
UTM Y (Meters):	3775413.5
Elevation:	1307 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5630631 REDLANDS, CA
Version Date:	2012
North Map:	5630615 HARRISON MOUNTAIN, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

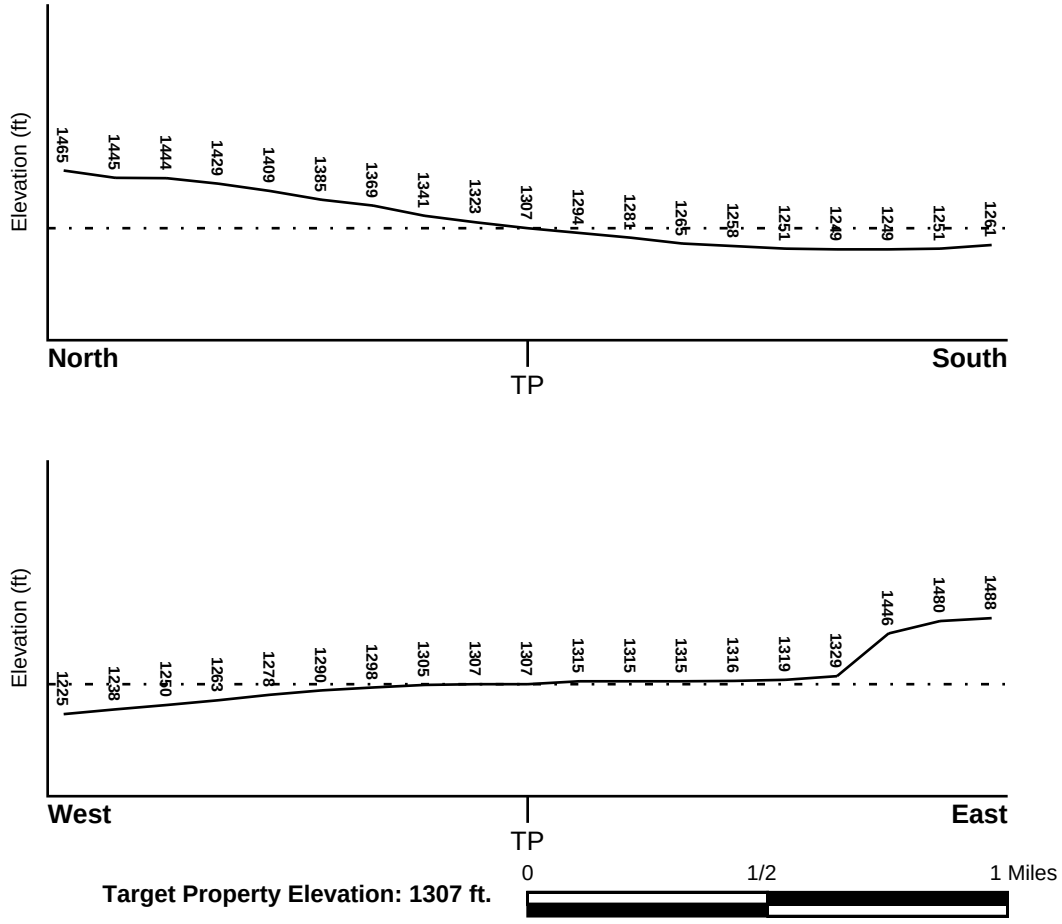
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06071C8702H	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06071C7970F	FEMA Q3 Flood data
06071C7965H	FEMA FIRM Flood data
06071C8706F	FEMA Q3 Flood data
06071C8706H	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

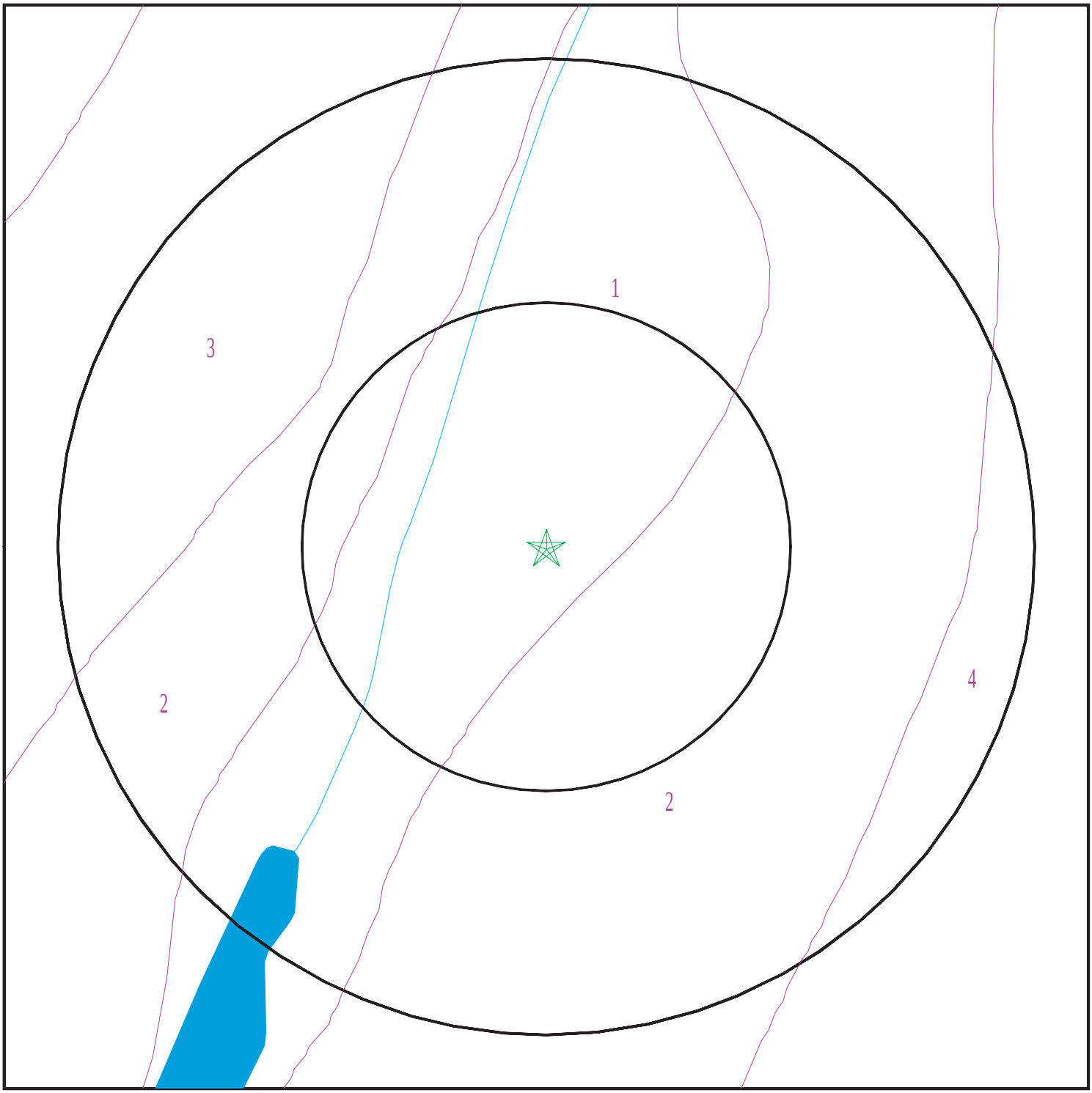
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4743402.2s



SITE NAME:	Baseline Road Bridge Project	CLIENT:	Diaz-Yourman & Associates
ADDRESS:	Baseline Road Highland CA 92346	CONTACT:	Somadevan Niranjanan
LAT/LONG:	34.121175 / 117.192072	INQUIRY #:	4743402.2s
		DATE:	October 03, 2016 4:08 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: FLUVENTS

Soil Surface Texture: gravelly sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 6.6
2	9 inches	29 inches	stratified gravelly sand to gravelly loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
3	29 inches	59 inches	stratified gravelly sand to gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

Soil Map ID: 2

Soil Component Name: Soboba

Soil Surface Texture: very stony loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	very stony loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6.1 Min: 5.6
2	9 inches	59 inches	very stony sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 141 Min: 141	Max: 7.8 Min: 6.6

Soil Map ID: 3

Soil Component Name: TUJUNGA

Soil Surface Texture: gravelly loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.1
2	35 inches	59 inches	gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.1

Soil Map ID: 4

Soil Component Name: SOBOBA

Soil Surface Texture: gravelly loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6.5 Min: 6.1
2	11 inches	35 inches	very gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.	Max: 141 Min: 42	Max: 6.5 Min: 6.1
3	35 inches	59 inches	very stony sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 141 Min: 141	Max: 7.3 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS40000141506	0 - 1/8 Mile West
A2	USGS40000141507	0 - 1/8 Mile West
3	USGS40000141487	1/8 - 1/4 Mile West
4	USGS40000141486	1/8 - 1/4 Mile East
5	USGS40000141410	1/4 - 1/2 Mile SE
C7	USGS40000141394	1/4 - 1/2 Mile SW
8	USGS40000141508	1/4 - 1/2 Mile West
B9	USGS40000141617	1/4 - 1/2 Mile NE
10	USGS40000141662	1/4 - 1/2 Mile NNE
C11	USGS40000141411	1/2 - 1 Mile SW
13	USGS40000141573	1/2 - 1 Mile ENE
D14	USGS40000141387	1/2 - 1 Mile SW
D15	USGS40000141395	1/2 - 1 Mile WSW
E18	USGS40000141373	1/2 - 1 Mile SE
E19	USGS40000141370	1/2 - 1 Mile SE
E20	USGS40000141372	1/2 - 1 Mile SE
E21	USGS40000141371	1/2 - 1 Mile SE
F23	USGS40000141307	1/2 - 1 Mile South
24	USGS40000141343	1/2 - 1 Mile SE
25	USGS40000141737	1/2 - 1 Mile North
26	USGS40000141574	1/2 - 1 Mile WNW
27	USGS40000141248	1/2 - 1 Mile South
28	USGS40000141715	1/2 - 1 Mile NE
29	USGS40000141270	1/2 - 1 Mile SSE
G30	USGS40000141743	1/2 - 1 Mile NNW
31	USGS40000141221	1/2 - 1 Mile SSE
33	USGS40000141201	1/2 - 1 Mile South
34	USGS40000141324	1/2 - 1 Mile SW
35	USGS40000141258	1/2 - 1 Mile SW
36	USGS40000141347	1/2 - 1 Mile WSW
41	USGS40000141240	1/2 - 1 Mile SE
42	USGS40000141749	1/2 - 1 Mile NE
43	USGS40000141184	1/2 - 1 Mile South
48	USGS40000141624	1/2 - 1 Mile WNW
J49	USGS40000141827	1/2 - 1 Mile North

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

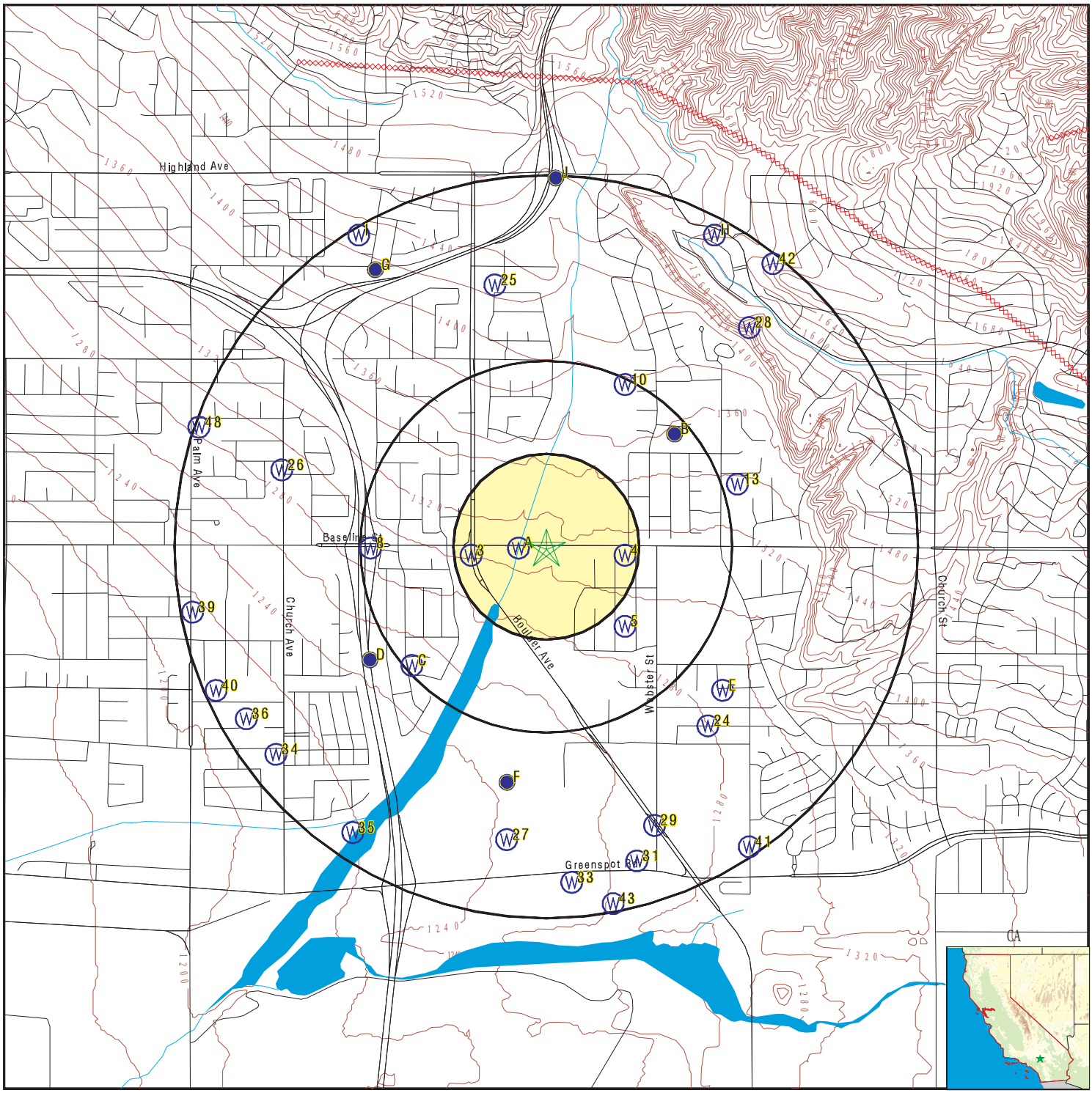
MAP ID	WELL ID	LOCATION FROM TP
B6	CADW60000019517	1/4 - 1/2 Mile NE
D12	CADW60000003444	1/2 - 1 Mile WSW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
D16	799	1/2 - 1 Mile WSW
D17	800	1/2 - 1 Mile WSW
F22	CADW60000001447	1/2 - 1 Mile South
G32	CADW60000000832	1/2 - 1 Mile NNW
H37	100	1/2 - 1 Mile NNE
H38	101	1/2 - 1 Mile NNE
39	797	1/2 - 1 Mile West
40	798	1/2 - 1 Mile WSW
I44	105	1/2 - 1 Mile NNW
I45	102	1/2 - 1 Mile NNW
I46	107	1/2 - 1 Mile NNW
I47	106	1/2 - 1 Mile NNW
J50	CADW60000019503	1/2 - 1 Mile North

PHYSICAL SETTING SOURCE MAP - 4743402.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: Baseline Road Bridge Project	CLIENT: Diaz-Yourman & Associates
ADDRESS: Baseline Road Highland CA 92346	CONTACT: Somadevan Niranjanan INQUIRY #: 4743402.2s
LAT/LONG: 34.121175 / 117.192072	DATE: October 03, 2016 4:08 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
West
0 - 1/8 Mile
Lower

FED USGS **USGS40000141506**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340716117113301		
Monloc name:	001N003W33R001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1211223
Longitude:	-117.1933728	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1308.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19280101	Welldepth:	352
Welldepth units:	ft	Wellholedepth:	352
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

A2
West
0 - 1/8 Mile
Lower

FED USGS **USGS40000141507**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340716117113302		
Monloc name:	001N003W33R002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1211223
Longitude:	-117.1933728	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1314.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19510101	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	381
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

3
West **FED USGS** **USGS40000141487**
1/8 - 1/4 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340715117114101		
Monloc name:	001S003W04A001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1208445
Longitude:	-117.1955951	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1293.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19350101	Welldepth:	210
Welldepth units:	ft	Wellholedepth:	215
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

4
East **FED USGS** **USGS40000141486**
1/8 - 1/4 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340715117111501		
Monloc name:	001S003W03D001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1208445
Longitude:	-117.1883726	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1310.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19260101	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	200
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

5
SE **FED USGS** **USGS40000141410**
1/4 - 1/2 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340705117111501		
Monloc name:	001S003W03D002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1180669
Longitude:	-117.1883726	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1284.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19490101	Welldepth:	265
Welldepth units:	ft	Wellholedepth:	290
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

B6
NE **CA WELLS** **CADW60000019517**
1/4 - 1/2 Mile
Higher

Objectid:	19517
Latitude:	34.1256
Longitude:	-117.1865
Site code:	341256N1171865W001
State well numbe:	01N03W34L001S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000019517

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

C7
SW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000141394**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340701117115001		
Monloc name:	001S003W04G001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1169558
Longitude:	-117.1980952	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1250.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19090101	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	600
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

8
West
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000141508**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340716117115801		
Monloc name:	001S003W04C001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1211223
Longitude:	-117.2003175	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1285.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19480101	Welldepth:	423
Welldepth units:	ft	Wellholedepth:	440
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

B9
NE **FED USGS** **USGS40000141617**
1/4 - 1/2 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340732117110501		
Monloc name:	001N003W34L001S		
Monloc type:	Well		
Monloc desc:	Depth measured 311 feet in 1995		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1255666
Longitude:	-117.1855948	Sourcemap scale:	24000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1346
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Other aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19540420	Welldepth:	311
Welldepth units:	ft	Wellholedepth:	311
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 20

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-10-22	306.88		2004-04-20	301.2	
2003-10-23	296.24		2003-04-21	291.50	
2002-10-28	286.28		2002-04-09	279.17	
2001-10-23	273.33		2001-04-18	266.56	
2000-10-24	260.87		2000-04-12	254.02	
1999-11-17	250.08		1999-10-18	249.48	
1999-04-14	248.64		1998-10-19	254.08	
1998-04-14	260.82		1997-10-30	259.66	
1997-04-15	257.67		1996-10-07	257.74	
1996-04-22	257.35		1995-10-24	260.67	

10
NNE **FED USGS** **USGS40000141662**
1/4 - 1/2 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340739117111501		
Monloc name:	001N003W34M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.127511
Longitude:	-117.1883727	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1372.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Other aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	120
Welldepth units:	ft	Wellholedepth:	120
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

C11
SW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141411**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340705117115201		
Monloc name:	001S003W04G000S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1161225
Longitude:	-117.1986507	Sourcemap scale:	Not Reported
Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1250.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	390
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D12
WSW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000003444**

Objectid:	3444
Latitude:	34.117112
Longitude:	-117.199902
Site code:	341171N1171999W001
State well numbe:	01S03W04G002S
Local well name:	'Well #136-1'
Well use id:	1
Well use descrip:	Observation
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000003444

13
ENE
1/2 - 1 Mile
Higher

FED USGS **USGS40000141573**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340725117105601		
Monloc name:	001N003W34Q001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1236222
Longitude:	-117.1830947	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1337.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19110101	Welldepth:	160
Welldepth units:	ft	Wellholedepth:	240
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

D14
SW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141387**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340659117115601		
Monloc name:	001S003W04G002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1164003
Longitude:	-117.1997619	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	406
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

D15
WSW **FED USGS** **USGS40000141395**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340701117115801		
Monloc name:	001S003W04G003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1169558
Longitude:	-117.2003175	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	391
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D16
WSW
1/2 - 1 Mile
Lower

CA WELLS **799**

Water System Information:

Prime Station Code:	01S/03W-04G02 S	User ID:	TAN
FRDS Number:	3610064009	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Inactive Treated
Source Lat/Long:	340700.0 1171200.0	Precision:	Undefined
Source Name:	DUNKIRK WELL 01 - INACTIVE		
System Number:	3610064		
System Name:	EAST VALLEY WD		
Organization That Operates System:			
	PO BOX 3427		
	SAN BERNARDINO, CA 92413		
Pop Served:	55000	Connections:	18303
Area Served:	SAN BERNARDINO VIC		

D17
WSW
1/2 - 1 Mile
Lower

CA WELLS **800**

Water System Information:

Prime Station Code:	01S/03W-04G03 S	User ID:	TAN
FRDS Number:	3610064010	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Inactive Treated
Source Lat/Long:	340700.0 1171200.0	Precision:	Undefined
Source Name:	DUNKIRK WELL 02 - INACTIVE		
System Number:	3610064		
System Name:	EAST VALLEY WD		
Organization That Operates System:			
	PO BOX 3427		
	SAN BERNARDINO, CA 92413		
Pop Served:	55000	Connections:	18303
Area Served:	SAN BERNARDINO VIC		

E18
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000141373**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340656117110001		
Monloc name:	001S003W03F002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.115567
Longitude:	-117.1842057	Sourcemap scale:	Not Reported

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1280.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19270101	Welldepth:	311
Welldepth units:	ft	Wellholedepth:	324
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

E19
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000141370**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340656117105801		
Monloc name:	HOLE-19 LYSIMETER AT 15		
Monloc type:	Well: Test hole not completed as a well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.115567
Longitude:	-117.1836501	Sourcemap scale:	Not Reported
Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

E20
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000141372**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340656117105803		
Monloc name:	HOLE-19 LYSIMETER AT 108		
Monloc type:	Well: Test hole not completed as a well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.115567
Longitude:	-117.1836501	Sourcemap scale:	Not Reported

Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

E21
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000141371**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340656117105802		
Monloc name:	HOLE-19 LYSIMETER AT 58		
Monloc type:	Well: Test hole not completed as a well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.115567
Longitude:	-117.1836501	Sourcemap scale:	Not Reported
Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

F22
South
1/2 - 1 Mile
Lower

CA WELLS **CADW60000001447**

Objectid:	1447
Latitude:	34.112
Longitude:	-117.1939
Site code:	341120N1171939W001
State well numbe:	01S03W04J001S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code: '8-2.06'
Basin desc: Bunker Hill
Dwr region id: 80238
Dwr region: Southern Region Office
Site id: CADW60000001447

F23
South **FED USGS** **USGS40000141307**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340643117113501		
Monloc name:	001S003W04J001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.111956
Longitude:	-117.1939283	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1242.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19480101	Welldepth:	456
Welldepth units:	ft	Wellholedepth:	500
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 10

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-10-22	219.57		2004-04-20	212.31	
2003-10-22	208.38		2003-04-21	203.12	
2002-10-29	199.51		2002-04-09	188.73	
2001-10-22	183.42		2001-04-18	172.73	
2001-01-25	171.43		2000-10-26	166.83	

24
SE **FED USGS** **USGS40000141343**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340651117110101		
Monloc name:	001S003W03F003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1141781
Longitude:	-117.1844835	Sourcemap scale:	Not Reported

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1275.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	257
Welldepth units:	ft	Wellholedepth:	277
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

25
North **FED USGS** **USGS40000141737**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340753117113701		
Monloc name:	001N003W33H001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1313997
Longitude:	-117.194484	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1420.00
Vert measure units:	feet	Vertacc measure val:	5.
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Other aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19510101	Welldepth:	440
Welldepth units:	ft	Wellholedepth:	504
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

26
WNW **FED USGS** **USGS40000141574**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340725117121301		
Monloc name:	001N003W33M002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1241778
Longitude:	-117.2044844	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1294.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19310101	Welldepth:	451
Welldepth units:	ft	Wellholedepth:	508
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

27
South **FED USGS** **USGS40000141248**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340635117113501		
Monloc name:	001S003W04R003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1097339
Longitude:	-117.1939282	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1239.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19520101	Welldepth:	245
Welldepth units:	ft	Wellholedepth:	255
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

28
NE **FED USGS** **USGS40000141715**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340747117105401		
Monloc name:	001N003W34G002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1297331
Longitude:	-117.1825392	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1480.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Other aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19491230	Welldepth:	400
Welldepth units:	ft	Wellholedepth:	400
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

29
SSE **FED USGS** **USGS40000141270**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340637117111001		
Monloc name:	001S003W03N001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1102894
Longitude:	-117.1869835	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1265.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19440101	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	180
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

G30
NNW **FED USGS** **USGS40000141743**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340755117115701		
Monloc name:	001N003W33F001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1319552
Longitude:	-117.2000399	Sourcemap scale:	24000

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Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1410.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19290101	Welldepth:	471
Welldepth units:	ft	Wellholedepth:	513
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 141

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1945-06-06	235.4		1945-04-04	233.9	
1945-01-26	235.2		1944-11-17	237.7	
1944-08-09	238.0		1944-06-21	235.0	
1944-05-09	233.9		1944-03-08	234.8	
1944-01-03	236.8		1943-11-09	239.0	
1943-02-10	238.9		1942-12-21	239.5	
1942-10-27	239.7		1942-09-09	238.5	
1942-08-10	237.5		1942-07-02	234.1	
1942-05-06	229.5		1942-04-02	229.7	
1942-02-17	230.4		1942-01-15	231.3	
1941-12-16	232.5		1941-11-17	233.2	
1941-10-13	235.3		1941-08-25	235.1	
1941-07-15	234.6		1941-06-03	236.1	
1941-04-14	239.2		1941-03-03	241.3	
1941-01-23	241.7		1940-12-06	243.1	
1940-10-29	244.4		1940-09-27	243.9	
1940-08-27	242.9		1940-07-23	241.4	
1940-06-28	237.4		1940-05-29	236.7	
1940-04-24	235.9		1940-03-25	236.6	
1940-02-28	237.3		1940-01-29	237.9	
1939-12-29	238.8		1939-12-01	237.9	
1939-10-25	238.9		1939-09-29	239.1	
1939-08-30	238.6		1939-07-31	237.3	
1939-07-03	235.4		1939-05-29	233.4	
1939-04-28	233.9		1939-03-28	234.5	
1939-02-23	235.4		1939-01-30	236.4	
1938-12-28	237.5		1938-11-30	238.3	
1938-10-25	239.6		1938-09-29	240.4	
1938-08-30	241.3		1938-07-27	243.7	
1938-07-01	244.8		1938-06-02	247.4	
1938-04-29	250.9		1938-04-01	253.4	
1938-02-28	255.3		1938-01-26	257.0	
1937-12-29	258.1		1937-12-02	259.4	
1937-10-27	261.2		1937-09-27	261.6	
1937-08-26	261.9		1937-08-03	263.4	
1937-07-02	265.7		1937-06-03	268.7	
1937-05-03	271.9		1937-04-08	274.9	
1937-03-30	274.5		1937-03-05	277.3	
1937-02-24	278.3		1937-02-03	279.1	
1937-01-05	279.4		1936-12-22	280.6	
1936-12-07	278.1		1936-07-30	282.6	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1936-07-01	286.6	
1936-05-28	278.6	
1936-04-29	277.6	
1936-03-25	276.6	
1936-02-25	280.6	
1936-01-21	280.6	
1935-07-09	275.3	
1935-05-09	275.3	
1935-03-13	275.0	
1935-01-16	276.7	
1934-11-05	279.2	
1934-06-28	273.8	
1934-04-06	258.1	
1934-02-07	259.1	
1934-01-04	261.1	
1933-10-05	269.8	
1933-06-07	264.4	
1932-11-18	290.0	
1932-02-05	298.0	
1931-11-03	285.0	
1931-05-05	264.5	
1931-04-02	263.0	
1931-02-09	264.0	
1930-12-09	265.0	
1930-08-01	257.1	
1930-06-05	256.0	
1930-04-04	257.0	
1930-02-06	261.0	
1929-12-09	274.0	
Note: The site was being pumped.		
1929-11-06	275.0	
Note: The site was being pumped.		
1929-04-11	245.6	
1936-06-03	276.8	
1936-05-01	276.0	
1936-03-31	277.0	
1936-03-04	277.8	
1936-02-05	278.6	
1936-01-03	279.2	
1935-06-04	273.4	
1935-04-09	274.1	
1935-02-12	275.4	
1934-12-06	277.8	
1934-10-02	282.3	
1934-06-05	273.0	
1934-03-06	258.1	
1934-01-22	280.0	
1933-11-07	264.1	
1933-08-10	268.0	
1933-01-05	291.0	
1932-06-06	293.0	
1932-01-04	290.0	
1931-06-04	266.0	
1931-04-15	265.1	
1931-03-06	262.5	
1931-01-05	265.0	
1930-11-13	271.0	
1930-07-07	271.0	
1930-05-06	255.0	
1930-03-09	257.0	
1930-01-05	264.0	

31
SSE **FED USGS** **USGS40000141221**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340632117111301		
Monloc name:	001S003W03N002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1089005
Longitude:	-117.1878169	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1257.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	225
Welldepth units:	ft	Wellholedepth:	225
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

G32
NNW **CA WELLS** **CADW60000000832**
1/2 - 1 Mile
Higher

Objectid:	832
Latitude:	34.132049
Longitude:	-117.20014
Site code:	341320N1172001W001
State well numbe:	01N03W33F001S
Local well name:	'Well #94'
Well use id:	1
Well use descrip:	Observation
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000000832

33
South **FED USGS** **USGS40000141201**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340629117112401		
Monloc name:	001S003W03N004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1080673
Longitude:	-117.1908725	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1252.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19470101	Welldepth:	148
Welldepth units:	ft	Wellholedepth:	153
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

34
SW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141324**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340647117121401		
Monloc name:	001S003W04M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1130671
Longitude:	-117.204762	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1210.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	170
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

35
SW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141258**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340636117120101		
Monloc name:	001S003W04P001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1100116
Longitude:	-117.2011508	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1218.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19420101	Welldepth:	209
Welldepth units:	ft	Wellholedepth:	209
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

36
WSW **FED USGS** **USGS40000141347**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340652117121901		
Monloc name:	001S003W04E001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1144559
Longitude:	-117.206151	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1207.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19270101	Welldepth:	179
Welldepth units:	ft	Wellholedepth:	182
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

H37
NNE **CA WELLS** **100**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	01N/03W-27N02 S	User ID:	TAN
FRDS Number:	3610064004	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340800.0 1171100.0	Precision:	Undefined
Source Name:	CITY CREEK WELL 03		
System Number:	3610064		
System Name:	EAST VALLEY WD		
Organization That Operates System:			
	PO BOX 3427		
	SAN BERNARDINO, CA 92413		
Pop Served:	55000	Connections:	18303
Area Served:	SAN BERNARDINO VIC		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

H38
NNE
1/2 - 1 Mile
Higher

CA WELLS **101**

Water System Information:

Prime Station Code:	01N/03W-27N05 S	User ID:	TAN
FRDS Number:	3610064003	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Inactive Untreated
Source Lat/Long:	340800.0 1171100.0	Precision:	Undefined
Source Name:	CITY CREEK WELL 01 - INACTIVE		
System Number:	3610064		
System Name:	EAST VALLEY WD		
Organization That Operates System:			
	PO BOX 3427		
	SAN BERNARDINO, CA 92413		
Pop Served:	55000	Connections:	18303
Area Served:	SAN BERNARDINO VIC		

39
West
1/2 - 1 Mile
Lower

CA WELLS **797**

Water System Information:

Prime Station Code:	01S/03W-04D03 S	User ID:	36C
FRDS Number:	3601060001	County:	San Beernardino
District Number:	66	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340707.0 1171228.0	Precision:	100 Feet (one Second)
Source Name:	WELL 01		
System Number:	3601060		
System Name:	ROBERTSONS REDI MIX		
Organization That Operates System:			
	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	18-MAR-15	Findings:	24.6 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	18-MAR-15	Findings:	2.91 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	18-MAR-15	Findings:	27.7 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	18-MAR-15	Findings:	3.26 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	18-MAR-15	Findings:	0.977 PCI/L
Chemical:	GROSS ALPHA MDA95		

Sample Collected:	18-MAR-15	Findings:	0.3 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	14-SEP-15	Findings:	8.37 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	14-SEP-15	Findings:	1.97 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	14-SEP-15	Findings:	5.44 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	14-SEP-15	Findings:	1.66 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	14-SEP-15	Findings:	1.08 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-SEP-15	Findings:	0.3 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	07-OCT-15	Findings:	18.9 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	07-OCT-15	Findings:	2.61 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07-OCT-15	Findings:	8.4 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	07-OCT-15	Findings:	1.98 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	07-OCT-15	Findings:	0.897 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	07-OCT-15	Findings:	0.3 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	07-OCT-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-JAN-16	Findings:	24.5 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	25-JAN-16	Findings:	3.29 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	25-JAN-16	Findings:	21.4 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	25-JAN-16	Findings:	4.11 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	25-JAN-16	Findings:	1. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	25-JAN-16	Findings:	0.481 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	08-JUN-11	Findings:	3.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-APR-12	Findings:	26.6 PCI/L
Chemical:	GROSS ALPHA		

Sample Collected:	25-APR-12	Findings:	2.89 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	25-APR-12	Findings:	25. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	25-APR-12	Findings:	1.94 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	02-JUL-12	Findings:	41.6 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	02-JUL-12	Findings:	3.58 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12-OCT-12	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-OCT-12	Findings:	40.54 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	12-OCT-12	Findings:	3.58 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-JAN-13	Findings:	4.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	22-OCT-13	Findings:	20. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	24-JAN-14	Findings:	26.5 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	24-JAN-14	Findings:	3.51 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	24-JAN-14	Findings:	28.1 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	24-JAN-14	Findings:	3.4 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	24-JAN-14	Findings:	1.06 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	24-JAN-14	Findings:	0.401 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	24-JUN-14	Findings:	12.1 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	24-JUN-14	Findings:	2.3 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	24-JUN-14	Findings:	0.528 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	24-JUN-14	Findings:	0.969 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	24-JUN-14	Findings:	0.2 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	13-OCT-14	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	10-DEC-14	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	18-MAR-15	Findings:	1.2 UG/L
Chemical:	BROMOFORM (THM)		

40
WSW **CA WELLS** **798**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/03W-04E02 S	User ID:	36C
FRDS Number:	3601051001	County:	San Beernardino
District Number:	66	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340656.0 1171224.0	Precision:	100 Feet (one Second)
Source Name:	WELL 01		
System Number:	3601051		
System Name:	SUNWEST MAERIALS (Alabama System)		
Organization That Operates System:	Not Reported		
Pop Served:	25	Connections:	1
Area Served:	Not Reported		
Sample Collected:	14-MAR-11	Findings:	50.6 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	14-MAR-11	Findings:	4.09 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	14-MAR-11	Findings:	52.4 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	14-MAR-11	Findings:	2.52 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	18-JUL-11	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	27-JUN-12	Findings:	19. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	31-JAN-13	Findings:	31. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	31-JAN-13	Findings:	3.12 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	31-JAN-13	Findings:	30.6 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	31-JAN-13	Findings:	1.98 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	11-APR-13	Findings:	25.4 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	11-APR-13	Findings:	2.81 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

Sample Collected:	11-APR-13	Findings:	25. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	11-APR-13	Findings:	2.42 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	13-MAY-13	Findings:	0.6 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	13-MAY-13	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-MAY-13	Findings:	20.4 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	13-MAY-13	Findings:	2.54 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	13-MAY-13	Findings:	23.1 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	13-MAY-13	Findings:	2.56 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	12-AUG-13	Findings:	24.3 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	12-AUG-13	Findings:	3.54 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12-AUG-13	Findings:	30.3 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	12-AUG-13	Findings:	3.38 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	12-AUG-13	Findings:	1.17 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	12-AUG-13	Findings:	0.363 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	12-NOV-13	Findings:	20.4 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	12-NOV-13	Findings:	3.03 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12-NOV-13	Findings:	30.7 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	12-NOV-13	Findings:	3.6 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	12-NOV-13	Findings:	1.02 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	12-NOV-13	Findings:	0.363 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	18-JUN-14	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-OCT-14	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	13-OCT-14	Findings:	20.3 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	13-OCT-14	Findings:	2.72 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	13-OCT-14	Findings:	33. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	13-OCT-14	Findings:	4.32 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	13-OCT-14	Findings:	1.02 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	13-OCT-14	Findings:	0.481 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	12-JAN-15	Findings:	18.9 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	12-JAN-15	Findings:	2.75 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12-JAN-15	Findings:	21.4 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	12-JAN-15	Findings:	2.73 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	12-JAN-15	Findings:	0.908 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	12-JAN-15	Findings:	0.3 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	14-APR-15	Findings:	18.6 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	14-APR-15	Findings:	2.65 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	14-APR-15	Findings:	19.7 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	14-APR-15	Findings:	2.75 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	14-APR-15	Findings:	0.86 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-APR-15	Findings:	0.3 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	29-JUN-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-JUL-15	Findings:	23.4 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	23-JUL-15	Findings:	3.03 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	23-JUL-15	Findings:	14.7 PCI/L
Chemical:	URANIUM (PCI/L)		

Sample Collected:	23-JUL-15	Findings:	2.42 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	23-JUL-15	Findings:	1.06 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	23-JUL-15	Findings:	0.3 PCI/L
Chemical:	URANIUM MDA95		

41
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000141240**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340634117105401		
Monloc name:	001S003W03P001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1094561
Longitude:	-117.1825389	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1282.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19350101	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	300
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

42
NE
1/2 - 1 Mile
Higher

FED USGS **USGS40000141749**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340756117105001		
Monloc name:	001N003W34B001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.132233
Longitude:	-117.181428	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1643.00
Vert measure units:	feet	Vertacc measure val:	5.
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Other aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	190
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

43
South **FED USGS** **USGS40000141184**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340626117111701		
Monloc name:	HOLE-25 LYSIMETER AT 48		
Monloc type:	Well: Test hole not completed as a well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1072339
Longitude:	-117.188928	Sourcemap scale:	Not Reported
Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

I44
NNW **CA WELLS** **105**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	01N/03W-33C01 S	User ID:	TAN
FRDS Number:	3610064012	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Destroyed
Source Lat/Long:	340800.0 1171200.0	Precision:	Undefined
Source Name:	MUTUAL WELL 113 - DESTROYED		

System Number: 3610064
System Name: EAST VALLEY WD
Organization That Operates System:
PO BOX 3427
SAN BERNARDINO, CA 92413
Pop Served: 55000 Connections: 18303
Area Served: SAN BERNARDINO VIC

I45
NNW **CA WELLS** **102**
1/2 - 1 Mile
Higher

Water System Information:
Prime Station Code: 01N/03W-28P01 S User ID: TAN
FRDS Number: 3610064027 County: San Beernardino
District Number: 13 Station Type: WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type: Well/Groundwater Well Status: Inactive Raw
Source Lat/Long: 340800.0 1171200.0 Precision: Undefined
Source Name: WELL 054 - INACTIVE
System Number: 3610064
System Name: EAST VALLEY WD
Organization That Operates System:
PO BOX 3427
SAN BERNARDINO, CA 92413
Pop Served: 55000 Connections: 18303
Area Served: SAN BERNARDINO VIC

I46
NNW **CA WELLS** **107**
1/2 - 1 Mile
Higher

Water System Information:
Prime Station Code: 01N/03W-33M02 S User ID: TAN
FRDS Number: 3610064001 County: San Beernardino
District Number: 13 Station Type: WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type: Well/Groundwater Well Status: Inactive Treated
Source Lat/Long: 340800.0 1171200.0 Precision: Undefined
Source Name: CHURCH WELL - INACTIVE
System Number: 3610064
System Name: EAST VALLEY WD
Organization That Operates System:
PO BOX 3427
SAN BERNARDINO, CA 92413
Pop Served: 55000 Connections: 18303
Area Served: SAN BERNARDINO VIC
Sample Collected: 31-AUG-09 Findings: 49. MG/L
Chemical: NITRATE (AS NO3)

I47
NNW **CA WELLS** **106**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	01N/03W-33M01 S	User ID:	TAN
FRDS Number:	3610064014	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Inactive Treated
Source Lat/Long:	340800.0 1171200.0	Precision:	Undefined
Source Name:	PALM WELL - INACTIVE		
System Number:	3610064		
System Name:	EAST VALLEY WD		
Organization That Operates System:			
	PO BOX 3427		
	SAN BERNARDINO, CA 92413		
Pop Served:	55000	Connections:	18303
Area Served:	SAN BERNARDINO VIC		

48
WNW **FED USGS** **USGS40000141624**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340733117122701		
Monloc name:	001N003W33M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1258444
Longitude:	-117.2083735	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1290.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19480101	Welldepth:	448
Welldepth units:	ft	Wellholedepth:	500
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 6

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1997-04-15					
Note: The well was destroyed (no water level is recorded).					
1996-10-07	246.30		1996-04-22	240.43	
1995-10-24	248.15		1995-04-20	254.23	
1994-10-28	259.37				

J49
North **FED USGS** **USGS40000141827**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340808117112501		
Monloc name:	001N003W27N001S		
Monloc type:	Well		
Monloc desc:	Well destroyed by highway construction in 1991.		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1355662
Longitude:	-117.1911507	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1465.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Other aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1918	Welldepth:	65.3
Welldepth units:	ft	Wellholedepth:	72
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 12

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1991-06-18					
Note: The well was destroyed (no water level is recorded).					
1990-11-27	10.60		1990-06-25	7.86	
1989-11-28	8.02		1989-09-21	17.86	
1988-11-23	10.20		1988-06-28	12.49	
1988-04-13	9.01		1987-06-22	7.00	
1986-11-24	6.30		1986-06-19	7.44	
1986-05-21	11.97				

J50
North
1/2 - 1 Mile
Higher

CA WELLS **CADW60000019503**

Objectid:	19503
Latitude:	34.1356
Longitude:	-117.1921
Site code:	341356N1171921W001
State well numbe:	01N03W27N001S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000019503

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92346	17	0

Federal EPA Radon Zone for SAN BERNARDINO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 92346

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.900 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX D -
ENVIRONMENTAL QUESTIONNAIRE

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PRE-SURVEY QUESTIONNAIRE AND DISCLOSURE STATEMENT
ASTM 1527-13 GUIDELINES

SITE NAME: Base Line Bridge at City Creek

DATE: 12/20/16

COMPLETED BY: Dennis Barton
Print Name
D. Barton
Signature

TITLE Principal Project Manager

COMPANY City of Highland / ERSE

SITE INFORMATION

ADDRESS: Base Line at City Creek
No. & Street or Location
Highland, CA 92346
City, State, Zip

ASSESSOR PARCEL No. _____

LEGAL DESCRIPTION

_____
(attached or transmitted?)

SITE AREA _____

STRUCTURES
Bridge, RCB

BUILDING AREA(S) N/A
(attached or transmitted?)

SITE USE Transportation, Flood Control
(Rent Roll / Occupant List Attached?)

YEAR CONSTRUCTED _____ RENOVATED _____

ASTM-REQUIRED INQUIRIES

SITE OWNER: City of Highland, County of San Bernardino

(Name, Location, Contact No.)

KEY SITE MANAGER: Dennis Barton 909-864-8732 x251

(Name, Location, Contact No.)

Do you have knowledge of any environmental liens recorded against the Property.
YES ____ NO ~~____~~

Do you have knowledge of environmentally related Activity and Use Limitations (AUL) of the Property, such as engineering controls, land use restrictions, or institutional controls?
YES ~~____~~ NO ____

Do you have any specialized knowledge that would be material in identifying recognized environmental conditions (REC) in connection with the Property?
YES ____ NO ~~____~~

Do you have special knowledge or experience related to the property of nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjacent property so that you have specialized knowledge of the chemicals and processes used by this type of business.
YES ____ NO ~~____~~

Are you aware of a reduction in the property value due to environmental issues?
YES ____ NO ~~____~~

To your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?
YES ____ NO ~~____~~

(IF "YES" TO ANY OF THE ABOVE, PLEASE PROVIDE AVAILABLE INFORMATION)

PREVIOUS INVESTIGATIONS

Phase I ESA YES ____ NO ~~____~~ Phase II ESA YES ____ NO ~~____~~

Underground Storage Tanks YES ____ NO ~~____~~ PCBs YES ____ NO ~~____~~

Asbestos /ACM O&M YES ____ NO ~~____~~ Lead Based Paint YES ____ NO ~~____~~

Wastewater/Water Supply YES ____ NO ~~____~~

(IF "YES" TO ANY OF THE ABOVE, PLEASE PROVIDE AVAILABLE INFORMATION)

ON SITE OPERATIONS

CONDITION	YES	NO	COMMENTS
Stored Chemicals		✓	
Underground Storage Tanks		✓	
Aboveground Storage Tanks		✓	
Spills or Releases		✓	
Dump Areas/ Landfills		✓	
Waste Treatment Systems		✓	
Clarifies/ Separators		✓	
Air stacks/ Vents/ Odors		✓	
Floor Drains/Sumps		✓	
Stained Soil/ Impacted Vegetation		✓	
On-site OWNED Electrical Transformers		✓	
Hydraulic lifts/ Elevators		✓	
Dry Cleaning Operations		✓	
Wetlands/ Flooding		✓	
Oil/ Gas/ Water/ Monitoring Wells		✓	
Environmental Cleanups		✓	
Environmental Permits		✓	
a) Industrial Discharge			
b) POTW (NPDES)			
c) Hazardous Waste Generator			
d) Air Quality			
e) Flammable Materials			
f) AST/UST			
g) Waste Manifest(s)			
h) Other			

OFF SITE ENVIRONMENTAL CONCERNS

CONDITION	YES	NO	COMMENTS
Gasoline Stations		✓	
Dry Cleaners		✓	
Industrial Uses		✓	
Other		✓	

Clint Isa

From: Dudley, Todd <Todd.Dudley@aecom.com>
Sent: Tuesday, January 10, 2017 10:55 AM
To: Clint Isa; S. Niranjan
Subject: FW: Base Line - ESA Pre-Survey

See the response below from the City.

Todd Dudley
Project Manager, Transportation, Southern California
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M +1-530-306-3350
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From: Dennis Barton [mailto:dbarton@cityofhighland.org]
Sent: Tuesday, January 10, 2017 9:45 AM
To: Dudley, Todd
Cc: 'Carlos Zamano'
Subject: RE: Base Line - ESA Pre-Survey

Todd,
Limitations refer to the area as an environmentally sensitive due to the SBKR and Santa Ana Wooley Star. City Creek is also a flood control facility that has restricted use, hence the fencing at entries.
Let me know if anything else is needed.
Dennis

From: Dudley, Todd [mailto:Todd.Dudley@aecom.com]
Sent: Tuesday, January 10, 2017 5:07 AM
To: Dennis Barton
Cc: Carlos Zamano
Subject: Base Line - ESA Pre-Survey

Dennis,

Quick follow-up on the ESA Pre-Survey questionnaire: can you elaborate on your response to the question about activity use limitations? You answered yes, so it would be helpful for us to know what sort of limitations/engineering controls/etc you have knowledge of so we can make a determination as to whether or not it will affect our project.

Thank you.

P.S.

> I haven't forgotten that I need to prepare an agenda for tomorrow, and also forward copies of action items, latest PDT meeting minutes and an updated schedule.

I apologize for the delay. Seems like I let everything get behind during the holidays. I will be focusing on these action items this morning, and will forward all information asap.

Todd Dudley
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PHASE I ENVIRONMENTAL SITE ASSESSMENT
PRE-SURVEY QUESTIONNAIRE AND DISCLOSURE STATEMENT
ASTM 1527-13 GUIDELINES

SITE NAME: _____

DATE: _____

COMPLETED BY: _____
Print Name

_____
Signature

TITLE _____

COMPANY _____

SITE INFORMATION

ADDRESS: _____
No. & Street or Location

_____
City, State, Zip

ASSESSOR PARCEL No. _____

LEGAL DESCRIPTION

_____
(attached or transmitted?)

SITE AREA _____

STRUCTURES

_____

BUILDING AREA(S) _____
(attached or transmitted?)

SITE USE

_____
(Rent Roll / Occupant List Attached?)

YEAR CONSTRUCTED _____ RENOVATED _____

ASTM-REQUIRED INQUIRIES

SITE OWNER:

_____

(Name, Location, Contact No.)

KEY SITE MANAGER:

_____

(Name, Location, Contact No.)

Do you have knowledge of any environmental liens recorded against the Property.
YES ____ NO ____

Do you have knowledge of environmentally related Activity and Use Limitations (AUL) of the Property, such as engineering controls, land use restrictions, or institutional controls?
YES ____ NO ____

Do you have any specialized knowledge that would be material in identifying recognized environmental conditions (REC) in connection with the Property?
YES ____ NO ____

Do you have special knowledge or experience related to the property of nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjacent property so that you have specialized knowledge of the chemicals and processes used by this type of business.
YES ____ NO ____

Are you aware of a reduction in the property value due to environmental issues?
YES ____ NO ____

To your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?
YES ____ NO ____

(IF "YES" TO ANY OF THE ABOVE, PLEASE PROVIDE AVAILABLE INFORMATION)

PREVIOUS INVESTIGATIONS

Phase I ESA YES ____ NO ____ Phase II ESA YES ____ NO ____

Underground Storage Tanks YES ____ NO ____ PCBs YES ____ NO ____

Asbestos /ACM O&M YES ____ NO ____ Lead Based Paint YES ____ NO ____

Wastewater/Water Supply YES ____ NO ____

(IF "YES" TO ANY OF THE ABOVE, PLEASE PROVIDE AVAILABLE INFORMATION)

ON SITE OPERATIONS

CONDITION	YES	NO	COMMENTS
Stored Chemicals			
Underground Storage Tanks			
Aboveground Storage Tanks			
Spills or Releases			
Dump Areas/ Landfills			
Waste Treatment Systems			
Clarifies/ Separators			
Air stacks/ Vents/ Odors			
Floor Drains/Sumps			
Stained Soil/ Impacted Vegetation			
On-site OWNED Electrical Transformers			
Hydraulic lifts/ Elevators			
Dry Cleaning Operations			
Wetlands/ Flooding			
Oil/ Gas/ Water/ Monitoring Wells			
Environmental Cleanups			
Environmental Permits			
a) Industrial Discharge			
b) POTW (NPDES)			
c) Hazardous Waste Generator			
d) Air Quality			
e) Flammable Materials			
f) AST/UST			
g) Waste Manifest(s)			
h) Other			

OFF SITE ENVIRONMENTAL CONCERNS

CONDITION	YES	NO	COMMENTS
Gasoline Stations			
Dry Cleaners			
Industrial Uses			
Other			

APPENDIX E -
HISTORICAL AERIAL PHOTOGRAPHS

Baseline Road Bridge Project

Baseline Road

Highland, CA 92346

Inquiry Number: 4743402.9

October 04, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/04/16

Site Name:

Baseline Road Bridge Project
Baseline Road
Highland, CA 92346
EDR Inquiry # 4743402.9

Client Name:

Diaz-Yourman & Associates
1616 E. Seventeenth Street
Santa Ana, CA 92705
Contact: Somadevan Niranjanan

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=500'	Acquisition Date: May 31, 1994	USGS/DOQQ
1989	1"=500'	Flight Date: August 15, 1989	USDA
1985	1"=500'	Flight Date: July 28, 1985	USDA
1975	1"=500'	Flight Date: August 01, 1975	USGS
1968	1"=500'	Flight Date: August 22, 1968	USDA
1966	1"=500'	Flight Date: April 16, 1966	USGS
1959	1"=500'	Flight Date: October 16, 1959	USDA
1953	1"=500'	Flight Date: January 15, 1953	USDA
1949	1"=500'	Flight Date: May 08, 1949	USDA
1938	1"=500'	Flight Date: August 12, 1938	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

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INQUIRY #: 4743402.9
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 4743402.9
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4743402.9
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 4743402.9
YEAR: 2006
= 500'
N
EDR

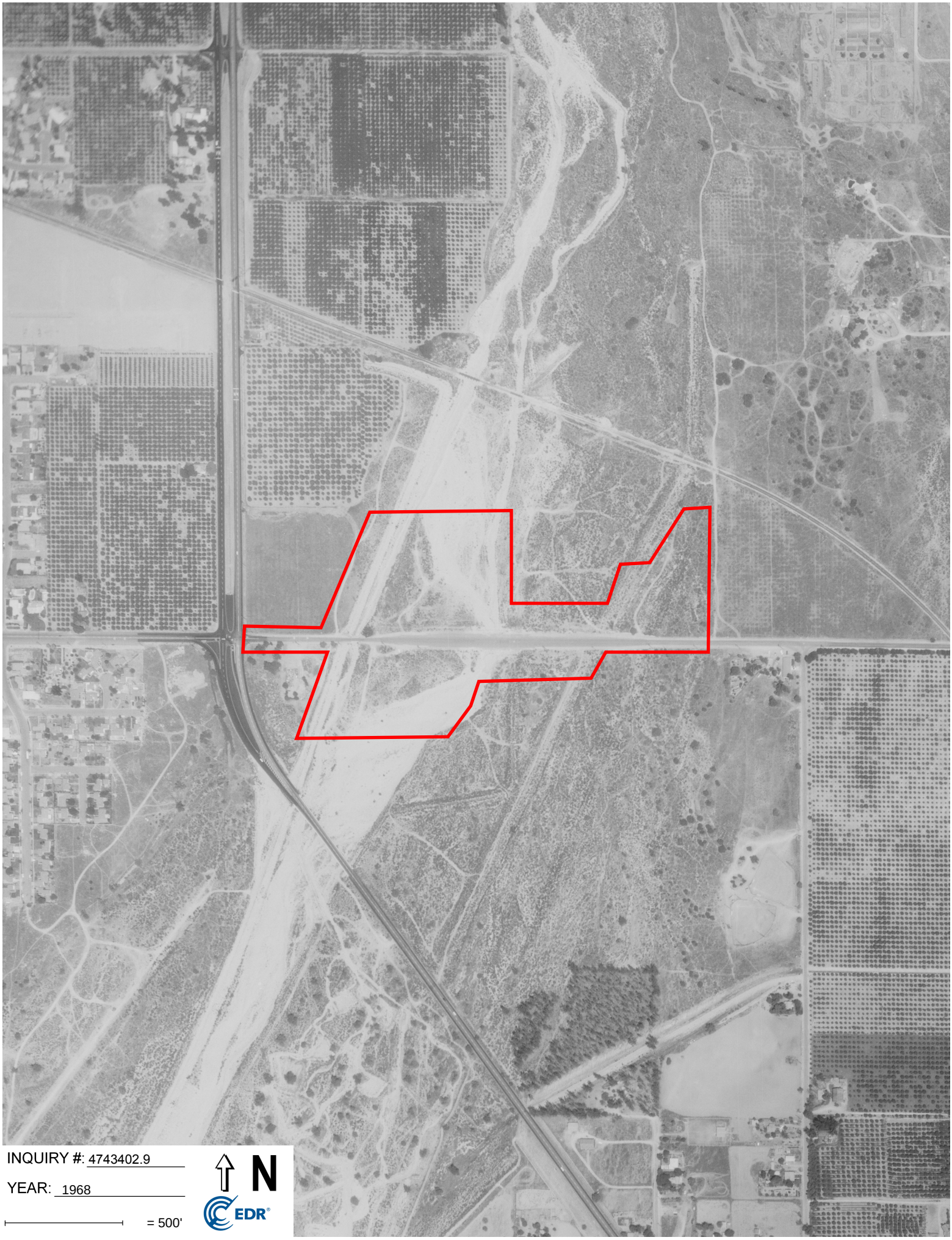

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YEAR: 2005
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EDR


INQUIRY #: 4743402.9
YEAR: 1994
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EDR


INQUIRY #: 4743402.9
YEAR: 1989
= 500'
N
EDR


INQUIRY #: 4743402.9
YEAR: 1985
= 500'
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EDR


INQUIRY #: 4743402.9
YEAR: 1975
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N
EDR



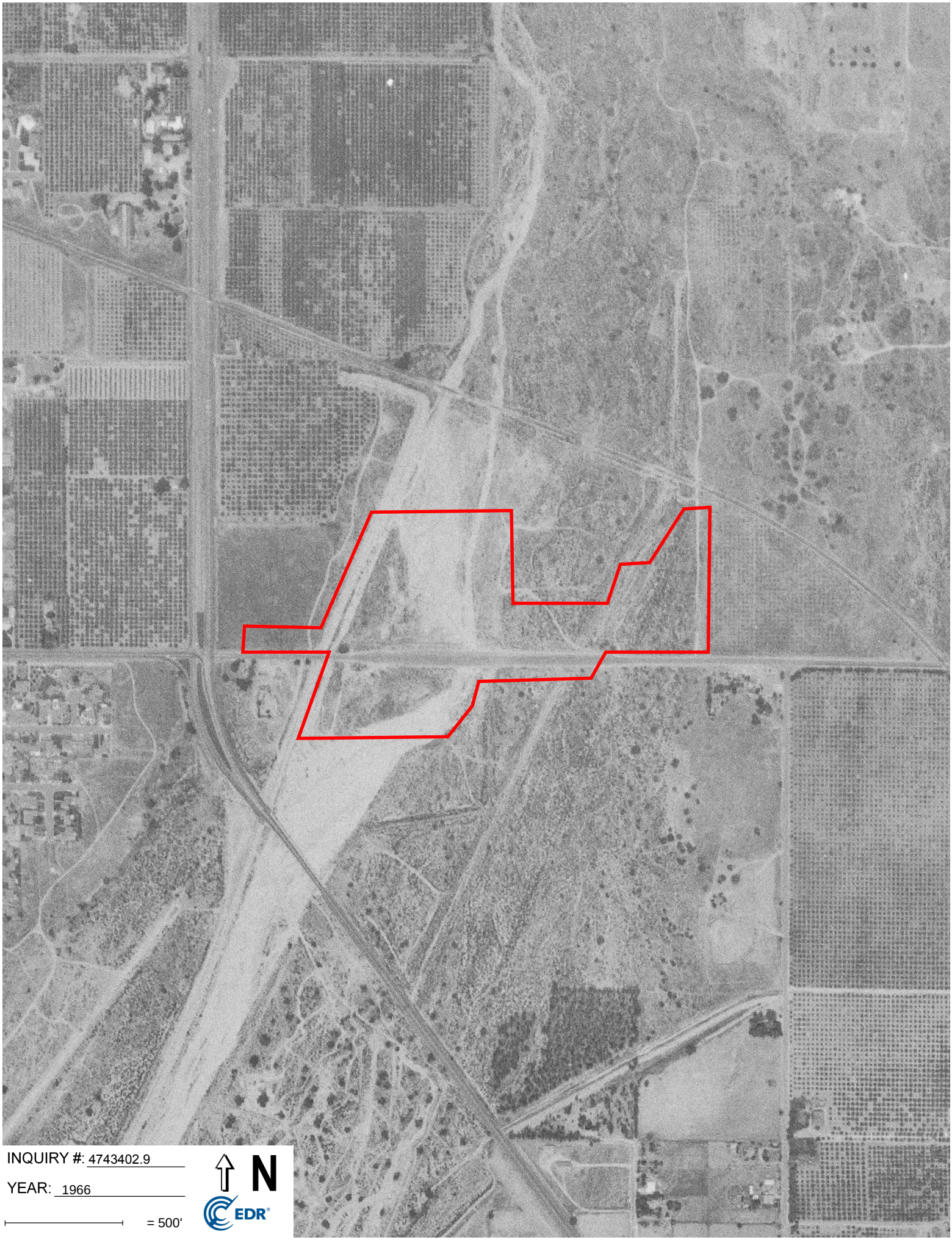
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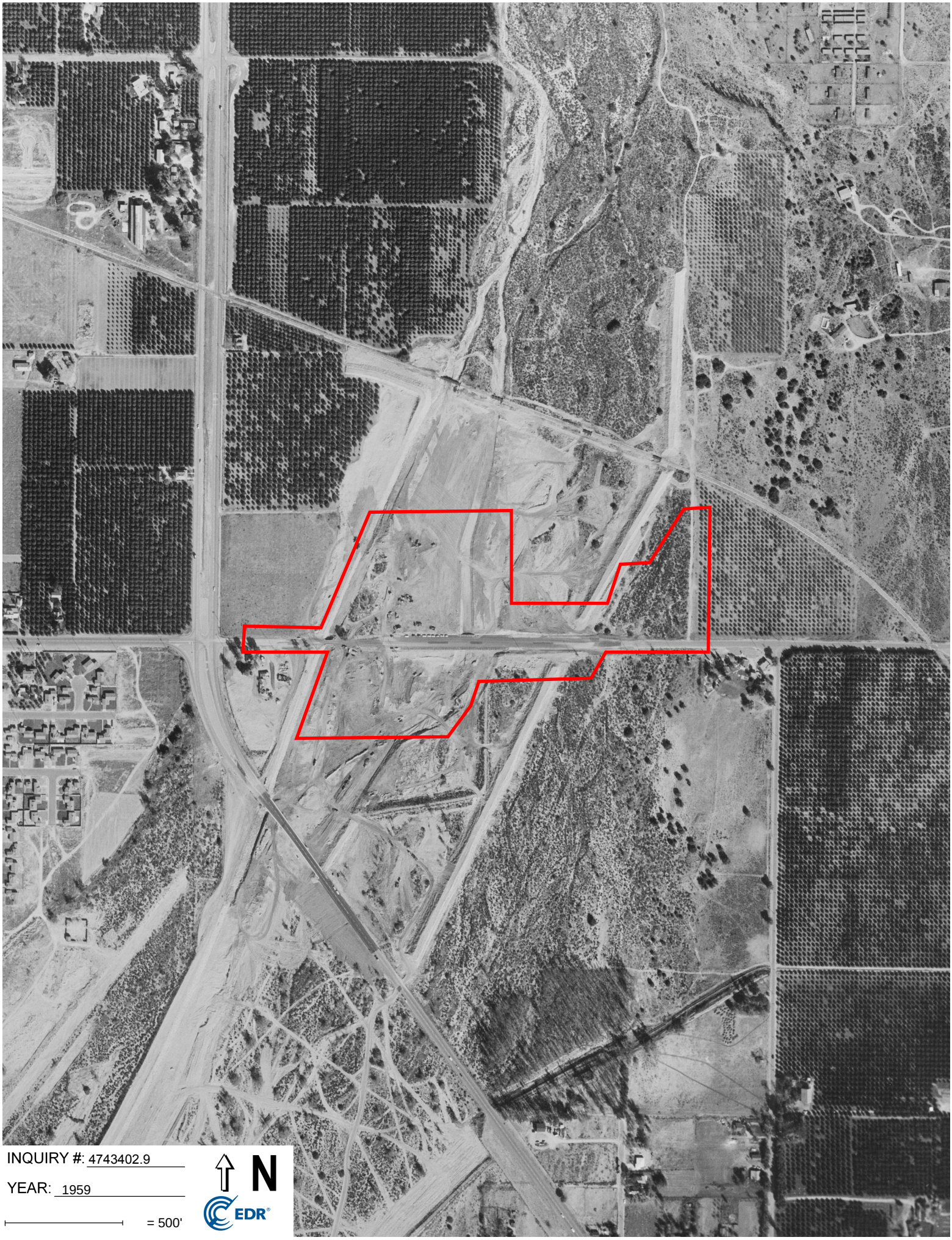
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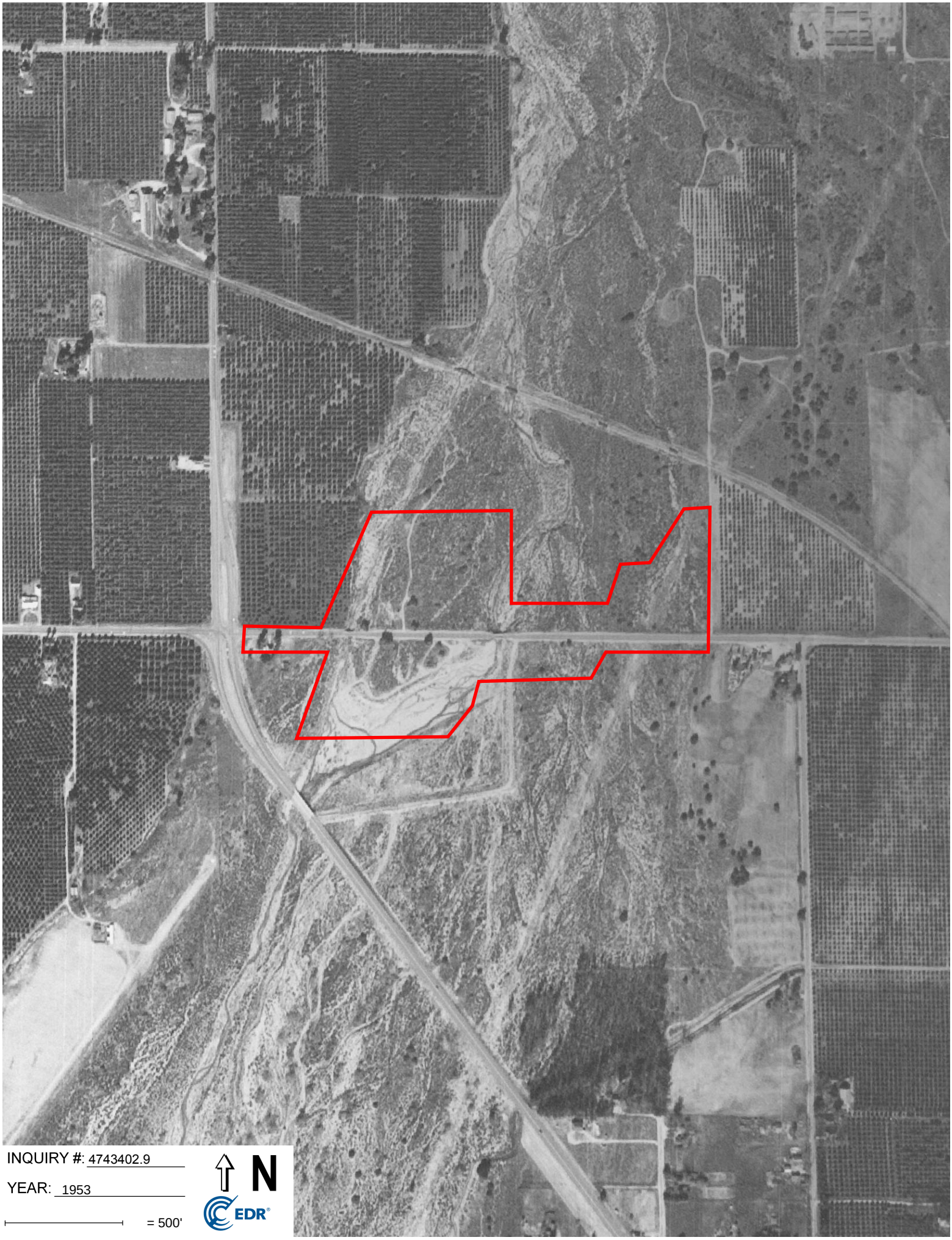
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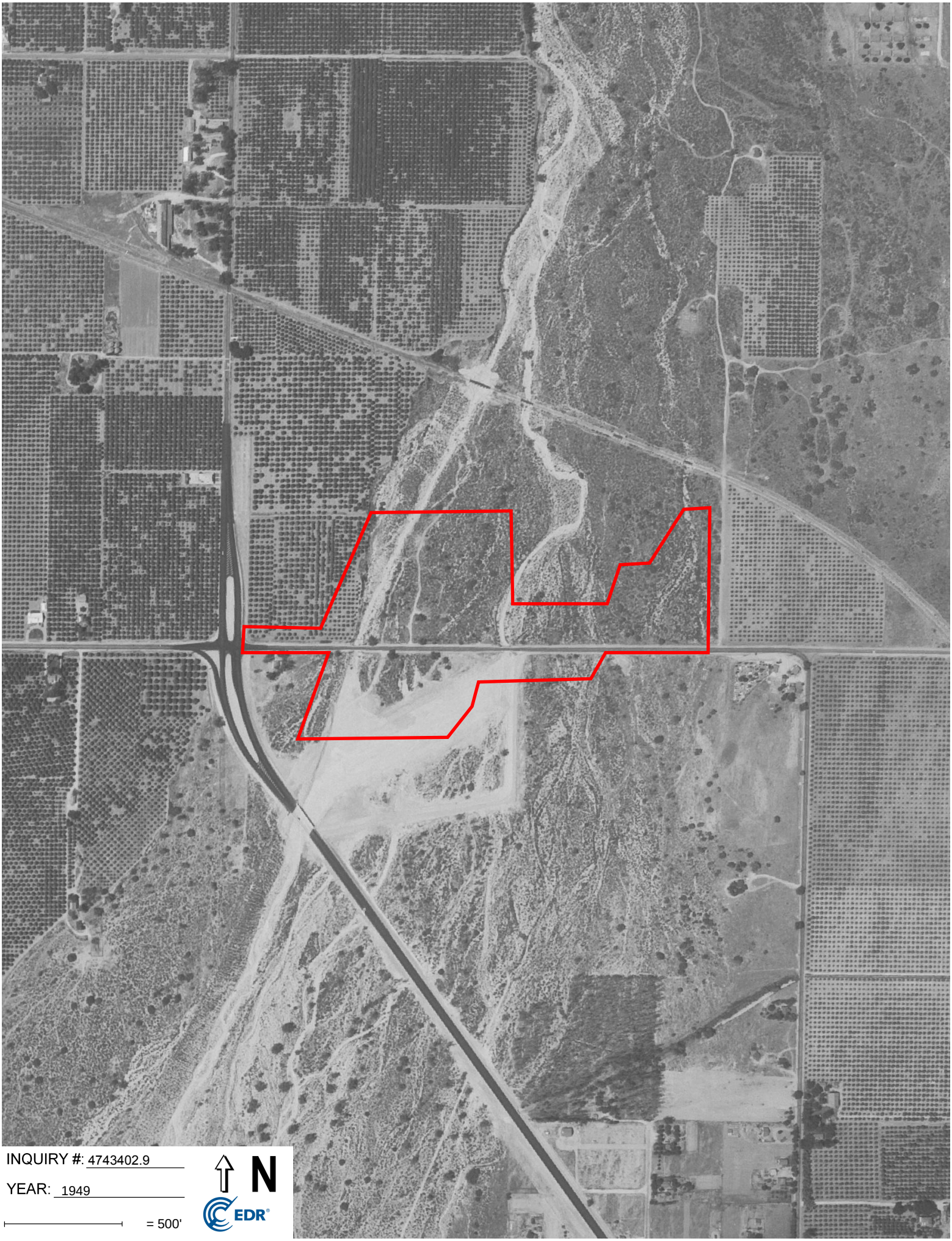
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EDR


INQUIRY #: 4743402.9
YEAR: 1966
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EDR


INQUIRY #: 4743402.9
YEAR: 1959
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EDR


INQUIRY #: 4743402.9
YEAR: 1953
= 500'
N
EDR



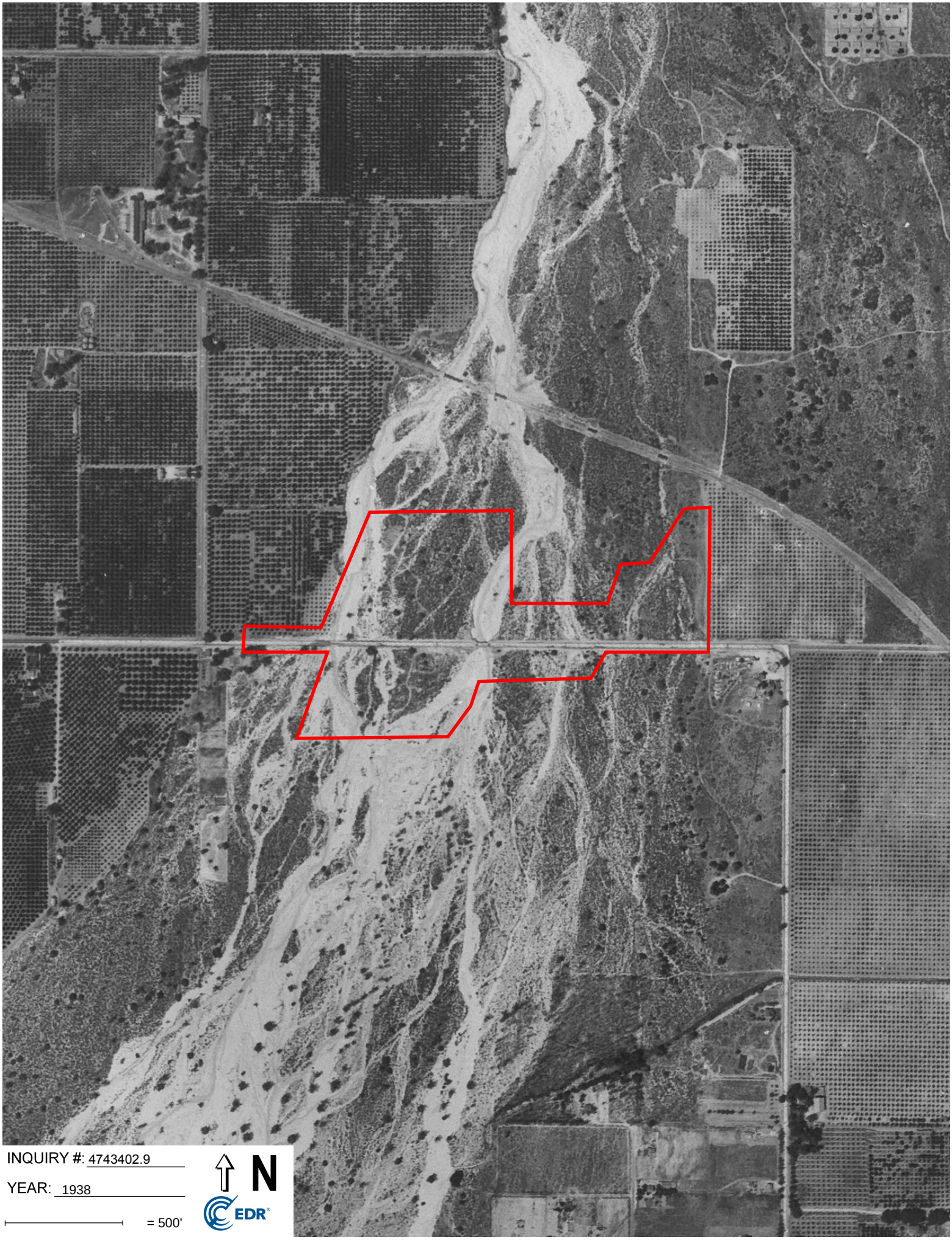
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YEAR: 1949

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EDR

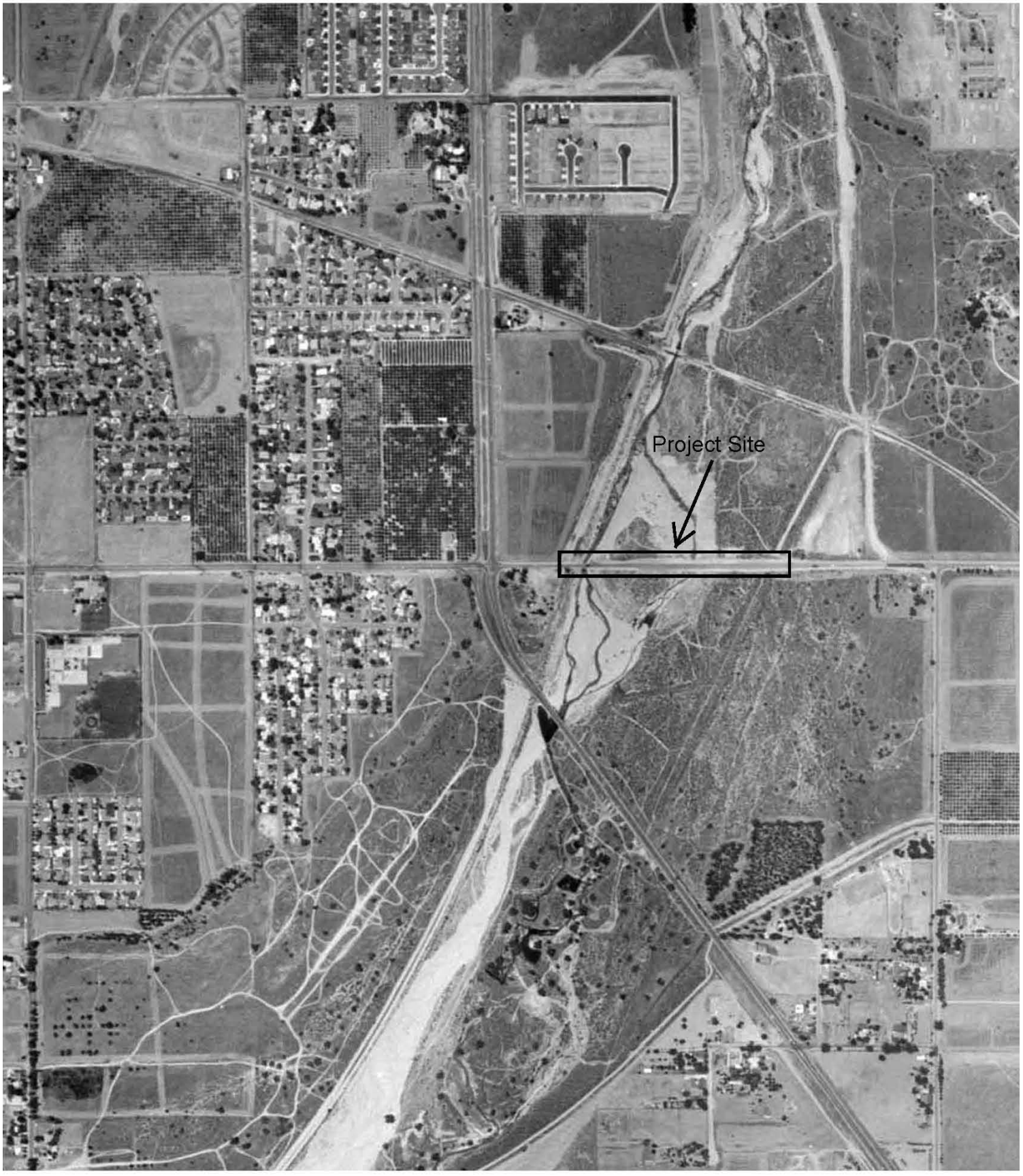

INQUIRY #: 4743402.9
YEAR: 1938
= 500'
N
EDR





Site: BASE LINE BRIDGE AT CITY CREEK
Source: USGS
Date: 5-31-1994
County: SAN BERNARDINO,CA
Scale: 1" = 700'

GeoSearch



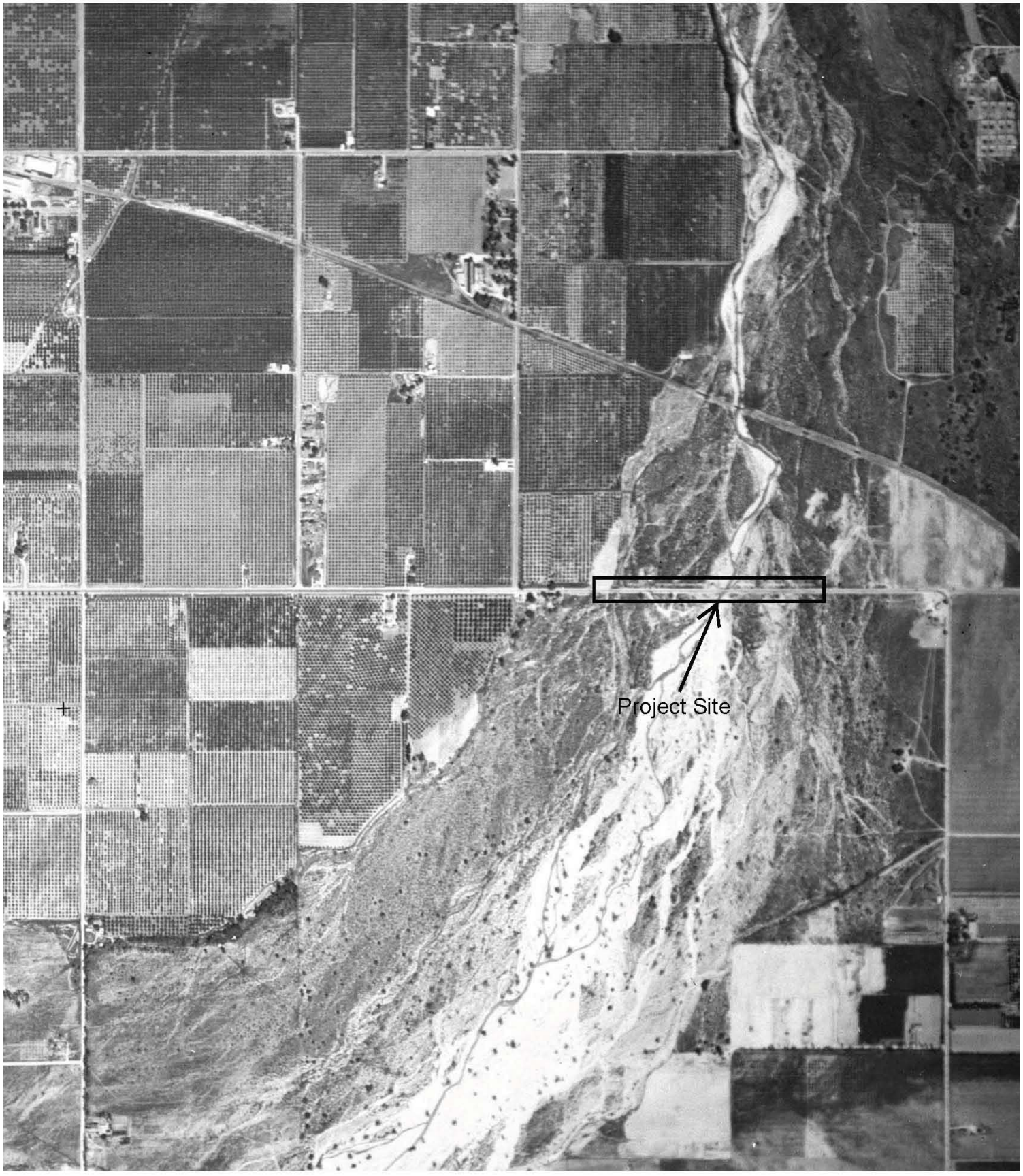
Site: BASE LINE BRIDGE AT CITY CREEK
Source: AERIAL MAP INDUSTRIES
Date: 7-12-1980
County: SAN BERNARDINO,CA
Scale: 1" = 700'

GeoSearch



Site: BASE LINE BRIDGE AT CITY CREEK
Source: TELEDYNE
Date: 9-19-1977
County: SAN BERNARDINO,CA
Scale: 1" = 700'

GeoSearch



Site: BASE LINE BRIDGE AT CITY CREEK
Source: FAIRCHILD
Date: 1930
County: SAN BERNARDINO,CA
Scale: 1" = 700'

GeoSearch

APPENDIX F -
HISTORICAL CITY DIRECTORIES

Baseline Road Bridge Project
Baseline Road
Highland, CA 92346

Inquiry Number: 4743402.5
October 04, 2016

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☑	☑	Cole Information Services
1992	☑	☑	Cole Information Services
1985	☑	☑	Haines Criss-Cross Directory
1980	☑	☑	Haines Criss-Cross Directory
1975	☑	☑	Haines Criss-Cross Directory

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FINDINGS

TARGET PROPERTY STREET

Baseline Road
Highland, CA 92346

Year	*CD Image*	*Source*
BASELINE ST		
2013	pg A1	Cole Information Services
2008	pg A4	Cole Information Services
2003	pg A7	Cole Information Services
1999	pg A10	Cole Information Services
1995	pg A13	Cole Information Services
1992	pg A15	Cole Information Services
1985	pg A17	Haines Criss-Cross Directory
1980	pg A19	Haines Criss-Cross Directory
1980	pg A20	Haines Criss-Cross Directory
1975	pg A22	Haines Criss-Cross Directory
1975	pg A23	Haines Criss-Cross Directory

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*
BOULDER AVE		
2013	pg. A2	Cole Information Services
2008	pg. A5	Cole Information Services
2003	pg. A8	Cole Information Services
1999	pg. A11	Cole Information Services
1995	pg. A14	Cole Information Services
1992	pg. A16	Cole Information Services
1985	pg. A18	Haines Criss-Cross Directory
1980	pg. A21	Haines Criss-Cross Directory
1975	pg. A24	Haines Criss-Cross Directory

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

BASELINE ST 2013

27555	UNITED METHODIST NURSERY SCH
27615	STARBUCKS COFFEE
27617	POPEYES CHICKEN
27627	A1 AUTO REPAIR
	EL RANCHO SHELL
27727	OCCUPANT UNKNOWN
27767	HAVE A SNACK VALERONOBEL ROMANS PIZ
	OCCUPANT UNKNOWN
27774	MCDONALDS
27787	PAUL DIMARINO
27879	WENDYS
27880	HAIR FX
	LANDMAX
	STYLISH NAILS
	STYLISH NAILS & HAIR
27951	WALGREENS
28355	IMMANUEL BAPTIST CHURCH
	IMMANUEL BOOK STORE
28422	GEORGE ZAHAROPOULOS
28455	CHERIA CHRISTENSENA
28485	MICHAEL CRAIG
28497	CLARENCE ADAMS
28807	CHRISTOPHER DICKINSON
28841	KERRY HENNON
28909	APPLE TREE LEARNING CENTER
29400	OCCUPANT UNKNOWN
29411	JAMIE BENZOR
29412	LUIS CURIEL
29454	MARK ALLEN
29507	CITY OF HIGHLAND

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 2013

1	HIGHLAND FLORIST & GIFTS
1818	GREG GROOM
6544	DEAN HALL
6568	ROBERT CARISCH
6962	HINKLEY & ASSOCIATES INC
6982	IDC INLAND DENTAL CENTER
	KAO CECILIA DDSINLAND DENTAL CENTER
7000	BEAVER MEDICAL CLINIC INC
	BEAVER MEDICAL GROUP
	BEAVER MEDICAL GROUP EXTENDED CARE C
	BIAMA RICHARD A MD
	HARPER PHILIP C MD
	JACOBS CLINICAL DIAGNOSITCES
	JACOBS CLINICAL DIAGNOSTICS
	JONES GREGORY M MD
	LEONG MICHAEL G MD
	MCFARLANE DELROY MD
7186	PATRICIA GREEN
7191	TUTOR TIME
7195	CHASE
7197	AVON PRODUCTS INC
7199	DEMIRDJI SAMUEL A DDS MS PHD
	DOLLAR CITY
7201	ALBERTSONS
	BANK OF AMERICA
	OCCUPANT UNKNOWN
7215	REDLANDS POOL & SPA CENTER
7219	RADIOSHACK
7221	M C CLEANERS
7223	HAIRMASTERS
7225	HIGHLAND JEWELRY MART
7231	CATCH PHRASE MARKETING
	NORMAN WILLIAMS
	TEAM FIRE PROTECTION COMPANY INC
	UPS
7235	HIGHLAND NAILS
7241	CVS PHARMACY
7243	SUSHI MAC
7245	STRAIGHTAHEAD CHIROPRACTIC
7247	BASKINROBBINS
7249	TEA ZONE
7251	WIN VIDEO
7253	PIZZA HUT
7257	HIGHLAND VILLAGE PET HOSPITAL
7259	JADE INN CHINESE RESTAURANT
7261	CARLS JR
7273	JOYCE CHUNG
7275	CHEONS FAMILY TAEKWONDO ACADEMY INC
	ROSA MARIAS
	ROSA MARIAS 2

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 2013 (Cont'd)

7291	ARROW WEST HEALTH CENTER
	CHOCKALINGAM CHANDRA DDS
	CLAYVILLE TERRY OD
	HIGHLAND OPTOMETRICS
	HIGHLAND SMOKE SHOP
	HIGHLAND VILLAGE DENTISTRY
	HILTONS FLOWERS
	INLAND HEALTHCARE GROUP
	MERCY SAN JUAN HOME HEALTH
	PAUL CAREY MD FAMILY PRACTICE
	SOWELL BRYAN MD
	STINSON MARC OD
7347	KFC
7404	DENNIS DOOLEY
	HIGHLAND SELF STORAGE
	STONEY CREEK SELF STORAGE
7824	GLENN ELSSMANN

Target Street	Cross Street	Source
✓	-	Cole Information Services

BASELINE ST 2008

27595	CUTE NAILS
27615	STARBUCKS CORP
27617	POPEYES
27627	A1 AUTO REPAIR
	ACTION PAGE & CELLULAR
	EL RANCHO CAR
	QUIZNOS
	RAYA WHOLESALE CARS
	WIRELESS NETWORK SERVICE CENTER
27774	MCDONALDS
27787	PAUL DIMARINO
27879	WENDYS INTERNATIONAL
27880	LAWRENCE HOULE
	VICTORIAN HOUSE VINTAGE AUTO SALES I
27889	BLOCKBUSTER VIDEO
27951	WALGREEN DRUG STORES
28355	IMMANUEL BAPTIST CRUCH
	IMMANUEL CHURCH
28422	JOSHUA MYERS
28455	CHERI CHRISTENSEN
28485	BARKING LOT
	MICHAEL CRAIG
	WHITNEY KENNEL
28497	CLARENCE ADAMS
28807	CHRISTOPHER DICKINSON
28841	KERRY HENNON
28909	APPLE TREE LEARING CENTER
29400	CLIFFORD EKE
29411	JAMIE BENZOR
29412	LARRY STALLINGS
29454	MARK ALLEN

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 2008

1818	GREG GROOM
6544	OCCUPANT UNKNOWN
6962	HINKLEY & ASSOCIATES INC
	NANCY HINKLEY
7000	BEAVER EXTENED CARE
	BEAVER MEDICAL GROUP EXTENDED CARE
	BEAVER MEDICAL GROUP HIGHLAND OFC AP
	BEAVER MEDICAL GROUP L P
	EPIC MANAGEMENT
	FREDERICK P JACOBS
	JACOBS CLINICAL DIAGNOSTICS
	JOHN F ZDROJEWSKI
	PHILLIP C HARPER
	WATSON JAMES MD
7186	DAVID CHAPIN
7191	TUTOR TIME CHILD CARE LEARNING CEN
7195	WASHINGTON MUTUAL
7197	BOMBSHELL
7199	ALBERTS FAMILY SHOES
	AMONG FRIENDS
	CALYPSO SALON & FACIAL ROOM
	GROUNDS FOR ENJOYMENT COFFEE HOUSE
	SAMUEL A DEMIRDJI DDS MS PHD
	SD ORTHODONTICS
	TOUCAN TAN
7201	ALBERTSONS S SUPERMARKETS
	NEW ALBERTSONS INC
	SAV ON PHARMACY
7211	JUDYS HALLMARK
7215	POOL & SPA CENTER
7217	VIDEO TIME
7219	RADIOSHACK
7223	FANTASTIC SAMS
	SALON CUTZ
7225	HIGHLAND JEWELRY MART
7227	H & R BLOCK
7231	A1 TUB & TILE
	AFT ENTERPRISES
	ALL ABOUT CARE PLACEMNT AGC
	C & C CO
	EYES FORWARD
	FOREFRONT ELECTION SOLUTIONS LLC
	HIGHLAND LEGAL SERVICES
	LIVING FRESH AIR CO
	MONTHLY COUPONS PUBLISHING INC
	PRECISION ENGINEERING SURVEYORS
	PRESTIGE KOLLECTIONS
	RICK CARINGER COMPUTER SERVICE
	ROBERT C AMADOR ATTORNEY AT LAW
	SERVPRO OF HIGHLAND REDLAND

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 2008 (Cont'd)

7231	THE UPS STORE
	VENERO PROPERTIES & DISTRIBUTION
7235	HIGHLAND NAILS
	JULIE MYERS
7241	LONGS DRUG PHARMACY 313
	LONGS DRUG STORE
7243	BAGEL BAGEL
7245	STRAIGHTAHEAD CHIROPRACTIC
7247	BASKIN ROBBINS NO 6167
7253	PIZZA HUT
7259	JADE INN
7261	CARL KARCHER ENTERPRISES
	CARLS JR
7273	JOYCE CHUNG
7275	CHUNGS REALTY CENTER
	COURTYARD TRAVEL INC
	CRC MORTGAGE
	LIBERTY FITNESS HIGHLAND
	ROSA MARIAS DRIVE IN
	STEVEN CHUNG
	YIS ACUPUNCTURE & HERBS CLINIC
7291	CHANDRA CHOCKALINGAM DDS & ASSOCIATE
	CLAYVILLE TERRY L OD VISION SOURCE
	DR TERRY CLAYVILLE
	HIGHLAND OPTOMETRIC
	HIGHLAND SMOKE SHOP
	HILTONS FLOWERS & GIFTS
	INLAND HEALTH ORG OF SO CAL
	MARC STINSON
	PAUL CAREY MD
7347	KENTUCKY FRIED CHICKEN
	KFC
	TACO BELL
	YM BRANDS INC
7404	DEBORAH VILLAGRAMA
	HIGHLAND SELF STORAGE
7824	GLENN ELSSMANN

Target Street	Cross Street	Source
✓	-	Cole Information Services

BASELINE ST 2003

27555	AMERICAN INDIAN FREEDOM RIDE
	UNITED METHODIST NRSRY SCHL
27627	EL RANCHO CAR WASH
	EL RANCHO SHELL
	MARWAN ALABBASI
	QUIZNOS
27767	JODY DOUGLAS
27774	MCDONALDS RESTAURANTS
27787	CHRISTOPHER FEICHO
27879	WENDYS
27880	LAWRENCE HOULE
	VCTRN HOUSE VNTG AUTO SALES
27925	BLOCKBUSTER VIDEO
27951	WALGREEN DRUG STORES HIGHLAND
28355	IMMANUEL BAPTIST CHURCH
	OCCUPANT UNKNOWN
28422	GEORGE ZAHAROPOULOS
28455	SY SHENKMAN
28485	MICHAEL CRAIG
28497	CLARENCE ADAMS
28807	HARRIET MCLEAN
28841	KERRY HENNON
	TERRA PHYSICS
29300	RUSSEL CHRISTIANSON
29400	ESHNBRNR & JAMES BRYON ANTG
	TERRY ESHENBRENNER
29411	JOSE GUTIERREZ
29412	LARRY STALLINGS
29454	DONALD EVANS
29507	HIGHLAND CITY OF FIRE DEPT

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 2003

1818	GREGORY GROOM
6544	OCCUPANT UNKNOWN
6962	OCCUPANT UNKNOWN
7000	BEAVER MDCL GROUP HGHLND OFC
	BEAVER MEDICAL CLINIC
	BEAVER MEDICAL GROUP
	BVR MDCL GROUP BVR MDCL GROUP
	FREDERICK P JACOBS PHD
	HARPER PHILLIP C MD
	JACOBS CLINICAL DIAGNOSTICS
	LEONG MICHAEL G MD
	MCFARLANE DELROY MD
	SANT KATHRYN MD
7186	DAVID CHAPIN
7201	BANK OF AMERICA OFFICE LCTN
	SAV ON DRUGS SAV ON DRUGS
7211	JUDYS HALLMARK
	OCCUPANT UNKNOWN
7215	POOL & SPA CTR OF REDLANDS
7217	OCCUPANT UNKNOWN
7219	MICHAEL QUIROGA
	RADIOSHACK CNSMR ELCTRNC STR
7221	MCCLEANERS
7223	FANTASTIC SAMS
7225	OCCUPANT UNKNOWN
	SWEET MEMORIES
7227	MY FAVORITE JEWELER
	OCCUPANT UNKNOWN
7231	ALL NATIONS VISA SERVICE
	ANNA MATTHEWS
	CASHNET INC
	EXEC MANAGEMENT GROUP
	G & G DESIGN
	GENESIS ENTERPRISES
	GRETCHEN HECHT
	JAMES DIEROFF
	LEE SCHEFFERS INC
	LESLIE DARBY
	MAIL BOXES ETC
	MARY JONES
	MATT A NORMAN & ASSOCS
	MERITUS CONSULTING
	PACIFIC SOUTHWEST CORP
	PREMIERE EXPORT CO
	REBECCA WELLS
	REBEKAH MCNEILL
	RED ZEBRA
	SOFT STEEL
	STRAINTEC INC
	VILLA MANOR CARE CTR INC

BOULDER AVE 2003 (Cont'd)

7231	WADD SQUAD
	WILLIAM CHADDICK & ASSOC
7235	HIGHLAND NAILS
7241	LONGS DRUG STORE
	OCCUPANT UNKNOWN
7243	MANHATTAN BAGEL OF HIGHLAND
7245	EMIKO JAPANESE RESTAURANT
7247	BSKN RBN NO ICE CREAM & CAKE
7249	3D DONUT
7251	TOUCAN TAN
7253	PIZZA HUT
7257	HIGHLAND VILLAGE PET HOSPITAL
	OCCUPANT UNKNOWN
7259	JADE INN CHINESE RESTAURANT
	OCCUPANT UNKNOWN
7261	CARLS JR RESTAURANTS
7275	CHUNGS REALTY CTR
	E CHUNG
	ROSA MARIAS
7281	TIMOTHY FARRIS
7285	ARROWHEAD CREDIT UNION
	OCCUPANT UNKNOWN
7291	BRYAN SOWELL
	CLAYVILLE TERRY L OD
	HIGHLAND OPTOMETRICS VSN SRC
	HIGHLAND SMOKE SHOP
	INLAND HEALTH ORGANIZATION
	INLND HEALTHCARE GROUP NGHBRHD
	MILLER LOREN E DR
7347	KFC
7812	OCCUPANT UNKNOWN
7820	JJ SALES
	JOHN JONES
	LAJONS CUSTOM WOODCRAFT
7921	MILLER LOREN A DR

Target Street	Cross Street	Source
✓	-	Cole Information Services

BASELINE ST 1999

27555	UNITED METHODIST CHURCH OF HIGHLAND
	UNITED METHODIST NURSERY SCHOOL OF HIGHLAND
27707	OCCUPANT UNKNOWN
27787	OCCUPANT UNKNOWN
	PAUL DIMARINO
27880	LAWRENCE HOULE
28343	OCCUPANT UNKNOWN
28422	GEORGE ZAHAROPOULOS
28455	CHERI CHRISTENSEN
28485	MICHAEL CRAIG
28497	CLARENCE ADAMS
28807	CHRISTOPHER DICKINSON
28841	KERRY HENNON
28929	OCCUPANT UNKNOWN
29300	RICHARD CHRISTIANSON
29378	OCCUPANT UNKNOWN
29400	CLIFFORD EKE
29411	JAMIE BENZOR
29412	LARRY STALLINGS
29454	ANTONIO GONZALES

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 1999

1818	GREG GROOM
6544	ALIENA AFFAITATI
6962	NANCY HINKLEY
7000	BEAVER MEDICAL GROUP
	BEAVER MEDICAL GROUP EXTENDED CARE CENTER
	BEAVER MEDICAL GROUP HIGHLAND OFFICE
	BEAVER MEDICAL GROUP RADIOLOGY APPOINTMENTS
	BIAMA RICHARD A MD
	BVR MEDICAL GROUP BEAVER MEDICAL GROUP EXTENDED CARE
	BVR MEDICAL GROUP INTERNL MEDCN APPOINTMENTS
	BVR MEDICAL GROUP ONCOLOGY HEMATLGY APPOINTMENTS
	BVR MEDICAL GROUP ORTHO SURG APPOINTMENTS
	FOSMIRE DANIEL MD
	HEPPENSTALL MALCOLM MD
	JACOBS FREDERICK P MS
	JONES GREGORY M MD
	KLEIN ROBERT A MD
	LEONG MICHAEL G MD
	MCFARLANE DELROY MD
	RUIZ CYNTHIA E MD
	RUIZ V REINALDO MD
	WATKINS AI MEE C MD
	WATSON JAMES MD
	WHITESIDE PAUL MD
	WILSON MICHAEL A MD
7191	TUTOR TIME CHILD CARE LEARNING CENTERS
7197	FITNESS LA
7201	BANK OF AMERICA OFFICE LOCATIONS (CONTD)
	LUCKY FOOD CENTERS
	SAV-ON PHARMACY
7211	FASHION GAL
	JUDYS HALLMARK CARDS & GIFTS
7217	GOLF ETC
7219	RDO SHACK A DIVISON OF TANDY CORPORATION CONSUMER ELECTRONIC
7221	MCCLEANERS
7223	FANTASTIC SAMS
7225	SWEET MEMORIES
7231	MAIL BOXES ETC
7235	HIGHLAND NAILS
7241	LONGS DRUG STORES HIGHLAND
7243	MANHATTEN BAGEL OF HIGHLAND
7245	JUICE APEEL
7247	BASKIN ROBBINS 31 ICE CREAM & FROZEN YOGURT
7249	3D DONUT
7251	TWOCAN TAN
7253	PIZZA HUT
7257	HIGHLAND VILLAGE PET HOSPITAL
7259	JADE INN CHINESE RESTAURANT
7261	CARLS JR RESTAURANTS
7273	JOYCE CHUNG

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 1999 (Cont'd)

7275	FIRST CHOICE TRAVEL
	FLOWERS BY YVONNE INCORPORATED
	ROSA MARIAS NUMBER 2
7285	ARROWHEAD CREDIT UNION
7291	ARROW WEST HEALTH CENTER
	HIGHLAND SMOKE SHOP
	HIGHLAND VILLAGE DENTISTRY
	INLND HEALTHCARE GROUP NEIGHBORHOOD MEDICAL OFFICES
	PAUL CAREY B MD
	SOWELL BRYAN MD
7404	DEBORAH VILLAGRAMA
7820	LAJONS CUSTOM WOODCRAFT
7824	GLENN ELSSMANN

Target Street	Cross Street	Source
✓	-	Cole Information Services

BASELINE ST 1995

27555	FIRST UNITED METHODIST CHURCH
	UNITED METHODIST NURSERY SCHL
27719	OCCUPANT UNKNOWNN
27731	OCCUPANT UNKNOWNN
27736	OCCUPANT UNKNOWNN
27767	NANCE, DANIEL A
27776	GUNTHER, RONALD E
27787	MCCRARY, D C
27880	HOULE, L
28355	HMH CONSTRUCTION
	IMMANUEL BAPTIST CHURCH
28485	MIKE CRAIG PLUMBING
28515	SHELTON RANCH
28807	ROBERTS, RUSSELL R
28841	OCCUPANT UNKNOWNN

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 1995

6544	HAGEY, WILLIAM J
6568	CARISCH, ROBERT
7000	ZDROJEWSKI, JOHN F MD
7186	CHAPIN, DAVID
7201	LUCKY STORE
	SAV ON PRESCRIPTIONS
7211	FASHION GAL
7217	VIDEO TIME
7219	RADIO SHACK
7221	HODGES, DENISE
	MC CLEANERS
7223	FANTASTIC SAMS
7227	MY FAVORITE JEWELER
7231	FERRARA, LINDA
	HOSTERMAN, STEPHEN L
	HUDGENS, JAMES D
	JAWHARY, HALA
	KIMBER, TONI A
	MAIL BOXES ETC
	MCKINNEY, MICHAEL A
	PRICE, MARILYN
	SQUARE, CARLITA
	STRAIT, ANN K
	TIPTON, SHANNON L
	WATKINS, KATHY
7235	HOT SHOTS SPORTSCARDS
7241	LONGS DRUG STORE
7247	BASKIN ROBBINS ICE CREAM
7249	3 D DONUT
7255	CAREY PAUL MD
	PAUL, CAREY
7259	JADE INN CHINESE RESTAURANT
7261	CARLS JR RESTAURANT
7285	WELLS FARGO BANK
7812	LOCKERBIE MANUFACTURING CORP
	WILLIAMS, WILLIAM L
7820	LAJONS CUSTOM WOODCRAFT
	LAJONS PRODUCTION SANDING
7824	LAJONS MOLDING MADNESS
7925	RIEDMAN, FRED M

Target Street	Cross Street	Source
✓	-	Cole Information Services

BASELINE ST 1992

27555 FIRST UNTD METH CH
27719 WISHAM, JOSEPH W
27736 REYNOLDS, DARBY
27787 BIEGUN, A
MCCRARY, D C
28455 SHENKMAN, SEYMOUR
28485 CRAIG MIKE PLUMBING
CRAIG, MICHAEL R
28515 WHITNEYS RANCH
28841 REHFUSS, ROGER
28909 EAST HIGHLANDS RNCH
29111 REDLANDS YMCA
29300 CHRISTIANSON, RUSS E
29454 HARTSOOK, GUY

Target Street	Cross Street	Source
-	✓	Cole Information Services

BOULDER AVE 1992

6544	HAGEY, WILLIAM J
6568	CARISCH, ROBERT
6962	HENDERSON ENTPRS
6982	HAMILL, BRIAN
7186	CHAPIN, DAVID
7241	LONGS DRUG
7812	LOCKERBIE MFG CORP
	WILLIAMS, WILLIAM L
7820	LAJONS CSTM WDCRFT
7824	LAJONS MOLDING
7925	REIDMAN, FRED M

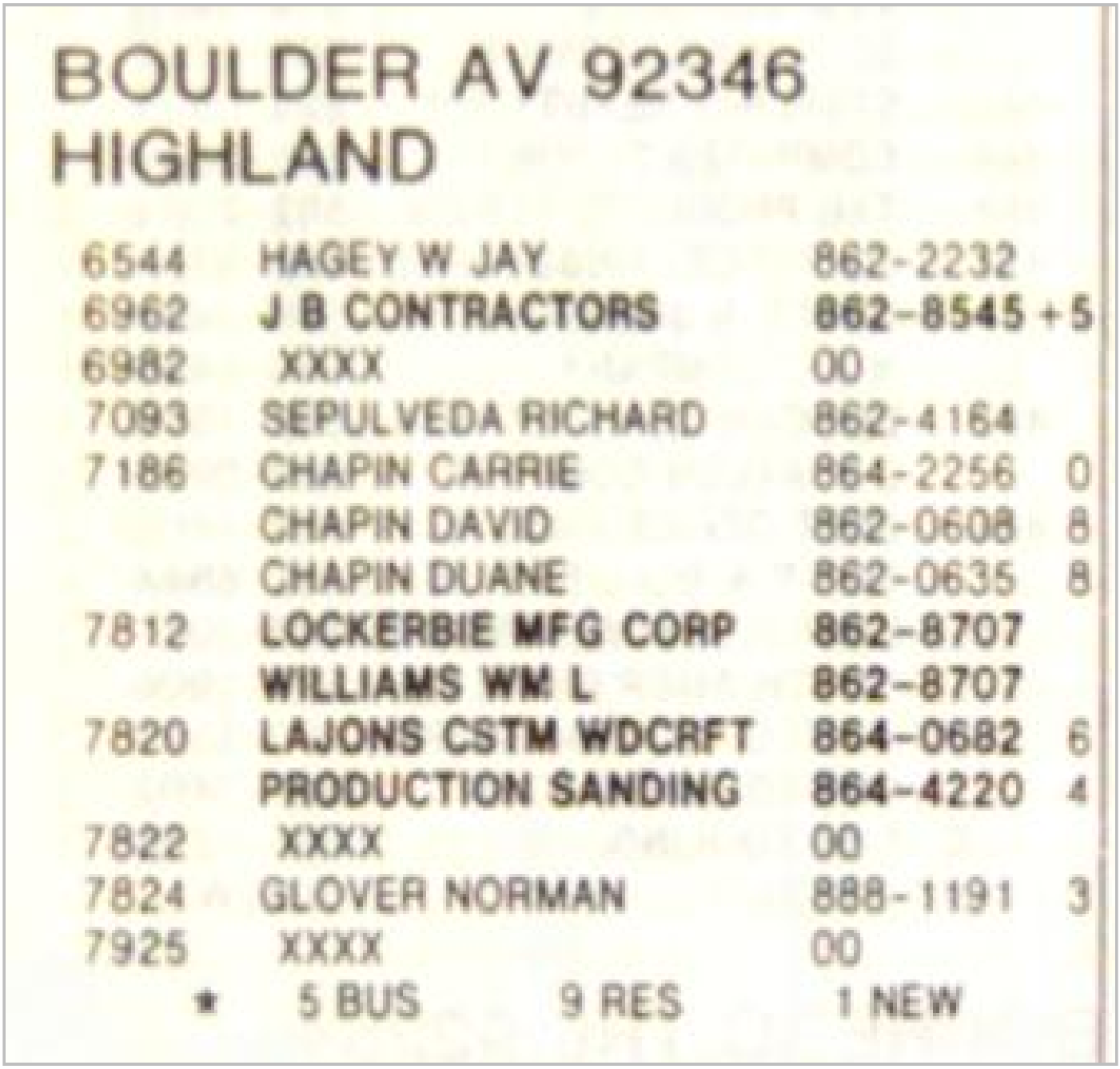
Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

BASELINE ST 1985

27457	ST ADELAIDE CH CCD	862-5722	3
	ST ADELAIDE CH HALL	862-3872	3
	ST ADELAIDE CH OFC	862-8669	3
	ST ADELAIDE CONVENT	862-5755	3
27487	ST ADELAIDE CH SC	862-5851	3
27555	FIRST UNTD METH CH	862-0512	
	HIGHLAND UN METH CH	862-0512	9
	UNITD METH CH	862-0512	9
	UNITD METH NURSERY	862-0516	
27654	TYLER DON C	862-3291	
27697	XXXX	00	
27718	XXXX	00	
27719	BREINING JEFFREY G	862-6458	+5
27736	XXXX	00	
27776	GUNTHER S	862-3221	0
27787	MCCRARY D C	862-2648	3
27935	XXXX	00	
28279	XXXX	00	
28455	KNOTTS LARRY	864-1390	8
28485	EELLS ROBT L	862-6609	8
28515	WHITNEYS RANCH	862-3313	
28655	XXXX	00	
28675	TAYLOR DON	864-0314	
28807	ROBERTS RUSSELL DR	862-2825	
28841	XXXX	00	
29111	CRAM SCHOOL	862-8463	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

BOULDER AVE 1985

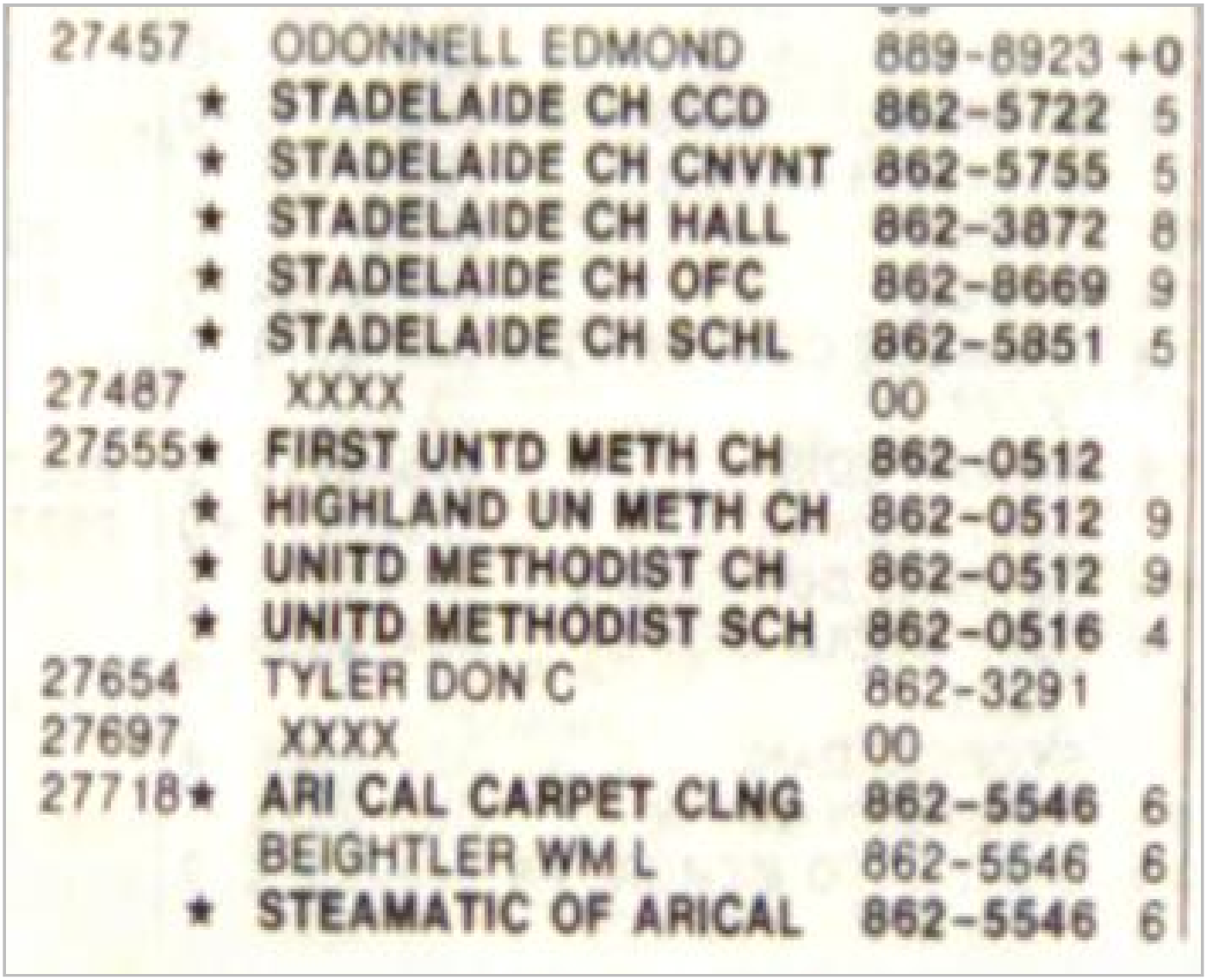


BOULDER AV 92346
HIGHLAND

6544	HAGEY W JAY	862-2232	
6962	J B CONTRACTORS	862-8545	+5
6982	XXXX	00	
7093	SEPULVEDA RICHARD	862-4164	
7186	CHAPIN CARRIE	864-2256	0
	CHAPIN DAVID	862-0608	8
	CHAPIN DUANE	862-0635	8
7812	LOCKERBIE MFG CORP	862-8707	
	WILLIAMS WM L	862-8707	
7820	LAJONS CSTM WDCRFT	864-0682	6
	PRODUCTION SANDING	864-4220	4
7822	XXXX	00	
7824	GLOVER NORMAN	888-1191	3
7925	XXXX	00	
*	5 BUS 9 RES	1 NEW	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

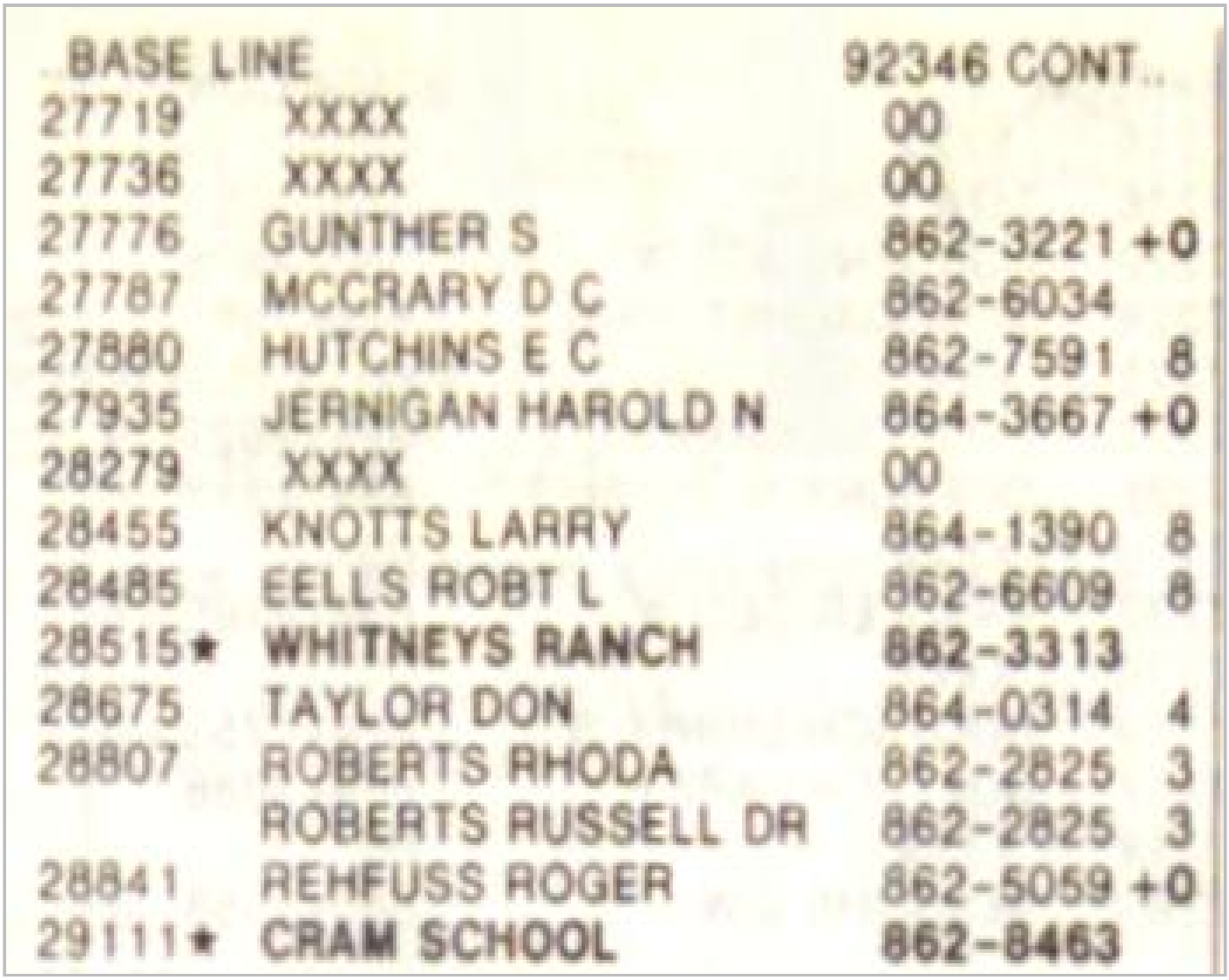
BASELINE ST 1980



27457		ODONNELL EDMOND	889-8923 +0
	*	STADELAIDE CH CCD	862-5722 5
	*	STADELAIDE CH CNVNT	862-5755 5
	*	STADELAIDE CH HALL	862-3872 8
	*	STADELAIDE CH OFC	862-8669 9
	*	STADELAIDE CH SCHL	862-5851 5
27487		XXXX	00
27555	*	FIRST UNTD METH CH	862-0512
	*	HIGHLAND UN METH CH	862-0512 9
	*	UNITD METHODIST CH	862-0512 9
	*	UNITD METHODIST SCH	862-0516 4
27654		TYLER DON C	862-3291
27697		XXXX	00
27718	*	ARI CAL CARPET CLNG	862-5546 6
		BEIGHTLER WM L	862-5546 6
	*	STEAMATIC OF ARICAL	862-5546 6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

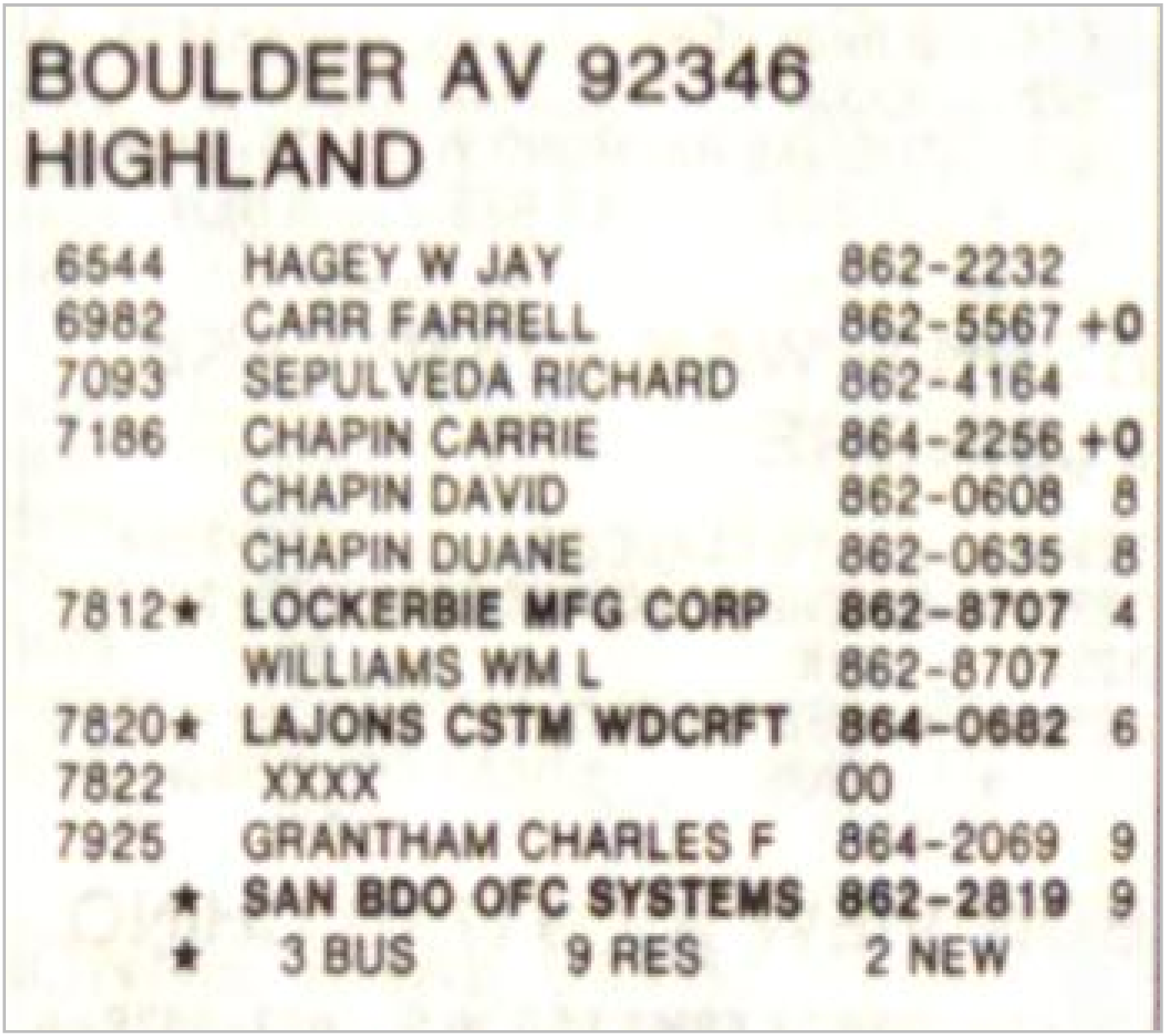
BASELINE ST 1980



BASE LINE		92346 CONT..
27719	XXXX	00
27736	XXXX	00
27776	GUNTHER S	862-3221 +0
27787	MCCRARY D C	862-6034
27880	HUTCHINS E C	862-7591 8
27935	JERNIGAN HAROLD N	864-3667 +0
28279	XXXX	00
28455	KNOTTS LARRY	864-1390 8
28485	EELLS ROBT L	862-6609 8
28515*	WHITNEYS RANCH	862-3313
28675	TAYLOR DON	864-0314 4
28807	ROBERTS RHODA	862-2825 3
	ROBERTS RUSSELL DR	862-2825 3
28841	REHFUSS ROGER	862-5059 +0
29111*	CRAM SCHOOL	862-8463

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

BOULDER AVE 1980

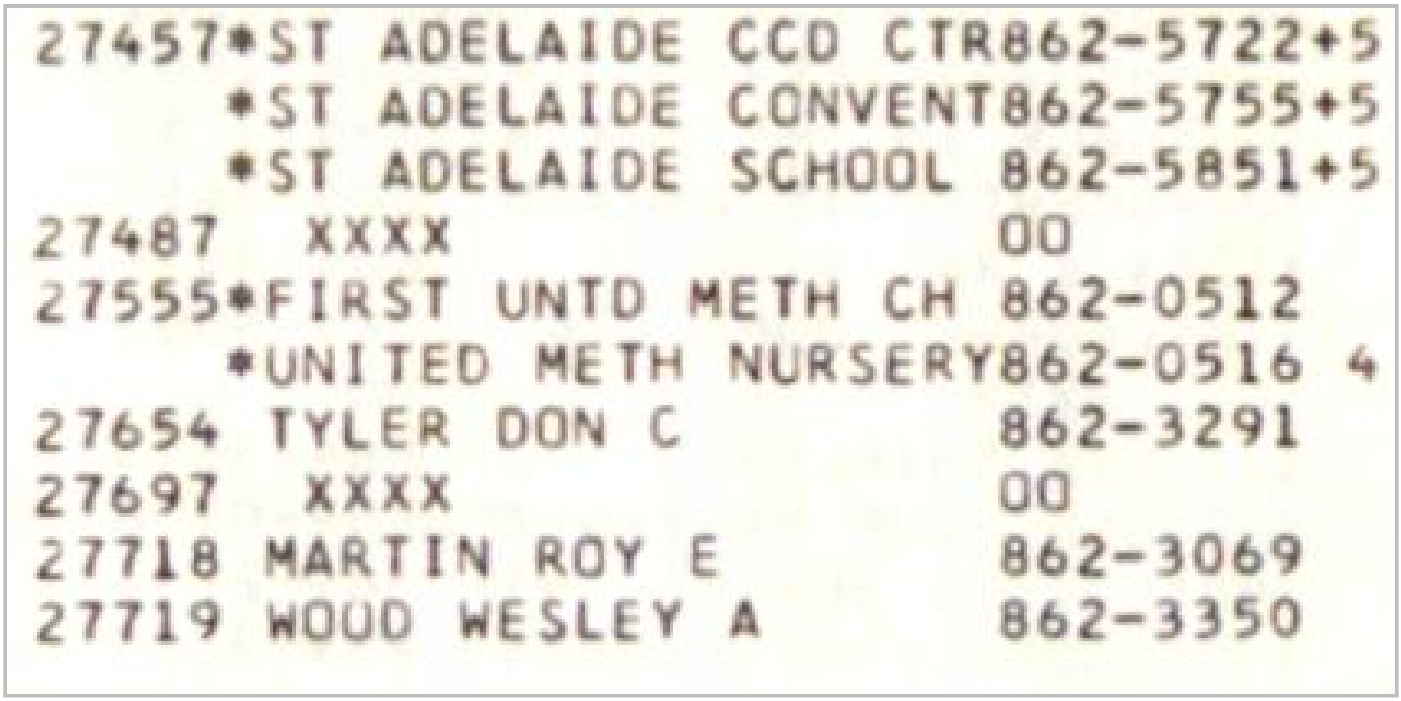


BOULDER AV 92346
HIGHLAND

6544	HAGEY W JAY	862-2232	
6982	CARR FARRELL	862-5567	+0
7093	SEPULVEDA RICHARD	862-4164	
7186	CHAPIN CARRIE	864-2256	+0
	CHAPIN DAVID	862-0608	8
	CHAPIN DUANE	862-0635	8
7812*	LOCKERBIE MFG CORP	862-8707	4
	WILLIAMS WM L	862-8707	
7820*	LAJONS CSTM WDCRFT	864-0682	6
7822	XXXX	00	
7925	GRANTHAM CHARLES F	864-2069	9
*	SAN BDO OFC SYSTEMS	862-2819	9
*	3 BUS 9 RES	2 NEW	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

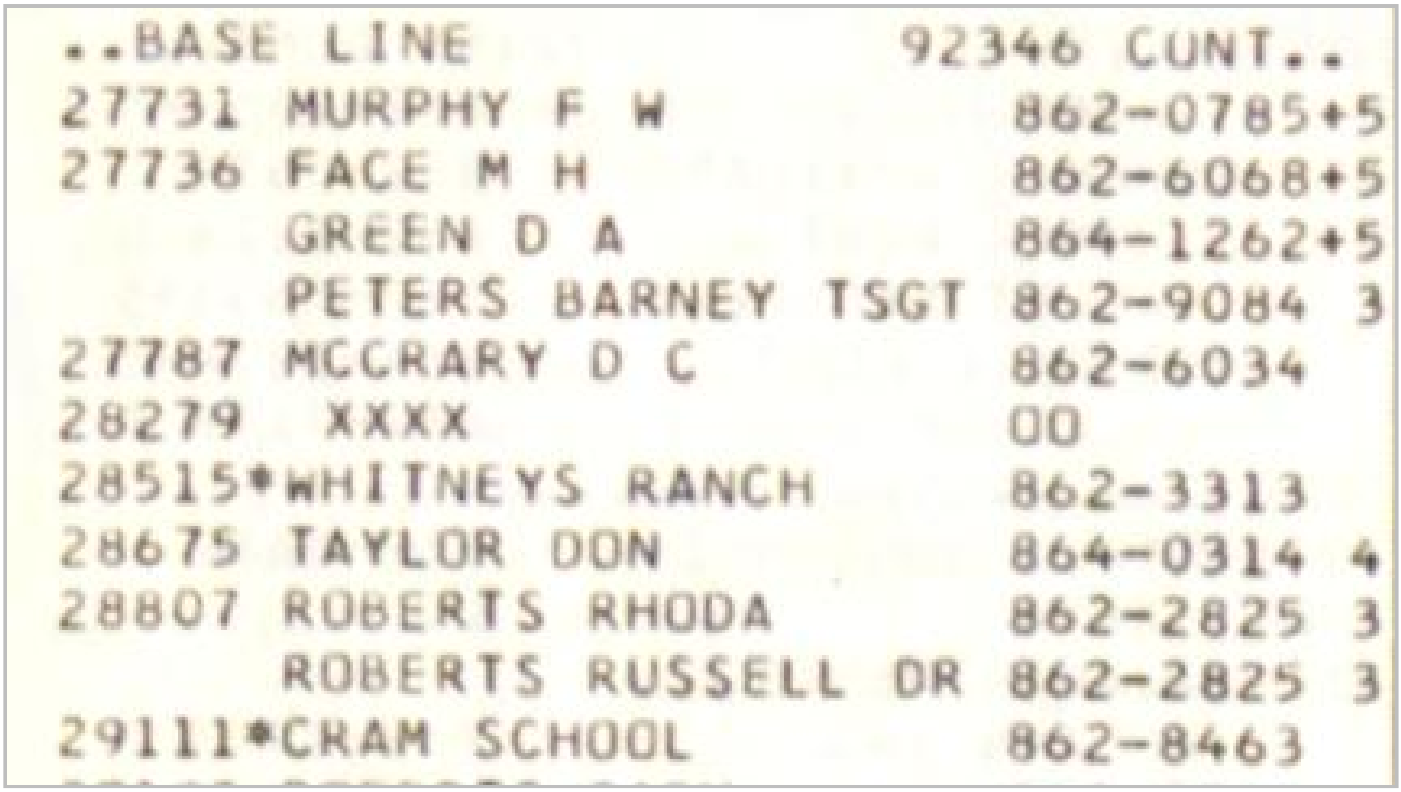
BASELINE ST 1975



```
27457*ST ADELAIDE CCD CTR862-5722+5
     *ST ADELAIDE CONVENT862-5755+5
     *ST ADELAIDE SCHOOL 862-5851+5
27487  XXXX                OO
27555*FIRST UNTD METH CH 862-0512
     *UNITED METH NURSERY862-0516 4
27654 TYLER DON C          862-3291
27697  XXXX                OO
27718 MARTIN ROY E         862-3069
27719 WOUD WESLEY A        862-3350
```

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

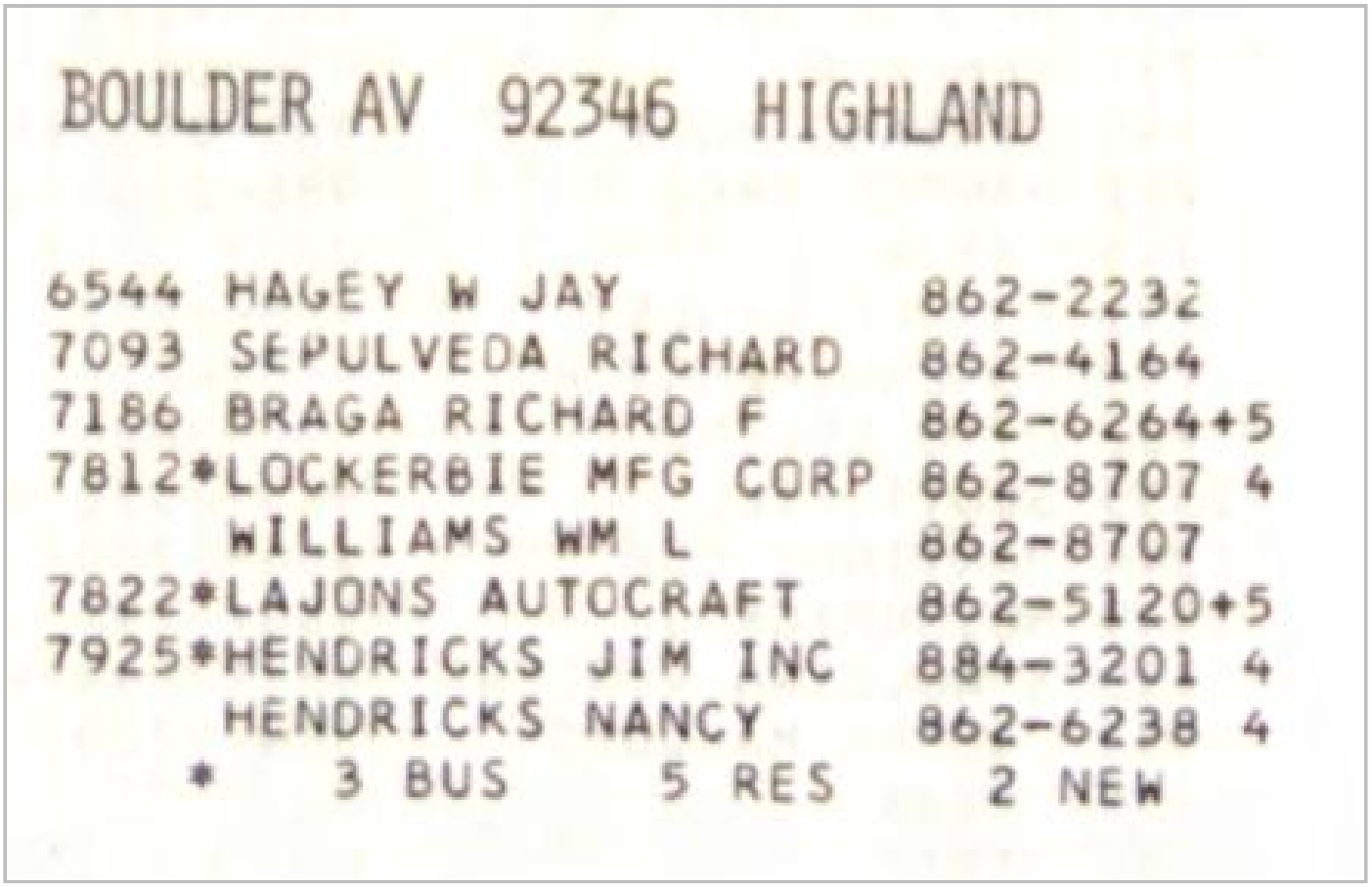
BASELINE ST 1975



..BASE LINE 92346 CUNT..
27731 MURPHY F W 862-0785+5
27736 FACE M H 862-6068+5
GREEN D A 864-1262+5
PETERS BARNEY TSGT 862-9084 3
27787 MCCRARY D C 862-6034
28279 XXXX OO
28515*WHITNEYS RANCH 862-3313
28675 TAYLOR DON 864-0314 4
28807 ROBERTS RHODA 862-2825 3
ROBERTS RUSSELL DR 862-2825 3
29111*CRAM SCHOOL 862-8463

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

BOULDER AVE 1975



BOULDER AV 92346 HIGHLAND

6544	HAGEY W JAY	862-2232
7093	SEPULVEDA RICHARD	862-4164
7186	BRAGA RICHARD F	862-6264+5
7812*	LOCKERBIE MFG CORP	862-8707 4
	WILLIAMS WM L	862-8707
7822*	LAJONS AUTOCRAFT	862-5120+5
7925*	HENDRICKS JIM INC	884-3201 4
	HENDRICKS NANCY	862-6238 4

* 3 BUS 5 RES 2 NEW

Haines Directory
San Bernardino 1995

Baseline St

27555	United Meth Ch
27719	XXXX
27767	Nance Daniel
27787	McCrary D C
27880	Houle Lawrence
28335	XXXX
28422	Gunn Mark
28455	Shenkman Sue
28485	Craig Michael R
28515	Shelton's Ranch
28807	Roberts Russell Dr

Haines Directory
San Bernardino 1990

Baseline St

27555	United Meth Church
27719	XXXX
27767	Nance Daniel
27880	Houle Lawrence
28335	XXXX
28422	XXXX
28455	Shenkman Sue
28485	Craig Michael R

Haines Directory
San Bernardino 1984

Baseline St

27718	Steamatic of Ari Ca
27719	XXXX
27736	XXXX
27776	Gunther's
27787	McCrary D C
27935	XXXX
28279	XXXX
28455	Eells Robt L
	Knotts Larry
28515	Whitneys Ranch

City Search (Target Property Address)

Baseline St, Highland, CA 92346

1 Baseline St

1968	Street Not Listed	Haines Directory	San Bernardino
1965	Street Not Listed	Haines Directory	San Bernardino

27555 Baseline St

1995	United Meth Ch	Haines Directory	San Bernardino
1990	United Meth Church	Haines Directory	San Bernardino

27718 Baseline St

1984	Steamatic of Ari Ca	Haines Directory	San Bernardino

27719 Baseline St

1995	XXXX	Haines Directory	San Bernardino
1990	XXXX	Haines Directory	San Bernardino
1984	XXXX	Haines Directory	San Bernardino
1981	Franz Y M	Haines Directory	San Bernardino
1977	Franz Y M	Haines Directory	San Bernardino

27736 Baseline St

1984	XXXX	Haines Directory	San Bernardino
1981	XXXX	Haines Directory	San Bernardino
1977	XXXX	Haines Directory	San Bernardino

27767 Baseline St

1995	Nance Daniel	Haines Directory	San Bernardino
1990	Nance Daniel	Haines Directory	San Bernardino

27774 Baseline St

2002	McDonalds Rest	Haines Directory	San Bernardino

27776 Baseline St

2002	XXXX	Haines Directory	San Bernardino
	x [Stoney Creek]	Haines Directory	San Bernardino
1984	Gunther's	Haines Directory	San Bernardino
1981	Gunther S	Haines Directory	San Bernardino

APPENDIX G -
SITE RECONNAISSANCE PHOTOGRAPHS







Photo 1:

Existing Arco gas station located at southwest corner of intersection of Base Line and Seine Avenue.

Photo 2:

View facing west from Arco gas station located at southwest corner of intersection of Base Line and Seine Avenue. UST lids visible in foreground; AST visible beyond UST lids.

Photo 3:

View facing northwest from Arco gas station located at southwest corner of intersection of Base Line and Seine Avenue. UST lids visible in foreground; AST visible beyond UST lids.

Initial Site Assessment
Base Line Bridge at City Creek
Highland, CA

Project No. 2016-035

Photo Date: October 26, 2016







Photo 4:

Existing Valero gas station located at southeast corner of intersection of Base Line and Seine Avenue. (Note that Valero gas service station was under construction during previous site reconnaissance; see Section 8.6).

Photo 5:

View facing east from the Valero gas station. UST lids visible in the foreground.

Photo 6:

View facing west from the Valero gas station. AST visible in foreground. Roadway improvements along Base Line visible in background.

Initial Site Assessment
Base Line Bridge at City Creek
Highland, CA

Project No. 2016-035

Photo Date: October 26, 2016







Photo 7:

View of miscellaneous debris and vegetation in City Creek observed from sidewalk near west abutment of existing Base Line Bridge.

Photo 8:

View of miscellaneous debris and vegetation in City Creek observed from sidewalk near west abutment of existing Base Line Bridge.

Photo 9:

View facing south from City Creek bridge. Creek replete with vegetation.

Initial Site Assessment
Base Line Bridge at City Creek
Highland, CA

Project No. 2016-035

Photo Date: October 26, 2016







Photo 10:

View facing northwest from City Creek Bridge. Drainage culvert outlet located near the toe of levee forming western bank of City Creek. Bottom of creek filled with vegetation.

Photo 11:

View of the City Creek bottom and miscellaneous debris from Base Line Bridge.

Photo 12:

North-facing view of bottom of City Creek from Base Line Bridge. Bottom of the creek filled with vegetation.

Initial Site Assessment
Base Line Bridge at City Creek
Highland, CA

Project No. 2016-035

Photo Date: October 26, 2016







Photo 13:

Television and other debris observed along western embankment of City Creek south of Base Line Bridge.

Photo 14:

Miscellaneous debris observed along western embankment of City Creek south of Base Line Bridge.

Photo 15:

View facing northeast from the western embankment of City Creek south of Base Line Bridge.

Initial Site Assessment
Base Line Bridge at City Creek
Highland, CA

Project No. 2016-035

Photo Date: October 26, 2016





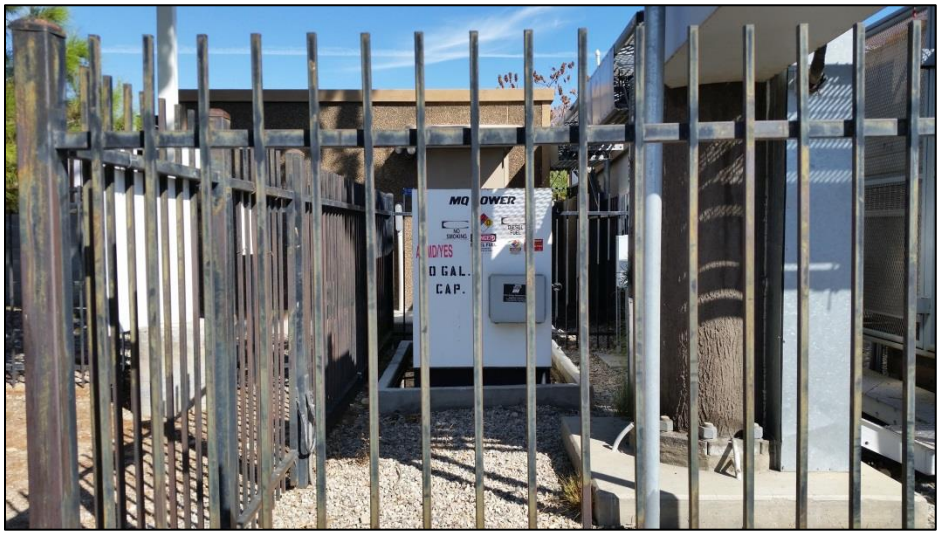


Photo 16:

Cellular tower observed at rear of shopping center located at northeast corner of intersection of Boulder Avenue and Base Line (approximately 1,000 feet north of Project site).

Photo 17:

Cellular tower station observed at rear of shopping center located at northeast corner of intersection of Boulder Avenue and Base Line (approximately 1,000 feet north of Project site).

Photo 18:

AST containing diesel fuel inside cellular tower station premises. Concrete berm observed at the tank base.

Initial Site Assessment
Base Line Bridge at City Creek
Highland, CA

Project No. 2016-035

Photo Date: October 26, 2016

APPENDIX H -
RESUMES OF THE PREPARERS

CLINT ISA
Professional Engineer

Mr. Isa has over 12 years of experience performing environmental and geotechnical investigations in California. He has managed soil initial site assessments for public works projects involving petroleum products and heavy metals. His experience includes site reconnaissance, data searches, field subsurface investigations to obtain samples for testing and analysis of laboratory test results.

EDUCATION

2010/M.S., Civil Engineering, University of California, Los Angeles, California.
2003/B.S., Civil Engineering, University of California, Los Angeles, California.

REGISTRATION/CERTIFICATION

2010/Registered Professional Engineer, No. 76470
2003/Engineer-in-Training, No. 117970

REPRESENTATIVE PROJECTS

Cherry Avenue On-Ramp at Interstate 405, Long Beach, California - Project manager for aerially deposited lead (ADL) soil assessment for Caltrans along Cherry Avenue collector ramp at Interstate 405. The project consisted of evaluating the site for ADL for the landscaped areas located within the California Department of Transportation (Caltrans) right-of-way along approximately 1,000 feet of the collector ramp. The test results were evaluated using U.S. Environmental Protection Agency (EPA) and California Department of Toxic Substances (DTSC) guidelines.

Ironwood Avenue and Indian Detention Basin, Moreno Valley, California - Project manager for initial site assessment for City of Moreno Valley along Ironwood Avenue and within the Indian Detention Basin. The project consisted of conducting an ISA for the proposed underground utility realignment and widening of Ironwood Avenue, and rehabilitation of the Indian Detention Basin. Project concerns included UST/LUST sites identified adjacent to the project sites, and undocumented soil dumping on the Indian Detention Basin site.

Base Line Bridge at City Creek, Highland, California - Project manager for initial site assessment for City of Highland along the Base Line Bridge alignment at City Creek. The project consisted of conducting an ISA for the proposed bridge lengthening, and improvements along the associated bridge approaches. Project concerns included ADL along the project alignment.

East San Fernando Valley Transit Corridors - ***Van Nuys Boulevard, Los Angeles, California*** - Project manager for initial site assessment of Van Nuys Boulevard transit corridor. The project consisted of conducting an ISA based the transit alternatives proposed along the project alignment. Project concerns included LUSTs adjacent to the project alignment; soil contamination at ERNS incident sites along the project alignment; potential ACM and LBP in existing bridge crossings along the project alignment; ADL along the project alignment; and LBP in thermoplastic paint striping along the project alignment.

Sepulveda Boulevard Widening, Manhattan Beach, California - Project manager during ISA between Rosecrans Avenue and 33rd Street. The project consisted of conducting an ISA in accordance with Caltrans' guidelines for the widening of Sepulveda Boulevard, including an existing bridge structure. Project concerns included the impacts of heavy metals, VOCs, polychlorinated biphenyls (PCBs), and petroleum hydrocarbons in the soil and groundwater from existing and previous adjacent facilities; potential asbestos-containing material (ACM) and LBP in the existing bridge structure along the project alignment; ADL along the project alignment; LBP in thermoplastic paint striping along the project alignment; and TWW and weed control within a former railroad ROW crossing the site. Mr. Isa performed the data review and prepared the report.

Foothill Boulevard Improvement Project, Fontana, California - Project manager during ISA performed for improvements to Foothill Boulevard between Oleander Avenue and 600 feet east of Cypress Avenue in Fontana, California. DYA's services consisted of performing an ISA for a Project constructing a raised median; resurfacing existing pavement; construction of curb, gutter, sidewalk, commercial driveways and curb ramps; and installing a traffic signal, traffic signs, stripes, and pavement markings. The primary hazardous material considerations were ADL; VOCs released from historical USTs adjacent to the site; ACM; and LBP. Mr. Isa reviewed and helped prepare the report, responded to agency comments on the report, and performed project management.

Skypark at Santa's Village Improvements, Skyforest, California - Project manager and engineer during ISA performed for widening of California State Route 18 in the vicinity of Santa's Village in Skyforest, California. DYA's services consisted of performing an ISA for the proposed widening, which included the addition of a center turn lane; grading the adjacent slopes to accommodate the roadway widening; and relocating traffic signals and the associated underground utilities. The primary hazardous material considerations were ADL and LBP. Mr. Isa reviewed and helped prepare the report, responded to agency comments on the report, and performed project management.

Mission Boulevard Bridge Replacement, Riverside, CA - Project manager for ISA for project to replace the existing Mission Boulevard Bridge (State Bridge Number 56C-0071) over the Santa Ana River near Mount Rubidoux in Riverside County. The proposed Project also includes necessary approach roadway work, re-striping, and utility relocation. Hazardous materials of concern to the project included the impacts of heavy metals, VOCs, polynuclear aromatic hydrocarbons (PAHs), and petroleum hydrocarbons in the soils forming the proposed bridge abutments; potential polychlorinated bi-phenyls (PCBs), VOCs, petroleum hydrocarbons, and lead in the soils at properties adjacent to the project ROW; potential ACM and LBP in the existing bridge structure along the project alignment; ADL along the project alignment; LBP in thermoplastic paint striping along the project alignment; and pest and weed control in former agricultural areas adjacent to the site. Mr. Isa performed the data review and prepared the report.

Somadevan Niranjanan
Professional Engineer

Mr. Niranjanan has over 16 years of experience performing environmental and geotechnical investigations in California. He has managed soil and groundwater environmental site assessments for public works projects. His experience includes site reconnaissance, data searches, field subsurface investigations to obtain samples for testing and analysis of laboratory test results.

EDUCATION

MSCE/Civil Engineering, Washington State University, Pullman, Washington, 2000
BS/Civil Engineering with Honors, University of Peradeniya, Sri Lanka, 1997

REGISTRATION

2004/Professional Engineer, California – No.67023
2009/Geotechnical Engineer, California – No. 2819

REPRESENTATIVE PROJECTS

Sepulveda Boulevard Widening, Manhattan Beach, California - Project Manager for a project that consisted of performing a Phase I Initial Site Assessment (ISA) in accordance with Caltrans' guidelines for the proposed widening of Sepulveda Boulevard between Rosecrans Boulevard and 33rd Street, including an existing bridge structure. DYA's scope during the Phase I ISA consisted of performing a site reconnaissance; conducting research of environmental databases, regulatory agency records, and historical records; and preparing a Phase I ISA report. Also performed Phase II site investigation based on recommendations provided in the Phase I ISA report.

Southern California International Gateway, Wilmington, California - Project Manager for Phase I hazardous waste initial site assessment (ISA) performed for the Pacific Coast Highway (PCH) portion of the overall Southern California International Gateway (SCIG) project. The majority of the PCH project (Project) will be located along PCH and between the existing Hobson Overhead on the east and the Dominguez Channel on the west. This ISA study is intended to provide preliminary identification of potential hazardous waste mitigation that may be necessary for the construction of the Project. Performed site reconnaissance, reviewed environmental data base research, file reviews for leaking underground tanks, and historical underground tanks, and report writing. The ISA report was reviewed and approved by Caltrans District 7.

Iowa Avenue/ BNSF Grade Separation, Riverside California - Project Manager for Phase I Environmental Site Assessment (ESA). Performed site reconnaissance, reviewed environmental data base research, file reviews for leaking underground tanks, and historical underground tanks, and report writing.

Magnolia Avenue/ UPRR Grade Separation, Riverside California - Project Manager for Phase I Environmental Site Assessment (ESA). Performed site reconnaissance, reviewed

environmental data base research, file reviews for leaking underground tanks, and historical underground tanks, and report writing.

Broadway Sidehill Viaduct, Los Angeles, California - Field Engineer for aerially deposited lead (ADL) soil assessment for the North Broadway Sidehill Viaduct as part of the City of Los Angeles Highway Bridge Replacement and Rehabilitation (HBRR) program. The project consisted of collecting soil samples along the proposed retaining wall alignment for lead laboratory testing. The laboratory results were evaluated using U.S. Environmental Protection Agency (EPA) and California Department of Toxic Substances (DTSC) guidelines.

State Route 210, Pasadena, Arcadia, And Glendora, California - Field Engineer for aerially deposited lead (ADL) soil assessment for Caltrans along State Route (SR) 210. The project consisted of evaluating the site for ADL for the proposed noise barriers (sound walls) located within the California Department of Transportation (Caltrans) right-of-way along approximately 4 miles of freeway. The test results were evaluated using U.S. Environmental Protection Agency (EPA) and California Department of Toxic Substances (DTSC) guidelines.

Bitter Point Pump Station - The proposed Pump Station is located north of Pacific Coast Highway (PCH) and is approximately ¼ mile north of the intersection of Superior Avenue and PCH in Newport Beach, California. The proposed project will consist of a new pumping station structure. Upon completing the geotechnical soil sampling, groundwater samples were obtained from the bore hole using a bailer. Groundwater quality testing on collected water samples was performed. (EPA 413.2 for Oil and Grease, EPA 418.1 for total recoverable petroleum hydrocarbons, EPA 8015B/8021B for gas range organics and BTEX, EPA 330.5 for chlorine, EPA 150.1 for pH, EPA 376.2 for Sulfide, EPA 160.2 for total suspended solids, EPA 180.1 for turbidity and SM4500-N-OC for total nitrogen).

Front Street Sewer Rehabilitation, Los Angeles, California - The project consists of rehabilitating 3,450 linear feet of 42-inch-diameter vitrified clay pipe (VCP) located at Front Street, Los Angeles. The City planned to rehabilitate the existing pipe by slip lining. However, the pipe will be removed and replaced where curvature in the alignment does not allow for pulling a new pipe through the existing pipe. The sewer alignment includes the sections on Front Street from Harbor Boulevard to Pacific Avenue and on Pacific Avenue from Front Street to Channel Street. A photo ionization detector (PID) was used to detect potential volatile hydrocarbons during our field investigation. Background level and the sample head space readings were recorded for each soil sample. The boring logs show the difference between the headspace reading and the background reading. Lower explosive limit (LEL) readings were taken at the ground surface of the borings.

Pier T, Port of Long Beach - Performed site investigation for a former naval facility that was converted to a container terminal. The investigation consisted of collecting soil samples for the assessment of petroleum hydrocarbons.

DISTRIBUTION

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Principal

CI/SN:dr

APPENDIX E

2018 IS/MND WATER QUALITY STUDY

Water Quality Assessment Report

Base Line Bridge Replacement Project



Base Line Bridge Replacement Project
City of Highland
San Bernardino County, California
EA Number 08-925035
Federal Project Number BR-NBIL-5449 (505)

May 2017

Caltrans

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Water Quality Assessment Report

Base Line Bridge Replacement Project
City of Highland
San Bernardino County, California
EA Number 08-925035
Federal Project No. BR-NBIL-5449 (505)

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LOCAL ASSISTANCE

May 2017

STATE OF CALIFORNIA
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Executive Summary

The purpose of this Water Quality Assessment Report (WQAR) is to identify the physical setting of the Base Line Bridge Replacement at City Creek (proposed project) and the existing water quality, specify the regulatory framework with respect to water quality, identify potential water quality impacts associated with the project, and make recommendations for avoidance and minimization measures for potentially adverse water quality impacts. Further, the analysis developed in this WQAR fulfills the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

The City of Highland (City), in cooperation with the California Department of Transportation (Caltrans), District 8, and the Federal Highway Administration (FHWA), proposes a replacement bridge for the Base Line Bridge (State Bridge Number 54C0035) located on Base Line Road at City Creek, approximately 0.4 mile east of Interstate 210. The proposed replacement bridge will accommodate four lanes of vehicular traffic with dedicated space for pedestrians and bicyclists in accordance with current federal, State, and applicable local geometric standards. The proposed project will include four 12-foot lanes, a 16-foot median, two 8-foot shoulders, and two dedicated 5-foot pedestrian corridors separated from vehicle lanes by a concrete barrier along the length of the bridge. The new bridge will measure approximately 95 feet 6 inches wide and 600 feet long and replace the existing 72-foot-wide and 42-foot-long bridge. Both the northern and southern edges of the proposed bridge deck will extended past their current locations to accommodate standard shoulders and the pedestrian corridors. The replacement bridge profile will be raised by approximately one foot to accommodate current standards for the roadway design, and it will facilitate an additional 558 feet of horizontal clearance for water flows to pass beneath Base Line Road compared to existing conditions. This increase in horizontal clearance beneath Base Line Bridge will result in a net increase of approximately 0.96 acre of natural communities expected to be restored naturally with Riversidean alluvial fan sage scrub and southern willow scrub vegetation (LSA 2017b).

Runoff is conveyed off the existing Base Line Bridge via existing roadside gutters. Generally, runoff from Base Line Road flows west and south through the storm drain system and discharges into City Creek and then into the Santa Ana River. The proposed drainage system would preserve the overall drainage pattern, and storm water runoff would continue to be discharged into the Santa Ana River through the storm drain system and via City Creek.

Construction of the project would disturb approximately 20 acres of soil, which includes the proposed limits of grading and temporary staging areas. Potential impacts during construction activities include exposure of excavated soil, which would increase the potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via storm runoff into receiving waters.

A Storm Water Pollution Prevention Plan (SWPPP) would be prepared and implemented during construction as required by the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit [CGP], Order 2009-0009-DWQ, as amended by 2010-

0014-DWQ and 2012-0006-DWQ; NPDES No. CAS000002). The construction SWPPP would identify the specific Best Management Practices (BMPs) to be implemented during construction so as not to cause or contribute to an exceedance of any applicable water quality standard included in the Santa Ana Regional Water Quality Control Board (Santa Ana RWQCB) Basin Plan. These construction BMPs would be designed to meet the technology requirement stipulated in the CGP.

Perched groundwater dewatering may be necessary during excavations for the spread footings proposed at the pier supports for the new bridge. If perched groundwater dewatering is required during construction, construction activities associated with the proposed project would comply with the requirements of *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality* (Order No. R8-2015-0004, NPDES No. CAG998001). This permit covers general waste discharge requirements for discharges to surface waters that pose an insignificant (de minimis) threat to water quality within the Santa Ana Region. Under this permit, discharges must comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in the permit.

The proposed project is subject to compliance with the *San Bernardino County MS4 NPDES Permit and Waste Discharge Requirements for the San Bernardino County Flood Control District (SBCFCD) the County of San Bernardino, and the Incorporated Cities of San Bernardino County within the Santa Ana Region* (Order No. R8-2010-0036; NPDES No. CAS618036). The proposed project includes roads and is classified as a *Category 1 Priority Project*[1] pursuant to the *Technical Guidance Document for Water Quality Management Plans* (AECOM 2017 and County of San Bernardino 2013). Accordingly, a project-specific Water Quality Management Plan (WQMP) has been prepared to determine appropriate BMPs and treatment measures to minimize impacts to surface water quality. Source control BMPs (landscape management, BMP maintenance, contractor and tenant training on BMPs, litter/debris control program, catch basin inspection program, storm drain stenciling, hydroseed and fiber rolls, and riprap, etc.), site design BMPs (minimizing impervious areas, preserving and restoring vegetation, minimizing compaction of soils, etc.), and Low Impact Development (LID) BMPs (infiltration trench) would be implemented as part of the proposed project to reduce the discharge of pollutants of concern to the maximum extent practicable.

To maintain water quality, the proposed project will implement a LID BMP consisting of an infiltration trench approximately 9.65 feet wide by 337.62 feet long (3,256.85 square feet) within a 10-foot-wide median of the eastern roadway approach to the proposed bridge. Infiltration trenches perform well for removal of fine sediment and associated pollutants and would reduce pollutants of concern during operation of the proposed project (CASQA 2003). Additionally, a system of proposed deck drains along Base Line Bridge and proposed catch basins south of the bridge (Base Line Bridge Storm Drain Improvement Plans- to be submitted at a later stage) will be implemented to direct storm water runoff.

[1] Significant re-development involving the addition or replacement of 5,000 or more square feet of impervious surface on an already developed site (AECOM 2017, Form 2.1-1 and County of San Bernardino 2013, Table 1-1).

The proposed project includes six Drainage Management Areas (DMAs). DMA-1 is 1.69 acres and encompasses the proposed roadway approach west of the proposed bridge, as well as the bridge roadway itself. DMA-2 is 1.5 acres and encompasses a portion of the bridge roadway itself and a portion of the roadway approach east of the proposed bridge. DMAs -3 through -6 are 13.7 acres, 4.75 acres, 7.49 acres, and 1.07 acres, respectively, and comprise the balance of the total drainage area for the upstream and downstream management of storm runoff.

The expected pollutants of concern of the proposed project include heavy metals, organic compounds, sediments, trash and debris, and oil and grease. The potential pollutants of concern include bacteria/virus, nutrients, pesticides, and oxygen demanding substances. The project would increase impervious surface area by 0.64 acre (AECOM 2017). An increase in impervious area would increase the volume of runoff during a storm, which would more effectively transport pollutants to receiving waters and result in a potential Hydrologic Condition of Concern (HCOC).

The increase in impervious surface area (0.64 acre) of the proposed project results in an additional 2,478.54 cubic feet of runoff. Therefore, the reduction in runoff volume required to avoid an HCOC would be 2,478.54 cubic feet. The LID BMP infiltration trench proposed for the project would be designed with a design capture volume of 2,768.33 cubic feet (AECOM 2017), so the infiltration trench would treat runoff from the equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area. The area treated by the infiltration trench LID BMP exceeds the net new impervious area generated, so the LID BMP infiltration trench is sufficient to capture, store, and infiltrate storm water surface runoff. Although the proposed 0.64-acre increase in impervious surface area could increase runoff, City Creek would not be affected by the increase in peak flows since the design capture volume of the infiltration trench will reduce peak flows to at or below existing conditions. Therefore, the proposed project will not result in hydromodification impacts to City Creek or cause or contribute to an HCOC in a downstream channel.

By complying with existing water quality regulations and implementation of BMPs during construction and operation of the proposed project, as stipulated in Measures WQ-1 through WQ-4, the proposed project is not anticipated to result in adverse impacts to water quality.

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1. Introduction

The City of Highland, in cooperation with Caltrans and the FHWA, propose a replacement bridge for the Base Line Bridge (State Bridge Number 00L0028) that will accommodate four lanes of vehicular traffic with dedicated space for pedestrians and bicyclists in accordance with current federal, State, and applicable local geometric standards. The Base Line Bridge crosses over City Creek, which drains directly into the Santa Ana River, approximately 0.4 mile east of Interstate 210 in the City of Highland, San Bernardino County (Federal Project Number: BR-NBIL-5449 [505]). The proposed project also includes necessary approach roadway work, restriping, and utility relocation. The project site includes portions of Base Line Road (Figure 1).

1.1. Purpose and Need

1.1.1. Purpose

The purpose of the proposed project is to replace the existing bridge and an RC box culvert with a raised bridge with adequate clearance for the design storm event to flow underneath and to maintain safe access through the project area on a roadway that meets adopted City standards.

1.1.2. Need

Upstream of Base Line, during normal flow conditions, flows are contained within the main channel on the west side of the floodplain. However during major flood events, breaches have been observed and documented at multiple locations. As a result of these breaches, flows can be diverted to a secondary flow path where the existing box culvert is inadequate to convey such large flows. Consequently, the flows overtop the roadway. Major storms in December 2010 resulted in substantial flows within City Creek, resulting in the overtopping of a number of roadways and culverts within the City.

According to the City of Highland General Plan, Base Line crossing City Creek is classified as "Major Highway," defined as a four-lane, 80-foot roadway (including a 12-foot median) curb-to-curb, within 104-foot rights-of-way. The existing Base Line Bridge carries four lanes of traffic over City Creek (two lanes in each direction) via a 72-foot roadway curb-to-curb but without a median. The new bridge will include a 95.5-foot wide roadway (including a 16-foot median and 5-foot dedicated pedestrian path on each side) curb-to-curb, within a 160-foot City right-of-way.

1.2. Project Description

1.2.1. No Build Alternative

The No Build Alternative assumes that no improvements would be made to the Base Line Bridge at City Creek, and existing conditions would be maintained. Under the No Build Alternative, the structural integrity of the bridge would continue to deteriorate and safety concerns for adequate freeboard would increase. Due to deficient hydraulic conveyance capacity, public safety could be compromised during a major storm event.

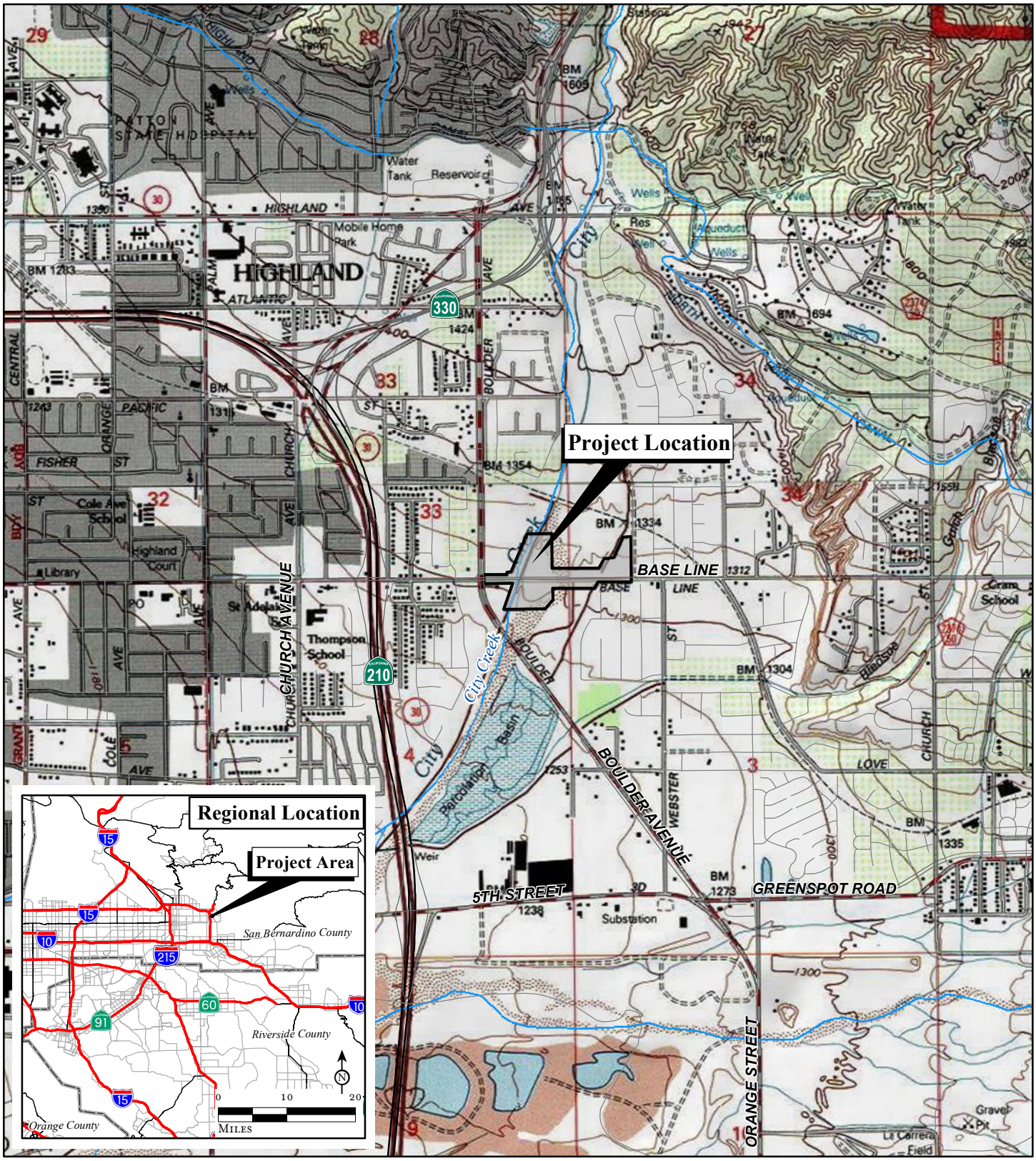


FIGURE 1

SOURCE: USGS 7.5' Quads: Redlands and Harrison Mtn. (1988), CA; ESRI Streetmap, 2013.

Base Line Bridge Over City Creek (Replace)
Water Quality Assessment Report

Regional and Project Location

08-SBd-0-HIGH
EA 08-925035

I:\AEM1603(LIM0801)\Reports\WaterQuality\Fig1_RegLoc_Topo.mxd (4/27/2017)

1.2.2. Build Alternative

Under the build alternative, the City of Highland, in cooperation with the California Department of Transportation (Department) and the Federal Highway Administration (FHWA), proposes to replace the existing Base Line bridge and RC box culvert with a raised bridge with adequate clearance for the creek to flow underneath and to maintain safe access through the project area on a roadway that meets adopted City standards. The existing Base Line four-lane roadway sections approaching the bridge over City Creek from both the east and the west will be elevated to meet the proposed raised bridge profile. The proposed action (Figure 2) will include, but is not limited to, the following improvements:

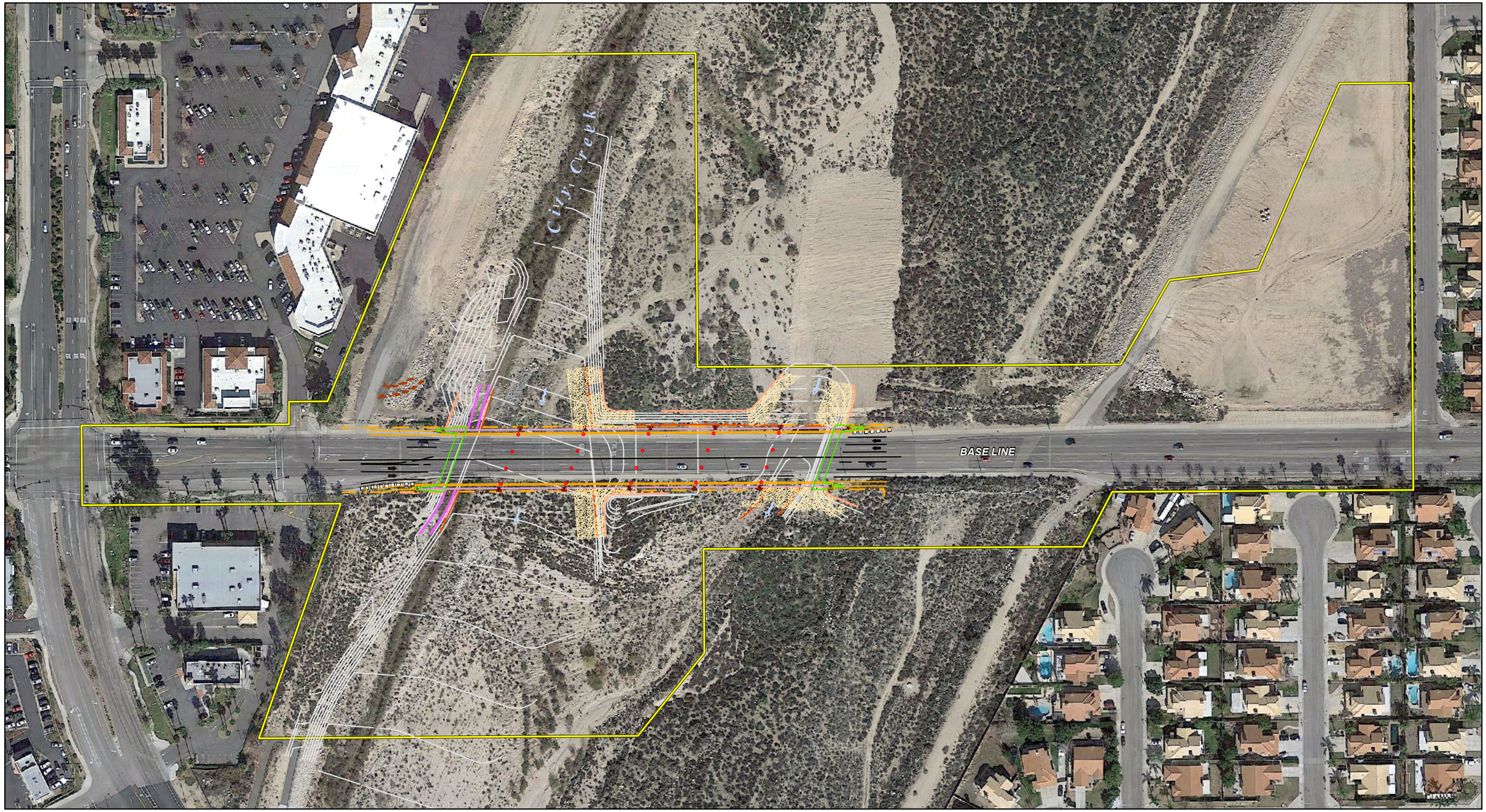
- Replace the structurally deficient bridge over City Creek with a longer bridge with a raised profile. The raised bridge will span 600 feet across City Creek and will be 95.5 feet wide.
- Construct roadway approaches, approximately 170 feet to the west of the proposed bridge and approximately 540 feet to the east, to tie into the existing four-lane roadway section.
- Construct street improvements including utility construction, pavement widening, curbs, gutters, sidewalks, and street lighting and the relocate utilities as needed.
- Accommodate the construction of a north to southwestern trending multipurpose trail along the western bank of City Creek (to be locally funded by the City of Highland at a later date).

Other miscellaneous improvements include channel grading in City Creek to divert flows under the new bridge.

Spread footings are proposed to support the bridge. The proposed bridge will be supported on 4-foot-diameter columns, with four columns at each bent. There will be a total of five bents supporting the proposed bridge in addition to an abutment at each end of the bridge structure. Approximately 21,500 square feet of concrete will be poured for slope protection at the west abutment; the east abutment will be protected by riprap. Foundation construction may require de-watering. Columns will be supported on spread footings, which will be placed below the maximum scour depth.

The width of the proposed bridge will match the width of the existing roadway approaches. The proposed project is non-capacity increasing with the same number of traffic lanes. The proposed project will require the acquisition of new right-of-way (ROW). Additional approach roadway work and restriping will be necessary in order to tie-in with the revised geometry for the traffic lanes, shoulders, and sidewalks. The proposed project also includes the relocation of utilities, including existing sewer, water, gas, electric, and communication.

The proposed project may require a few short term (partial day) closures to facilitate the project staging and construction. Construction will occur in stages to allow for continued traffic flow during construction. Two lanes of traffic with pedestrian access will remain open at all times. The details of the final construction methods addressing these issues will be developed during the project design phase. Potential staging areas have been identified north of Base Line Road along the eastern terminus of the project site and along the upland banks of City Creek in the northwest section of the project site (Figure 2).



Project Site
Abutment
Access
Accomodations for Future Trail
Column
Concrete Barrier
Cut-off Wall
Direction of Flow
Existing City ROW
Guard Rail
Light Pole & Pilaster/Pedestal
Metal Barrier
Rip-Rap
Striping
Toe of Slope
Top of Slope
Channel Grading

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0 75 150
FEET

SOURCE: AECom, 2017

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FIGURE 2

Base Line Bridge Over City Creek (Replace)
Water Quality Assessment Report
Project Features
08-SBd-0-HIGH
EA 08-925035

Construction of the project would disturb approximately 20 acres of soil, which includes the proposed limits of grading and temporary staging areas. In accordance with the risk determination methodology outlined in the Construction General Permit [CGP], Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ; NPDES No. CAS000002, the combined risk level for a project is based on the receiving water risk and the sediment risk. Receiving water risk is based on whether a project drains to a sediment-sensitive waterbody, which is a waterbody that is either listed on the most recent 303(d) list as impaired for sediment, has an approved Total Maximum Daily Load (TMDL) for sediment, or has the beneficial uses of cold freshwater habitat (COLD), spawning, reproduction, and development habitat (SPAWN), or migratory habitat (MIGRATORY).

Projects that do not drain to a sediment-sensitive waterbody are assigned a low receiving risk level, and projects that drain to a sediment-sensitive waterbody are assigned a high receiving risk level. Runoff from the project footprint does not drain to a sediment-sensitive waterbody; therefore, the receiving water risk for the project is low.

Project Sediment Risk is determined by multiplying R (rainfall-runoff erosivity factor), K (soil erodibility factor), and LS (length-slope factor) from the Revised Universal Soil Loss Equation (RUSLE) to obtain an estimate of project-related bare ground soil loss expressed in tons/acre. Projects with a calculated soil loss of less than 15 tons/acre, between 15 and 75 tons per acre, and greater than 75 tons per acre are assigned a sediment risk level of low, medium, and high, respectively. The soil loss for the project was calculated as 19.008 tons/acre;[1] therefore, the sediment risk level for the project is medium (SWRCB 2012b). As shown in the Combined Risk Level Matrix in the CGP (Table A), the low receiving water risk and medium sediment risk result in a combined Risk Level of 2 for the project. Risk Level 2 projects are required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP); install, inspect, and maintain BMPs; and conduct water quality sampling of effluent from the project site during construction. However, the calculated Risk Level of 2 is based on preliminary design and could change during final design.

Table A: Combined Risk Level Matrix

		Sediment Risk		
		Low	**Medium**	**High**
Receiving Water Risk	**Low**	Level 1	Level 2	
	High	Level 2		Level 3

Source: Construction General Permit [CGP], Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ; NPDES No. CAS000002. Fact Sheet accessed December 17, 2016 from http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_complete.pdf

The proposed project would result in permanent net increase of impervious surface area of approximately 0.64 acre. As noted previously, the proposed LID BMP consists of an infiltration trench approximately 9.65 feet wide by 337.62 feet long (3,256.85 square feet) within the 10-foot-wide median of the eastern roadway approach to the proposed bridge.

[1] R: 40, K: 0.24, and LS: 1.98; therefore, R × K × LS = 19.008 tons per acre bare ground soil loss.

An infiltration trench is a long, narrow rock and soil-filled trench designed to receive storm water runoff and remove fine sediments and associated pollutants by storing runoff in the void space between stones as it infiltrates into the soil matrix. Additionally, infiltration trenches that are installed flush with surface grade can be landscaped, thus providing unobtrusive water quality improvements with minimal impact to project site aesthetics.

The LID BMP infiltration trench will be installed at surface grade within the 10-foot-wide median of Base Line Road and will be vegetated. The infiltration trench will be designed with a design capture volume of 2,768.33 cubic feet (AECOM 2017) and will treat runoff from the equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area. The area treated by the infiltration trench LID BMP exceeds the net new impervious area generated, so the LID BMP infiltration trench is sufficient to capture, store, and infiltrate storm water surface runoff.

In order to maintain effective trench infiltration rates, it is important to limit the amount of coarse sediment entering the trench. This can be achieved through pretreatment non-structural source control BMPs such as landscaping designed to control erosion and act as a vegetated swale, routine maintenance of BMPs, implementation of a litter/debris control program, as well as structural source control BMPs such as buffer strips, swales, hydroseed and fiber rolls, and riprap (CASQA 2003).

In order to maintain effective trench infiltration rates, the proposed project will implement non-structural source control BMPs including, but not limited to, landscape management, BMP maintenance, contractor and tenant training on BMPs, litter/debris control program, catch basin inspection program, as well as structural source control BMPs such as storm drain stenciling, hydroseed and fiber rolls, and riprap. The drawdown rate for water within the proposed infiltration trench is 48 hours; however, the infiltration trench will be filled with rock and soil and vegetated at surface grade to prevent water from ponding at surface.

As detailed in Figure 3, runoff from DMA-2 (1.5 acres) would be treated by the infiltration trench LID BMP within a 10-foot-wide median along the Base Line Road eastern roadway approach to the proposed bridge. This would equate to 2,768.33 cubic feet of runoff being treated by the LID BMP. Flow from the roadway would be conveyed to the BMP as pipe flow and/or sheet flow.

DMA-1 is from the eastern terminus of the proposed bridge structure to the western terminus of the approach roadway west of the proposed bridge and encompasses approximately 1.69 acres. DMA-1 would not be treated with a BMP because of the lack of available ROW beyond the proposed slopes and retaining walls north and south of Base Line Road. A system of proposed deck drains along the proposed bridge and proposed catch basins south of the bridge will capture runoff from DMA-1 and convey it to City Creek.

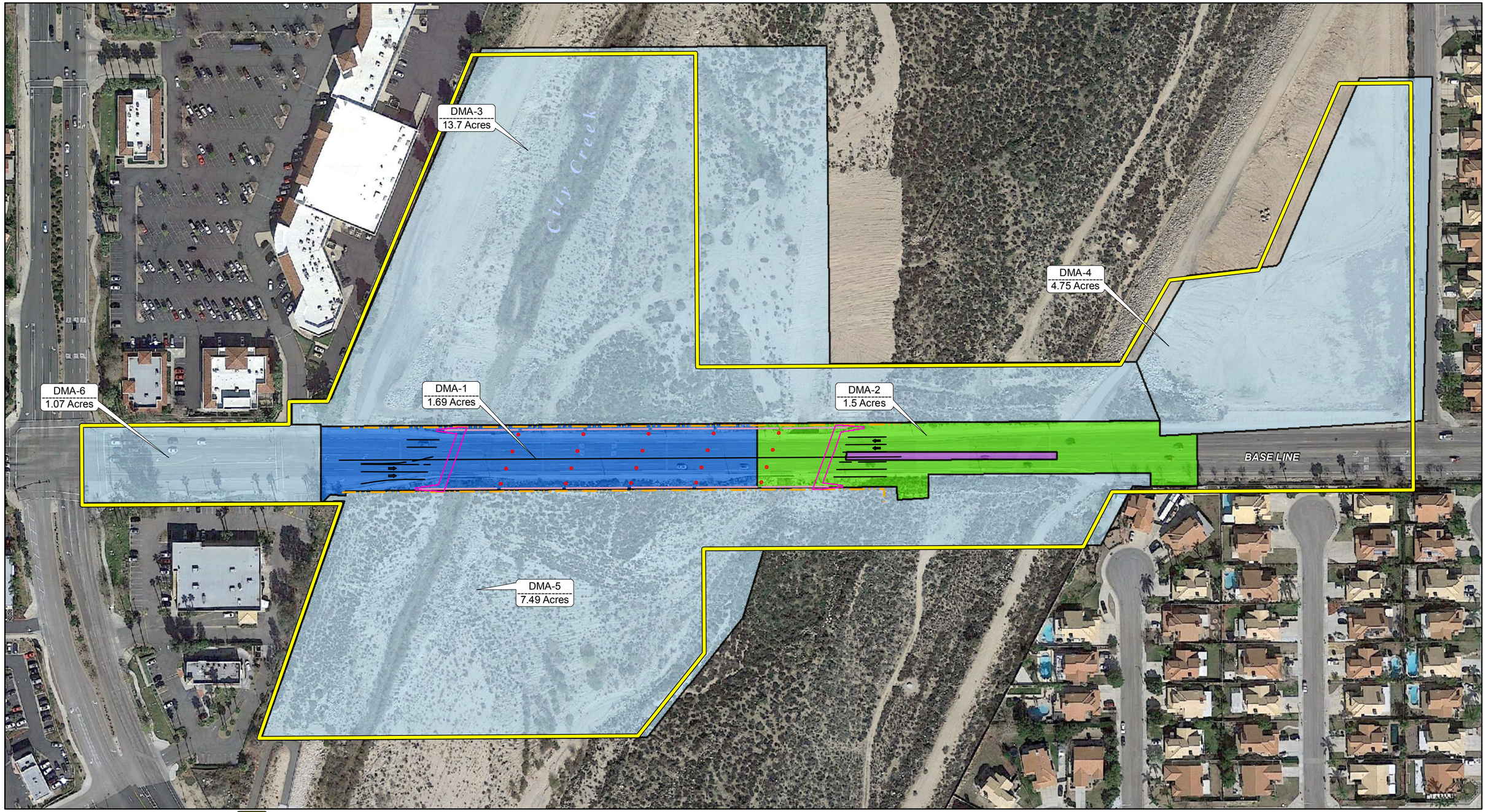
DMA-3 (13.7 acres), DMA-4 (4.75 acres), DMA-5 (7.49 acres), and DMA-6 (1.07 acres) comprise the balance of the total drainage area for the upstream and downstream management of storm runoff and are considered self-treating areas. Runoff from these areas drains overland offsite or directly into the storm drain system and does not comingle with runoff from the impervious surfaces within the project footprint (i.e., the roadway) that require treatment of

runoff. Therefore, these areas are not required to be treated by BMPs (CASQA 2003). Accordingly, runoff from the self-treating areas drains directly off site and does not drain to the proposed LID BMP.

1.3. Approach to Water Quality Assessment

The purpose of the Water Quality Assessment Report (WQAR) is to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and to provide information, to the extent possible, for National Pollution Discharge Elimination System (NPDES) permitting. The document includes a discussion of the proposed project, the physical setting of the project site, and the regulatory framework with respect to water quality; it also provides data on surface water and groundwater resources within the project site and the water quality of these waters, describes water quality impairments and beneficial uses, identifies potential water quality impacts/benefits associated with the proposed project, and recommends avoidance and/or minimization measures for potentially adverse effects.

This WQAR determines whether reconstruction and operation of the Base Line Bridge and widening of Base Line Road at City Creek would have an adverse impact on water quality. The determination of impacts is based on the anticipated change in pollutant loads due to the proposed 20-acre disturbed soil area, as well as anticipated changes in land use and impervious area percentages between the existing condition and the post-project condition. The analysis includes consideration of BMPs to be implemented as part of the proposed project. The report format is based on the California Department of Transportation (Caltrans) Water Quality Assessment Report Content and Recommended Format (June 2012).



Project Site

Bridge Structure
- Abutment
- Column
- Existing City ROW
- Metal Barrier
- Striping

Drainage Plans
- Untreated Drainage Management Area
- Treated Drainage Management Area
- Self-treating Drainage Management Area
- Infiltration Trench LID BMP

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SOURCE: AECom, 2017, Google Earth, 2016

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FIGURE 3

Base Line Bridge Over City Creek (Replace)
Water Quality Assessment Report
Drainage Plans
08-SBd-0-HIGH
EA 08-925035

2. Regulatory Setting

2.1. Federal Laws and Requirements

2.1.1. Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a NPDES permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and Municipal Separate Storm Sewer Systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

USACE issues two types of 404 permits: Standard and General permits. For General permits there are two types: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are also two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (EPA) Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if

there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have fewer effects on waters of the U.S., and not have any other adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

2.2. State Laws and Requirements

2.2.1. Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards on a project site are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB (2012a) identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of TMDLs. TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

2.2.1.1. State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for

protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

2.2.1.2. National Pollution Discharge Elimination System (NPDES) Program

2.2.1.2.1. Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including MS4s. The U.S. EPA defines an MS4 as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water." The SWRCB has identified the Department as an owner/ operator of an MS4 pursuant to federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit, currently under revision, contains three basic requirements:

1. The Department must comply with the requirements of the CGP (see below);
2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

2.2.1.2.2. Construction General Permit

Construction General Permit (Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ; NPDES No. CAS000002), adopted on November 16, 2010, became effective on February 14, 2011. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. For all projects subject to the CGP, applicants are

required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for substantial water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the CGP.

The CGP separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and pre- and post-construction aquatic biological assessments during specified seasonal windows.

2.2.1.2.3. Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permit triggering 401 Certification is a CWA Section 404 permit, issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.3. Regional and Local Requirements

2.3.1. Santa Ana Region Water Quality Control Board Basin Plan

The Santa Ana RWQCB has adopted the *Water Quality Control Plan for the Santa Ana River Basin* (Santa Ana RWQCB 1995, updated February 2008 and February 2016) for its region of responsibility, which includes the city of Highland. The RWQCB has delineated water resource area boundaries based on hydrological features. For purposes of achieving and maintaining water quality protection, specific beneficial uses have been identified for each of the hydrologic areas described in the Basin Plan. The Basin Plan also establishes implementation programs to achieve water quality objectives to protect beneficial uses and requires monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State anti-degradation

policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected. The beneficial uses and water quality objectives from the Basin Plan are discussed in detail in Section 3.3, Water Quality Objectives/Standards and Beneficial Uses.

2.3.2. San Bernardino County NPDES MS4 Permit

The City of Highland is a permittee under the *San Bernardino County MS4 NPDES Permit and Waste Discharge Requirements for the San Bernardino County Flood Control District (SBCFCD) the County of San Bernardino, and the Incorporated Cities of San Bernardino County within the Santa Ana Region* (Order No. R8-2010-0036; NPDES No. CAS618036) (County MS4 Permit). The NPDES permit prohibits discharges, sets limits on pollutants being discharged into receiving waters, and requires implementation of technology-based standards.

Under the NPDES permit, the City of Highland is responsible for the management of the storm drain systems within its jurisdiction. The City is required to implement management programs, monitoring programs, the San Bernardino County Watershed Action Plan (WAP), and BMPs outlined in the San Bernardino County Municipal Storm Water Management Plan (MSWMP) and to take any other actions as may be necessary to protect water quality to the maximum extent practicable. The City is required to develop its own Local Implementation Plan (LIP), which includes the specific actions the City needs to take to implement the WAP, the MSWMP, and the requirements of the NPDES permit (Santa Ana RWQCB 2010).

The proposed project is subject to local assistance, so the County MS4 permit requirements, as opposed to Caltrans standards, dictate water quality treatment. The County MS4 Permit requires co-permittees to develop and implement a standard design and post-development WQMP to guide application of LID BMPs to the maximum extent practicable. The proposed project includes roads and is classified as a *Category 1 Priority Project*[1] pursuant to the *Technical Guidance Document for Water Quality Management Plans* (AECOM 2017 and County of San Bernardino 2013). Accordingly, a project-specific WQMP has been prepared to determine appropriate BMPs and treatment measures to avoid impacts to surface water quality.

Drainage and flood control structure and improvements in the County of San Bernardino are subject to review and approval by the County of San Bernardino Flood Control District, while structures and improvements in the City of Highland are subject to review and approval by the City of Highland Department of Public Works. In general, the County maintains the large regional channels and smaller storm drains are maintained by the City. Both agencies utilize design standards to provide a specified level of protection against flooding for different types of land use and regulate drainage-related improvements through plan approvals and permits. The City requires project proponents to design storm water collection and conveyance systems using specifications and procedures set forth in their respective storm drain design manuals. Methods

[1] Significant re-development involving the addition or replacement of 5,000 or more square feet of impervious surface on an already developed site (AECOM 2017, Form 2.1-1 and County of San Bernardino 2013, Table 1-1).

for reducing impacts to the storm drain/flood system can include controlling peak and total discharge though storm water detention or by increasing site perviousness.

2.3.3. General Waste Discharge Requirements for De Minimis Discharges

On June 19, 2015, the Santa Ana RWQCB adopted the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality* (Order No. R8-2015-0004, NPDES No. CAG998001) (Santa Ana RWQCB 2015). This permit became effective on July 1, 2015. This permit regulates discharge of groundwater and non-storm water construction dewatering waste to surface waters (including estuarine and ocean waters) that pose an insignificant threat to water quality in the Santa Ana Region. Under this permit, discharges must comply with discharge specifications, receiving water and groundwater limitations, and monitoring and reporting requirements detailed in the permit.

2.4. Summary of Permits Required for the Project

The project will be required to obtain the following water quality-related permits prior to construction:

- National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit [CGP]) (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWG and 2012-0006-DWQ, NPDES No. CAS000002).
- General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality (Order No. R8-2015-0004, NPDES No. CAG998001).
- Clean Water Act (CWA) Section 401 Water Quality Certification from the Santa Ana Regional Water Quality Control Board (Santa Ana RWQCB) for any discharge to a water of the United States.
- CWA Section 404 Nationwide Permit from United States Army Corps of Engineers (USACE) for the discharge of dredge or fill material into a water of the United States.
- California Fish and Game Code Section 1602 Streambed Alteration Agreement will be required from the California Department of Fish and Wildlife (CDFW) for impacts to CDFW riparian streambed.

Section 4.5, Alternative-Specific Impact Analysis, contains additional details regarding the project nexus to these permits.

3. Affected Environment

3.1. Introduction

The proposed project is located in the eastern portion of the City of Highland in the southwest region of San Bernardino County, within the Santa Ana River Watershed.

3.2. General Setting

3.2.1. Population and Land Use

The project site is located within urbanized portions of the City of Highland. Land uses adjacent to the project site are floodplain. To the east of the project site are residential uses, and to the west are commercial uses. In 2015, the population of San Bernardino County was 2.13 million people. The population of the City of Highland was 54,651 (U.S. Census Bureau 2015).

3.2.2. Topography

Elevations at the project site range from approximately 1,290 feet above mean sea level (MSL) at the west end of the project site to 1,305 feet above MSL at the east end. The topography of the area is generally characterized by a surface gradient sloping gently to the southwest (USGS 1980).

3.2.3. Hydrology

3.2.3.1. Regional Hydrology

The project site is located within the Santa Ana RWQCB jurisdiction, which includes portions of Orange, Riverside, and San Bernardino Counties. The Santa Ana Region is approximately 2,800 square miles (sq mi) in Southern California and mostly consists of the Santa Ana River Watershed, which is where the project is located. The Santa Ana Region is too large and complex to be managed as a single watershed. Therefore, for the purpose of watershed planning, the Santa Ana Region has been divided into 10 Watershed Management Areas (WMAs). The project site is located within the Middle Santa Ana River WMA, which extends from Prado Dam to the foothills of the San Bernardino and San Gabriel Mountains (Santa Ana RWQCB 2001).

For regulatory purposes, the Santa Ana RWQCB designates watershed areas in Hydrologic Units (HUs), which are further divided into Hydrologic Areas (HAs) and Hydrologic Subareas (HSAs). As designated by the Santa Ana RWQCB, the project site is located within the Santa Ana River HU, the Upper Santa Ana River HA, and Bunker Hill HSA (Figure 4) (Santa Ana RWQCB 1995, updated February 2008 and February 2016).

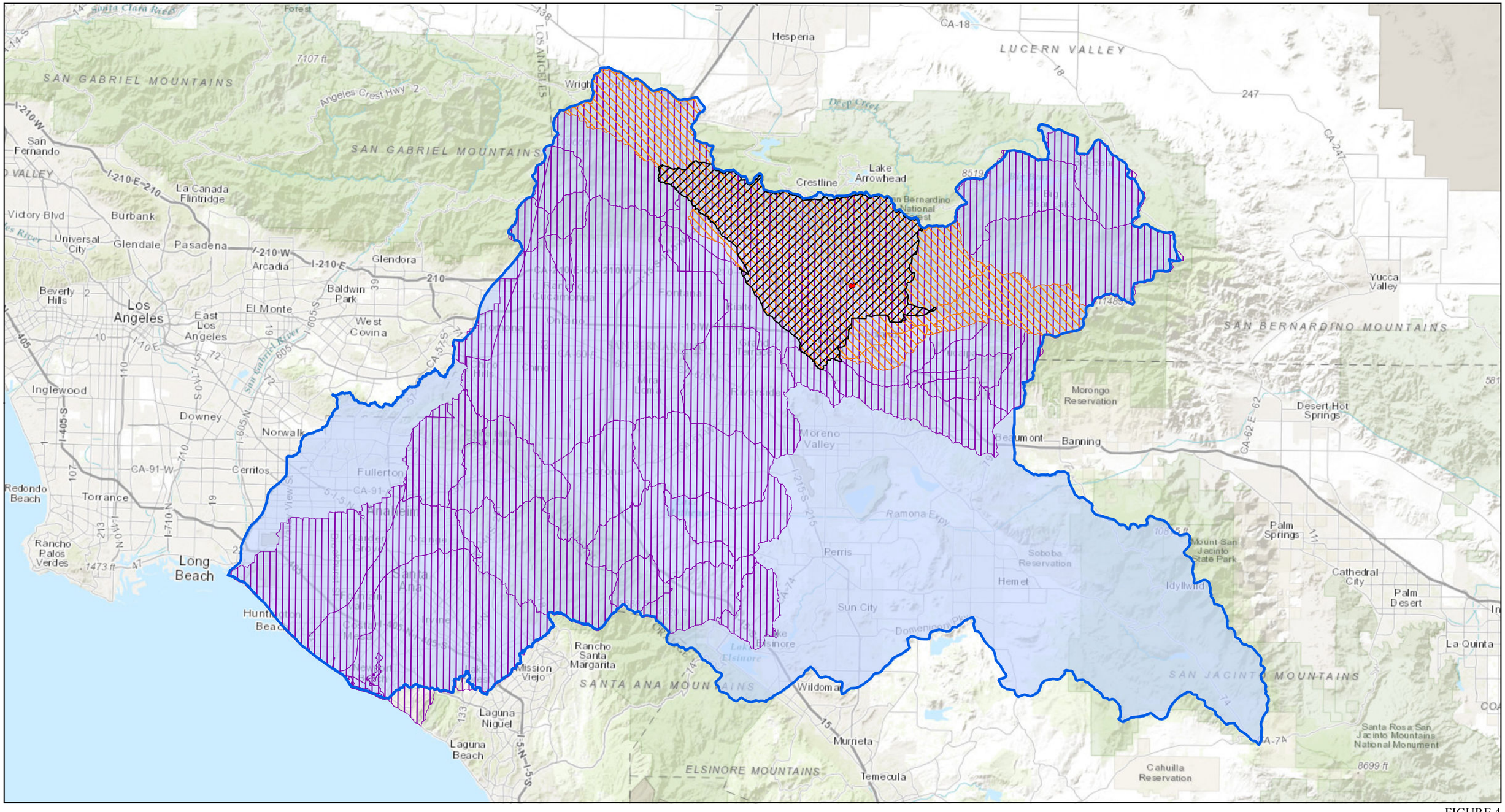


FIGURE 4

Project Site
Santa Ana River Watershed
Santa Ana River Hydrologic Unit (HU)
Upper Santa Ana River Hydrologic Area (HA)
Bunker Hill Hydrologic Subarea

0 4 8
MILES

SOURCE: World Topo; SAWPA, 2003; California Interagency Watershed Mapping Committee, 2004.

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Base Line Bridge Over City Creek (Replace)
Water Quality Analysis Report

Hydrologic Units

08-SBd-0-HIGH
EA 08-925035

The Santa Ana River extends approximately 96 mi from its headwaters to where it drains into the Pacific Ocean. The headwaters for the Santa Ana River and its tributaries originate in the San Gabriel, San Bernardino, and Santa Ana Mountains. From the San Bernardino and San Gabriel Mountains, the Santa Ana River flows through the Santa Ana Valley, then through the Prado Basin and a narrow pass in the Santa Ana Mountains. From the Santa Ana Mountains, the Santa Ana River flows in a southwesterly direction to the Pacific Ocean.

The project site is located along the Mountain reach of City Creek (Santa Ana RWQCB 1995, updated February 2008 and February 2016). City Creek flows converge with Plunge Creek before joining Reach 5 of the Santa Ana River in the City of San Bernardino, approximately 2.3 miles southwest from the project site. Reach 5 of the Santa Ana River spans from the San Jacinto Fault in the City of San Bernardino to Seven Oaks Dam in the San Bernardino Mountains. Reach 5 is downstream of the project site and is therefore considered a receiving water of runoff from the project site.

3.2.3.2. Local Hydrology

City Creek flows from the northeast to southwest beneath the existing Base Line Bridge and is the primary surface receiving water for storm water originating from the project site (Figure 5). City Creek acts as a major drainage facility for the City of Highland. The drainage pattern of the project site consists of surface flow from the existing Base Line Road and Base Line Bridge. Surface flows along Base Line Road, including the existing 42-foot-long Base Line Bridge, flow eastbound from Boulder Avenue and westbound from Yarnell Road along roadside gutters into storm drain inlets that discharge into City Creek and eventually into the Santa Ana River.

3.2.3.2.1. Precipitation and Climate

The climate in the City of Highland is classified as Mediterranean (i.e., generally dry in the summer with mild, wet winters). Annual average precipitation in the Santa Ana River Basin ranges from approximately 12 inches per year (in/yr) in the coastal plain to 18 in/yr in the inland alluvial valleys, and 40 in/yr in the San Bernardino Mountains. Most of the precipitation occurs from November to March (USGS 2015). According to the climatology station located at the Highland Station, the closest station to the project site, the average annual mean rainfall in the Highland area is approximately 39.77 inches (Western Regional Climate Data 2016).

According to the climatology station located at the San Bernardino Station , the annual average maximum temperature recorded at this station is 80.1 degrees Fahrenheit (°F), and the annual average minimum is 49.3°F, with an annual average mean of 64.7°F. January is typically the coldest month in this area (Western Regional Climate Center, 2016).

3.2.3.2.2. Surface Streams

City Creek acts as a major drainage facility for the City of Highland. The Mountain reach of City Creek flows from the northeast and crosses beneath the existing Base Line Bridge before continuing in a southwest direction (Santa Ana RWQCB 1995, updated February 2008 and February 2016). Flows along City Creek fluctuate from year to year between wet and dry periods. City Creek at the project site is broad with a low gradient, having an earthen bottom



Project Site

NHD Flowline

Surface Waters

NHD Area

Surface Waters

N

0 1000 2000

FEET

SOURCE: ESRI Streetmap, 2013; World Imagery, 2014;
National Hydrography Dataset, USGS 1999

FIGURE 5

Base Line Bridge Over
City Creek (Replace)
Water Quality Assessment Report

Surface Waters

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EA 08-925035

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with grouted riprap on the side slopes. City Creek flows converge with Plunge Creek before joining the Reach 5 of the Santa Ana River in the City of San Bernardino, approximately 2.3 miles southwest from the project site.

The Santa Ana River where it converges with City Creek is broad with a low gradient, having an earthen bottom with grouted riprap on the side slopes. Reach 5 of the Santa Ana River where it converges with City Creek is a slow-flowing perennial[1] stream that is subject to high flows immediately following larger storm events. Such flows can scour out vegetation outside the low-flow channel.

The Santa Ana River is considered an alluvial river.[2] The river is confined in a well-defined channel configuration and exhibits a braided channel pattern within the well-defined channel.

3.2.3.2.3. Floodplains

Most of the annual rainfall in the Southern California region occurs in the winter. Flooding in the City of Highland could result from intense storms resulting in rapid runoff or through the failure of the Seven Oaks Dam along the Santa Ana River. The FEMA Flood Insurance Rate Maps (FIRMs) identify areas subject to flooding during the 100-year storm (FEMA 2010).

City Creek is in the Special Flood Hazard Zone A (FEMA 2010) which are areas subject to inundation by the 100-year (1 percent annual chance flood) for which no base flood have been determined [Figure 6]).[3] Additionally, the western portion of the project site is within Zone X (Other Flood Areas),[4] and the eastern portion of the project site is within Zone X (Other Areas).[5]

3.2.3.2.4. Municipal Supply

All of the water supply for the City of Highland is supplied by groundwater, surface runoff from natural watershed and drainage areas, and imported water (City of Highland 2006).

3.2.3.3. Groundwater Hydrology

The project site is located in the Bunker Hill II Subbasin within the larger Upper Santa Ana River Groundwater Basin (Figure 7). Based on data from the California Department of Water Resources and United States Geological Survey (USGS), groundwater on the project site can be found at a depth of between 100 and 250 feet below the ground surface (bgs) and flows in a

---

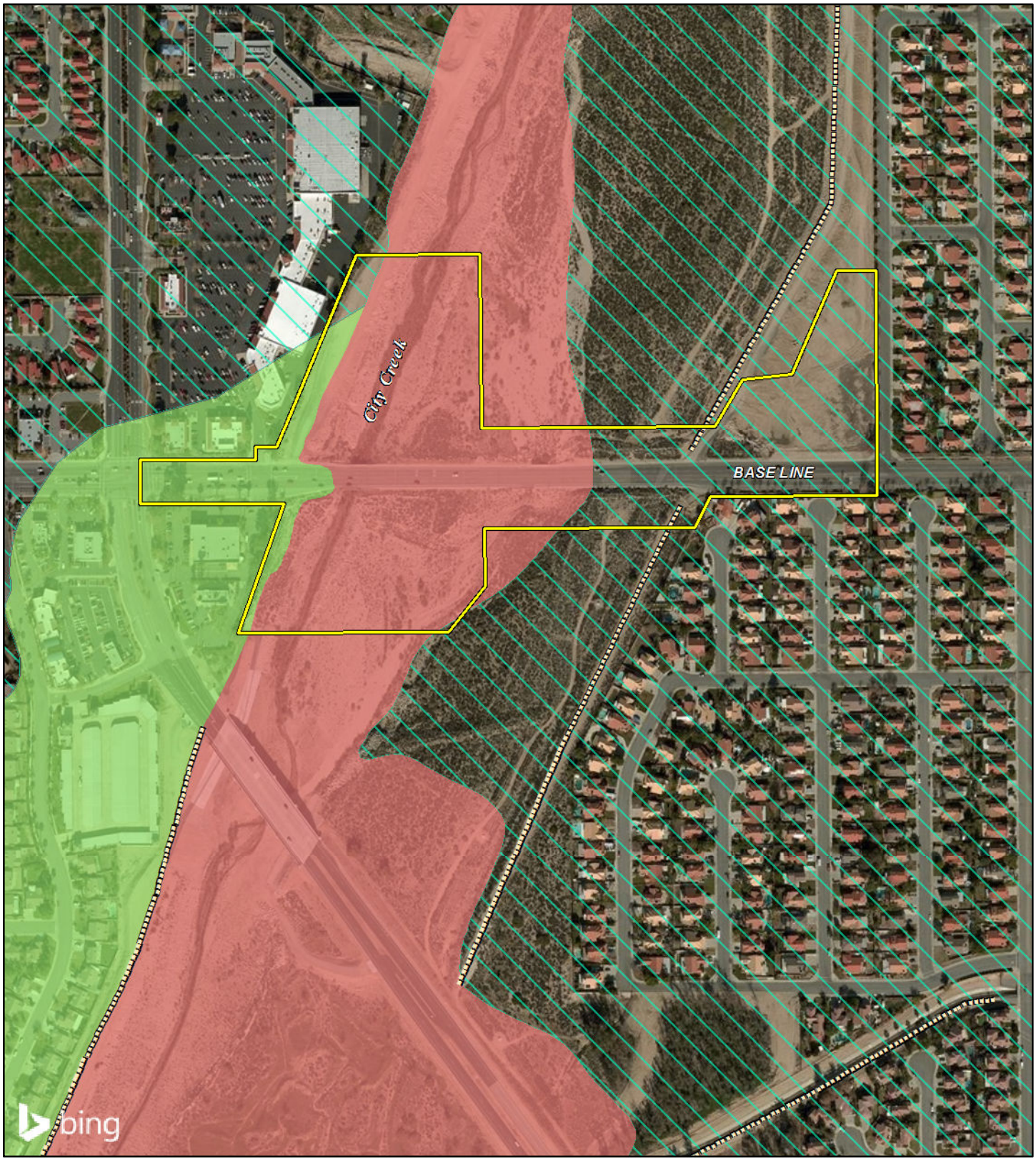
1 A perennial waterbody has continuous flow in parts of the channel all year round during years of normal rainfall.

2 An alluvial river has bed and banks that are composed of mobile sediment and/or soil. Alluvial rivers are self-formed, meaning that their channels are shaped by the magnitude and frequency of the floods that they experience, and the ability of these floods to erode, deposit, and transport sediment.

3 The 1 percent annual flood (100-year flood), also known as the base flood, is the flood that has a 1 percent chance of being equaled or exceeded in any given year.

4 Zone X (Other Flood Areas) are areas of 0.2 percent annual chance of flood (500-year flood); areas of 1 percent annual chance of flood (100-year flood) with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from 1 percent chance of flood (100-year flood).

5 Zone X (Other Areas) are areas determined to be outside the 0.2 percent annual chance (500-year) floodplain.



Project Site

Levee

FEMA DFIRM Flood Zones

A: 100-Year Floodplain (Special Flood Hazard Area)

X: An Area Outside the 500-Year Floodplain (Other Areas)

X Protected by Levee (Other Flood Areas)

FEMA Panel 06071C8702H 8/28/08

N

0 150 300

FEET

SOURCE: FEMA DFIRM Flood Data, 2008; ESRI Streetmap, 2013; Bing Aerial, 2015

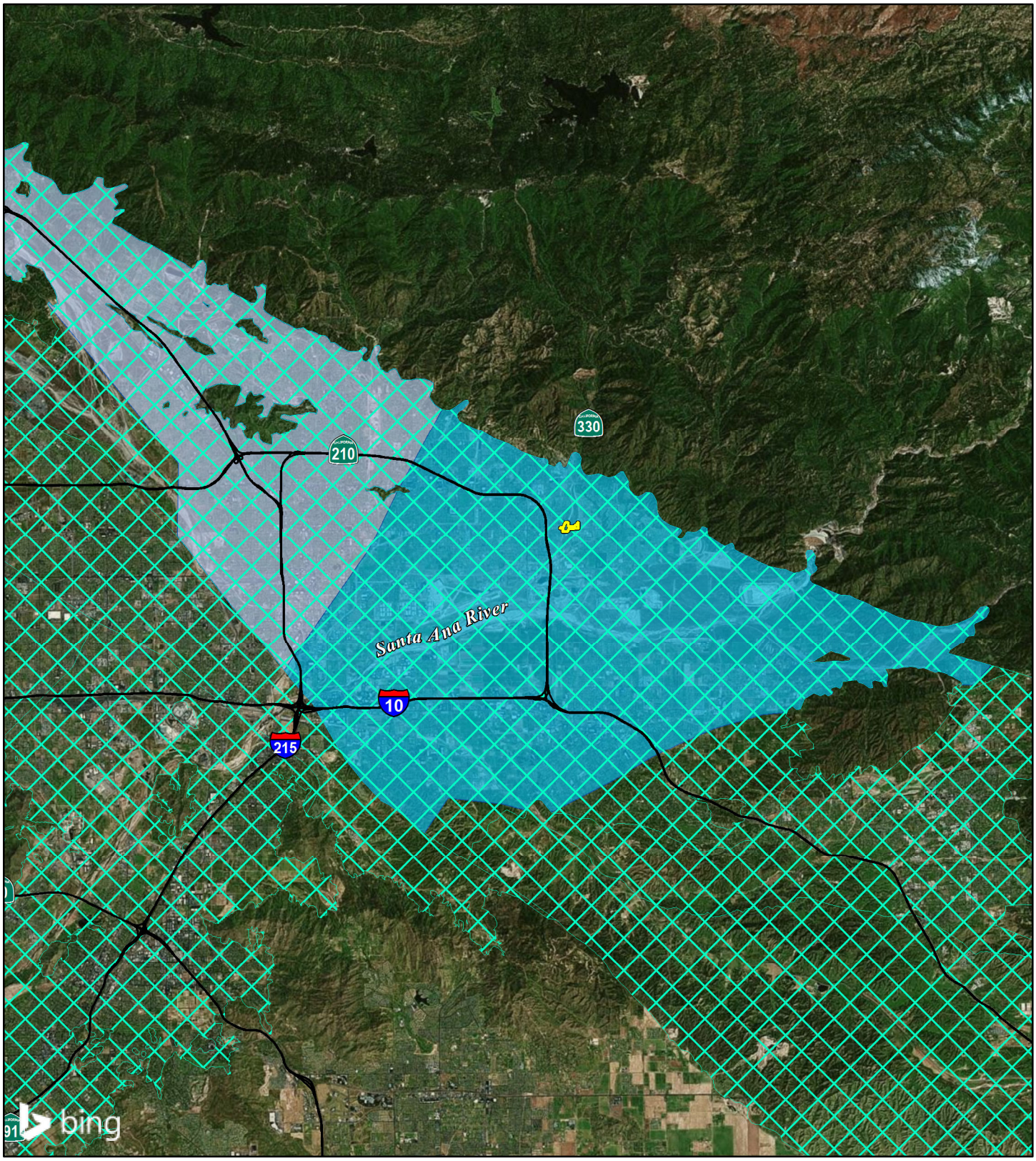
FIGURE 6

Base Line Bridge Over City Creek (Replace) Water Quality Assessment Report

Floodplains

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EA 08-925035

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Project Site

Upper Santa Ana Valley Groundwater Basin (State)

Upper Santa Ana Valley Groundwater Basin, Bunker Hill I

Upper Santa Ana Valley Groundwater Basin, Bunker Hill II

N

0 8000 16000

FEET

SOURCE: ESRI Streetmap, 2013; Bing Aerial, 2015;Santa Ana Regional Water Quality Control Board (Santa Ana RWQCB). 1995, updated February 2008 and February 2016. Water Quality Control Plan for the Santa Ana River Basin.

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FIGURE 7

Base Line Bridge Over City Creek (Replace) Water Quality Assessment Report

Groundwater Basins

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EA 08-925035

west-southwest direction (Diaz-Yourman & Associates 2010). Perched groundwater conditions occur at the project site: saturated soils were encountered between approximately 35 and 60 feet bsg during geotechnical borings, but the soils below 60 feet bsg were dry (*Ibid.*). The project site, located in the City of Highland within San Bernardino County, is not located in or near any of the existing or proposed sole-source aquifers in the State, which are located in Fresno, Santa Cruz, Butte, and Imperial Counties (EPA 2016).

For regulatory purposes, the Santa Ana RWQCB designated Groundwater Management Zones for the Santa Ana Region. The project site is within the Bunker Hill-B Groundwater Management Zone (Santa Ana RWQCB 1995, updated February 2008 and February 2016).

Groundwater in the subbasin is found primarily in alluvial deposits. Groundwater in the Bunker Hill II Subbasin is replenished by infiltration from runoff from the San Gabriel and San Bernardino Mountains via primarily the Santa Ana River, Mill Creek, Lytle Creek, Cajon Creek, San Timoteo Creek, and deep percolation of precipitation (DWR 2004).

3.2.4. Geology/Soils

3.2.4.1. Soil Erosion Potential

As summarized in Table B, soils are classified by the United States Natural Resource Conservation Service into four Hydrologic Soils Groups based on the soil's runoff potential. "Hydrologic Soil Group" is a term that represents a group of soils having similar runoff potential under similar storm and cover conditions. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonally high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate (United States Department of Agriculture 2016).

Table B: Hydrologic Soil Group Characteristics

Hydrologic Soil Group	Soil Type	Soil Characteristics
Group A	Sand, Loamy Sand, Sandy Loam	Low runoff potential and high infiltration rates even when thoroughly wetted. Consists of deep, well to excessively drained sands or gravels and have a high rate of water transmission.
Group B	Silt Loam, Loam	Moderate infiltration rate when thoroughly wetted. Consists of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures.
Group C	Sandy Clay Loam	Low infiltration rates when thoroughly wetted. Consists of soils that contain a layer that impedes downward movement of water and soils with moderately fine to fine textures.
Group D	Clay Loam, Silty Clay Loam, Sandy Clay, Silty Clay, Clay	Very low infiltration rates when thoroughly wetted. Consists of clay soils with high swelling potential, soils with a permanent high water table, soils with a clay layer at or near the surface and shallow soils over nearly impervious material.

Source: United States Department of Agriculture. Natural Resources Conservation Service, 2010.

The project site contains three different types of soils: Psamments and Fluvents (Ps), Soboba Stony Loamy Sand, 2 to 9 percent slopes (SpC), and Tujunga Gravelly Loamy Sand, 0 to 9 percent slopes (TvC) (*Ibid.*). All soils found on site are considered to be part of Hydrologic Soil Group A which, as shown in Table B, have a low runoff potential and a high infiltration rate.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water, transportability of the sediment, and the amount and rate of runoff given a particular rainfall input as measured under a standard condition. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on the percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. The project site soils have a K factor of 0.24 (*Ibid.*); therefore, according to erosion factor K, the soils in the project footprint are characterized by low to moderate erodibility.

3.2.5. Biological Communities

The information presented in this section is obtained from the *Jurisdictional Delineation for the Base Line Bridge Replacement Project* (LSA 2017a) and the draft *Natural Environment Study* (LSA 2017b) prepared for the proposed project. Although the draft *Natural Environment Study* identifies both upland and riparian/aquatic-dependent species, only riparian/aquatic-dependent species are discussed in this analysis.

3.2.5.1. Aquatic Habitat

The Biological Study Area (BSA) is defined as the area (land and water) that may be directly, indirectly, temporarily, or permanently affected by construction and construction-related activities plus an additional buffer surrounding the project site (LSA 2017b). The BSA includes City Creek as well as adjacent upland areas in the vicinity of the existing Base Line Bridge. City Creek contains a primary perennial low-flow channel along the western bank of the larger floodplain; a secondary, ephemeral low-flow channel of City Creek parallels the toe-of-slope along the east bank of the larger floodplain. These channels are the only aquatic features identified within the project site. One ephemeral, non-natural earthen drainage feature (Drainage A) also was identified within the BSA situated in an upland area east of the City Creek floodplain paralleling the west side of Yarnell Road and terminating in a low earthen area north of Base Line Road.

3.2.5.1.1. Special-Status Species

The BSA contains potentially suitable habitat for four federally and/or State-listed riparian/aquatic-dependent species: Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), Santa Ana sucker (*Catostomus santaanae*), least Bell's vireo (*Vireo bellii pusillus*), and San Bernardino kangaroo rat (*Dipodomys merriami parvus*). The BSA is also within federally designated critical habitat for Santa Ana sucker and San Bernardino kangaroo rat. The least Bell's vireo and San Bernardino kangaroo rat were found to be present within the BSA

during surveys conducted between 2009 and 2016, while the Santa Ana River woollystar and Santa Ana sucker are considered absent.

The BSA contains suitable habitat for several non-listed riparian/aquatic-dependent special-status species, two of which (the Santa Ana speckled dace (*Rhinichthys osculus* ssp. *3*) and San Diego desert woodrat (*Neotoma lepida intermedia*)) are both riparian/aquatic-dependent and found to be present within the BSA.

The project site contains United States Fish and Wildlife Service (USFWS) 2010 designated critical habitat for Santa Ana sucker, which is aquatic dependent, federally threatened, and a California Species of Special Concern. The draft *Natural Environmental Study* concludes Santa Ana sucker has been extirpated from City Creek and therefore has a very low potential to occur within the project site (LSA 2017b).

Although not listed as special-status, one native aquatic amphibian species observed within the BSA is the California treefrog (*Pseudacris cadaverina*).

3.2.5.1.2. Stream/Riparian Habitats

The primary perennial low-flow channel along the western bank of the larger floodplain of City Creek and the secondary, ephemeral low-flow channel along the toe-of-slope along the east bank of the larger floodplain of City Creek are the only aquatic features identified within the BSA. One ephemeral, non-natural earthen drainage feature (Drainage A) also was identified within the BSA.

The low-flow perennial channel of City Creek is vegetated by willow scrub, while Riversidean alluvial fan sage scrub and non-native grasslands dominate the remainder of the dry floodplain. As stated previously, City Creek is within federally designated critical habitat for the Santa Ana sucker, although the Santa Ana sucker is believed to be extirpated from this portion of City Creek.

City Creek bears evidence of disturbance due to historical vegetation removal activities and channel contouring, which was confirmed through review of aerial imagery. This portion of City Creek serves as a flood control channel and carries substantial flows during larger storm events.

The project site is surrounded by developed areas associated with existing transportation features as well as residential and commercial buildings and small areas of open space uses that have severely affected wildlife habitat connectivity. However, the Santa Ana River, which converges with City Creek approximately 2.3 miles south of the project site, acts as one of the major wildlife corridors within the region. Regionally, the Santa Ana River serves as a linkage between wildlife habitats from its origins in the San Bernardino Mountains, through the Prado Dam area, and into Orange County.

3.2.5.1.3. Wetlands

A total of 12.39 acres of City Creek were determined to be subject to USACE jurisdiction within the BSA. Of the 12.39 acres subject to USACE jurisdiction, a narrow strip along the banks of the

open water channel totaling 1.06 acres meet the USACE three-parameter (hydrophytic vegetation, hydric soils, and wetland hydrology) requirements and are classified as USACE wetlands, and 11.33 acres do not meet the USACE three-parameter (hydrophytic vegetation, hydric soils, and wetland hydrology) requirements and are therefore classified as non-wetland waters (LSA 2017a). A total of 13.30 acres of riparian streambed within City Creek in the BSA are subject to CDFW jurisdiction based on the presence of a defined bed and bank (*Ibid.*).

Drainage A is an ephemeral, earthen channel at the eastern edge of the BSA, parallel to the west side of Yarnell Road, and terminates in a low earthen area north of Base Line Road. Drainage A is situated in an upland area east of the City Creek floodplain and contains zero acres subject to USACE jurisdiction within the BSA because it is unvegetated and does not have any connectivity to City Creek (LSA 2017a). Since the USACE typically does not assert jurisdiction over non-tidal drainages and ditches that are excavated on dry land and drain adjacent upland areas, Drainage A is considered to be a non-jurisdictional drainage feature. Nevertheless, Drainage A exhibits a defined bed and bank and therefore contains 0.26 acre subject to the jurisdiction of the CDFW.

Since there is no public guidance on determining RWQCB jurisdictional areas, jurisdiction was determined based on the federal definition of wetlands (three-parameter) and other waters of the U.S. ordinary high water mark as recommended by the September 2004 Workplan. Since there are areas within the BSA subject to USACE and CDFW jurisdiction, RWQCB jurisdiction in this case is coincident with USACE jurisdiction for purposes of Section 401 certification. Therefore, the total area of potential RWQCB jurisdiction is 12.39 acres.

3.2.5.1.4. Fish Passage

As noted previously, the perennial flows of City Creek provide a water source and potential suitable habitat to sustain a viable population of fish, including Santa Ana sucker, at this time. However, the draft *Natural Environmental Study* concludes Santa Ana sucker has been extirpated from City Creek and therefore has a very low potential to occur on the project site (LSA 2017b). Nevertheless, the portion of the creek on the project site is considered passable by fish species should they be present within the project site.

3.3. Water Quality Objectives/Standards and Beneficial Uses

3.3.1. Surface Water Quality Objectives/Standards and Beneficial Uses

Surface water quality objectives for all inland receiving waters from the Basin Plan that are applicable to the proposed project are listed in Table C. In addition, City Creek has the following site-specific water quality objectives, not to exceed (Santa Ana RWQCB 1995, updated February 2008 and February 2016):

- **Total Dissolved Solids (TDS):** 200 mg/L
- **Hardness:** 115 mg/L
- **Sodium:** 30 mg/L
- **Chloride:** 10 mg/L
- **Total Inorganic Nitrogen (TIN):** 1 mg/L

- **Sulfate:** 20 mg/L
- **Chemical Oxygen Demand (COD):** 5 mg/L

City Creek drains into Reach 5 of the Santa Ana River, both of which are in the Upper Santa Ana River HA/Bunker Hill HSA. According to the Basin Plan, Reach 5 of the Santa Ana River has the following water quality objectives, not to exceed (Santa Ana RWQCB 1995, updated February 2008 and February 2016):

- **Total Dissolved Solids (TDS):** 300 mg/L
- **Hardness:** 190 mg/L
- **Sodium:** 30 mg/L
- **Chloride:** 20 mg/L
- **Total Inorganic Nitrogen (TIN):** 5 mg/L
- **Sulfate:** 60 mg/L
- **Chemical Oxygen Demand (COD):** 25 mg/L

Beneficial uses of water are defined in the Santa Ana RWQCB Basin Plan as those necessary for the survival or well-being of humans, plants, and wildlife. Examples of those beneficial uses include drinking water supplies, swimming, industrial and agricultural water supply, and the support of freshwater and marine habitats and their organisms.

Beneficial uses are identified in the Basin Plan. The present or potential beneficial uses for City Creek include the following:

- **AGR:** Agricultural Supply
- **COLD:** Cold Freshwater Habitat
- **GWR:** Groundwater Recharge
- **REC 1:** Contact Water Recreation (swimming/wading)
- **REC 2:** Non-contact Water Recreation (boating/fishing)
- **MUN:** Municipal and Domestic Supply
- **WILD:** Wildlife Habitat (for plants and animals)
- **RARE:** Rare, Threatened, or Endangered Species
- **SPWN:** Spawning, Reproduction, and Development

Beneficial uses are identified in the Basin Plan for Reach 5 of the Santa Ana River. The present or potential beneficial uses for Reach 5 of the Santa Ana River at the confluence with City Creek include the following:

- **AGR:** Agricultural Supply
- **GWR:** Groundwater Recharge
- **REC 1:** Contact Water Recreation (swimming/wading)
- **REC 2:** Non-contact Water Recreation (boating/fishing)
- **WARM:** Warm Freshwater Habitat (for fish amenable to reproduction in warm water)
- **WILD:** Wildlife Habitat (for plants and animals)
- **RARE:** Rare, Threatened, or Endangered Species

Table C: Surface Water Quality Objectives for Inland Receiving Waters

Constituent	Concentration	Receiving Waters
Algae	Waste discharges shall not contribute to excessive algal growth in inland surface receiving waters.	All inland surface waters
Ammonia (Un-ionized)	Calculated numerical non-ionized ammonia objectives and corresponding total ammonia nitrogen concentration vary for various pH and temperature conditions.	WARM beneficial use designation
Boron	Shall not exceed 0.75 mg/L in inland surface waters of the region as a result of controllable water quality factors.	All inland surface waters
Cadmium	Shall not exceed 4 µg/l in inland surface waters of the region as a result of controllable water quality factors.	All inland surface waters
Coliform (Total)	Shall not exceed 100 organisms/100 ml.	MUN beneficial use designation
Color	Waste discharges shall not result in coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses. The natural color of fish, shellfish or other inland surface water resources used for human consumption shall not be impaired.	All inland surface waters
Copper	Shall not exceed 37 µg/l in inland surface waters of the region as a result of controllable water quality factors.	All inland surface waters
Floatables	Water discharges shall not contain floating materials, including solids, liquids, foam, or scum, that cause a nuisance or adversely affect beneficial uses.	All inland surface waters
Fluoride	Shall not exceed 0.7 to 1.2 mg/l as a result of controllable water quality factors depending on air temperature.	MUN beneficial use designation
Lead	Shall not exceed 28 µg/l in inland surface waters of the region as a result of controllable water quality factors.	All inland surface waters
Metals	Varies based on hardness.	All inland surface waters
Methylene blue-activated substances	Shall not exceed 0.05 mg/l in inland surface waters of the region as a result of controllable water quality factors.	MUN beneficial use designation
Nitrate-Nitrogen	Shall not exceed 45 mg/l (as nitrate [NO_3]) or 10 mg/l (as nitrogen [N]) as a result of controllable water quality factors.	MUN beneficial use designation
Oil and grease	Waste discharges shall not result in deposition of oil, grease, wax, or other materials in concentrations that result in a visible film or in coating objects in the water or which cause a nuisance or adversely affect beneficial uses.	All inland surface waters
Oxygen (Dissolved)	Shall not be depressed below 5 mg/l as a result of controllable water quality factors.	WARM beneficial use designation
	Waste discharges shall not cause the median dissolved oxygen concentration to fall below 85 percent of saturation or the 95th percentile concentration or fall below 75 percent of saturation within a 30-day period.	All inland surface waters
pH	Shall not be raised above 8.5 or depressed below 6.5 as a result of controllable water quality factors.	All inland surface waters

Table C: Surface Water Quality Objectives for Inland Receiving Waters

Constituent	Concentration	Receiving Waters
Radioactivity	Shall not exceed the California Code of Regulations, Title 22, standards of 5 pCi/L for combined radium-226 and radium-228, 15 pCi/L for gross alpha particle activity, 20,000 pCi/L for tritium, 8 pCi/L for strontium-90, 50 pCi/L for gross beta particle activity, and 20 pCi/L for uranium.	MUN beneficial use designation
Solids (Suspended and settable)	Shall not cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.	All inland surface waters
Sulfide	Shall not be increased as a result of controllable water quality factors.	All inland surface waters
Surfactants	Waste discharges shall not contain concentrations of surfactants that result in foam in the course of flow or use of the receiving water or that adversely affect aquatic life.	All inland surface waters
Taste and odor	Shall not contain taste- or odor-producing substances at concentrations that cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish or other regional inland surface water resources used for human consumption shall not be impaired.	All inland surface waters
Temperature	Shall not be raised above 90°F June through October or above 78°F during the rest of the year as a result of controllable water quality factors.	WARM beneficial use designation
Toxic substances	Shall not be discharged at levels that will bioaccumulate in aquatic resources to levels that are harmful to human health. The concentrations of contaminants in waters which are existing or potential sources of drinking water shall not occur at levels that are harmful to human health. Concentrations of toxic pollutants in the water column, sediments, or biota shall not adversely affect beneficial uses.	All inland surface waters
Turbidity	Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20 percent. Where natural turbidity is between 50 and 100 NTU, increases shall not exceed 10 NTU. Where natural turbidity is greater than 100 NTU, increases shall not exceed 10 percent.	All inland surface waters

mg/l: milligrams per liter µg/l: micrograms per liter pCi/L = picocuries per liter NTU= Nephelometric Turbidity Unit
NO_3 = nitrate N = nitrogen
Source: *Water Quality Control Plan, Santa Ana River Basin (8),* Santa Ana Regional Water Quality Control Board, 1995, updated February 2008 and February 2016.

3.3.2. Groundwater Quality Objectives/Standards and Beneficial Uses

The groundwater quality objectives in the Santa Ana Region as designated in the Basin Plan are provided in Table D. The site-specific groundwater quality objectives for the Bunker Hill-B Groundwater Management Zone are not to exceed (Santa Ana RWQCB 1995, updated February 2008 and February 2016):

- **Total Dissolved Solids:** 330 mg/L
- **Nitrate as Nitrogen:** 7.3 mg/L

Table D: Groundwater Quality Objectives for the Bunker Hill II Subbasin

Constituent	Concentration	Area and/or Beneficial Uses
Arsenic	Shall not exceed 0.05 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Barium	Shall not exceed 1.0 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Boron	Shall not exceed 0.75 mg/l as a result of controllable water quality factors.	Santa Ana Region
Chloride	Shall not exceed 500 mg/L as a result of controllable water quality factors.	MUN beneficial use designation
Coliform bacteria (total)	Shall not exceed 2.2 organisms/100 ml median over any seven-day period as a result of controllable water quality factors.	MUN beneficial use designation
Color	Waste discharges shall not result in coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses.	Santa Ana Region
Cyanide	Shall not exceed 0.2 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Fluoride	Shall not exceed 1.0 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Hardness	The hardness of receiving waters shall not be increased as a result of waste discharges to levels that adversely affect beneficial uses.	MUN beneficial use designation
Cadmium	Shall not exceed 0.01 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Chromium	Shall not exceed 0.05 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Cobalt	Shall not exceed 0.2 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Copper	Shall not exceed 1.0 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Iron	Shall not exceed 0.3 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Lead	Shall not exceed 0.05 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Manganese	Shall not exceed 0.05 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Mercury	Shall not exceed 0.002 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Selenium	Shall not exceed 0.01 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Silver	Shall not exceed 0.05 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Oil and grease	Waste discharges shall not result in deposition of oil, grease, wax, or other materials in concentrations that cause a nuisance or adversely affect beneficial uses.	Santa Ana Region
Methylene blue-activated substances	Shall not exceed 0.05 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
pH	The pH of groundwater shall not be raised above 9 or depressed below 6 as a result of controllable water quality factors.	Santa Ana Region

Table D: Groundwater Quality Objectives for the Bunker Hill II Subbasin

Constituent	Concentration	Area and/or Beneficial Uses
Radioactivity	Groundwater designated MUN shall not be in excess of limits specified on page 4-24 and in Title 22 California Code of Regulations, Chapter 15, Section 64443, Table 4.	MUN beneficial use designation
Sodium	Shall not exceed 180 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Sulfate	Shall not exceed 500 mg/l as a result of controllable water quality factors.	MUN beneficial use designation
Taste and odor	Groundwater shall not contain taste- or odor-producing substances in concentrations that adversely affect beneficial uses.	Santa Ana Region
Toxic substances	All waters shall be maintained free of substances in concentrations that are toxic or that produce detrimental physiological responses in human, plant, animal, or aquatic life.	Santa Ana Region

Source: *Water Quality Control Plan, Santa Ana River Basin (8)*, Santa Ana Regional Water Quality Control Board, 1995, updated February 2008 and February 2016.
mg/l: milligrams per liter AGR: Agricultural Supply mL: milliliter
MUN: Municipal Supply pCi/L: picocuries per liter pH: percentage of hydrogen

The present or potential beneficial uses identified in the Basin Plan for the Bunker Hill II Subbasin include:

- **MUN:** Municipal and Domestic Supply
- **AGR:** Agricultural Supply
- **IND:** Industrial Supply
- **PROC:** Process Water Supply

3.4. Existing Water Quality

3.4.1. Regional Water Quality

3.4.1.1. Surface Water Quality

The USGS monitors water resources throughout the U.S. Most of the data from individual sites distributed in the National Water Information System (NWIS) are related to stream flow; however, some water quality data are available for a few select sites. In addition, USGS launched the National Water Quality Assessment (NAWQA) Program in 1991 and has been collecting water quality information on watersheds throughout the country. Constituents tested reflect limiting parameters for aquatic life but do not necessarily include typical urban runoff pollutants.

According to the USGS, surface water and groundwater quality progressively decrease as water is conveyed downstream along hydraulic flow paths of the Santa Ana River (2016). Typically, water closer to its source is of the highest quality, as opportunities for contamination are generally fewer. Therefore, water conveyed in tributaries from surrounding mountains, and groundwater recharged by these mountain tributaries, typically is of higher quality than water that has been subject to consumptive use, importation, runoff from urban and agricultural areas, and recycling (USGS 2016).

According to the Santa Ana RWQCB *Watershed Management Initiative*, the most serious constituent affecting water quality in the Middle Santa Ana River WMA is the buildup of TDS in ground and surface waters (Santa Ana RWQCB 2001). Likewise, agricultural activities resulting in the decomposition of organic matter along the Santa Ana River Basin generates high levels of nitrogen in the form of nitrate (TIN) which, along with TDS, adversely affect ground and surface waters of the Middle Santa Ana River (*Ibid.*).

To assess water quality of the Santa Ana River recharged into the Orange County Groundwater Basin, the Orange County Water District (OCWD) collects monthly and quarterly samples from Prado Dam downstream and annual samples in August of the subject year from Prado Dam upstream. Data collected by the OCWD is used in the Santa Ana Watershed Project Authority *Annual Report of Santa Ana River Water Quality* to evaluate the water quality for Reaches 2, 3, 4, and 5 of the Santa Ana River during low flow conditions.

As discussed in Section 3.3.1, the Basin Plan specified water quality objectives for City Creek and Reach 5 of the Santa Ana River for TDS, hardness, sodium, chloride, TIN, sulfate, and COD. The nearest sampling location in proximity to the project site is the gauging station at City Creek (USGS Site No. 11055800) approximately 1.5 miles upstream; however, this sampling location measures only the depth and flow of City Creek. The nearest location to the project site monitored for water quality is *SAR-WATERMAN-01* located 6.2 miles downstream of the project site along South Waterman Avenue at the Santa Ana River in the City of San Bernardino (Figure 8). According to the Santa Ana Watershed Project Authority, no data was collected at *SAR-WATERMAN-01* for at least the past five years (2011 through 2015) since there was no water flow during the time scheduled for sampling, typically occurring between August 16 and 21 of the subject year (Santa Ana Watershed Project Authority 2012, 2013, 2014, 2015, 2016).

Farther downstream along Reach 4 of the Santa Ana River, the Basin Plan specified water quality objectives for TDS (550 mg/L), TIN (10 mg/L), and COD (30 mg/L). Along Reach 4 of the Santa Ana River, the OCWD monitors sites *SAR-MISSION-01, SAR-RIVERSIDE-01,* and *SAR-LACADENA-01,* and included *WR-RIX-01* during the years 2011 and 2012. Relative to the project site, *SAR-MISSION-01, SAR-RIVERSIDE-01, WR-RIX-01,* and *SAR-LACADENA-01* are located 15.75 miles, 12.8 miles, 10.5 miles, and 10.3 miles downstream, respectively (Figure 8). According to the Santa Ana Watershed Project Authority, no data was collected at *SAR-LACADENA-01* for at least the past five years (2011 through 2015) since there was no water flow during the time scheduled for sampling, typically occurring between August 16 and 21 of the subject year (Santa Ana Watershed Project Authority 2012, 2013, 2014, 2015, 2016). However, based on available data from *SAR-MISSION-01* and *SAR-RIVERSIDE-01* during years 2011 through 2015, and from *WR-RIX-01* during 2011 and 2012, no constituents were shown to exceed Basin Plan objectives along Reach 4 of the Santa Ana River (*Ibid.*).

3.4.1.2. Groundwater Quality

Groundwater in Bunker Hill Subbasin is predominantly calcium-bicarbonate with a Total Dissolved Solid (TDS) range of 150 mg/l to 550 mg/l. According the California Department of Health Services, the TDS concentration from public supply water wells indicate an average TDS content of 324 mg/l and a range of 155 to 1,140 mg/l (DWR 2004). According to the Basin Plan, the ambient TDS level in the Bunker Hill-B Groundwater Management Zone is 280 mg/l, which

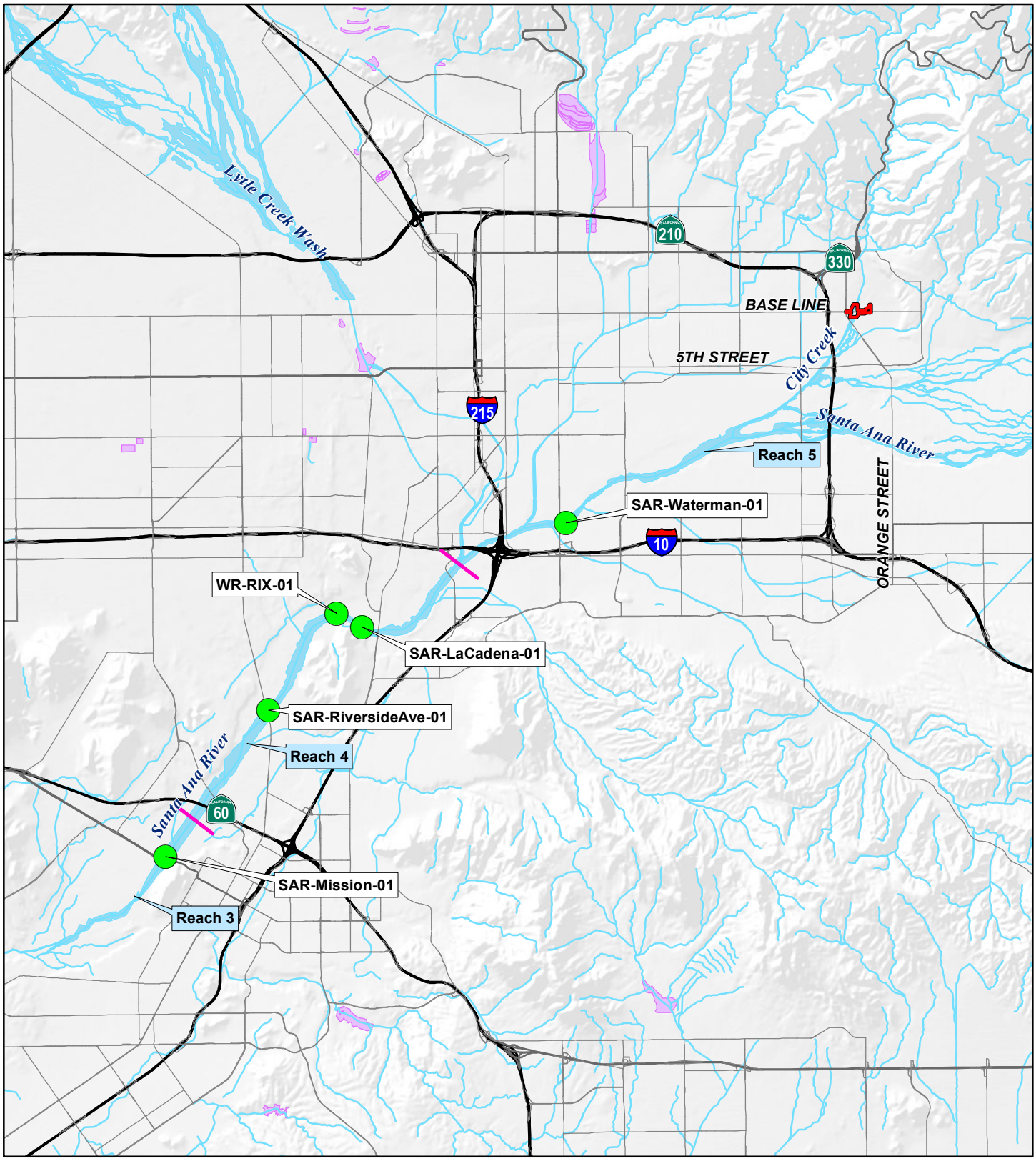


FIGURE 8

Project Site
OCWD Site
Spreading Basin
Waterbodies
Reach Boundary

N

0 6000 12000
FEET

SOURCE: ESRI Streetmap, 2013; SAWPA; National Hydrography Dataset , 1999.

I:\AEM1603(LIM0801)\Reports\WaterQuality\Fig8_WaterMonSta.mxd (4/28/2017)

Base Line Bridge Over City Creek (Replace)
Water Quality Assessment Report

Santa Ana River Water Quality Monitoring Locations

08-SBd-0-HIGH
EA 08-925035

is lower than the water quality objective of 330 mg/l (Santa Ana Watershed Project Authority Basin Monitoring Program Task Force 2014). The ambient nitrate level is 5.5 mg/l, which is lower than the water quality objective of 7.3 mg/L. (*Ibid.*).

3.4.2. List of Impaired Waters

Section 303(d) of the CWA specifically requires the State to develop a list of impaired water bodies and subsequent numeric TMDLs[1] for any constituents that impair a particular water body. These constituents include inorganic and organic chemical compounds, metals, sediment, and biological agents (SWRCB 2012a).

The SWRCB approved the 2012 Integrated Report (Clean Water Act Section 303(d) List/305(b)) on April 8, 2015 (SWRCB 2012a). On July 30, 2015, the EPA approved the 2012 California 303(d) List of Water Quality Limited Segments. There are no approved or proposed TDMLs for City Creek or Reach 5 of the Santa Ana River, and neither City Creek nor Reach 5 of the Santa Ana River is listed as impaired pursuant to Section 303 of the CWA (*Ibid.*).

3.4.3. Areas of Special Biological Significance (ASBS)

Areas of Special Biological Significance (ASBS) are a subset of State water quality protection areas and require special protection as determined by the SWRCB pursuant to the California Ocean Plan. ASBSs are areas that (1) are intrinsically valuable or have recognized value for scientific study, commercial use, recreational use, or aesthetic reasons and (2) require protection beyond that offered by waste discharge restrictions or other administrative and statutory mechanisms. ASBSs support an unusual variety of aquatic life and often host unique individual species and are basic building blocks for a sustainable, resilient coastal environment and economy. There are no ASBS, as defined by the SWRCB, on the project site. Additionally, City Creek does not drain into an ASBS. Therefore, runoff from the project site does not drain into an ASBS (SWRCB 2014).

[1] The TMDL is the total amount of a constituent that can be discharged while meeting water quality objectives and protecting beneficial uses. It is the sum of the individual load allocations for point source inputs (e.g., an industrial plant); load allocations for nonpoint source inputs (e.g., runoff from urban areas); and natural background, with a margin of safety.

4. Environmental Consequences

4.1. Introduction

This chapter discusses the potential environmental effects related to water quality with implementation of the project, as well as the procedures and practices that will be applied to reduce those effects.

During removal of the existing bridge, construction of the new bridge, and modifications to the roadway approaches, the proposed project would result in a permanent net increase in impervious surface area of approximately 0.64 acre. Increases in impervious surface area can change on-site drainage patterns, decrease infiltration, and increase the volume and rate of runoff during a storm.

Storm water runoff from the project site would infiltrate into the LID BMP infiltration trench within DMA-2 or drain directly into City Creek within DMA-1 and DMA-3 through DMA-6. City Creek flows converge with Plunge Creek before joining Reach 5 of the Santa Ana River in the City of San Bernardino, approximately 2.3 miles southwest of the project site, before draining into the Pacific Ocean.

As detailed in Figure 3, runoff from DMA-2 (1.5 acres) would be treated by the infiltration trench LID BMP within a 10-foot-wide median along the Base Line Road eastern roadway approach to the proposed bridge. This would equate to 2,768.33 cubic feet of runoff being treated by the LID BMP. Flow from the roadway would be conveyed to the BMP as pipe flow and/or sheet flow.

DMA-1 (1.69 acres) would not be treated with a BMP because of the lack of available ROW beyond the proposed slopes and retaining walls north and south of Base Line Road. A system of proposed deck drains along the proposed bridge and proposed catch basins south of the bridge (Base Line Bridge Storm Drain Improvement Plans—to be submitted at a later stage) will capture runoff from DMA-1 and convey it to City Creek.

DMA-3 (13.7 acres), DMA-4 (4.75 acres), DMA-5 (7.49 acres), and DMA-6 (1.07 acres) comprise the balance of the total drainage area for the upstream and downstream management of storm runoff and are considered self-treating areas. Runoff from these areas does not comingle with runoff from the impervious surfaces within the project footprint (i.e., the roadway) and is therefore not required to be treated by BMPs. Accordingly, runoff from the self-treating areas drains directly off site and does not drain to the proposed LID BMP.

As an operating bridge facility, the Base Line Bridge Replacement Project must consider the incorporation of treatment BMPs to treat storm water runoff from the bridge and roadway. Caltrans-approved treatment BMPs include biofiltration (vegetated swales and strips), infiltration basins, detention devices, traction sand traps, media filters, gross solid removal devices, multi-chambered treatment trains, wet basins, and dry weather flow diversion.

4.2. Potential Impacts to Water Quality

Expected pollutants of concern include heavy metals, organic compounds, sediments, trash and debris, and oil and grease. The potential pollutants of concern include bacteria/virus, nutrients, pesticides, and oxygen demanding substances. During construction activities, excavated soil would be exposed and there would be an increased potential for soil erosion compared to existing conditions. Construction of the project would disturb approximately 20 acres of soil, which includes the proposed limits of grading and temporary staging areas. In compliance with the CGP, an SWPPP would be prepared and Construction BMPs (including, but not limited to, Good Housekeeping BMPs) implemented to prevent spills, leaks, and discharges of construction debris and waste into receiving waters.

Construction activities are anticipated to occur when water is present within City Creek. Therefore, flow diversion would be required around the construction area within the City Creek channel. Water diversion would be carried out via a temporary culvert with a bridge or earth berms over the culvert for construction access.

Perched groundwater dewatering may be necessary during excavations for the spread footings at the pier supports for the new bridge. Groundwater may contain elevated levels of TDS, nitrates, or other constituents that could affect surface water quality when discharged into City Creek. If groundwater dewatering is required during construction, construction activities associated with the proposed project would comply with the requirements of the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality* (Order No. R8-2015-0004, NPDES No. CAG998001). This permit covers general waste discharge requirements for discharges to surface waters that pose an insignificant (de minimis) threat to water quality within the Santa Ana Region. Under this permit, discharges must comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in the permit.

Expected pollutants of concern include heavy metals, organic compounds, sediments, trash and debris, and oil and grease. The potential pollutants of concern include bacteria/virus, nutrients, pesticides, and oxygen demanding substances. The proposed project would result in a permanent net increase in impervious surface area of approximately 0.64 acre. An increase in impervious surface area would increase the volume of runoff during a storm and has the potential to increase pollutant loading to downstream receiving waters. Additionally, changes in runoff can alter substrate deposition in the downstream receiving waters.

The project includes implementation of source control, site design, and LID BMPs. Source control BMPs proposed for the project include hydroseeded slopes, efficient irrigation, storm drain stenciling, BMP maintenance, litter/debris control, spill contingency plan, etc. Site design BMPs proposed for the project include minimizing impervious areas, preserving and restoring vegetation, minimizing compaction of soils, etc. LID BMPs proposed for the project include an infiltration trench. These BMPs shall be implemented to reduce the discharge of pollutants of concern to the maximum extent practicable to comply with the County MS4 Permit.

The proposed LID BMP consists of an infiltration trench approximately 9.65 feet wide by 337.62 feet long (3,256.85 square feet) within a 10-foot-wide median of the eastern roadway approach to

the proposed bridge. Infiltration trenches are long, narrow rock and soil-filled trenches designed to receive storm water runoff and remove fine sediments and associated pollutants by storing runoff in the void space between stones as they infiltrate into the soil matrix. When appropriate evaluation of project sites identify infiltration rates and adequate design capture volumes, infiltration trenches provide 100 percent reduction in the load discharged to surface waters, infiltration of substantial portions of average annual rainfall, and control of channel forming (erosion) and high frequency flood events. Additionally, infiltration trenches that are installed flush with surface grade can be landscaped, thus providing unobtrusive water quality improvements with minimal impact to project site aesthetics.

In order to maintain effective trench infiltration rates, it is important to limit the amount of coarse sediment entering the trench. This can be achieved through pretreatment non-structural source control BMPs such as landscaping designed to control erosion and act as a vegetated swale, routine maintenance of BMPs, implementation of a litter/debris control program, as well as structural source control BMPs such as buffer strips, swales, hydroseed and fiber rolls, and riprap (CASQA 2003).

The LID BMP infiltration trench would treat runoff from DMA-2, which encompasses 1.5 acres of a portion of the bridge roadway itself and a portion of the roadway approach east of the proposed bridge. This would equate to 2,768.33 cubic feet of runoff being treated by the LID BMP. Flow from the roadway would be conveyed to the BMP as pipe flow and/or sheet flow. Since the proposed project would result in a permanent net increase in impervious surface area of approximately 0.64 acre, the LID BMP infiltration trench would treat runoff from the equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area.

Proposed non-structural source control BMPs include, but are not limited to:

- Education of employees, property owners, tenants, and occupants on storm water BMPs;
- Activity restrictions;
- Landscape management;
- BMP maintenance;
- Title 22 CCR compliance;
- Local water quality ordinances;
- Spill contingency plan;
- Litter/Debris control program;
- Catch basin inspection program; and
- Compliance with all other applicable NPDES permits.

Proposed structural source control BMPs include, but are not limited to

- Storm drain stenciling and signage;
- Install efficient irrigation systems and landscape design;
- Install hydroseed and fiber rolls to protect slopes and channels; and
- Install riprap at all storm drain and culvert outlets.

Proposed site design BMPs include, but are not limited to:

- Minimization of impervious areas;
- Maximization of natural infiltration capacity;
- Preservation of existing drainage patterns;
- Protection of existing vegetation and sensitive areas;
- Revegetation of disturbed areas;
- Minimization of soil compaction in infiltration trench areas and revegetation areas; and
- Utilization of vegetated drainage swales.

The source control, site design, and LID BMPs would target pollutants of concern from the operation of transportation facilities.

Neither City Creek nor Reach 5 of the Santa Ana River is listed as impaired on the 2012 California 303(d) List of Water Quality Limited Segments. The project would integrate source control, site design, and LID BMPs into the design to capture any constituents, including inorganic and organic chemical compounds, metals, sediment, and biological agents, that impair a particular water body. Therefore, the proposed project would not contribute to any potential impairment to the receiving waters.

An increase in impervious area would increase the volume of runoff during a storm, which would more effectively transport pollutants to receiving waters and result in a potential HCOC. The increase in impervious surface area of the proposed project (0.64 acre) results in an additional 2,478.54 cubic feet of runoff. Therefore, the reduction in runoff volume required to avoid an HCOC would be 2,478.54 cubic feet. The LID BMP infiltration trench proposed for the project would be designed with a design capture volume of 2,768.33 cubic feet (AECOM 2017), so the infiltration trench would treat runoff from the equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area. The area treated by the infiltration trench LID BMP exceeds the net new impervious area generated, so the LID BMP infiltration trench is sufficient to capture, store, and infiltrate storm water surface runoff. Although the proposed 0.64-acre increase in impervious surface area could increase runoff, City Creek would not be affected by the increase in peak flows since the design capture volume of the infiltration trench will reduce peak flows to at or below existing conditions. Therefore, the proposed project will not result in hydromodification impacts to City Creek or cause or contribute to an HCOC in a downstream channel.

4.2.1. Anticipated Changes to the Physical/Chemical Characteristics of the Aquatic Environment

4.2.1.1. Substrate

During grading, excavation, removal of the existing bridge, construction of the new bridge, and modifications to the roadway approaches, land and vegetation would be cleared, thereby exposing soil to the potential for erosion, which can affect substrate deposition in the downstream receiving waters. Construction of the bridge piers would result in some disturbance of the creek substrate and therefore may impact aquatic species habitat. In compliance with the

CGP, a SWPPP would be prepared and construction BMPs implemented. Construction BMPs would include, but not be limited to, erosion control and sediment control BMPs that are designed to minimize erosion and retain sediment on site. Site design BMPs will preserve existing drainage patterns and time of concentration by limiting soil disturbance within the City Creek substrate and minimizing compaction of soils.

Changes in runoff can affect substrate deposition in the downstream receiving waters. Since a portion of the proposed project's storm water is discharged into City Creek, which has an earthen bottom, changes in storm water volumes and velocities have the potential to affect substrate in downstream receiving waters.

During operation, the LID BMP for the proposed project would consist of an infiltration trench which would reduce the total amount of sediment in the infiltrated runoff from within the project footprint by up to 90 percent (CASQA 2003). Therefore, there is a low potential for operational activities associated with the proposed project to adversely affect the downstream substrate.

4.2.1.2. Currents, Circulation, or Drainage Patterns

Construction activities are anticipated to occur when water is present in City Creek. Flow diversion would be required to divert flows around the construction zone within the City Creek channel; however, water would not need to be diverted outside the channel. Any water diversion would be carried out via a minimum of two temporary 48-inch corrugated metal culverts installed at the existing invert of the main flow path of City Creek with a temporary access road over the culverts for construction access. The flow path of the low flow channel will remain generally in its existing alignment.

The proposed project would maintain the existing drainage pattern on the project site, including draining storm water runoff to City Creek and ultimately the Pacific Ocean via the Santa Ana River. In addition to providing storm water treatment, the proposed infiltration trench along the eastern roadway approach to the proposed Base Line Bridge would provide attenuation of storm water flow. By preserving the existing drainage pattern and implementing permanent BMPs, storm water flow concentrations associated with the proposed project would be similar under current conditions. Although the proposed 0.64-acre increase in impervious surface area could increase runoff, City Creek would not be affected by the increase in peak flows since the design capture volume of the infiltration trench will reduce peak flows to at or below existing conditions (AECOM 2017). Therefore, there is a low potential for the proposed project to adversely affect currents, circulation, and drainage patterns.

4.2.1.3. Suspended Particulates (Turbidity)

Suspended particulates are small solid particles that remain in suspension in water. Turbidity is the cloudiness or haziness of water caused by large numbers of suspended particulates. Increased suspended particulates can result in several negative effects to downstream environments. High turbidity can be detrimental to aquatic life by interfering with photosynthesis, respiration, growth, and reproduction. In addition, pollutants that can adhere to particulate matter (e.g., nutrients, trace metals, and hydrocarbons) can have other harmful effects on the aquatic environment when they occur at elevated levels.

During grading, excavation, removal of the existing bridge, construction of the new bridge, and modifications to the roadway approaches, land and vegetation would be cleared, thereby exposing soil to the potential for erosion. When soil erodes, the sediments/suspended particulates can enter surface waters, increasing turbidity (water cloudiness). In addition, suspended particulates can also be generated from vehicles operating on a roadway during construction activities. In compliance with the CGP, a SWPPP would be prepared and Construction BMPs implemented. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs that are designed to minimize erosion and retain sediment on site.

In locations of permanent low flow within the City Creek channel, a temporary culvert would be constructed to channel low-flow water below the construction work areas. Limiting construction activities outside of any water present within City Creek would reduce the potential for equipment to contribute suspended particulates into downstream receiving waters. In addition, because the project would be a Risk Level 2 project, runoff monitoring and sampling by the contractor for turbidity would be required during storm events to ensure that the project is not resulting in turbidity levels exceeding the Numeric Action Level of 250 NTU (turbidity) established in the CGP. Therefore, there is a low potential for construction activities to result in adverse water quality effects related to suspended particulates.

The proposed project would replace the existing bridge over City Creek; however, it would not add through lanes or increase vehicular capacity. Therefore, it is assumed that road maintenance would not increase beyond existing requirements once the project is operational, and sediments generated by vehicles operating on the roadway would not differ from existing conditions. During operation, the LID BMP for the proposed project would consist of an infiltration trench that would target pollutants of concern in storm water runoff, including suspended particles/sediments. In addition, source control and site design BMPs would be implemented in accordance with the project-specific WQMP (AECOM 2017) to reduce the potential for pollutants to be introduced into storm water. Therefore, there is a low potential for operational activities associated with the proposed project to contribute to adverse water quality effects related to suspended particulates.

4.2.1.4. Oil, Grease and Chemical Pollutants

Heavy metals, pesticides, petroleum hydrocarbons (oil and grease), and organic compounds can be toxic to aquatic life. In addition, some of these compounds can bioaccumulate (concentrate within the body) over several years, resulting in health problems for the affected organism. For example, these compounds can affect reproduction, the nervous system, and other biological functions.

During construction, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and then potentially transported via storm runoff into receiving waters. In compliance with the CGP, a SWPPP would be prepared and Construction BMPs (including, but not limited to, Good Housekeeping BMPs) implemented to prevent spills, leaks, and discharges of construction debris and waste into receiving waters. Construction activities are anticipated within the City Creek channel when water is present. In locations of permanent low flow within the City Creek channel, a temporary culvert would be constructed to channel low-flow water below the construction work areas. Limiting construction

activities outside of any water present within City Creek would reduce the potential for equipment to contribute oil and grease into downstream receiving waters. Therefore, there is a low potential for construction activities to contribute to adverse water quality effects related to oil, grease, and chemical pollutants.

During operation of the proposed project, oil, grease, and toxic organic compounds are pollutants of concern. These pollutants of concern can be generated from vehicles operating on the roadways as well as maintenance activities. The proposed project would replace the existing bridge over City Creek; however, it would not add additional through lanes or increase vehicular capacity. Therefore, it is assumed that road maintenance would not increase beyond existing requirements, and traffic volumes would not increase. The proposed project would include an infiltration trench that would target pollutants of concern in surface runoff from the operation of transportation facilities, including oil, grease, and chemical pollutants. In addition, source control and site design BMPs would be implemented in accordance with the project-specific WQMP (AECOM 2017) to reduce the potential for pollutants to be introduced into storm water. Therefore, there is a low potential for operational activities associated with the proposed project to contribute to adverse water quality effects related to oil, grease, and chemical pollutants.

4.2.1.5. Temperature, Oxygen, Depletion, and Other Parameters

Water temperature can affect survival, spawning success, and metabolic rates of aquatic animals. In addition, increased water temperature decreases the availability of dissolved oxygen, promotes algal and bacterial growth, and increases the sensitivity of organisms to pollution, parasites, and diseases. Water detained on construction sites has the potential to reach ambient air temperature, which could increase surface water temperature if discharged during storm events. In addition, non-storm water discharges have the potential to change surface water temperatures. During operation, storm water falling on or flowing over warm pavement can increase the temperature of runoff.

Nutrients are typically composed of phosphorus and/or nitrogen. Elevated levels in surface waters cause algal blooms and excessive vegetative growth. As nutrients are absorbed, the vegetative growth decomposes, utilizing oxygen in the process and reducing dissolved oxygen levels. Dissolved oxygen is critical for the support of aquatic life. The ammonium form of nitrogen (which is found in wastewater discharges) converts to nitrate in the presence of oxygen, thereby further reducing the dissolved oxygen levels in water. Temporary or portable sanitary facilities provided for construction workers could be a source of sanitary waste (i.e., nutrients that would be a pollutant of concern during construction). During operation, sources of phosphorus that may be present in roadway runoff include tree leaves, surfactants and emulsifiers, and natural sources (e.g., the mineralized organic matter in soils). Potential sources of nitrogen in roadway runoff include atmospheric fallout, nitrite discharges from automobile exhausts, fertilizer runoff, and natural sources such as mineralized soil organic matter.

Trash and debris can interfere with aquatic life respiration and can be harmful or hazardous to aquatic animals that mistakenly ingest floating debris. During construction, construction workers can generate trash and debris (e.g., food wrappers) and construction waste and debris (e.g., broken concrete and wood, rocks, and reclaimed asphalt). During operation, trash and debris are pollutants of concern that are generated from vehicles using the roads.

In compliance with the CGP, a SWPPP would be prepared and Construction BMPs implemented during construction activities. Construction BMPs would include, but not be limited to, Good Housekeeping BMPs to prevent spills, leaks, and discharges of construction debris and waste into receiving waters. In addition, sanitary waste generated from temporary or portable sanitary facilities would be disposed of in compliance with the applicable regulations. Therefore, there is a low potential for construction activities to contribute to adverse water quality effects related to temperature, oxygen depletion, and other parameters.

During operation, non-structural source control BMPs such as ongoing maintenance activities would include trash and debris removal along the roadways. Additionally, landscaping designed to control erosion will require fertilizer and pesticide applications, which will conform to product instructions and State regulations in accordance with California Code of Regulations (CCR), Title 22. The proposed project would include an infiltration trench that would target pollutants of concern in surface runoff from the operation of transportation facilities, including nutrients/fertilizers, pesticides, and debris. In addition, source control and site design BMPs would be implemented in accordance with the project-specific WQMP (AECOM 2017) to reduce the potential for pollutants to be introduced into storm water. Therefore, there is a low potential for operational activities associated with the proposed project to contribute to adverse water quality effects related to temperature, oxygen depletion, trash, and debris.

4.2.1.6. Flood Control Functions

This portion of City Creek serves as a flood control channel and carries substantial flows during larger storm events, which generally occur during the winter months in southern California. Flooding in the City of Highland could result from intense storms resulting in rapid runoff or through the failure of the Seven Oaks Dam along the Santa Ana River. The FEMA FIRMs identify areas subject to flooding during the 100-year storm.[1]

City Creek is in the Special Flood Hazard Zone A (FEMA 2010) for which no base flood elevations or depths are shown on FEMA maps [Figure 6]). Special Flood Hazard Zones are subject to inundation by the 100-year (1 percent annual chance) flood.[2] Additionally, the western portion of the project site is within Zone X (Other Flood Areas),[3] and the eastern portion of the project site is within Zone X (Other Areas).[4]

The City, in cooperation with Caltrans and the FHWA, will improve the Base Line crossing over City Creek by entirely replacing the existing bridge with a new bridge along the width of the City Creek channel to ensure adequate freeboard for the safety of the public and to maintain

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1 The term "100-year" is a measure of the size of the flood, not how often it occurs. The "100-year flood" is a flooding event that has a one percent chance of occurring in any given year.

2 The 1 percent annual flood (100-year flood), also known as the base flood, is the flood that has a 1 percent chance of being equaled or exceeded in any given year.

3 Zone X (Other Flood Areas) are areas of 0.2 percent annual chance of flood (500-year flood); areas of 1 percent annual chance of flood (100-year flood) with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from 1 percent chance of flood (100-year flood).

4 Zone X (Other Areas) are areas determined to be outside the 0.2 percent annual chance (500-year) floodplain.

consistency with the City General Plan. The project-specific *Hydraulic Report* analyzed three scenarios for bulked flow: Scenario 1 assumes the entire flow remains in the existing channel along the west side of the City Creek floodplain; Scenario 2 assumes sixty-five percent of the flow shifts to the east side of the City Creek floodplain; Scenario 3 assumes the entire flow shifts to the east side of the City Creek floodplain (West Consultants, Inc. 2012). Encroachment from the construction of piers for the bridge replacement would result in a minimal increase of the 100-year water surface elevation of the floodplain; however, after project construction, the 100-year flood would continue to be contained within City Creek (*Ibid.*).

The proposed project would construct the new bridge in accordance with SBCFCD design criteria for freeboard clearance, using bulked flow, the clearance for which is dependent on velocity. Therefore, the minimum levee freeboard[1] to be provided above the 100-year clear flood elevation is at least 3 feet at the downstream end and throughout, at least 3.5 feet at the upstream end, and at least 4 feet within 100 feet upstream/downstream of all structures and/or constrictions (West Consultants, Inc. 2012). The replacement bridge profile will be raised by approximately one foot to accommodate current standards for the roadway design, and it will facilitate an additional 558 feet of horizontal clearance for water flows to pass beneath Base Line Road compared to existing conditions.

With implementation of the proposed project, the new bridge would have adequate clearance and would not be overtopped during the 100-year flow, which when compared to existing conditions, would be an improvement. Because construction activities are anticipated when water is present in City Creek, flow diversion would be required to divert flows around the construction zone. Water would not need to be diverted outside the channel, and the flow diversion methods are not expected to alter flood control functions. Therefore, implementation of the proposed project would have a beneficial effect on the flood control functions of the surface waters in and downstream of the project site.

4.2.1.7. Storm, Wave, and Erosion Buffers

Wetlands serve as buffer zones that shield upland areas from wave actions, storm damage, and erosion. A narrow strip approximately one to three feet wide, totaling 1.06 acres along the banks of the City Creek perennial low flow channel, were identified as a USACE wetland area (LSA 2017a). There is potential for in-stream construction activities to permanently affect 0.01 acre of wetlands within City Creek (LSA 2017b). The project widening of the Base Line Bridge is not expected to provide suitable conditions for the natural restoration of wetland emergent vegetation, and the permanent loss of 0.01 acre of wetland emergent vegetation is not considered substantial (*Ibid.*). Additionally, the additional 558 feet of horizontal clearance for water flows to pass beneath Base Line Road compared to existing condition would result in a net increase of 0.70 acre of USACE and CDFW jurisdiction within City Creek. Because the impacts to wetland

[1] Freeboard is a factor of safety usually expressed in feet above a flood level for purposes of flood management and compensates for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed. Typically, a minimum one-foot freeboard is encouraged (FEMA 2017).

emergent vegetation are minimal, and because the proposed project will result in a net increase in USACE and CDFW jurisdiction within City Creek, compensatory mitigation is not required, and the proposed project would not adversely affect storm, wave, or erosion buffers.

4.2.1.8. Erosion and Accretion Patterns

During the removal of the existing bridge, construction of the new bridge, and modifications to the roadway approaches, there would be a potential for soil to be disturbed, thereby exposing soil to the potential for erosion. In compliance with the CGP, preparation of an SWPPP and implementation of Construction BMPs would be required. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs that are designed to minimize erosion and retain sediment on site. Construction activities are anticipated to occur when water is present in City Creek. Therefore, flow diversion would be required to divert flows around the construction area within the City Creek channel. As a result, there is a low potential for construction-related activities associated with the proposed project to adversely affect erosion and accretion patterns.

The proposed project would result in a net increase of impervious surface area of approximately 0.64 acre. Increases in impervious surface area decrease infiltration and increase the volume of runoff during a storm, which can lead to changes in downstream erosion and accretion patterns. Because City Creek has an earthen bottom, if storm water volumes and velocities increase, there is a potential for on- and off-site erosion and accretion to occur.

During operation, storm water runoff from the proposed project would be treated with an infiltration trench LID BMP, site design, and source control BMPs in accordance with the project-specific WQMP (AECOM 2017). These BMPs would reduce the total amount of sediment in surface runoff from the operation of transportation facilities, thereby reducing the downstream transport of sediment in storm water runoff. Additionally, the infiltration trench would serve to attenuate storm water flows, as the design capture volume of the infiltration trench will reduce peak flows to at or below existing conditions (AECOM 2017). Therefore, there is a low potential for operational activities associated with the proposed project to adversely affect the downstream erosion and accretion patterns.

4.2.1.9. Aquifer Recharge/Groundwater

Based on data from the California Department of Water Resources and United States Geological Survey (USGS), groundwater on the project site can be found at a depth of between 100 and 250 feet below the ground surface (bgs) and flows in a west-southwest direction (Diaz-Yourman & Associates 2010). Perched groundwater conditions occur at the project site: saturated soils were encountered between approximately 35 and 60 feet bsg during geotechnical borings, but the soils below 60 feet bsg were dry (*Ibid.*). During construction of the new bridge, excavations for the spread footings at the pier supports may extend between 22 feet and 32 feet below the existing streambed. Therefore, perched groundwater may be encountered during construction, and groundwater dewatering may be required during construction activities within the streambed. However, any groundwater dewatering activities during construction would be short term, and the volume removed would be minimal. Once construction of the new bridge is complete, any

dewatered groundwater would reinfiltrate once it is released into the creek on account of the high infiltration rate of the on-site soils.

The project site contains three different types of soils: Psamments and Fluvents (Ps), Soboba Stony Loamy Sand, 2 to 9 percent slopes (SpC), and Tujunga Gravelly Loamy Sand, 0 to 9 percent slopes (TvC). As indicated in Table B, soils belonging to Hydrologic Soil Group A have a low runoff potential and high infiltration rate when thoroughly wetted. All soils found on site are considered to be part of Hydrologic Soil Group A and are considered to have a low runoff or erosion potential and a high infiltration rate.

During operation, the LID BMP for the proposed project would consist of an infiltration trench which would capture storm water runoff from within the project site. Storm water runoff from a portion of the project site would infiltrate into the LID BMP infiltration trench within DMA-2 (Figure 3). This would equate to 2,768.33 cubic feet of runoff being treated by the LID BMP, which would be equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area and thus increasing aquifer recharge capacity within the project site. The remainder of the storm water runoff would drain directly into City Creek within DMA-1 and DMA-3 through DMA-6 similar to existing conditions. For these reasons, the proposed project would not substantially change groundwater levels in the groundwater basin, and there would be a low potential for impacts to the aquifer/groundwater recharge to occur.

4.2.1.10. Baseflow

Baseflow is the streamflow resulting from precipitation that infiltrates the soil and eventually moves through the soil to the stream channel. This is also referred to as groundwater flow or dry-weather flow. As discussed above, the soils within the project site are anticipated to have a high infiltration rate when thoroughly wetted. Although construction and operation of the proposed project have the potential to reduce infiltration capacity of soils on the project site, implementation of site design BMPs to minimize soil compaction during construction would maintain soil infiltration capacity. Additionally, implementation of a LID BMP infiltration trench would result in approximately 2,768.33 cubic feet of runoff treated by the LID BMP, which would be equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area, thus increasing infiltration capacity within the project site. Therefore, baseflow would not be adversely affected.

4.2.2. Anticipated Changes to the Biological Characteristics of the Aquatic Environment

The information presented in this section is obtained from the *Jurisdictional Delineation for the Base Line Bridge Replacement Project* (LSA 2017a) and the draft *Natural Environment Study* (LSA 2017b) prepared for the proposed project. Although the draft *Natural Environment Study* identifies both upland and riparian/aquatic-dependent species, only riparian/aquatic-dependent species are discussed in this analysis.

4.2.2.1. Special Aquatic Sites

The project would have 0.03 acre of permanent effects and 5.38 acres of temporary effects on USACE non-wetland waters, and 0.01 acre of permanent effects and no temporary effects on USACE wetland waters occurring within City Creek (LSA 2017b). The waters determined to be regulated by the USACE above would be subject to RWQCB jurisdiction. The project would have 0.06 acre of permanent effects and 6.18 acres of temporary effects to CDFW riparian streambed/riparian habitat occurring within City Creek. However, since the proposed project would result in an additional 558 feet of horizontal clearance for water flows to pass beneath Base Line Road compared to existing conditions, the proposed project would result in a net increase of 0.70 acre of USACE and CDFW jurisdiction within City Creek. The project widening of the Base Line Bridge is not expected to provide suitable conditions for the natural restoration of wetland emergent vegetation. Because the impacts to wetland emergent vegetation are minimal, and because the proposed project will result in a net increase in USACE and CDFW jurisdiction within City Creek, compensatory mitigation is not required.

A Federal Clean Water Act (CWA) Section 404 permit authorization from the USACE, a CWA Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a Fish and Game Code Section 1602 Streambed Alteration Agreement from the CDFW will be submitted to the respective agencies for authorization of impacts to respective jurisdictional areas. In addition, construction, LID/site design, and source control BMPs would be implemented in accordance with the project-specific WQMP (AECOM 2017) to minimize erosion and target pollutants of concern in runoff from the project site before it is discharged into City Creek and its associated habitat. Therefore, the project would not adversely affect the special aquatic sites within the project site.

4.2.2.2. Habitat for Fish and Other Aquatic Organisms

The project site is within USFWS 2010 designated critical habitat for Santa Ana sucker, which is aquatic dependent, federally threatened, and a California Species of Special Concern. Additionally, the project site was found to contain the Santa Ana speckled dace, a non-listed special-status species. Perennial flows of City Creek within the project site provide sustainable habitat for fish and/or aquatic species, including suitable habitat for Santa Ana sucker and the Santa Ana speckled dace. The draft *Natural Environmental Study* concludes Santa Ana sucker has been extirpated from City Creek and therefore has a very low potential to occur on the project site (LSA 2017b). The project, however, will have 5.57 acres of temporary direct impacts associated with temporary construction easements, temporary equipment access areas, and temporary staging areas, and 0.06 acre of permanent impacts to Santa Ana sucker critical habitat. However, since the proposed project would result in an additional 558 feet of horizontal clearance for water flows to pass beneath Base Line Road compared to existing conditions, the proposed project would result in a net increase of 0.97-acre to Santa Ana sucker critical habitat (*Ibid.*).

Implementation of Construction BMPs and avoidance and minimization measures such as habitat avoidance and installation of highly visible barriers and exclusionary and silt-fencing, as detailed in the project-specific WQMP (AECOM 2017) and draft *Natural Environmental Study* (LSA 2017b), respectively, would avoid and minimize effects to special status aquatic species

including Santa Ana sucker and Santa Ana speckled dace. The temporary loss of 5.57 acres and permanent loss of 0.06 acre of Santa Ana sucker critical habitat is not considered substantial when taking into account a net increase of 0.97-acre to Santa Ana sucker critical habitat.

The project-related effects to habitats associated with Santa Ana sucker critical habitat are expected to restore naturally over time. In addition source control BMPs would reduce pollutants of concern in storm water runoff, and LID/site design BMPs would treat runoff from the roadways before it is discharged into City Creek and its associated habitat. Therefore, there would be no adverse water quality-related impacts to fish habitat.

4.2.2.2.1. Fish Passage (Beneficial Uses)

City Creek within the project site provides a water source and potential suitable habitat to sustain a viable population of fish, including Santa Ana sucker and Santa Ana speckled dace. Construction activities are anticipated to occur when water is present within City Creek. Therefore, flow diversion would be required around the construction area within the City Creek channel. Water diversion would be carried out via a temporary culvert with a bridge or earth berms over the culvert for construction access and would maintain the constant flow of water to facilitate fish passage through the project site during construction. Implementation of construction BMPs and avoidance and minimization measures such as habitat avoidance and installation of highly visible barriers and exclusionary and silt-fencing, as detailed in the project-specific WQMP (AECOM 2017) and draft *Natural Environmental Study* (LSA 2017b), respectively would ensure construction of the proposed project would not adversely affect fish passage.

Additionally, the portions of the City Creek bottom affected by the proposed project would be recontoured to their original grades in accordance with the draft *Natural Environmental Study* (*Ibid.*). Finally, source control BMPs would reduce pollutants of concern in storm water runoff, and LID/site design BMPs would treat runoff from the roadways before it is discharged into City Creek. Therefore, there would be no adverse water quality-related impacts to fish passage.

4.2.2.3. Wildlife Habitat

Within the floodplain of the project site, the predominant natural plant communities are developed/disturbed lands, Riversidean alluvial fan sage scrub, southern willow scrub, emergent wetlands, and unvegetated stream channel. These plant communities provide potentially suitable habitat for wildlife within the project site. The proposed project will result 4.85 acres of temporary effects and 0.03 acre of permanent effects to Riversidean alluvial fan sage scrub and 0.68 acre of temporary effects and no permanent effects to southern willow scrub. Emergent wetlands are discussed in Section 4.2.2.1 above.

Implementation of Construction BMPs and avoidance and minimization measures such as habitat avoidance, installation of highly visible barriers around the boundaries of environmentally sensitive areas, monitoring during construction within the vicinity of riparian areas, and adherence to a weed abatement program, as detailed in the project-specific WQMP (AECOM 2017) and draft *Natural Environmental Study* (LSA 2017b), respectively, would avoid and/or minimize potential construction-related effects to wildlife habitats. Project-related effects to

these wildlife habitats are not considered substantial and are expected to restore naturally over time with control of non-native vegetation.

Because City Creek is leveed within the project site and subject to unpredictable flood events, a habitat restoration plan or other natural restoration program is not considered feasible within the project site. The Base Line Bridge widening will result in a net increase of 0.96 acre of Riversidean alluvial fan sage scrub and southern willow scrub vegetation that is expected to be restored naturally. In addition, source control BMPs would reduce pollutants of concern in storm water runoff, and LID/site design BMPs would treat runoff from the roadways before it is discharged into City Creek and its associated habitat. Therefore, there would be no adverse water quality-related impacts to wildlife habitat.

4.2.2.3.1. Wildlife Passage (Beneficial Uses)

The project site is surrounded by developed areas associated with existing transportation corridors as well as residential and commercial buildings and small areas of open space uses that have severely affected wildlife habitat connectivity. However, the Santa Ana River, which converges with City Creek approximately 2.3 miles south of the project site, acts as one of the major wildlife corridors within the region despite also being affected by development (e.g. channelization). Regionally, the Santa Ana River serves as a linkage between wildlife habitats from its origins in the San Bernardino Mountains, through the Prado Dam area, and into Orange County.

Under the Build Alternative, the existing 42-foot-long bridge would be replaced with a new 600-foot bridge with an enlarged corridor of 558 feet of horizontal clearance to better facilitate the passage of wildlife within the creek from the San Bernardino Mountains one mile north of the project site to the Santa Ana River 2.3 miles south of the project site compared to the existing condition. This increase in horizontal clearance beneath Base Line Bridge will result in a net increase of approximately 0.96 acre of natural communities expected to be restored naturally with Riversidean alluvial fan sage scrub and southern willow scrub vegetation, which would create increased habitat connectivity between upstream and downstream habitats in City Creek (LSA 2017b). Therefore, no substantial adverse effects to wildlife passage are expected, and no compensatory mitigation is proposed as part of the project.

4.2.2.4. Endangered or Threatened Species

The least Bell's vireo (federally/state listed as endangered) and San Bernardino kangaroo rat (federally listed as endangered) were determined to be present in the BSA. The least Bell's vireo is riparian/aquatic-dependent, and the San Bernardino kangaroo rat prefers gravelly and sandy soils of alluvial fans, braided river channels, and active channels and terraces. The BSA is within USFWS-designated critical habitat for the Santa Ana sucker and San Bernardino kangaroo rat. Potential project-related effects to the Santa Ana sucker are described above in Section 4.2.2.2.

An individual male least Bell's vireo was observed (vocalizing) on two occasions within the southern willow scrub habitat along City Creek. The observations occurred on June 2 and 17, 2016, and were incidental to other biological studies conducted within the BSA. The proposed project would have 0.68 acre of temporary effects and no permanent effects to least Bell's vireo

habitat within the BSA. Implementation of avoidance and minimization measures such as ensuring removal of southern willow scrub vegetation occurs outside of the least Bell's vireo breeding season would avoid and minimize potential construction-related effects to least Bell's vireo. The temporary loss of 0.68 acre of least Bell's vireo habitat is not considered substantial, and the project-related effects to habitats associated with least Bell's vireo are expected to restore naturally over time. In addition, source control BMPs would reduce pollutants of concern in storm water runoff, and LID/site design BMPs would treat runoff from the roadways before it is discharged into City Creek and its associated habitat. Therefore, there would be no adverse water quality-related impacts to least Bell's vireo habitat and no compensatory mitigation is required.

A focused trapping survey was conducted for San Bernardino kangaroo rat within the BSA in 2009 (LSA 2017b). Twenty-eight San Bernardino kangaroo rats were captured during the two-week trapping effort. The BSA is also located within USFWS designated critical habitat for this species. The proposed project has the potential to result in take of individual San Bernardino kangaroo rats and will have 5.93 acres of temporary effects and 0.09 acre of permanent effects to federally designated San Bernardino kangaroo rat critical habitat within the BSA. However, the proposed project is expected to have a net benefit of 0.96 acre of additional habitat for San Bernardino kangaroo rat, which is expected to result in increased habitat connectivity between upstream and downstream habitats in City Creek. Implementation of avoidance and minimization measures such as implementation of a contractor awareness program, exclusionary and silt-fencing, ongoing biological monitoring and live trapping during construction for relocation of the species from within the project site, and restriction of construction work during daytime hours only would avoid and/or minimize potential construction-related effects to the San Bernardino kangaroo rat. In addition, source control BMPs would reduce pollutants of concern in storm water runoff, and the LID/site design BMPs would treat runoff from the roadways before it is discharged into City Creek and its associated habitat.

With implementation of the avoidance and minimization measures described above, and because the proposed project is expected to provide a net benefit for San Bernardino kangaroo rat critical habitat, there would be no adverse water quality-related impacts to the San Bernardino kangaroo rat, and no compensatory mitigation is required. However, a Federal Endangered Species Act (FESA) Section 7 Consultation will be required with the USFWS to address project effects to San Bernardino kangaroo rat. Additional avoidance, minimization, and mitigation measures may be required as a result of the Section 7 Consultation process.

The 2009 trapping survey for San Bernardino kangaroo rat identified San Diego desert woodrat to be present within the BSA. This species were captured in areas of City Creek vegetated by Riversidean alluvial fan sage scrub but has no official status but merit consideration under CEQA. The project will have 4.85 acres of temporary effects and 0.03 acre of permanent effects to San Diego desert woodrat habitat (Riversidean alluvial fan sage scrub). However, the Base Line Bridge widening will result in a net increase of 0.96 acre of habitat within the BSA that is expected to provide a net benefit for this species. Potential project-related effects to Riversidean alluvial fan sage scrub are described above in Section 4.2.2.3. The avoidance and minimization measures described in Section 4.2.2.3 will minimize project-related effects to the San Diego desert woodrat. Therefore, there would be no adverse water quality-related impacts to the San Diego desert woodrat, and no compensatory mitigation is required.

All bat species (regardless of listing status) and other nongame mammals are protected by California Fish and Game Code Section 4150. Crevice habitat suitable for day and night roosting bats is present in the spaces between the concrete slab beams of the Base Line Bridge, which form 17 crevices spanning the length of the bridge structure. In addition, high-quality foraging habitat for bats is present in the riparian and scrub vegetation along City Creek, increasing the desirability of the bridge structure for use by roosting bats. Although no bats were observed roosting at the time of the assessment, the probability of roosting is moderate to high due to the high-quality foraging habitat surrounding the bridge (LSA 2017b). The observed crevice habitat is also suitable for use by multiple bat species for maternity roosting and it is possible that a maternity colony is present in this bridge structure during the maternity season.

Implementation of avoidance and minimization measures such as implementation of a nighttime exit count ad acoustic survey, humane evictions and/or exclusions as necessary, establishment of alternative bat roosting habitat near the existing Base Line Bridge, and coordination of construction activities in consultation with a qualified bat biologist would avoid and/or reduce potential construction-related effects to night roosting and foraging bats. With implementation of avoidance and minimization measures, no compensatory mitigation is required. In addition, source control BMPs would reduce pollutants of concern in storm water runoff, and LID/site design BMPs would treat runoff from the roadways before it is discharged into City Creek and its associated habitat. Therefore, there would be no adverse water quality-related impacts to bat habitat.

The remaining non-listed special interest species with potential to occur in the BSA have no official status, but merit consideration under CEQA in order to evaluate any potential adverse impacts. Project impacts to these non-listed species are not considered substantial with implementation of avoidance and minimization measures discussed in the draft *Natural Environmental Study* (LSA 2017b) for habitats and other special-interest species present within the BSA.

4.2.2.5. Invasive Species

The proposed project may provide opportunities for the movement of invasive species through the landscape. Invasive species can be transported by pedestrians, bicyclists, and other forms of sidewalk use. Invasive plants can be moved from site to site during spraying and mowing operations. Weed seed can be inadvertently introduced into the corridor on equipment during construction and through the use of mulch, imported soil or gravel, and sod. Some invasive plant species might be deliberately planted in erosion control, landscape, or wildflower projects. In compliance with the United States Department of Agriculture Executive Order (EO) 13112, a weed abatement program would be developed to minimize the importation of nonnative plant material during and after construction. Eradication strategies would be employed should an invasion occur. Measures addressing invasive species abatement and eradication would be included in the project design and contract specifications, and would be implemented and enforced by the construction contractor. Therefore, with compliance with EO 13112, it is not anticipated that the proposed project would result in adverse impacts related to the spread and introduction of invasive species during construction or operation of the proposed project.

4.2.3. Anticipated Changes to the Human Use Characteristics of the Aquatic Environment

4.2.3.1. Existing and Potential Water Supplies; Water Conservation

Water is supplied to the City of Highland from groundwater, surface runoff from natural watershed and drainage areas, and imported water (City of Highland 2006). Landscaping would be implemented in accordance with the project-specific landscaping plans and utilize efficient irrigation systems to control water timing and avoid excess runoff. Therefore, water use would be minimal, and it is anticipated that the water use would not exceed demands for harvested water within the City.

4.2.3.2. Recreational or Commercial Fisheries

Changes in water quality can affect the survival of fish and other aquatic organisms. This would have deleterious impacts to recreational and commercial fisheries. Runoff from the project site drains into City Creek and ultimately the Santa Ana River and Pacific Ocean. According to the Basin Plan, City Creek and Reach 5 of the Santa Ana River are used for recreational purposes but not for commercial fishing. However, the Basin Plan states that recreational uses should not be construed as encouraging recreational activities. Furthermore, in certain reaches of City Creek and the Santa Ana River, access to the water bodies is prohibited because of potentially hazardous conditions and/or because of the need to protect other uses.

The Santa Ana River eventually drains into the Pacific Ocean, which is located approximately 62 miles downstream from the proposed project. Portions of the Santa Ana River may be used for recreational fishing, and the Pacific Ocean is used for recreational and commercial fishing. Construction BMPs would be implemented to reduce impacts related to erosion, sedimentation, and spills. In addition, the proposed project includes site design, source control, and LID BMPs (an infiltration trench) that would target pollutants of concern from transportation facilities. Because runoff from the proposed project would be treated using LID BMPs and because of the proposed project's distance from the Pacific Ocean, there would be a low potential for the proposed project to result in adverse effects on recreational or commercial fishing.

4.2.3.3. Other Water-Related Recreation

Trash and debris, oil and grease, nutrients, and sediment can decrease the recreational value and safety of a water body for contact and noncontact recreational activities. Contact recreational activities involve body contact with water where ingestion of water is reasonably possible, such as swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs. Noncontact recreational activities involve proximity to, but not contact with water, such as picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, and aesthetic enjoyment. The Basin Plan identifies both contact and noncontact recreation as beneficial uses for City Creek and Reach 5 of the Santa Ana River. However, the Basin Plan states that recreational uses should not be construed as encouraging recreational activities. Furthermore, in certain reaches of City Creek and the Santa Ana River, access to water bodies is prohibited because of potentially hazardous

conditions and/or the need to protect other uses. However, runoff from the proposed project would eventually drain into the Pacific Ocean, which has beneficial uses associated with human activities that include contact and non-contact recreation.

Construction BMPs would be implemented to reduce impacts related to erosion, sedimentation, and spills. In addition, the proposed project includes source control, site design, and LID infiltration trench BMP that would target pollutants of concern from transportation facilities. Because BMPs would be implemented to target pollutants of concern, there is a low potential for operational activities associated with the proposed project to have an adverse effect on other water-related recreation.

4.2.3.4. Aesthetics of the Aquatic Ecosystem

City Creek is an important aesthetic feature that enhances the enjoyment of residents whose homes abut the open space landscape along City Creek. Trash and debris, oil and grease, nutrients, and sediment can detract from the aesthetics of a water body. Trash and debris can accumulate in the waterways. Oil and grease float on the water surface and often have a distinctive sheen and/or smell. Sediment increases turbidity and can turn water a murky brown color. Nutrients can promote algal blooms and reduce the clarity of surface waters.

The proposed project will accommodate construction of a north to southwestern trending multipurpose trail along the western bank of City Creek (to be locally funded by the City of Highland at a later date). No portion of the trail will be constructed under the proposed scope of work, but its future construction will be accounted in the proposed project's site design and layout. Construction BMPs would be implemented to reduce impacts related to erosion, sedimentation, and spills. In addition, the proposed project includes source control, site design, and LID BMPs (an infiltration trench) that would target pollutants of concern from transportation facilities. Because the BMPs would target pollutants of concern in storm water runoff, there is a low potential for the proposed project to have an adverse effect on the aesthetics of the aquatic ecosystem. Additionally, infiltration trenches that are installed flush with surface grade can be landscaped, thus providing unobtrusive water quality improvements with minimal impact to the aesthetics of the aquatic ecosystem.

4.2.3.5. Parks, National and Historic Monuments, National Seashores, Wild and Scenic Rivers, Wilderness Areas, etc.

Neither City Creek nor the Santa Ana River is designated as a wild and scenic river by the National Wild and Scenic Rivers System. In addition, there are no national or historic monuments, national seashores, or wilderness areas in the vicinity of the project site. According to the *Historic Resources Evaluation Report* (LSA 2010) and *Supplemental Historic Resources Evaluation Report*, no resources listed or eligible for listing in the National Register of Historic Places were identified on the project site (LSA 2017c). However, Base Line Road is documented as a historic resource and California Point of Historical Interest (P-36-015497/CPHI-12) pursuant to CEQA. The existing Base Line Bridge comprises a portion of Base Line Road, but the bridge itself is not historic in nature. Additionally, the replacement bridge will maintain Base Line Road in the same alignment as the current bridge. The portion of Base Line Road being

replaced (i.e. Base Line Bridge) is miniscule when taking the entire Base Line Road into consideration. Additionally, the Base Line Bridge meets the criteria for Section 106 Programmatic Agreement, Attachment 4, between the State Historic Preservation Office (SHPO) and Caltrans for *Properties Exempt from Evaluation*. Therefore, replacement of the Base Line Bridge will not result in adverse water quality and/or hydrology-related effects to Historic Properties.

There is one public park, Canyon Oaks Park, within one mile of the project limits. Additionally, Thompson Elementary School, Cole Elementary School, Highland Grove Elementary School, Beattie Middle School, and Immanuel Baptist Church all have park facilities within one mile of the project limits. However, none of these park facilities has the potential to receive storm water from the proposed project due to their locations above gradient relative to the project limits. Therefore, storm water from the project site would not adversely affect any waters in or associated with these park facilities, and the proposed project would not have an adverse effect on any parks, national or historic monuments, national seashores, wild and scenic rivers, or wilderness areas.

4.2.3.6. Traffic/Transportation Patterns

Although construction of the proposed project would affect traffic and transportation patterns on the project site, the aquatic resources on the project site are not used for transportation. In addition, operation of the proposed project would be similar to the existing condition, and no aquatic resources on the project site would be used for transportation purposes. Therefore, there is no potential for the proposed project to have an adverse effect on traffic/transportation patterns associated with aquatic resources.

4.2.3.7. Energy Consumption or Generation

The waters on the project site are not used for energy generation. Therefore, there is no potential for the proposed project to have an adverse effect on energy consumption or energy generation.

4.2.3.8. Navigation

The waters on the project site are altered in some form and carry perennial flows that are not used for navigation. Therefore, the proposed project would not have an adverse effect on navigation.

4.2.3.9. Safety

City Creek serves as a flood control channel and carries substantial flows during larger storm events, which generally occur during the winter months in southern California. The Base Line Road crossing over City Creek is the site of a fatality in which the vehicle and its driver were swept away by floodwaters during a major rainstorm event in January 2005. Flooding in the City

of Highland could result from intense storms resulting in rapid runoff or through the failure of the Seven Oaks Dam along the Santa Ana River. The FEMA FIRMs identify areas subject to flooding during the 100-year storm.[1]

City Creek is in the Special Flood Hazard Zone A (FEMA 2010) for which no base flood elevations or depths are shown on FEMA maps [Figure 6]). Special Flood Hazard Zones are subject to inundation by the 100-year (1 percent annual chance) flood.[2] Additionally, the western portion of the project site is within Zone X (Other Flood Areas),[3] and the eastern portion of the project site is within Zone X (Other Areas).[4]

As discussed previously, the proposed project would construct the new bridge with a higher profile that would provide the additional flow capacity needed to convey the 100-year flow in accordance with SBCFCD design criteria for freeboard clearance. Additionally, the proposed project includes drainage improvements to accommodate the increased volume of storm water flows resulting from the additional impervious surface area. With implementation of the proposed project, storm water flows would continue to be contained within City Creek. The replacement bridge profile will be raised by approximately one foot to accommodate current standards for the roadway design, and it will facilitate an additional 558 feet of horizontal clearance for water flows to pass beneath Base Line Road compared to existing conditions. Therefore, implementation of the proposed project would reduce the risk of flooding compared to existing conditions and have a beneficial effect on safety.

4.2.4. Short-Term Impacts during Construction

Construction of the project would disturb approximately 20 acres of soil and would include the following elements:

- Grading activities
- Removal of the existing bridge
- Construction of the new bridge
- Modification of the roadway approaches
- Relocation of utility lines
- Diversion of the City Creek flow

The following sections summarize the potential for short-term effects from the proposed project on the physical/chemical characteristics, biological characteristics, and human use characteristics of the aquatic environment.

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1 The term "100-year" is a measure of the size of the flood, not how often it occurs. The "100-year flood" is a flooding event that has a one percent chance of occurring in any given year.

2 The 1 percent annual flood (100-year flood), also known as the base flood, is the flood that has a 1 percent chance of being equaled or exceeded in any given year.

3 Zone X (Other Flood Areas) are areas of 0.2 percent annual chance of flood (500-year flood); areas of 1 percent annual chance of flood (100-year flood) with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from 1 percent chance of flood (100-year flood).

4 Zone X (Other Areas) are areas determined to be outside the 0.2 percent annual chance (500-year) floodplain.

4.2.4.1. Physical/Chemical Characteristics of the Aquatic Environment

The expected pollutants of concern of the proposed project include heavy metals, organic compounds, sediments, trash and debris, and oil and grease. The potential pollutants of concern include bacteria/virus, nutrients, pesticides, and oxygen demanding substances. Construction activities associated with the proposed project include grading, excavation, removal of the existing bridge, construction of the new bridge, construction of permanent water quality BMPs, and modifications to the roadway approaches.

During construction of the proposed project, activities such as grading and excavation could expose soil and increase the potential for soil erosion, which could be a source of downstream sediment. As noted above, when sediment enters a receiving water body, it can increase turbidity, smother bottom-dwelling organisms, and suppress aquatic vegetation growth. When new structures are installed or modified (e.g., bridges and roadways), concrete and/or asphalt applications could be a source of fine sediment, metals, and chemicals that could change the pH levels in downstream water bodies.

Grading and other earthmoving activities during construction could be a source of petroleum products and heavy metals if construction equipment leaks petroleum products, such as engine oil, hydraulic oil, or antifreeze. Furthermore, temporary or portable sanitary facilities provided for construction workers could be a source of sanitary waste.

Preparation of an SWPPP and implementation of construction and source control BMPs would be required to reduce pollutants of concern in the storm water runoff. Therefore, the potential for short-term water quality impacts associated with construction to adversely affect the physical/chemical characteristics of the on-site or downstream aquatic environment during construction is considered to be low.

4.2.4.2. Biological Characteristics of the Aquatic Environment

City Creek is a perennial natural aquatic feature within the project site and provides potentially suitable habitat for the Santa Ana sucker and Santa Ana speckled dace. The creek is leveed and contains a low-flow, open water channel along the westerly levee. Flows from City Creek eventually drain via the Santa Ana River into the Pacific Ocean, which is a functioning aquatic ecosystem supporting both the biological (e.g., fish) and human (e.g., recreation) environment. Preparation of an SWPPP, WQMP, and implementation of construction, source control, site design, and LID BMPs would be required to reduce pollutants of concern in the storm water runoff. Therefore, no short-term water quality impacts to the biological characteristics of the on-site or downstream aquatic environment during construction are anticipated.

4.2.4.3. Human Use Characteristics of the Aquatic Environment

City Creek is a perennial water body within the project site; however, it has been highly modified. The Basin Plan identifies both contact and noncontact recreation uses for City Creek and Reach 5 of the Santa Ana River. However, the Basin Plan states that recreational uses should not be construed as encouraging recreational activities. Furthermore, in certain reaches of City Creek and the Santa Ana River, access to the water bodies is prohibited because of potentially

hazardous conditions and/or the need to protect other uses. However, runoff from the proposed project would eventually drain into the Pacific Ocean, which has beneficial uses associated with human activities that include contact and noncontact recreation. Preparation of an SWPPP and implementation of construction and source control BMPs would be required to reduce pollutants of concern in the storm water runoff. Therefore, the potential for short-term water quality impacts during construction to adversely affect the human use characteristics of the on-site or downstream aquatic environment during construction is considered to be very low.

4.2.5. Long-Term Impacts during Operation and Maintenance

Replacing the existing Base Line Bridge over City Creek would result in an increase in impervious surface area of approximately 0.64 acre (from 2.17 acres to 2.81 acres). This increase in impervious area would cause an increase in the amount of pollutants typically generated by operating and maintaining a transportation facility (e.g., TDS, nutrients, trash/litter, oil and grease, and heavy metals). As noted above, increases in sediments and other pollutants in a water body can increase turbidity, smother bottom-dwelling organisms, suppress aquatic vegetation growth, and alter the temperature and pH of a water body. The following section summarizes the potential for long-term effects on the physical/chemical characteristics, biological characteristics, and human use characteristics of the aquatic environment during operation and maintenance of the proposed project.

4.2.5.1. Physical/Chemical Characteristics of the Aquatic Environment

Primary pollutants of concern are pollutants that are expected to be or have the potential to be in project runoff based on proposed land uses. Expected pollutants of concern for the proposed project are heavy metals, organic compounds, sediments, trash and debris, and oil and grease. The potential pollutants of concern include bacteria/virus, nutrients, pesticides, and oxygen demanding substances.

As a result of the removal of the existing bridge, construction of the new bridge, and modifications to the roadway approaches, the proposed project would increase impervious surface area by approximately 0.64 acre. An increase in impervious surface area would increase the volume of runoff during a storm, thereby increasing the potential for more effectively transporting pollutants to receiving waters. As discussed previously, although the proposed 0.64-acre increase in impervious surface area could increase runoff, City Creek would not be adversely affected by the increase in peak flows because the design capture volume of the infiltration trench will reduce peak flows to at or below existing conditions (AECOM 2017).

Increases in chemical pollutants and changes in temperature and pH may lead to detrimental effects to downstream receiving waters. The proposed project would include site design and LID BMPs comprised of an infiltration trench to capture runoff from the project site and reduce pollutants of concern. Additionally, source control BMPs would be incorporated into the design of the project to reduce pollutant introduction to storm water. Because the proposed project would implement effective BMPs that would treat runoff from the equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area of the project site, there is a low potential for the proposed project to have an adverse effect on the physical/chemical characteristics of the on-site or downstream aquatic environment.

4.2.5.2. Biological Characteristics of the Aquatic Environment

City Creek is a perennial natural aquatic feature within the project site and provides potentially suitable habitat for the Santa Ana sucker and Santa Ana speckled dace. The creek is leveed and contains a low-flow, open water channel along the westerly levee. Flows from City Creek eventually drain via the Santa Ana River into the Pacific Ocean, which is a functioning aquatic ecosystem supporting both the biological (e.g., fish) and human (e.g., recreation) environment. As noted above, the proposed project would increase the amount of impervious surface area, thereby resulting in an increase in the volume of runoff and energy of the flows, which in turn would increase the downstream transport of pollutants to downstream receiving waters.

Biological resources on the project site require stable habitat functions and factors to maintain a healthy population. The replacement bridge would function in a similar way to the current Base Line Bridge; therefore, no adverse biological effects would be anticipated for the proposed project. Since the proposed project would result in an additional 558 feet of horizontal clearance for water flows to pass beneath Base Line Road compared to existing conditions, the proposed project would result in a net increase of 0.70 acre of USACE and CDFW jurisdiction within City Creek and a net increase of approximately 0.96 acre of natural communities expected to be restored naturally with Riversidean alluvial fan sage scrub and southern willow scrub vegetation (LSA 2017b). In addition, source control BMPs would reduce pollutants of concern in storm water runoff, and LID/site design BMPs would treat storm water runoff from the project site, there is a low potential for the proposed project to have an adverse effect on the biological characteristics of the on-site or downstream aquatic environment. Therefore, no long-term water quality impacts to the biological characteristics of the aquatic environment are anticipated.

4.2.5.3. Human Use Characteristics of the Aquatic Environment

City Creek is a perennial water body within the project site; however, it has been highly modified. The Basin Plan identifies both contact and noncontact recreation uses for City Creek and Reach 5 of the Santa Ana River. However, as noted above, the Basin Plan states that recreational uses should not be construed as encouraging recreational activities. Furthermore, in certain reaches of City Creek and the Santa Ana River, access to the water bodies is prohibited because of potentially hazardous conditions and/or the need to protect other uses. However, runoff from the proposed project would eventually drain into the Pacific Ocean, which has beneficial uses associated with human activities that include contact and noncontact recreation.

The proposed project would include an infiltration trench to treat runoff from the project site and reduce pollutants of concern. Additionally, source control BMPs would be incorporated into the design of the project to reduce pollutant introduction to storm water. Since there are no known existing BMPs within the project limits, and the infiltration LID BMP will treat the equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area, the proposed project would result in an increase in the quality of runoff that reaches downstream receiving waters during operation. Therefore, there is a very low potential for the proposed project to have an adverse effect on human use characteristics of the on-site or downstream aquatic environment.

4.3. Impact Assessment Methodology

This WQAR analyzes the differences between the existing condition and the proposed project condition with respect to water quality impacts and takes the following into consideration:

- Pollutant sources (changes in land uses);
- Impervious areas and relation to the amount of runoff (increase or decrease);
- Application of BMPs (number of BMPs, new technologies, effectiveness); and
- Discharges into impaired waters (listed pursuant to Section 303(d) of the CWA).

4.4. Alternative-Specific Impact Analysis

4.4.1. No Build Alternative

Under the No Build Alternative, the Base Line Bridge over City Creek would not be replaced. Therefore, the No Build Alternative would not result in any short-term water quality impacts from construction-related activities. In addition, under the No Build Alternative, there would be no increase in impervious surface area at the Base Line Bridge. Therefore, the No Build Alternative would not result in an increase in storm water runoff or long-term pollutant loading compared to existing conditions. However, BMPs would not be implemented during operation, and storm water would remain untreated.

4.4.2. Build Alternative

4.4.2.1. Construction

Expected pollutants of concern include heavy metals, organic compounds, sediments, trash and debris, and oil and grease. The potential pollutants of concern include bacteria/virus, nutrients, pesticides, and oxygen demanding substances. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions. Additionally, during a storm event, soil erosion could occur at an accelerated rate. The total disturbed area would be approximately 20 acres.

During construction, there is also a potential for construction-related pollutants to be spilled, leaked, or transported via storm runoff into drainages adjacent to the project site and thereby into downstream receiving waters. The following construction-related pollutants have the potential to affect water quality: chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste. These pollutants may be spilled or leaked and would then have the potential to be transported via storm runoff into receiving waters.

Construction activities are anticipated to occur when water is present in City Creek. Therefore, flow diversion would be required to divert flows around the construction area within the City Creek channel.

As specified in WQ-1 of Chapter 5, the construction activities associated with the proposed project would comply with the requirements of the CGP. In compliance with the CGP, preparation of an SWPPP and implementation of Construction BMPs would be required to

minimize erosion and prevent spills. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs (which are designed to minimize erosion and retain sediment on-site) and Good Housekeeping BMPs to prevent spills, leaks and discharge of construction debris and waste into receiving waters. The SWPPP would be developed and Construction BMPs selected and implemented to target pollutants of concern during construction.

Potential Construction BMPs include, but are not be limited to, stabilized construction entrance/ exit, preservation of existing vegetation, slope protection, construction scheduling, storm drain inlet protection, perimeter and runoff controls, sediment barriers, street sweeping and vacuuming, wind erosion control, concrete waste management, temporary stockpiles, streambank stabilization, gravel bag berms, sandbag barriers, concrete curing, and solid waste management. The Construction BMPs would retain sediment and other pollutants on the project site, which would prevent these pollutants from reaching receiving waters.

In addition, because the project would be Risk Level 2, effluent monitoring for pH and turbidity would be required during storm events to ensure that the project is not resulting in pH and turbidity levels exceeding the Numeric Action Levels (6.5 to 8.5 for pH and 250 NTU for turbidity) established in the CGP. Storm water discharges and authorized non-storm water discharges are not anticipated to cause or contribute to any violations of applicable water quality standards or objectives, or to adversely affect human health or the environment. In addition, runoff during construction would not contain pollutants in quantities that would create a condition of nuisance or adversely affect beneficial uses of the waters of the State. Properly designed Construction BMPs, with appropriate implementation and maintenance, as required in Measure WQ-1, would retain pollutants on site and prevent them from entering receiving waters. Therefore, no adverse water quality impacts are anticipated during construction of the proposed project.

The proposed project would be required to obtain a Section 401 Water Quality Certification, a Section 404 Nationwide Permit, and a Section 1602 Streambed Alteration Agreement for work within the City Creek channel as specified in Measure WQ-4 in Chapter 5.

Perched groundwater dewatering may be necessary during excavations for spread footings at the pier supports for the new bridge. Groundwater may contain elevated levels of TDS, nitrates, or other constituents that could affect surface water quality when discharged into City Creek. As specified in Measure WQ-2 in Chapter 5, if groundwater dewatering is required during construction, construction activities associated with the proposed project would comply with the requirements of the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality* (Order No. R8-2015-0004, NPDES No. CAG998001). This permit covers general waste discharge requirements for discharges to surface waters that pose an insignificant (de minimis) threat to water quality within the Santa Ana Region. Under this permit, discharges must comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in the permit.

Expected pollutants of concern include heavy metals, organic compounds, sediments, trash and debris, and oil and grease. The potential pollutants of concern include bacteria/virus, nutrients, pesticides, and oxygen demanding substances. Preparation of an SWPPP and implementation of

Construction BMPs would be required to reduce pollutants of concern in the storm water runoff. Therefore, potential construction impacts related to contributions to receiving water impairments would not be adverse.

4.4.2.2. Operation

Expected pollutants of concern include heavy metals, organic compounds, sediments, trash and debris, and oil and grease. The potential pollutants of concern include bacteria/virus, nutrients, pesticides, and oxygen demanding substances. The proposed project would result in a permanent net increase in impervious surface area of approximately 0.64 acre. An increase in impervious surface area would increase the volume of runoff during a storm, thereby increasing the potential for more effectively transporting pollutants to receiving waters. Also, an increase in impervious surface area would also increase the total amount of pollutants in the storm water runoff and non-storm water runoff, which would increase the amount of pollutants traveling to on-site drainages and downstream receiving waters.

As specified in Measure WQ-3 in Chapter 5, the County would be required to implement source control, site design, and LID BMPs to reduce the discharge of pollutants of concern to the maximum extent practicable to comply with the County MS4 Permit. LID BMPs are systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of storm water in order to protect water quality and associated aquatic habitat. Source control BMPs address potential causes of pollution at their source to prevent contaminants from entering storm water. The LID BMP being proposed as part of the proposed project is an infiltration trench approximately 9.65 feet wide by 337.62 feet long (3,256.85 square feet) within the 10-foot-wide median of the eastern roadway approach to the proposed bridge to minimize impacts to surface water quality. This would equate to 2,768.33 cubic feet of runoff being treated by the LID BMP. Flow from the roadway would be conveyed to the BMP as pipe flow and/or sheet flow.

The LID BMP infiltration trench would treat runoff from DMA-2, which encompasses 1.5 acres of a portion of the bridge roadway itself and a portion of the roadway approach east of the proposed bridge along the Base Line Road. Since the proposed project would result in a permanent net increase in impervious surface area of approximately 0.64 acre, the LID BMP infiltration trench would treat runoff from the equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area.

Site design BMPs include, but are not limited to, minimizing impervious areas, preserving and restoring vegetation, and minimizing compaction of soils. Site design BMPs would treat storm water runoff from the project site.

Source Control BMPs include, but are not limited to, irrigation system and landscape maintenance, sweeping of transportation surfaces adjoining curb and gutter, drainage facility inspection and maintenance, MS4 stenciling and signage, landscape and irrigation system design, and protection of slopes and channels. The Source Control and LID BMPs would target pollutants of concern from the operation of transportation facilities.

The proposed project would integrate Source Control and LID BMPs into the design to capture pollutants of concern before they enter receiving waters and site design and LID BMP (infiltration trench) to treat storm water prior to discharge into receiving waters. Therefore, potential operational impacts related to contributions to receiving water impairments would not be adverse.

As stated above, the source control BMPs would target constituents of concern from transportation facilities. Furthermore, the site design and LID BMPs would treat runoff from the project site, thereby reducing the amount of pollutants that would drain to downstream receiving waters. Therefore, the proposed project would not result in any adverse impacts to water quality during operation with implementation of Measures WQ-3, and WQ-4 in Chapter 5.

4.5. Cumulative Impacts

Cumulative development on the project site is a continuation of the existing urban pattern of development that has already resulted in extensive modifications to watercourses in the area. The project site's watercourses have been channelized, and drainage systems have been put in place to respond to the urbanization that has occurred in this area. For all cumulative analysis related to hydrology and water quality, the cumulative projects being considered include all potential projected development within the Upper Santa Ana River HA/Bunker Hill HSA in accordance with the location of the proposed project (refer to Figure 3). Because cumulative hydrology and water quality impacts are caused by build out of properties that increase impervious surface area and pollutant loads, cumulative development is considered to include the build out of the Upper Santa Ana River HA/Bunker Hill HSA over an extended period of time, resulting in the development of all available parcels consistent with local and regional plans.

New development and redevelopment can result in increased urban pollutants in dry weather and storm water runoff from project sites. Each project must comply with NPDES permitting requirements and include BMPs to avoid impacts to water quality and local hydrology in compliance with local ordinances and plans adopted to comply with the MS4 Permit and other permits (e.g., CGP). The proposed project must consider impaired receiving waters and annual TMDL levels for receiving waters. The TMDL program is designed to identify all constituents that adversely affect the beneficial uses of water bodies and then identify appropriate reductions in pollutant loads or concentrations from all sources so that the receiving waters can maintain/ attain the beneficial uses in the Basin Plan. Thus, by complying with TMDLs, the proposed project's contribution to overall water quality improvement in the Santa Ana River Watershed, in the context of the regulatory program, is designed to account for cumulative impacts.

The proposed project would make modifications and improvements to an existing transportation facility. The proposed project includes source control, site design, and LID BMPs that would target pollutant concentrations from runoff from the project site.

Regional programs and BMPs, such as TMDL programs and the MS4 Permit Program, have been designed under an assumption that the Upper Santa Ana River HA/Bunker Hill HSA would continue its pattern of urbanization. The regional control measures contemplate the cumulative effects of proposed development. The City would be required to comply with the regulations in effect at the time the grading permits are issued. Compliance with these regional programs and

the CGP constitutes compliance with programs intended to address cumulative water quality impacts.

The proposed project is subject to local assistance, so the County MS4 permit requirements, as opposed to Caltrans standards, dictate water quality treatment. The County MS4 Permit requires co-permittees to develop and implement a standard design and post-development WQMP to guide application of LID BMPs to the maximum extent practicable on all projects. The proposed project includes roads and is classified as a *Category 1 Priority Project*[1] pursuant to the *Technical Guidance Document for Water Quality Management Plans* (AECOM 2017 and County of San Bernardino 2013). Accordingly, a project-specific WQMP has been prepared to determine appropriate BMPs and treatment measures to avoid impacts to surface water quality. The infiltration LID BMP for the proposed project will treat the equivalent of 100 percent of the new impervious surface area (0.64 acre) and a portion of the existing impervious surface area, and the design capture volume of the infiltration LID BMP will reduce peak flows to at or below existing conditions. Therefore, the proposed project's contribution to cumulative water quality impacts is not anticipated to be substantial.

[1] Significant re-development involving the addition or replacement of 5,000 or more square feet of impervious surface on an already developed site (AECOM 2017, Form 2.1-1 and County of San Bernardino 2013, Table 1-1).

5. Avoidance and Minimization Measures

The following regulatory requirements would be implemented with the proposed project and would reduce or avoid impacts related to water quality:

Measure WQ-1 **Construction General Permit.** Prior to commencement of construction activities, the proposed project shall obtain coverage under the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit [CGP]) Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ, NPDES No. CAS000002, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including a Notice of Intent (NOI) for coverage under the permit to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained from SMARTS. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall identify the sources of pollutants that may affect the quality of storm water and include Best Management Practices (BMPs) to ensure that the potential for soil erosion, sedimentation, and spills is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities. Upon completion of construction activities and stabilization of the project site, a Notice of Termination (NOT) shall be via SMARTS.

Measure WQ-2 **De Minimis Permit.** If groundwater dewatering is required, the construction contractor shall comply with the provisions of the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality*, Order No. R8-2015-0004, NPDES No. CAG998001, or any subsequent permit. A Notice of Intent (NOI) shall be submitted to the Santa Ana Regional Water Quality Control Board at least 45 days before the start of groundwater dewatering activities. The construction contractor shall be required to comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in this permit for any discharge of groundwater and non-storm water construction dewatering waste to surface waters that pose an insignificant threat to water quality in the Santa Ana Region.

Measure WQ-3 **MS4 Permit.** The proposed project shall comply with the provisions of the *San Bernardino County MS4 NPDES Permit and Waste Discharge Requirements for the San Bernardino County Flood Control District*

(SBCFCD) the County of San Bernardino, and the Incorporated Cities of San Bernardino County within the Santa Ana Region (Order No. R8-2010-0036; NPDES No. CAS618036) (County MS4 Permit), or any subsequent permit. Compliance with the NPDES Permit shall include implementation of Low Impact Development (LID), site design, and source control BMPs to the maximum extent practicable as specified in the project-specific *Water Quality Management Plan*.

A final project-specific *Water Quality Management Plan* shall be prepared during final design. The final *Water Quality Management Plan* shall evaluate the potential for catch basin inserts to be incorporated into the project design. Source Control BMPs include, but are not limited to, irrigation system and landscape maintenance, sweeping of transportation surfaces adjoining curb and gutter, drainage facility inspection and maintenance, MS4 stenciling and signage, landscape and irrigation system design, and protection of slopes and channels.

Measure WQ-4 **Resource Agency Permits.** The following permits shall be obtained for the proposed project:

- Clean Water Act (CWA) Section 401 Water Quality Certification from the Santa Ana Regional Water Quality Control Board (Santa Ana RWQCB) for any discharge to a water of the United States.
- CWA Section 404 Nationwide Permit from United States Army Corps of Engineers (USACE) for the discharge of dredge or fill material into a water of the United States.
- California Fish and Game Code Section 1602 Streambed Alteration Agreement will be required from the California Department of Fish and Wildlife (CDFW) for impacts to CDFW riparian streambed.

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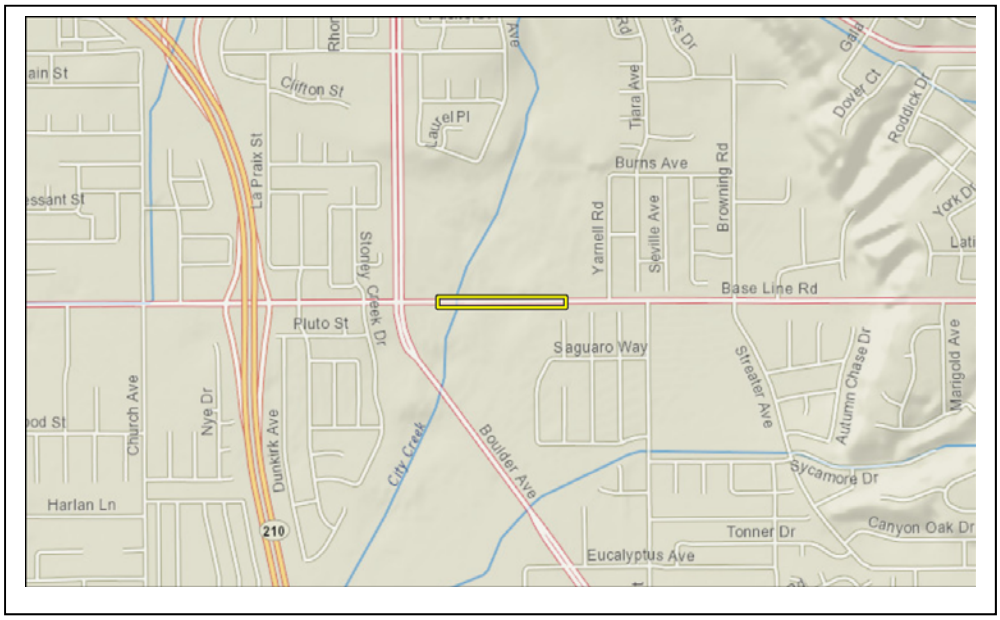
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APPENDIX F

2018 IS/MND NOISE STUDY REPORT



Noise Study Report

City of Highland

08-SBD-0 High

EA No. 08-925035

Federal Project No. BR NBIL (505)

April 2017

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Noise Study Report

Base Line Bridge Over City Creek

City of Highland

08-SBD-0 High

EA No. 08-925035

Federal Project No. BR NBIL (505)

RECEIVED
APR 21 2017
CALTRANS DISTRICT 8
LOCAL ASSISTANCE
SY

April 2017

Prepared By: _____ Date: April 13, 2017

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State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Serious drought.
Help save water!

To: AARON P. BURTON
Senior Environmental Planner
Environmental Special Studies "C" – MS 760

Date: July 25, 2017

File: BR-NBIL-5449(505)
City of Highland

From: SEAN YEUNG SY
Senior Transportation Engineer
Local Assistance – MS 760

Subject: Noise comments for Base Line Bridge Over City Creek.

This is a noise review of the project level analysis for the above project in which a Noise Study Report (NSR) dated April 2017 was submitted to Local Assistance. Comments are provided in the following:

1. Attached is the NSR signature page in which Local Assistance has concurred with the NSR.
2. We have no further comment, and this concludes the noise review.

If you have any questions, I can be reached at (909) 383-4030 or by email at sean.yeung@dot.ca.gov

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Summary

The City of Highland, in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), proposes to improve Base Line across City Creek. The existing bridge and low-water crossing do not have adequate capacity to convey the creek flow during the design flood event; therefore, Caltrans has recommended constructing a new bridge on a raised profile. As a consequence of raising the profile for the bridge, the roadway sections approaching the bridge from both the east and the west, which are four-lane roadways, will need to be raised to meet the raised bridge profile.

The purpose of the proposed project is to replace the existing bridge and eliminate the low-water crossing over City Creek, replacing it with a raised bridge with adequate clearance for the creek to flow underneath and to maintain safe access through the project area on a roadway that meets adopted City standards.

The proposed project is considered a Type I project because the vertical alignment of Base Line would be substantially altered. A noise analysis is required for all Type I projects.

Existing land uses in the project area include single-family residences, vacant land, restaurants, and commercial/retail uses. Currently, there are no permitted developments adjacent to the proposed project. The primary source of noise in the project area is traffic on Base Line.

One long-term 24-hour noise level measurement was conducted within the project area to characterize the change in hourly noise levels over the course of that period in the project area and to identify the peak traffic noise hour. Five short-term noise level measurements were conducted at representative locations to document the existing noise environment. All five short-term noise level measurements were used to calibrate the noise prediction model with concurrent traffic counts and measured vehicle speeds.

A total of 13 representative receptors were modeled and evaluated for potential traffic noise impacts.

When traffic noise impacts have been identified, noise abatement measures must be considered. Traffic noise impacts result from one or more of the following occurrences: (1) an increase of 12 A-weighted decibels (dBA) or more over their

corresponding existing noise level, or (2) predicted noise levels approaching or exceeding the Noise Abatement Criteria (NAC).

Implementation of the proposed project would result in potential short-term noise impacts during construction and long-term operational noise impacts from use of the completed project. Of the 13 modeled receptors, none of the receptors would approach or exceed the NAC. Likewise, none of the receptors would experience a substantial increase of 12 dBA or more over their corresponding modeled existing noise level. Therefore, implementation of the proposed project would not result in traffic noise impacts and no noise abatement measures were considered.

The closest residences are located within 50 feet of the project construction areas and may be subject to short-term noise reaching 86 dBA L_{max} or higher generated by construction activities within the project area. Construction noise is regulated by the Caltrans Standard Specifications in Section 14-8.02. Compliance with Caltrans Standard Specifications in Section 14-8.02 will be required to minimize construction noise impacts on land uses adjacent to the project site. The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBA L_{max} at a distance of 50 feet. The Contractor shall equip all internal combustion engines with the manufacturer-recommended muffler and shall not operate any internal combustion engine on the job site without its appropriate muffler.

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List of Abbreviated Terms

µPa	micro-Pascals
23 CFR 772	Title 23, Part 772 of the Code of Federal Regulations
Caltrans	California Department of Transportation
CA/T	Central Artery/Tunnel
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Highland
CNEL	Community Noise Equivalent Level
dB	decibels
dBA	A-weighted decibels
FHWA	Federal Highway Administration
HDM	Highway Design Manual
HOT	high-occupancy toll
HOV	high-occupancy vehicle
Hz	Hertz
kHz	kilohertz
K-Factor	correction factor
L_{dn}	day-night level
L_{eq}	equivalent continuous sound level
$L_{eq}(h)$	1-hour A-weighted equivalent continuous sound level
L_{max}	maximum instantaneous sound level
LOS	level(s) of service

L_{xx}	percentile-exceeded sound level
mph	miles per hour
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NSR	Noise Study Report
proposed project	Base Line Bridge Over City Creek Project
Protocol	Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects
SPL	sound pressure level
TeNS	Caltrans Technical Noise Supplement
TNM	Traffic Noise Model
vplph	vehicles per lane per hour

Chapter 1. Introduction

1.1 Purpose of the Noise Study Report

The purpose of this Noise Study Report (NSR) is to evaluate noise impacts and abatement under the requirements of Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) "Procedures for Abatement of Highway Traffic Noise and Construction Noise." 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. According to 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with Federal Highway Administration (FHWA) noise standards.

The California Department of Transportation (Caltrans) Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (Protocol) (Caltrans 2011) provides Caltrans policy for implementing 23 CFR 772 in California. The Protocol outlines the requirements for preparing NSRs. Noise impacts associated with this project under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) are evaluated in the project's environmental document.

1.2 Project Purpose and Need

1.2.1. Purpose

The purpose of the proposed project is to eliminate the low-water crossing over City Creek and replace it with a raised bridge with adequate clearance for the creek to flow underneath and to maintain safe access through the project area on a roadway that meets adopted City standards.

1.2.2. Need

Upstream of Base Line, during normal flow conditions, flows are contained within "piled-up" channel side slopes and pass under the existing bridge structure. However during major flood events, breaches have been observed and documented at multiple locations in the "piled-up" channel side slopes. As a result of these breaches, flows are diverted to the low-water crossing where the existing box culvert is inadequate to convey such large flows. Consequently, the flows overtop the roadway. Major storms in December 2010 resulted in significant flows within City Creek, resulting in the overtopping of a number of roadways and culverts within the City.

According to the City of Highland General Plan, Base Line crossing City Creek is classified as “Major Highway,” defined as a four-lane, 80-foot roadway (including a 12-foot median) curb-to-curb, within 104-foot rights-of-way. The existing Base Line Bridge carries four lanes of traffic over City Creek (two lanes in each direction) via a 42-foot roadway curb-to-curb but without a median. The new bridge will include a 95.5-foot wide roadway (including a 16-foot median and 5-foot dedicated pedestrian path on each side) curb-to-curb, within a 160-foot City right-of-way.

Chapter 2. Project Description

The City of Highland (City), in cooperation with Caltrans and the FHWA, proposes to improve the Base Line across City Creek. In the existing condition, Base Line is a four-lane low-water crossing over City Creek. The existing bridge and low-water crossing do not have adequate capacity to convey the creek flow during the design flood event; therefore, Caltrans has recommended constructing a new bridge on a raised profile. As a consequence of raising the profile for the bridge, the roadway sections approaching the bridge from both the east and the west, which are four-lane roadways, will need to be raised to meet the raised bridge profile.

Figure 1 shows the project location and vicinity.

The proposed action will include, but is not limited to, the following improvements:

1) Replace the Base Line low-water crossing over City Creek with a raised bridge. The raised bridge will span 240 feet across City Creek and will be 95.5 feet wide.
2) Construct roadway approaches, approximately 130 feet to the west of the proposed bridge and approximately 860 feet to the east, to tie into the existing four-lane roadway section.
3) Construction of street improvements including utility construction, pavement widening, curbs, gutters, sidewalks, and street lighting and the relocation of utilities as needed.
4) Construct a 16 × 10-foot box culvert to replace the existing 8 × 4-foot low-flow box culvert east of the proposed bridge.
5) Accommodate the construction of a north to southwestern trending multi-purpose trail along the western bank of City Creek (to be locally funded by the City of Highland at a later date).

Other miscellaneous improvements include channel grading in City Creek to divert flows under the new bridge. In addition, two temporary test pits approximately 15 × 4 feet (L × W), with a maximum depth of 15 feet are proposed to be excavated during the Design Phase as part of geotechnical investigation to ascertain the suitability of using pile foundations at abutments and pier.

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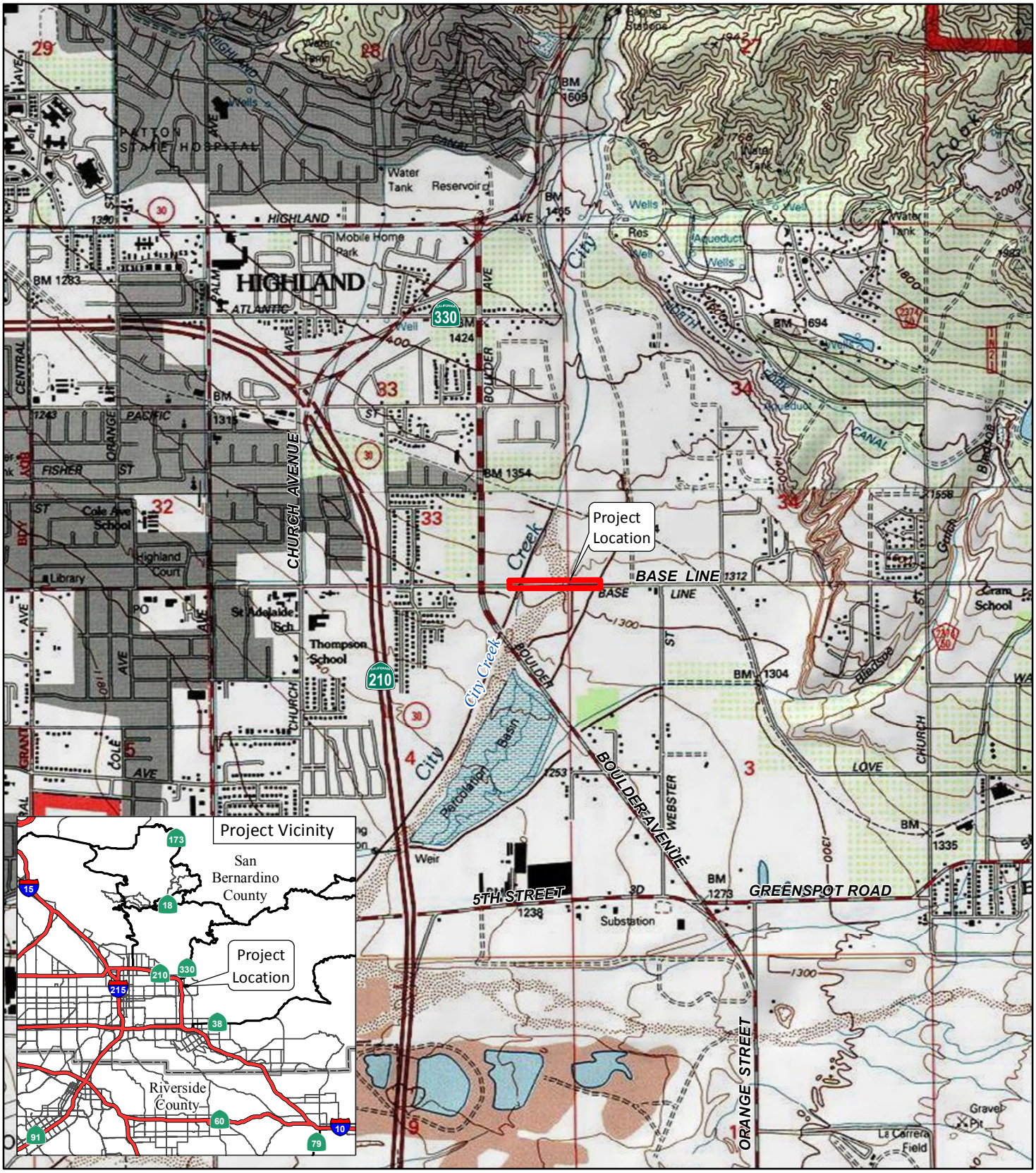


FIGURE 1

LEGEND

Project Boundary

0 1000 2000

FEET

SOURCE: USGS 7.5' Quads: Redlands and Harrison Mtn. (1988), CA.

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Base Line Bridge Over City Creek

Project Location and Vicinity Map

08-SBD-0 HIGH

EA No. 08-925035

Federal Proejct No. BR NBIL (505)

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Chapter 3. Fundamentals of Traffic Noise

The following is a brief discussion of fundamental traffic noise concepts. For a detailed discussion, please refer to Caltrans *Technical Noise Supplement* (TeNS) (Caltrans 2013), a technical supplement to the Protocol, available on the Caltrans website.[1]

3.1 Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

3.2 Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

3.3 Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (μPa). One μPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 μPa. Because of this huge

[1] Caltrans. Website: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf.

range of values, sound is rarely expressed in terms of μPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 μPa.

3.4 Addition of Decibels

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dB louder than one source.

3.5 A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an “A-weighted” sound level (expressed in units of A-weighted decibels, or dBA) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B-, C-, and D-scales), but these scales are rarely used in conjunction with highway-traffic noise. Noise levels for

traffic noise reports are typically reported in terms of A-weighted decibels. Table 3-1 describes typical A-weighted noise levels for various noise sources.

Table 3-1: Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet		
	— 100 —	
Gas lawnmower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	**— 70 —**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**— 60 —**	
		Large business office
Quiet urban daytime	**— 50 —**	Dishwasher in next room
Quiet urban nighttime	**— 40 —**	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	**— 0 —**	Lowest threshold of human hearing

Source: California Department of Transportation (1998).

dBA = A-weighted decibels
mph = miles per hour

3.6 Human Response to Changes in Noise Levels

As discussed above, doubling sound energy results in a 3 dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different than what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1 dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000 Hz–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5 dB increase

is generally perceived as a distinctly noticeable increase, and a 10 dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3 dB increase in sound would generally be perceived as barely detectable.

3.7 Noise Descriptors

Noise in our daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in traffic noise analysis.

- **Equivalent Continuous Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent continuous sound level (L_{eq}[h]) is the energy average of A-weighted sound levels occurring during a 1-hour period and is the basis for the NAC used by Caltrans and the FHWA.
- **Percentile-Exceeded Sound Level (L_{xx}):** L_{xx} represents the sound level exceeded for a given percentage of a specified period (e.g., L_{10} is the sound level exceeded 10 percent of the time, and L_{90} is the sound level exceeded 90 percent of the time).
- **Maximum Sound Level (L_{max}):** L_{max} is the highest instantaneous sound level measured during a specified period.
- **Day-Night Level (L_{dn}):** L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10:00 p.m. and 7:00 a.m.
- **Community Noise Equivalent Level (CNEL):** Similar to L_{dn}, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10:00 p.m. and 7:00 a.m., and a 5 dB penalty applied to the A-weighted sound levels occurring during evening hours between 7:00 p.m. and 10:00 p.m.

3.8 Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

3.8.1. Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

3.8.2. Ground Absorption

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water,), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance.

3.8.3. Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

3.8.4. Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. Vegetation between the highway and the receiver is rarely effective in reducing noise because it does not create a solid barrier.

Chapter 4. Federal Regulations and State Policies

This report focuses on the requirements of 23 CFR 772, as discussed below.

4.1 Federal Regulations

4.1.1. 23 CFR 772

23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR 772.7, projects are categorized as Type I, Type II, or Type III projects.

The FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway that significantly changes the horizontal or vertical alignment of the highway. The following projects are also considered to be Type I projects:

- The addition of a through-traffic lane or lanes. This includes the addition of a through-traffic lane that functions as a high-occupancy vehicle (HOV) lane, high-occupancy toll (HOT) lane, bus lane, or truck climbing lane.
- The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane.
- The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange.
- Restriping existing pavement for the purpose of adding a through traffic lane or an auxiliary lane.
- The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot, or toll plaza.

If a project is determined to be a Type I project under this definition, the entire project area as defined in the environmental document is a Type I project.

A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment. A Type III project is one that does not meet the classifications of a Type I or Type II project. Type III projects do not require noise analysis.

Under 23 CFR 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR 772

requires that the project sponsor "consider" noise abatement before adoption of the final NEPA document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR 772.5, occur when the predicted noise level in the design-year approaches or exceeds the NAC specified in 23 CFR 772, or a predicted noise level substantially exceeds the existing noise level (a "substantial" noise increase). 23 CFR 772 does not specifically define the terms "substantial increase" or "approach" and these criteria are defined in the Protocol, as described below.

Table 4-1 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual or permitted land use in a given area.

Table 4-1: Activity Categories and Noise Abatement Criteria

Activity Category	Activity $L_{eq}(h)$[1]	Evaluation Location	Description of Activities
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	Exterior	Residential
C[2]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	—	—	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	—	—	Undeveloped lands that are not permitted.

Source: Federal Highway Administration, Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772).
[1] The $L_{eq}(h)$ activity criteria values are for impact determination only and are not design standards for noise abatement measures. All values are in A-weighted decibels (dBA).
[2] Includes undeveloped lands permitted for this activity category.
$L_{eq}(h)$ = 1-hour equivalent continuous sound level

4.1.2. Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects

The Protocol specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction of federal or federal-aid highway projects. The NAC specified in the Protocol are the same as those specified in 23 CFR 772. The Protocol defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA. The Protocol also states that a sound level is considered to approach an NAC level when the sound level is within 1 dB of the NAC identified in 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA, but 65 dBA is not).

The TeNS to the Protocol provides detailed technical guidance for the evaluation of highway traffic noise. This guidance includes field measurement methods, noise modeling methods, and report preparation guidance.

4.2 State Regulations and Policies

4.2.1. California Environmental Quality Act (CEQA)

Noise analysis under CEQA may be required regardless of whether or not the project is a Type I project. The CEQA noise analysis is completely independent of the 23 CFR 772 analysis done for NEPA. Under CEQA, the baseline noise level is compared to the build noise level. The assessment looks at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Key considerations include the uniqueness of the setting, the sensitivity of the noise receptors, the magnitude of the noise increase, the number of residences affected, and the absolute noise level.

The significance of noise impacts under CEQA are addressed in the environmental document rather than the NSR. Even though the NSR (or noise technical memorandum) does not specifically evaluate the significance of noise impacts under CEQA, it must contain the technical information that is needed to make that determination in the environmental document.

4.2.2. Section 216 of the California Streets and Highways Code

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed project, noise levels exceed 52 dBA $L_{eq}(h)$ in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. This requirement

does not replace the “approach or exceed” NAC for FHWA Activity Category D for classroom interiors, but it is a requirement that must be addressed in addition to the requirements of 23 CFR 772.

If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA $L_{eq}(h)$. If the noise levels generated from freeway and non-freeway sources exceed 52 dBA $L_{eq}(h)$ prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

4.3 Local Regulations and Policies

4.3.1. City of Highland

Section 5.50.060 of the City’s Municipal Code exempts construction, operation, maintenance and repair of equipment, apparatus or facilities of the park and recreation department, and public work projects or essential public services and facilities, including trash collection and those of public utilities subject to the regulatory jurisdiction of the Public Utilities Commission.

Chapter 5. Study Methods and Procedures

5.1 Methods for Identifying Land Uses and Selecting Noise Measurement and Modeling Receiver Locations

A field investigation was conducted to identify land uses that could be exposed to traffic and construction noise impacts from the proposed project. Land uses in the project area were categorized by land use type, by Activity Category as defined in previously referenced Table 4-1, and by the extent of frequent human use. As stated in the Protocol, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Although all developed land uses are evaluated in this analysis, the focus is on locations of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas such as residential backyards and common use areas at single-family residences.

The geometry of the project relative to nearby existing and planned land uses was also identified.

Short-term measurement locations were selected to represent each major developed area and serve as representative modeling locations within the project area. The long-term measurement site was selected to capture the diurnal traffic noise level pattern in the project area. Several other receptor locations were selected as modeling locations at which noise measurements were not gathered.

5.2 Field Measurement Procedures

A field noise study was conducted in accordance with the recommended procedures in the TeNS (Caltrans 2013). The following is a summary of the procedures used to collect short-term and long-term sound level data.

5.2.1. Short-Term Measurements

Short-term noise level measurements in the project vicinity were collected during off-peak traffic hours when traffic was flowing freely. Short-term noise level measurements were made using a Larson Davis Model 824 Type 1 sound level meter.

The following measurement procedures were utilized:

- Calibrate the sound level meter.
- Set up the sound level meter at a height of 5 feet.
- Commence noise monitoring.
- Collect site-specific data such as date, time, direction of traffic, vehicle speed, and location of the sound level meter relative to any existing feature.
- Count passing vehicles for a period of 20 minutes during noise level measurement. Vehicles are split into five categories: automobiles, medium trucks, heavy trucks, buses, and motorcycles.
- Stop measurement after 20 minutes.
- Calibrate the sound level meter.
- Proceed to the next monitoring site and repeat.

The traffic counts were expanded to hourly volumes (multiplied by three to normalize the results to hourly values) and entered into the FHWA Traffic Noise Model (TNM) 2.5 for each monitoring site. The monitoring results were used to calibrate the model outputs.

5.2.2. Long-Term Measurements

One long-term noise level measurement was conducted using a Quest Noisepro DLX Dosimeter within the study area. The purpose of the long-term measurement was to identify variations in sound levels throughout the day.

5.3 Traffic Noise Levels Prediction Methods

Traffic noise levels were predicted using FHWA TNM 2.5. TNM 2.5 is a computer model based on two FHWA reports: FHWA-PD-96-009 and FHWA-PD-96-010 (FHWA 1998a, 1998b). Key inputs to the traffic noise model were the locations of roadways, shielding features (e.g., topography and buildings), sound walls, ground type, and receptors. Three-dimensional representations of these inputs were developed using topographic maps provided by the engineer.

The existing and future traffic noise levels at all 13 receptor locations were modeled using either the peak-hour traffic volumes or the worst-case traffic operations (prior to speed degradation), whichever is lower. The worst-case traffic condition, which results in the highest traffic noise level, is based on the maximum number of vehicles that can typically travel in a given lane while still resulting in free-flowing traffic conditions. This traffic condition is assumed to be Level of Service (LOS) D/E, which corresponds to 895 vehicles per lane per hour (vplph) on Base Line and Boulder

Avenue. The existing peak-hour traffic volumes are based on traffic counts and the future peak-hour volumes are based on the General Plan 2030 traffic volumes provided by the City. The p.m. peak-hour traffic volume was selected for the peak-hour traffic volume because the results of the long-term 24-hour noise level measurement showed that the peak traffic noise hour occurs during this period. Appendix A presents a summary of traffic data inputs for existing and future conditions.

TNM 2.5 is sensitive to the volume of trucks on the roadway because trucks contribute disproportionally to traffic noise. Vehicle distributions on all roadways within the project area were obtained from the Base Line Vehicle Classification Traffic Count Memorandum (AGA 2017). Table 5-1 shows the vehicle distribution and vehicle speeds for each vehicle category and roadway in the project area used to calculate existing and future traffic noise levels.

Table 5-1: Vehicle Distribution

Roadway	Vehicle Distribution (%)				
	Vehicle Speed (mph)				
	Autos	Medium Trucks	Heavy Trucks	Buses	Motorcycles
Base Line between Boulder Avenue and Webster Street (eastbound)	91.3	7.8	0.0	0.9	0.0
	45	45	45	45	45
Base Line between Boulder Avenue and Webster Street (westbound)	92.6	6.8	0.0	0.6	0.0
	45	45	45	45	45
Boulder Avenue north of Base Line (northbound)	96.8	3.1	0.1	0.0	0.0
	50	50	50	50	50
Boulder Avenue north of Base Line (southbound)	95.6	4.2	0.0	0.2	0.0
	50	50	50	50	50
Boulder Avenue south of Base Line (northbound)	95.6	4.3	0.1	0.0	0.0
	50	50	50	50	50
Boulder Avenue south of Base Line (southbound)	95.8	4.1	0.0	0.1	0.0
	50	50	50	50	50

Source: Compiled by LSA, April 2017.
mph = miles per hour

5.4 Methods for Identifying Traffic Noise Impacts and Consideration of Abatement

Traffic noise impacts are considered to occur at receptor locations where predicted design-year noise levels are at least 12 dBA greater than existing noise levels, or where predicted design-year noise levels would approach or exceed the NAC for the applicable activity category. Where traffic noise impacts are identified, noise

abatement must be considered for reasonableness and feasibility as required by 23 CFR 772 and the Protocol.

According to the Protocol, abatement measures are considered acoustically feasible if a minimum noise reduction of 5 dBA at affected receptor locations is predicted with implementation of the abatement measure. In addition, barriers should be designed to intercept the line of sight from the exhaust stack of a truck to the first tier of receptors as required by the Caltrans *Highway Design Manual* (HDM), Chapter 1100 (2012). Other factors that affect feasibility include topography, access requirements for driveways and ramps, presence of local cross streets, utility conflicts, other noise sources in the area, and safety considerations. The overall reasonableness of noise abatement is determined by considering factors such as the construction cost of the barrier, noise reduction design goal (a noise level reduction of 7 dBA or more at one or more benefited receptors), and the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

The Caltrans acoustical design goal is that a barrier must be predicted to provide at least 7 dB of noise reduction at one benefited receptor. This design goal applies to any receptor and is not limited to affected receptors.

The Protocol defines the procedure for assessing the reasonableness of noise barriers from a cost perspective. The 2017 allowance is $92,000 per benefited unit/receptor (i.e., receptors that receive at least 5 dBA of noise reduction from a noise barrier). The total allowance for each barrier is calculated by multiplying the number of benefited receptors by $92,000. If the estimated construction cost of a barrier is less than the total calculated allowance for the barrier, the barrier is considered reasonable from a cost perspective. The viewpoints of benefits receptors are determined by a survey that is typically conducted after completion of the NSR. The process for conducting the survey is described in detail in the Protocol.

The NSR identifies traffic noise impacts and evaluates noise abatement for acoustical feasibility. It also reports information that will be used in the reasonableness analysis including if the 7 dBA design goal reduction in noise can be achieved, as well as the abatement allowances. The NSR does not make any conclusions regarding reasonableness. The feasibility and reasonableness of noise abatement is reported in the Noise Abatement Decision Report.

Chapter 6. Existing Noise Environment

6.1 Existing Land Uses

As previously noted, developed and undeveloped land uses in the project vicinity were identified through land use maps, aerial photography, and site inspection. Receptors were identified within each land use category. Existing land uses in the vicinity of the project area include single-family residences, vacant land, a restaurant, and commercial/retail uses. Existing land uses in the project area are described below in further detail.

- **Northwest of Base Line Bridge.** Land uses in this area include commercial/retail uses that are located approximately 10 feet higher in elevation than Base Line. The commercial/retail land uses have no outdoor frequent human use areas and were classified under Activity Category F for reporting purposes.
- **Southwest of Base Line Bridge.** Land uses in this area include commercial/retail and a restaurant that are located approximately 2 feet lower in elevation than Base Line. The commercial/retail land use has no outdoor frequent human use area and was classified under Activity Category F for reporting purposes. The restaurant has an outdoor frequent human use area and was evaluated under Activity Category E, which has an exterior NAC of 72 dBA L_{eq}.
- **Northeast of Base Line Bridge.** Land use in this area includes vacant land that is located approximately 4 feet higher in elevation than Base Line. Vacant land was classified under Activity Category G for reporting purposes.
- **Southeast of Base Line Bridge.** Land uses in this area include single-family residences that are located at a similar in elevation to Base Line to approximately 3 feet lower than Base Line. Single-family residences were evaluated under Activity Category B, which has an exterior NAC of 67 dBA L_{eq}.

6.2 Noise Measurements Results

The existing noise environment in the project area is based on short-term and long-term 24-hour noise level measurements.

6.2.1. Short-Term Monitoring

The primary source of noise in the project area is traffic on Base Line within the project area. Short-term (20-minute) noise measurements were conducted to document existing noise levels at five representative sensitive receptor locations

within the project area. Short-term (20-minute) noise level measurements were conducted using a Larson Davis Models 824 Type 1 sound level meter. Table 6-1 contains the results of the short-term noise level measurements along with a description of the physical location at each monitoring site. Figure 2 identifies the short-term monitoring locations.

Table 6-1: Short-Term Ambient Noise Monitoring Results

Monitor No.	Date	Start Time	Duration (minutes)	dBA L_{eq}	Location Description	Noise Sources	Comments
ST-1	2/15/17	3:30 PM	20	61.2	27951 Base Line. Front parking lot of Walgreens.	Traffic on Base Line & Boulder Avenue.	Some parking lot activity.
ST-2	2/14/17	12:35 PM	20	63.1	North of Base Line, east of the bridge. Next to a driveway to a flood control area.	Traffic on Base Line	
ST-3	2/15/17	12:12 PM	20	54.0	At the cul-de-sac of Mountain Laurel Drive between 7310 and 7307 Mountain Laurel Drive. At the edge of the sidewalk.	Traffic on Base Line.	Three distant airplanes.
ST-4	2/15/17	1:02 PM	20	38.2	7372 Peach Blossom Court. In the middle of the back yard, north of the pool.	Traffic on Base Line.	
ST-5	2/15/17	2:15 PM	20	45.7	7348 Peach Blossom Court. In front of the side yard, on the sidewalk.	Traffic on Base Line.	Birds chirping.

Source: LSA Associates, Inc. (April 2017).

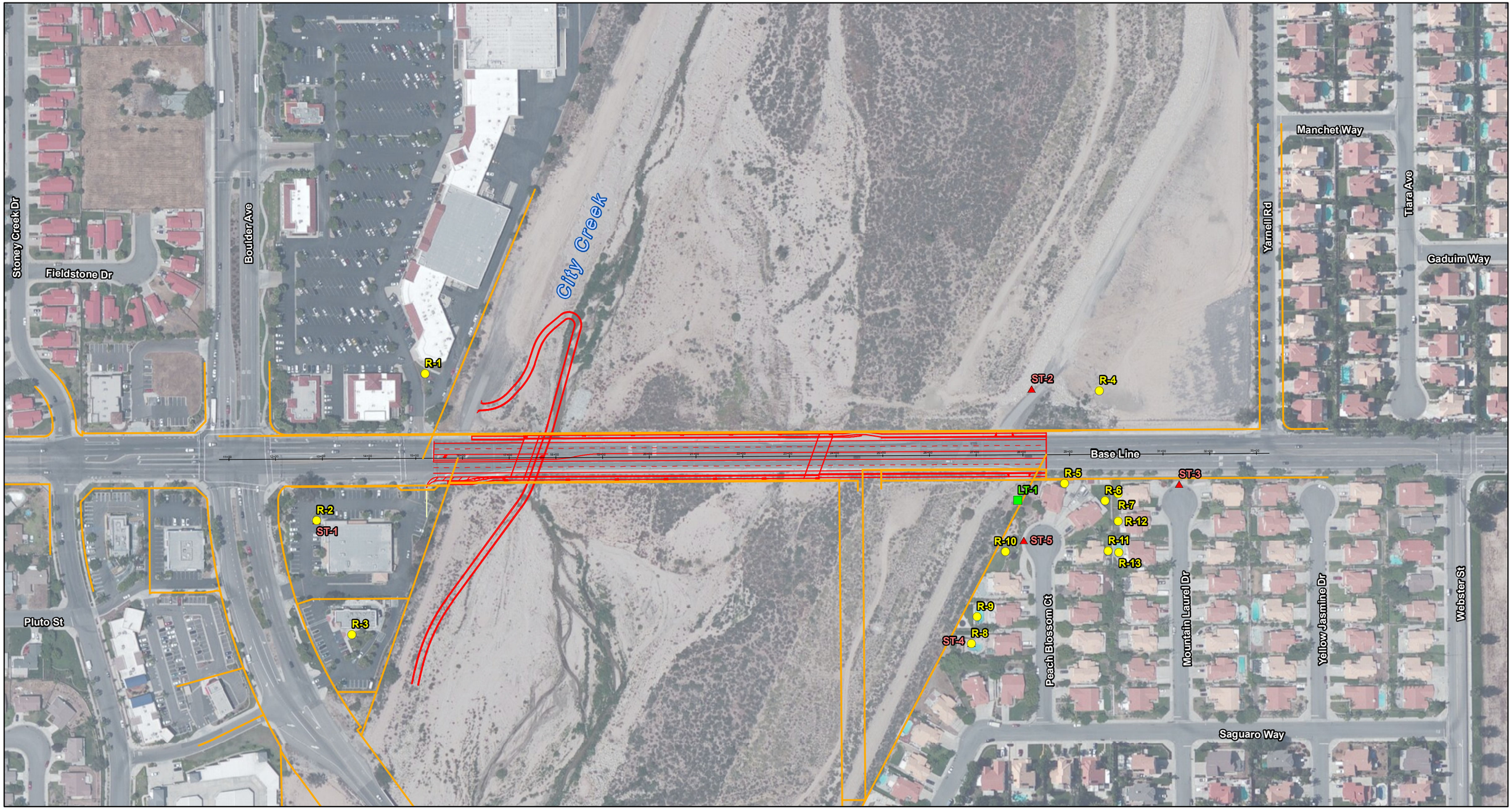
dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels

These short-term noise measurements were used to calibrate the noise model and to predict the noise levels at 13 modeled receptors in the project area. The concurrent traffic counts and measured vehicle speeds for each monitoring site are provided in Appendix A. Appendix B provides the results for each monitoring site. Table 6-2 shows the meteorological conditions during the short-term noise measurements.

Table 6-2: Meteorological Conditions During Noise Monitoring

Date	Temperature (°F)	Average Wind Speed (mph)
2/14/2017–2/15/2017	75.8–89.7	0.7–1.9

Source: LSA Associates, Inc. (April 2017).



LEGEND

- Modeled Receptors
- Short-Term Monitoring Locations
- Long-Term Monitoring Location
- Proposed Improvements
- Existing Right-of-Way

0 100 200
FEET

SOURCE: ESRI (2016)

I:\AEM1603\GIS\Fig2_MonitorReceptorLocations.mxd (4/11/2017)

FIGURE 2

Base Line Bridge Over City Creek

Monitoring and Modeled Receptor Locations

08-SBD-0 HIGH
EA No. 08-925035
Federal Project No. BR NBIL (505)

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6.2.2. Long-Term Monitoring

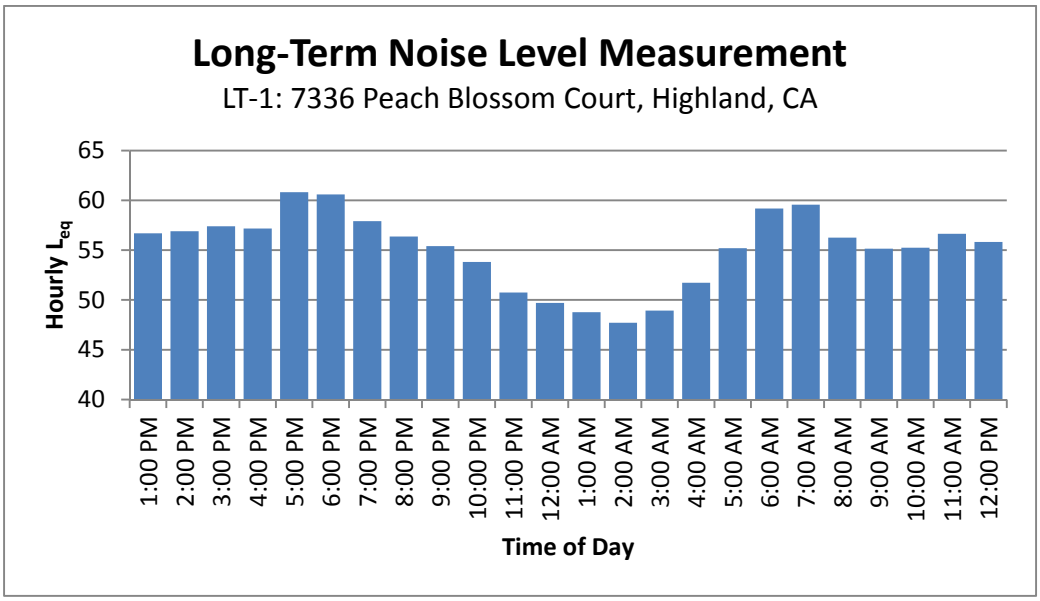
Long-term traffic noise level measurement was conducted to document the peak traffic noise hour. Long-term ambient noise monitoring was conducted using a Quest NoisePro DLX dosimeter at a representative location within the project area. The long-term noise level measurement at LT-1 was conducted at 7336 Peach Blossom Court from 1:00 p.m. on Tuesday, February 14 to 1:00 p.m. on Wednesday, February 15, 2017. Figure 2 identifies the long-term noise monitoring location.

Table 6-3 shows that traffic noise peaks during the 5:00 p.m. to 7:00 p.m. hour at LT-1. To determine existing peak traffic noise levels in the project area, the difference between the hour in which the short-term ambient noise measurements were conducted and the peak traffic noise hour was added to the monitored noise levels. For example, monitoring at location ST-1 was conducted during the 3:00 p.m. hour. Table 6-3 shows that the noise level during this hour is generally 4 dB lower than the level during the peak traffic noise hour. Therefore, 4 dB is added to the measured noise level at ST-1 to determine the existing peak traffic noise level.

Table 6-3: Long-Term 24-Hour Noise Level Measurement Results at LT-1

	Start Time	Date	Noise Level (dBA L_{eq})
1	1:00 PM	2/14/17	57
2	2:00 PM	2/14/17	57
3	3:00 PM	2/14/17	57
4	4:00 PM	2/14/17	57
5	5:00 PM	2/14/17	**61**[1]
6	6:00 PM	2/14/17	**61**
7	7:00 PM	2/14/17	58
8	8:00 PM	2/14/17	56
9	9:00 PM	2/14/17	55
10	10:00 PM	2/14/17	54
11	11:00 PM	2/14/17	51
12	12:00 AM	2/15/17	50
13	1:00 AM	2/15/17	49
14	2:00 AM	2/15/17	48
15	3:00 AM	2/15/17	49
16	4:00 AM	2/15/17	52
17	5:00 AM	2/15/17	55
18	6:00 AM	2/15/17	59
19	7:00 AM	2/15/17	60
20	8:00 AM	2/15/17	56
21	9:00 AM	2/15/17	55
22	10:00 AM	2/15/17	55
23	11:00 AM	2/15/17	57
24	12:00 PM	2/15/17	56

Source: LSA Associates, Inc. (April 2017).
[1] **Shaded Bold** numbers represent the peak traffic noise hour.
dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels



6.2.3. Noise Model Calibration

A total of five separate model runs were conducted using the traffic counts and measured vehicle speeds collected during the ambient noise monitoring. The results of these model runs were compared to the measured ambient noise levels to ensure the accuracy of TNM 2.5. Correction factors known as K-factors were applied to each of the modeled receptor locations so that the monitored and modeled noise levels were the same. Table 6-4 shows the measured ambient noise level, the modeled noise levels using traffic counts and measured vehicle speeds during noise monitoring, and the K-factor at each of the five monitored locations.

Table 6-4: Model Calibration

Monitor No.	Measured Noise Level (dBA L_{eq})	Modeled Noise Level (dBA L_{eq})	K-Factor (dBA)
ST-1	61.2	64.5	-3.3
ST-2	63.1	60.4	2.7
ST-3	54.0	55.1	-1.1
ST-4	38.2	42.0	-3.8
ST-5	45.7	49.2	-3.5

Source: LSA Associates, Inc. (April 2017).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

As shown in Table 6-4, monitoring locations ST-1, ST-4, and ST-5 have K-factors greater than 3 dBA. Based on Section 4.4.1.6 of the TeNS, K-factors between 3 and 4 can be calibrated unless the validity of the noise measurement conducted is in serious

doubt. Also, differences of 5 dBA or greater should be approached with caution by retaking measurements and looking for obvious causes for the difference, such as meteorology, pavement conditions, obstructions, and reflections. Monitoring locations ST-1, ST-4, and ST-5 were rechecked; noise level measurements and field surveys of existing features and the TNM 2.5 modeled input data were also reexamined and determined to be accurate. Therefore, the K-factors shown in Table 6-4 were used to calibrate the noise model.

6.3 Existing Noise Levels

The existing traffic noise levels were modeled using either the peak-hour traffic volumes or the worst-case traffic operations (prior to speed degradation), whichever is lower, as described under the Traffic Noise Level Prediction Methods discussion. The worst-case traffic condition, which results in the highest traffic noise level, is based on the maximum number of vehicles that can typically travel in a given lane while still resulting in free-flowing traffic conditions. This traffic condition is assumed to be LOS D/E, which corresponds to 895 vplph on Base Line and other local roadways in the vicinity. The existing peak-hour traffic volumes are based on traffic counts provided by the City. The p.m. peak-hour traffic volume was selected for the peak-hour traffic volume because the results of the long-term 24-hour noise level measurement showed that the peak traffic noise hour occurs during this period. The results of the existing traffic noise modeling is shown in Table C-1 in Appendix C. Currently, of the 13 modeled receptor locations, none of the receptors approaches or exceeds the NAC. Previously referenced Figure 2 shows the locations of the modeled receptors.

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Chapter 7. Future Noise Environment, Impacts, and Considered Abatement

7.1 Future Noise Environment and Impacts

The noise study was conducted to determine the future traffic noise impacts at sensitive receptors along Base Line. Potential long-term noise impacts under Build conditions are solely from traffic noise. Traffic noise was evaluated for the worst-case traffic condition. Using coordinates obtained from the topographic maps, 13 receptor locations were evaluated in the model.

Future traffic noise levels at all 13 modeled receptor locations were determined using either the peak-hour traffic volumes or the worst-case traffic operations (prior to speed degradation), whichever is lower, as described in Section 5.3. The worst-case traffic condition, which results in the highest traffic noise level, is based on the maximum number of vehicles that can typically travel in a given lane while still resulting in free-flowing traffic conditions. This traffic condition is assumed to be LOS D/E, which corresponds to 895 vplph on Base Line and Boulder Avenue. The existing peak-hour traffic volumes are based on traffic counts and the future peak-hour volumes are based on the General Plan 2030 traffic volumes provided by the City. The p.m. peak-hour traffic volume was selected for the peak-hour traffic volume because the results of the long-term 24-hour noise level measurement showed that the peak traffic noise hour occurs during this period. Table C-1 in Appendix C summarizes the traffic noise modeling results for the Existing, Future No Build, and Future Build conditions. The modeled future noise levels with the project were compared to the modeled existing noise levels (after calibration) from TNM 2.5 to determine whether a substantial noise increase would occur. The modeled future noise levels were also compared to the NAC to determine whether a traffic noise impact would occur.

Traffic noise impacts occur when either of the following occurs: (1) the traffic noise level at a receptor location is predicted to “approach or exceed” its corresponding NAC; or (2) the predicted traffic noise level is 12 dBA or more over the corresponding modeled existing noise level at the receptor locations analyzed. When traffic noise impacts occur, noise abatement measures must be considered. Of the 13 modeled receptors, none of the receptors would approach or exceed the NAC. Also,

of the 13 modeled receptors, none would experience a substantial noise increase of 12 dBA or more over their corresponding modeled existing noise levels.

7.2 Preliminary Noise Abatement Analysis

In accordance with 23 CFR 772, noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. As shown in Table C-1 in Appendix C, none of the 13 modeled receptors would approach or exceed the NAC under future with project conditions. In addition, no receptors would experience a substantial increase of 12 dBA or more over their corresponding modeled existing noise levels. Therefore, implementation of the proposed project would not result in a traffic noise impact as defined in 23 CFR 772, and the consideration of noise abatement measures is not required.

Chapter 8. Construction Noise

Two types of short-term noise impacts would occur during project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site, which would incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities will be moved on site, will remain for the duration of each construction phase, and will not add to the daily traffic volume in the project vicinity. A high single-event noise exposure potential at a maximum level of 55 dBA L_{max} from trucks passing at 50 feet would exist. However, the projected construction traffic will be minimal when compared to existing traffic volumes on Base Line and other affected streets. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would be less than substantial.

The second type of short-term noise impact is related to noise generated during roadway construction. Construction is performed in discrete steps, each of which has its own mix of equipment and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated as well as the noise levels along the project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 8-1 lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receiver.

Typical noise levels at 50 feet from an active construction area range up to 86 dBA L_{max} during the noisiest construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Table 8-1: Typical Construction Equipment Noise Levels

Equipment Description	Spec 721.560[1] L_{max} at 50 feet	Actual Measured[2] L_{max} at 50 feet
Backhoes	80	78
Compactor (ground)	80	83
Cranes	85	81
Dozers	85	82
Dump Truck	84	76
Excavators	85	81
Flat Bed Trucks	84	74
Front-End Loaders	80	79
Graders	85	N/A[3]
Jackhammer	85	89
Pickup Truck	55	75
Pneumatic Tools	85	85
Pumps	77	81
Rock Drill	85	81
Roller	85	80
Scrapers	85	84
Tractors	84	N/A
Vibratory Pile Driver	95	101

Source: Federal Highway Administration Roadway Construction Noise Model (January 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] Maximum noise levels were developed based on Spec 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.
[2] The maximum noise level was developed based on the average noise level measured for each piece of equipment during the CA/T program in Boston, Massachusetts.
[3] Since the maximum noise level based on the average noise level measured for this piece of equipment was not available, the maximum noise level developed based on Spec 721.560 was used.
L_{max} = maximum instantaneous sound level
N/A = not applicable

Construction of the proposed project is expected to require the use of front-end loaders, bulldozers, and water trucks/pickup trucks. Noise associated with the use of construction equipment is estimated to be between 55 and 85 dBA L_{max} at a distance of 50 feet from the active construction area for the grading phase. As seen in Table 8-1, the maximum noise level generated by each front-end loader is assumed to be approximately 80 dBA L_{max} at 50 feet from the front-end loader in operation. Each dozer would generate approximately 85 dBA L_{max} at 50 feet. The maximum noise level generated by water trucks/pickup trucks is approximately 55 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound source with equal strength increases the noise level by 3 dBA. Each piece of construction equipment operates as an individual point source. The worst-case composite noise level at the nearest residence during this phase of construction would be 86 dBA L_{max} (at a distance of 50 feet from an active construction area).

The closest residences are located within 50 feet from the project construction areas and may be subject to short-term noise reaching 86 dBA L_{max} or higher generated by construction activities within the project area. Construction noise is regulated by the Caltrans Standard Specifications in Section 14-8.02. Compliance with Caltrans Standard Specifications in Section 14-8.02 will be required to minimize construction noise impacts on land uses adjacent to the project site. The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBA L_{max} at a distance of 50 feet. The Contractor shall equip all internal combustion engines with the manufacturer-recommended muffler and shall not operate any internal combustion engine on the job site without its appropriate muffler.

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Appendix A. Traffic Data

This appendix contains tables presenting the traffic counts with measured vehicle speeds during ambient noise level measurements and traffic data for Existing, Future No Build, and Future Build conditions.

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Traffic Counts

	Traffic Count						Vehicle Distribution						Traffic Volume Per Lane (1 hour)						Lane		Vehicle Speed				
ST-2	**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**				**Auto**	**MT**	**HT**	**Bus**	**Moto**
Base Line EB	140	2	0	0	3		96.55%	1.38%	0.00%	0.00%	2.07%		210	3	0	0	5		2		45	45	45	45	45
Base Line WB	138	0	0	1	0		99.28%	0.00%	0.00%	0.72%	0.00%		207	0	0	2	0		2		45	45	45	45	45
ST-3	**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**				**Auto**	**MT**	**HT**	**Bus**	**Moto**
Base Line EB	107	2	1	0	1		96.40%	1.80%	0.90%	0.00%	0.90%		161	3	2	0	2		2		45	45	45	45	45
Base Line WB	126	0	0	1	0		99.21%	0.00%	0.00%	0.79%	0.00%		189	0	0	2	0		2		45	45	45	45	45
ST-4	**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**				**Auto**	**MT**	**HT**	**Bus**	**Moto**
Base Line EB	137	1	0	2	0		97.86%	0.71%	0.00%	1.43%	0.00%		206	2	0	3	0		2		45	45	45	45	45
Base Line WB	132	1	0	0	0		99.25%	0.75%	0.00%	0.00%	0.00%		198	2	0	0	0		2		45	45	45	45	45
ST-5	**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**				**Auto**	**MT**	**HT**	**Bus**	**Moto**
Base Line EB	185	1	1	1	0		98.40%	0.53%	0.53%	0.53%	0.00%		278	2	2	2	0		2		45	45	45	45	45
Base Line WB	109	2	1	1	0		96.46%	1.77%	0.88%	0.88%	0.00%		164	3	2	2	0		2		45	45	45	45	45
ST-1	**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**		**Auto**	**Medium**	**Heavy**	**Bus**	**Moto**				**Auto**	**MT**	**HT**	**Bus**	**Moto**
Base Line EB	162	1	0	0	1		98.78%	0.61%	0.00%	0.00%	0.61%		243	2	0	0	2		2		45	45	45	45	45
Base Line WB	180	0	1	1	1		98.36%	0.00%	0.55%	0.55%	0.55%		270	0	2	2	2		2		45	45	45	45	45
Boulder NB 6	118	2	1	0	0		97.52%	1.65%	0.83%	0.00%	0.00%		354	6	3	0	0		1		50	50	50	50	50
Boulder NB 1, 5	118	2	1	0	0		97.52%	1.65%	0.83%	0.00%	0.00%		177	3	2	0	0		2		50	50	50	50	50
Boulder NB 2, 3, 4	118	2	1	0	0		97.52%	1.65%	0.83%	0.00%	0.00%		118	2	1	0	0		3		50	50	50	50	50
Boulder SB 1, 2, 3	121	0	0	1	0		99.18%	0.00%	0.00%	0.82%	0.00%		182	0	0	2	0		2		50	50	50	50	50
Boulder SB 4	121	0	0	1	0		99.18%	0.00%	0.00%	0.82%	0.00%		363	0	0	3	0		1		50	50	50	50	50

Existing Traffic Volumes

Roadway Segments	TNM Roadway Name	No. of Lanes	AM Peak Hour	PM Peak Hour	Worst-Case Traffic	Selected Volume	Vehicle Distribution					Modeled Volumes					Per Lane					Vehicle Speed (mph)				
							Auto	Medium	Heavy	Bus	Motorcycle	Auto	Medium	Heavy	Bus	Motorcycle	Auto	Medium	Heavy	Bus	Motorcycle	Auto	Medium	Heavy	Bus	Motorcycle
Base Line Rd EB - East of SR-210	Base Line EB 1	2	825	1,442	1,790	1,442	91.3%	7.8%	0.0%	0.9%	0.0%	1,317	112	0	13	0	658	56	0	6	0	45	45	45	45	45
Base Line Rd WB - East of SR-210	Base Line WB 1	2	1,515	1,024	1,790	1,024	92.6%	6.8%	0.0%	0.6%	0.0%	948	70	0	6	0	474	35	0	3	0	45	45	45	45	45
Base Line Rd EB - Between Boulder Ave and Church St	Base Line EB 2,3,4,5	2	282	575	1,790	575	91.3%	7.8%	0.0%	0.9%	0.0%	525	45	0	5	0	262	22	0	3	0	45	45	45	45	45
Base Line Rd WB - Between Boulder Ave and Church St	Base Line WB 2,3,4,5	2	736	785	1,790	785	92.6%	6.8%	0.0%	0.6%	0.0%	727	53	0	5	0	363	27	0	2	0	45	45	45	45	45
Boulder Ave NB - North of Base Line Rd	Boulder NB 1	2	429	579	1,790	579	96.8%	3.1%	0.1%	0.0%	0.0%	560	18	1	0	0	280	9	0	0	0	50	50	50	50	50
Boulder Ave NB - North of Base Line Rd	Boulder NB 2, 3	3	429	579	1,790	579	96.8%	3.1%	0.1%	0.0%	0.0%	560	18	1	0	0	187	6	0	0	0	50	50	50	50	50
Boulder Ave SB - North of Base Line Rd	Boulder SB 1, 2	2	316	585	1,790	585	95.6%	4.2%	0.0%	0.2%	0.0%	559	25	0	1	0	280	12	0	1	0	50	50	50	50	50
Boulder Ave NB - South of Base Line Rd	Boulder NB 4	3	250	343	1,790	343	95.6%	4.3%	0.1%	0.0%	0.0%	328	15	0	0	0	109	5	0	0	0	50	50	50	50	50
Boulder Ave NB - South of Base Line Rd	Boulder NB 5	2	250	343	1,790	343	95.6%	4.3%	0.1%	0.0%	0.0%	328	15	0	0	0	164	7	0	0	0	50	50	50	50	50
Boulder Ave NB - South of Base Line Rd	Boulder NB 6	1	250	343	800	343	95.6%	4.3%	0.1%	0.0%	0.0%	328	15	0	0	0	328	15	0	0	0	50	50	50	50	50
Boulder Ave SB - South of Base Line Rd	Boulder SB 3	2	302	378	1,790	378	95.8%	4.1%	0.0%	0.1%	0.0%	362	15	0	0	0	181	8	0	0	0	50	50	50	50	50
Boulder Ave SB - South of Base Line Rd	Boulder SB 4	1	302	378	800	378	95.8%	4.1%	0.0%	0.1%	0.0%	362	15	0	0	0	362	15	0	0	0	50	50	50	50	50

Future (2030) Traffic Volumes

Roadway Segments	TNM Roadway Name	No. of Lanes	AM Peak Hour	PM Peak Hour	Worst-Case Traffic Volume	Selected Volume	Vehicle Distribution					Modeled Volumes					Per Lane					Vehicle Speed (mph)				
							Auto	Medium	Heavy	Bus	Motorcycle	Auto	Medium	Heavy	Bus	Motorcycle	Auto	Medium	Heavy	Bus	Motorcycle	Auto	Medium	Heavy	Bus	Motorcycle
Base Line Rd EB - East of SR-210	Base Line EB 1	2	1,652	2,289	1,790	1,790	1	0	0	0	0.0%	1,634	140	0	16	0	817	70	0	8	0	45	45	45	45	45
Base Line Rd WB - East of SR-210	Base Line WB 1	2	1,687	2,206	1,790	1,790	1	0	0	0	0.0%	1,658	122	0	11	0	829	61	0	5	0	45	45	45	45	45
Base Line Rd EB - Between Boulder Ave and Churcl	Base Line EB 2,3,4,5	2	486	1,001	1,790	1,001	1	0	0	0	0.0%	914	78	0	9	0	457	39	0	5	0	45	45	45	45	45
Base Line Rd WB - Between Boulder Ave and Churc	Base Line WB 2,3,4,5	2	1,114	752	1,790	752	1	0	0	0	0.0%	696	51	0	5	0	348	26	0	2	0	45	45	45	45	45
Boulder Ave NB - North of Base Line Rd	Boulder NB 1	2	634	1,110	1,790	1,110	1	0	0	0	0.0%	1,074	34	1	0	0	537	17	1	0	0	50	50	50	50	50
Boulder Ave NB - North of Base Line Rd	Boulder NB 2,3	3	634	1,110	1,790	1,110	1	0	0	0	0.0%	1,074	34	1	0	0	358	11	0	0	0	50	50	50	50	50
Boulder Ave SB - North of Base Line Rd	Boulder SB 1,2	2	629	1,025	1,790	1,025	1	0	0	0	0.0%	980	43	0	2	0	490	22	0	1	0	50	50	50	50	50
Boulder Ave NB - South of Base Line Rd	Boulder NB 4	3	579	1,195	1,790	1,195	1	0	0	0	0.0%	1,142	51	1	0	0	381	17	0	0	0	50	50	50	50	50
Boulder Ave NB - South of Base Line Rd	Boulder NB 5	2	579	1,195	1,790	1,195	1	0	0	0	0.0%	1,142	51	1	0	0	571	26	1	0	0	50	50	50	50	50
Boulder Ave NB - South of Base Line Rd	Boulder NB 6	1	579	1,195	800	800	1	0	0	0	0.0%	765	34	1	0	0	765	34	1	0	0	50	50	50	50	50
Boulder Ave SB - South of Base Line Rd	Boulder SB 3	2	832	1,230	1,790	1,230	1	0	0	0	0.0%	1,178	50	0	1	0	589	25	0	1	0	50	50	50	50	50
Boulder Ave SB - South of Base Line Rd	Boulder SB 4	1	832	1,230	800	800	1	0	0	0	0.0%	766	33	0	1	0	766	33	0	1	0	50	50	50	50	50

Appendix B. Supplemental Data

This appendix contains the noise monitoring results and sound level meter calibration certifications.

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SHORT-TERM NOISE LEVEL MEASUREMENTS

Noise Measurement Survey

Project Number: AEM1603
Project Name: Base Line Bridge
Test Personnel: Daniel Kaufman
Equipment: Larson Davis 824

Site Number: ST-1 Date: 2/15/17 Time: From 3:30 PM To 3:50 PM

Site Location: 27951 Base Line Road. Walgreens parking lot. In a planter in front of the store. Located on the southeast corner of the Base Line Road and Boulder Avenue intersection.

Primary Noise Sources: Traffic on Base Line Road and Boulder Avenue.

Measurement Results	
	dBA
L_{eq}	61.2
L_{max}	79.8
L_{min}	48.5
L_{peak}	92.8
L_2	68.5
L_8	63.5
L_{25}	60.5
L_{50}	58.2
L_{90}	54.5
L_{99}	51.9
SEL	92.0

Atmospheric Conditions	
Average Wind Velocity (mph)	1.9
Maximum Wind Velocity (mph)	5.2
Temperature (F)	81.8
Relative Humidity (%)	17.4

Comments: Some parking lot activity.

Traffic Description:

	#		NB/EB Counts					SB/WB Counts				
Roadway	Lanes	Speeds	Auto	MT	HT	Bus	M	Auto	MT	HT	Bus	M
Base Line Road	2/2	45 mph	162	1	0	0	1	180	0	1	1	1
Boulder Avenue	3/2	50 mph	118	2	1	0	0	121	0	0	1	0

Diagram:



Location Photo:



Noise Measurement Survey

Project Number: AEM1603
Project Name: Base Line Bridge
Test Personnel: Daniel Kaufman
Equipment: Larson Davis 824

Site Number: ST-2 Date: 2/14/17 Time: From 12:35 PM To 12:55 PM

Site Location: North of Base Line Road, east of the bridge. Next to a driveway leading to a flood control area.

Primary Noise Sources: Traffic on Base Line Road.

Measurement Results	
	dBA
L_{eq}	63.1
L_{max}	77.6
L_{min}	41.1
L_{peak}	90.5
L_2	70.0
L_8	67.6
L_{25}	64.2
L_{50}	59.5
L_{90}	48.3
L_{99}	42.5
SEL	93.9

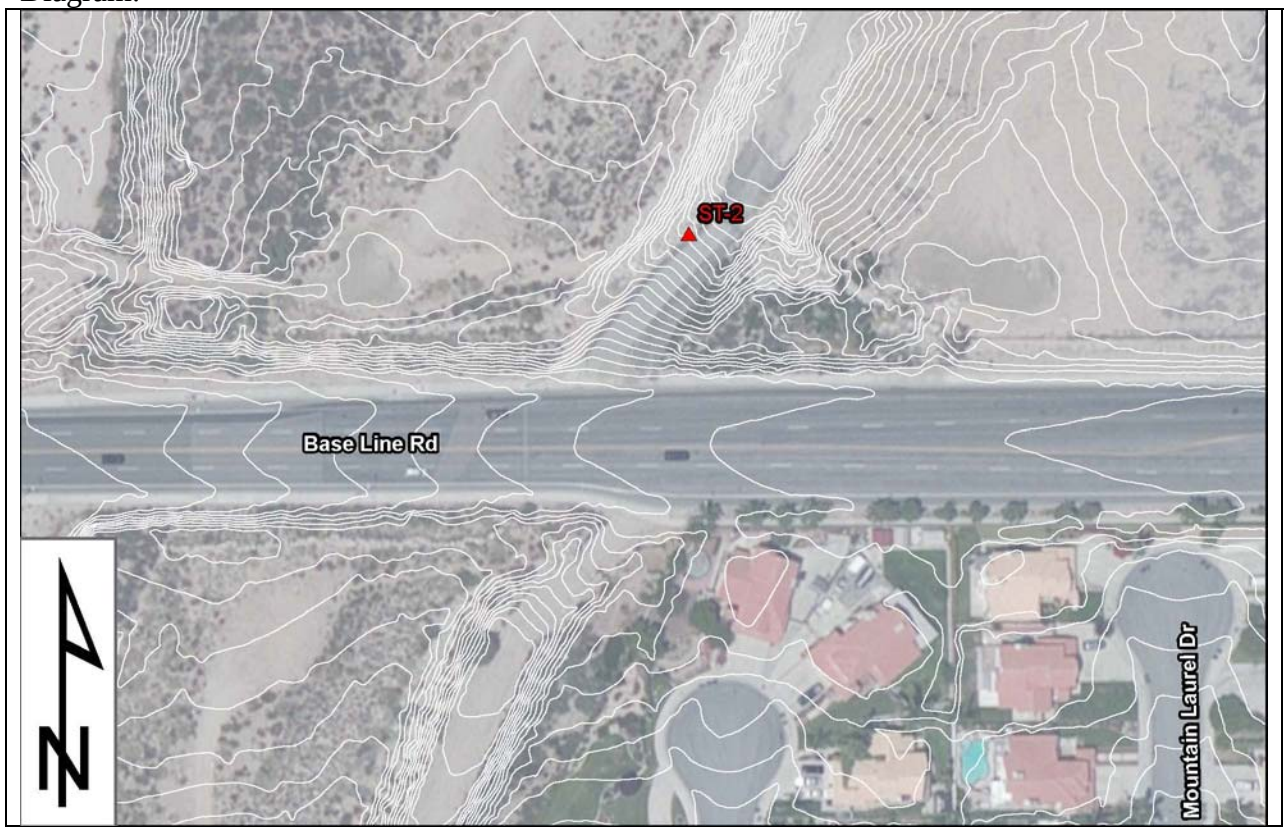
Atmospheric Conditions	
Average Wind Velocity (mph)	
Maximum Wind Velocity (mph)	
Temperature (F)	
Relative Humidity (%)	

Comments:

Traffic Description:

Roadway	# Lanes	Speeds	NB/EB Counts					SB/WB Counts				
			Auto	MT	HT	Bus	M	Auto	MT	HT	Bus	M
Base Line Road	2/2	45	140	2	0	0	3	138	0	0	1	0

Diagram:



Location Photo:



Noise Measurement Survey

Project Number: AEM1603
Project Name: Base Line Bridge

Test Personnel: Daniel Kaufman
Equipment: Larson Davis 824

Site Number: ST-3 Date: 2/15/17 Time: From 12:12 PM To 12:33 PM

Site Location: Cul-de-sac of Mountain Laurel Drive between 7310 and 7307 Mountain Laurel Drive. At the edge of the sidewalk.

Primary Noise Sources: Traffic on Base Line Road.

Measurement Results	
	dBA
L_{eq}	54.0
L_{max}	68.7
L_{min}	34.2
L_{peak}	83.1
L_2	60.3
L_8	58.0
L_{25}	55.4
L_{50}	51.9
L_{90}	42.0
L_{99}	37.3
SEL	85.1

Atmospheric Conditions	
Average Wind Velocity (mph)	0.9
Maximum Wind Velocity (mph)	3.8
Temperature (F)	89.7
Relative Humidity (%)	12.4

Comments: Three distant airplanes.

Traffic Description:

	#		NB/EB Counts					SB/WB Counts				
Roadway	Lanes	Speeds	Auto	MT	HT	Bus	M	Auto	MT	HT	Bus	M
Base Line Road	2/2	45 mph	107	2	1	0	1	126	0	0	1	0

Diagram:



Location Photo:



Noise Measurement Survey

Project Number: AEM1603
Project Name: Base Line Bridge
Test Personnel: Daniel Kaufman
Equipment: Larson Davis 824

Site Number: ST-4 Date: 2/15/17 Time: From 1:02 PM To 1:24 PM

Site Location: 7372 Peach Blossom Court. In the middle of the back yard, north of the pool.

Primary Noise Sources: Traffic on Base Line Road.

Measurement Results	
	dBA
L_{eq}	38.2
L_{max}	59.7
L_{min}	32.1
L_{peak}	77.1
L_2	42.9
L_8	40.1
L_{25}	38.1
L_{50}	36.6
L_{90}	34.4
L_{99}	33.2
SEL	69.0

Atmospheric Conditions	
Average Wind Velocity (mph)	0.7
Maximum Wind Velocity (mph)	2.9
Temperature (F)	75.8
Relative Humidity (%)	27.6

Comments:

Traffic Description:

	#		NB/EB Counts					SB/WB Counts				
Roadway	Lanes	Speeds	Auto	MT	HT	Bus	M	Auto	MT	HT	Bus	M
Base Line Road	2/2	45 mph	137	1	0	2	0	132	1	0	0	0

Diagram:



Location Photo:



Noise Measurement Survey

Project Number: AEM1603
Project Name: Base Line Bridge
Test Personnel: Daniel Kaufman
Equipment: Larson Davis 824

Site Number: ST-5 Date: 2/15/17 Time: From 2:15 PM To 2:37 PM

Site Location: 7348 Peach Blossom Court. In front of the side yard, on the sidewalk.

Primary Noise Sources: Traffic on Base Line Road.

Measurement Results	
	dBA
L_{eq}	45.7
L_{max}	62.6
L_{min}	32.7
L_{peak}	81.8
L_2	52.7
L_8	49.0
L_{25}	46.0
L_{50}	43.5
L_{90}	38.5
L_{99}	34.4
SEL	76.5

Atmospheric Conditions	
Average Wind Velocity (mph)	1.2
Maximum Wind Velocity (mph)	4.3
Temperature (F)	87.1
Relative Humidity (%)	15.6

Comments: Filtered dog barking across street. Birds chirping.

Traffic Description:

	#		NB/EB Counts					SB/WB Counts				
Roadway	Lanes	Speeds	Auto	MT	HT	Bus	M	Auto	MT	HT	Bus	M
Base Line Road	2/2	45 mph	185	1	1	1	0	109	2	1	1	0

Diagram:



Location Photo:



CALIBRATION CERTIFICATE FOR LARSON DAVIS 824

PCB PIEZOTRONICS INC.
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2016-204337

Instrument Model 824, Serial Number A1612, was calibrated on 22 Nov 2016. The instrument meets factory specifications per Procedure D0001.8046, IEC 61672-1:2002 Class 1; IEC 60651-2001, 60804-2000 and ANSI S1.4-1983 Type 1 1/3, 1/1 Oct. Filters; S1.11-1986 Type 1C; IEC61260-am1-2001 Class 1 .

Instrument found to be in calibration as received: YES
Date Calibrated: 22 Nov 2016
Calibration due: 22 Nov 2017

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0617 / 0104	12 Months	18 Dec 2016	2015-202267

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 26 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As received" data is the same as shipped data.
Tested with PRM902 S/N 2104

Signed: Sean Childs

Technician: Sean Childs

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

Calibration Certificate

Certificate Number 2016010395

Customer:
LSA Associates Inc
20 Executive Park
Irvine, CA 92614, United States

Model Number	2541	***Procedure Number***	D0001.8387		
Serial Number	7977	***Technician***	Abraham Ortega		
Test Results	**Pass**	***Calibration Date***	21 Nov 2016		
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***	21 Nov 2017		
Description	1/2 inch Microphone - FF - 200V	***Temperature***	23.7	°C	± 0.01 °C
		Humidity	31.4	%RH	± 0.5 %RH
		Static Pressure	101.40	kPa	± 0.03 kPa

Evaluation Method Tested electrically using an electrostatic actuator.

Compliance Standards Compliant to Manufacturer Specifications.

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.
Test points marked with a ‡ do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2008.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

This report may not be reproduced, except in full, unless permission for the publication of an approved abstract is obtained in writing from the organization issuing this report.

Standards Used

Description	Cal Date	Cal Due	Cal Standard
Sound Level Meter / Real Time Analyzer	07/15/2016	07/15/2017	001230
Microphone Calibration System	08/30/2016	08/30/2017	001233
1/2" Preamplifier	12/15/2015	12/15/2016	001274
Agilent 34401A DMM	12/04/2015	12/04/2016	001329
Larson Davis CAL250 Acoustic Calibrator	01/05/2016	01/05/2017	003030
1/2" Preamplifier	12/15/2015	12/15/2016	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	09/12/2016	09/11/2017	006507
1/2 inch Microphone - RI - 200V	03/15/2016	03/15/2017	006510
1/2 inch Microphone - RI - 200V	08/08/2016	08/08/2017	006519
Larson Davis 1/2" Preamplifier 7-pin LEMO	09/12/2016	09/12/2017	006530
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/11/2016	08/11/2017	006531

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1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ilac-MRA ACCREDITED Cert. #3622.01

LARSON DAVIS
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Sensitivity

Measurement	Test Result [mV/Pa]	Lower limit [mV/Pa]	Upper limit [mV/Pa]	Expanded Uncertainty [mV/Pa]	Result
Open Circuit Sensitivity	45.14	42.00	59.50	0.95	Pass

-- End of measurement results--

Capacitance

Measurement	Test Result [pF]				
Capacitance	19.00			‡	

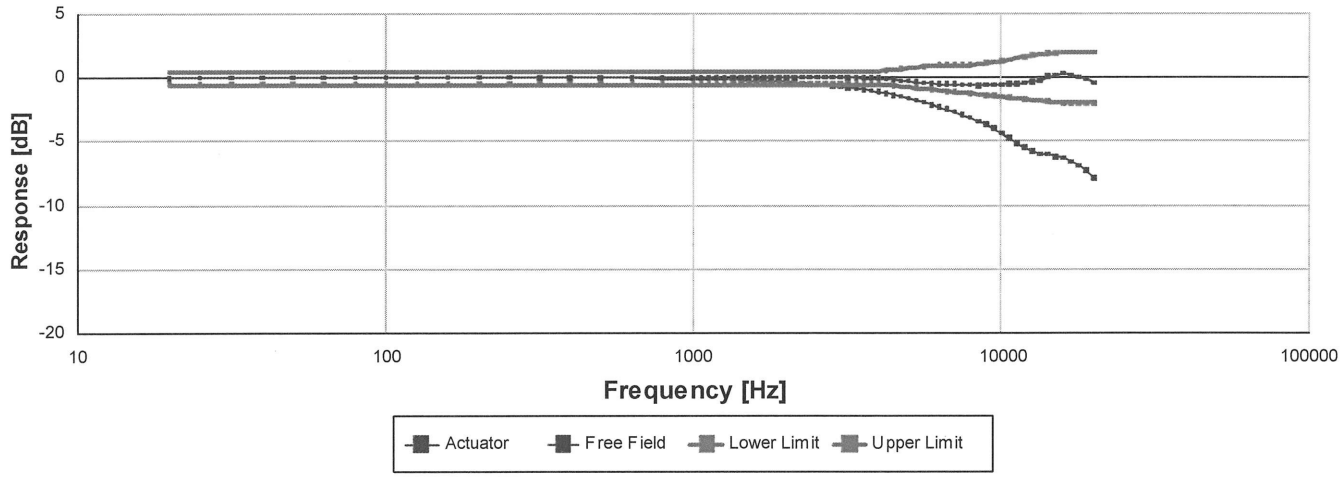
-- End of measurement results--

Lower Limiting Frequency

Measurement	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]		Result
-3 dB Frequency	1.38	1.00	2.00		Pass ‡

-- End of measurement results--

Frequency Response



Data is normalized for 0 dB @ 251.19 Hz.

Frequency [Hz]	Actuator [dB]	Free Field [dB]	Lower limit [dB]	Upper limit [dB]	Result
19.95	-0.03	-0.03	-0.50	0.50	Pass ‡
25.12	0.00	0.00	-0.50	0.50	Pass ‡
31.62	0.01	0.01	-0.50	0.50	Pass ‡
39.81	0.02	0.02	-0.50	0.50	Pass ‡
50.12	0.02	0.02	-0.50	0.50	Pass ‡
63.10	0.02	0.02	-0.50	0.50	Pass ‡
79.43	0.02	0.02	-0.50	0.50	Pass ‡
100.00	0.02	0.02	-0.50	0.50	Pass ‡
125.89	0.01	0.01	-0.50	0.50	Pass ‡
158.49	0.01	0.01	-0.50	0.50	Pass ‡
199.53	0.01	0.01	-0.50	0.50	Pass ‡

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716-684-0001

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Frequency [Hz]	Actuator [dB]	Free Field [dB]	Lower limit [dB]	Upper limit [dB]	Result
251.19	0.00	0.00	-0.50	0.50	Pass ‡
316.23	-0.01	-0.01	-0.50	0.50	Pass ‡
398.11	-0.01	0.00	-0.50	0.50	Pass ‡
501.19	-0.03	-0.01	-0.50	0.50	Pass ‡
630.96	-0.04	-0.01	-0.50	0.50	Pass ‡
794.33	-0.07	-0.02	-0.50	0.50	Pass ‡
1,000.00	-0.10	-0.03	-0.50	0.50	Pass ‡
1,059.25	-0.11	-0.03	-0.50	0.50	Pass ‡
1,122.02	-0.13	-0.04	-0.50	0.50	Pass ‡
1,188.50	-0.13	-0.04	-0.50	0.50	Pass ‡
1,258.93	-0.15	-0.05	-0.50	0.50	Pass ‡
1,333.52	-0.17	-0.05	-0.50	0.50	Pass ‡
1,412.54	-0.19	-0.05	-0.50	0.50	Pass ‡
1,496.24	-0.20	-0.04	-0.50	0.50	Pass ‡
1,584.89	-0.23	-0.04	-0.50	0.50	Pass ‡
1,678.80	-0.26	-0.05	-0.50	0.50	Pass ‡
1,778.28	-0.28	-0.04	-0.50	0.50	Pass ‡
1,883.65	-0.31	-0.03	-0.50	0.50	Pass ‡
1,995.26	-0.34	-0.01	-0.50	0.50	Pass ‡
2,113.49	-0.37	0.02	-0.50	0.50	Pass ‡
2,238.72	-0.41	0.04	-0.50	0.50	Pass ‡
2,371.37	-0.46	0.05	-0.50	0.50	Pass ‡
2,511.89	-0.51	0.05	-0.50	0.50	Pass ‡
2,660.73	-0.56	0.05	-0.50	0.50	Pass ‡
2,818.38	-0.63	0.03	-0.50	0.50	Pass ‡
2,985.38	-0.69	0.01	-0.50	0.50	Pass ‡
3,162.28	-0.78	-0.03	-0.50	0.50	Pass ‡
3,349.65	-0.85	-0.04	-0.50	0.50	Pass ‡
3,548.13	-0.94	-0.05	-0.50	0.50	Pass ‡
3,758.37	-1.03	-0.06	-0.50	0.50	Pass ‡
3,981.07	-1.14	-0.08	-0.50	0.50	Pass ‡
4,216.97	-1.25	-0.12	-0.56	0.56	Pass ‡
4,466.84	-1.37	-0.18	-0.63	0.63	Pass ‡
4,731.51	-1.50	-0.24	-0.69	0.69	Pass ‡
5,011.87	-1.64	-0.30	-0.75	0.75	Pass ‡
5,308.84	-1.79	-0.37	-0.81	0.81	Pass ‡
5,623.41	-1.96	-0.43	-0.88	0.88	Pass ‡
5,956.62	-2.12	-0.47	-0.94	0.94	Pass ‡
6,309.57	-2.31	-0.51	-1.00	1.00	Pass ‡
6,683.44	-2.49	-0.52	-1.06	1.00	Pass ‡
7,079.46	-2.70	-0.53	-1.13	1.00	Pass ‡
7,498.94	-2.92	-0.55	-1.19	1.00	Pass ‡
7,943.28	-3.15	-0.59	-1.25	1.00	Pass ‡
8,413.95	-3.40	-0.61	-1.31	1.08	Pass ‡
8,912.51	-3.65	-0.57	-1.38	1.15	Pass ‡
9,440.61	-3.98	-0.56	-1.44	1.23	Pass ‡
10,000.00	-4.37	-0.55	-1.50	1.30	Pass ‡
10,592.54	-4.73	-0.49	-1.56	1.41	Pass ‡
11,220.19	-5.15	-0.50	-1.63	1.53	Pass ‡
11,885.02	-5.50	-0.45	-1.69	1.64	Pass ‡
12,589.25	-5.74	-0.32	-1.75	1.75	Pass ‡
13,335.21	-5.98	-0.21	-1.81	1.81	Pass ‡
14,125.38	-6.03	0.07	-1.88	1.88	Pass ‡

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1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ilac-MRA ACCREDITED Cert. #3622.01

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Frequency [Hz]	Actuator [dB]	Free Field [dB]	Lower limit [dB]	Upper limit [dB]	Result
14,962.36	-6.20	0.20	-1.94	1.94	Pass ‡
15,848.93	-6.32	0.32	-2.00	2.00	Pass ‡
16,788.04	-6.60	0.19	-2.00	2.00	Pass ‡
17,782.80	-6.93	0.05	-2.00	2.00	Pass ‡
18,836.49	-7.30	-0.09	-2.00	2.00	Pass ‡
19,952.62	-7.90	-0.40	-2.00	2.00	Pass ‡

-- End of measurement results--

Signatory: *Abraham Ortega*

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1681 West 820 North
Provo, UT 84601, United States
716-684-0001

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PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2016-204335

Instrument Model PRM902, Serial Number 2104, was calibrated on 22 Nov 2016. The instrument meets factory specifications per Procedure D0001.8126.

Instrument found to be in calibration as received: YES
Date Calibrated: 22 Nov 2016
Calibration due: 22 Nov 2017

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0662/0114	12 Months	10 Dec 2016	2015-202190
Agilent Technologies	34401A	MY41038589	12 Months	6 Jan 2017	2016-000146

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 26 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As received" data is the same as shipped data.

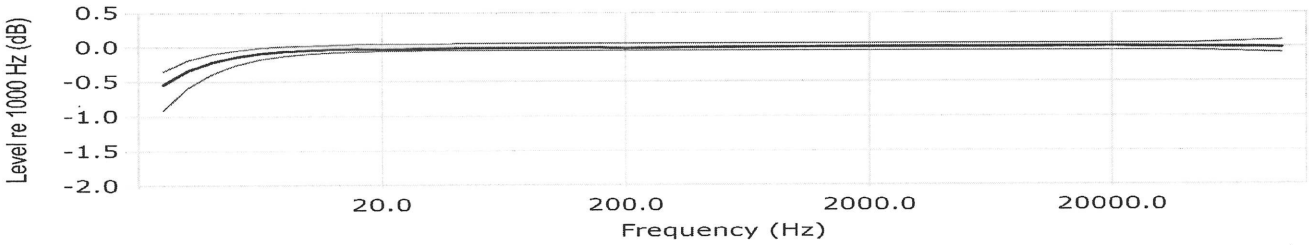
Signed: 

Technician: Sean Childs

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

Preamplifier Model: PRM902 Serial Number: 2104
Frequency Response Test Report

Frequency response electrically tested at 120.0 dBµV using a 18 pF capacitor to simulate microphone capacitance.



Frequency (Hz)	Relative Level (dB)	Uncertainty (dB)	Limits (dB)	Frequency (Hz)	Relative Level (dB)	Uncertainty (dB)	Limits (dB)
2.5	-0.54	0.08	-0.35,-0.91	631.0	-0.00	0.02	0.05,-0.05
3.2	-0.34	0.06	-0.19,-0.59	794.3	-0.00	0.02	0.05,-0.05
4.0	-0.22	0.06	-0.10,-0.39	1000.0	0.00	0.02	0.05,-0.05
5.0	-0.14	0.04	-0.05,-0.26	1258.9	0.00	0.02	0.05,-0.05
6.3	-0.09	0.04	-0.01,-0.18	1584.9	0.00	0.02	0.05,-0.05
7.9	-0.06	0.04	0.01,-0.13	1995.3	0.00	0.02	0.05,-0.05
10.0	-0.05	0.02	0.02,-0.10	2511.9	0.00	0.02	0.05,-0.05
12.6	-0.03	0.02	0.03,-0.08	3162.3	0.00	0.02	0.05,-0.05
15.8	-0.03	0.02	0.04,-0.07	3981.1	0.01	0.02	0.05,-0.05
20.0	-0.04	0.02	0.04,-0.06	5011.9	0.00	0.02	0.05,-0.05
25.1	-0.03	0.02	0.04,-0.06	6309.6	0.00	0.02	0.05,-0.05
31.6	-0.02	0.02	0.04,-0.05	7943.3	0.00	0.02	0.05,-0.05
39.8	-0.02	0.02	0.05,-0.05	10000.0	0.00	0.02	0.05,-0.05
50.1	-0.02	0.02	0.05,-0.05	12589.3	0.01	0.02	0.05,-0.05
63.1	-0.01	0.02	0.05,-0.05	15848.9	0.01	0.02	0.05,-0.05
79.4	-0.01	0.02	0.05,-0.05	19952.6	0.01	0.02	0.05,-0.05
100.0	-0.01	0.02	0.05,-0.05	25118.9	0.00	0.02	0.05,-0.05
125.9	-0.01	0.02	0.05,-0.05	31622.8	0.00	0.02	0.05,-0.05
158.5	-0.01	0.02	0.05,-0.05	39810.7	0.00	0.02	0.05,-0.05
199.5	-0.02	0.02	0.05,-0.05	50118.7	-0.00	0.02	0.06,-0.06
251.2	-0.01	0.02	0.05,-0.05	63095.7	-0.00	0.05	0.07,-0.07
316.2	-0.01	0.02	0.05,-0.05	79432.8	-0.01	0.05	0.08,-0.08
398.1	-0.01	0.02	0.05,-0.05	100000.0	-0.01	0.05	0.09,-0.09
501.2	-0.00	0.02	0.05,-0.05				

1000 Hz measured level: 119.742 dBµV, -0.258 dB re input (0.033 dB uncertainty; -0.483 dB to -0.017 dB limit)
1 kHz (1/3 Octave) Noise Floor : 0.37 µV, -8.70 dBµV (0.47 dB uncertainty; -4.00 dB limit)
Flat (20 Hz - 20 kHz) Noise Floor : 3.38 µV, 10.59 dBµV (0.47 dB uncertainty; 15.00 dB limit)
A-weight Noise Floor : 1.89 µV, 5.55 dBµV (0.46 dB uncertainty; 10.00 dB limit)
Environmental conditions: 23.4 °C, 26.8 %RH (0.3 °C, 3 %RH uncertainty)
Uncertainties are given as expanded uncertainty at ~95 percent confidence level (k = 2).
Test Procedure: D0001.8126 with PRM902 (SMD).xml
This frequency response is in compliance with manufacturers specification for the item tested.
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Technician: Sean Childs Test Date: 22 Nov 2016 10:11:52

Test Location: Larson Davis, a division of PCB Piezotronics, Inc.
1681 West 820 North, Provo, Utah 84601
Tel: 716 684-0001 www.LarsonDavis.com

Calibration Certificate

Certificate Number 2016010306

Customer:
LSA Associates Inc
20 Executive Park
Irvine, CA 92614, United States

Model Number	CAL200	***Procedure Number***	D0001.8386		
Serial Number	3228	***Technician***	Scott Montgomery		
Test Results	**Pass**	***Calibration Date***	18 Nov 2016		
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***	18 Nov 2017		
Description	Larson Davis CAL200 Acoustic Calibrator	***Temperature***	25	°C	± 0.3 °C
		Humidity	28	%RH	± 3 %RH
		Static Pressure	101.4	kPa	± 1 kPa

Evaluation Method The data is aquired by the insert voltage calibration method using the reference microphone's open circuit sensitivity. Data reported in dB re 20 µPa.

Compliance Standards Compliant to Manufacturer Specifications per D0001.8190 and the following standards:
IEC 60942:2003 ANSI S1.40-2006

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.
Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2008.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Standards Used

Description	Cal Date	Cal Due	Cal Standard
Agilent 34401A DMM	09/07/2016	09/07/2017	001021
Sound Level Meter / Real Time Analyzer	04/07/2016	04/07/2017	001051
Microphone Calibration System	08/17/2016	08/17/2017	005446
1/2" Preamplifier	10/06/2016	10/06/2017	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/22/2016	08/22/2017	006507
1/2 inch Microphone - RI - 200V	03/15/2016	03/15/2017	006510
Pressure Transducer	07/01/2016	07/01/2017	007368

Output Level

Nominal Level [dB]	Pressure [kPa]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
94	101.4	94.02	93.80	94.20	0.14	Pass
114	101.1	114.01	113.80	114.20	0.13	Pass

-- End of measurement results--

Frequency

Nominal Level [dB]	Pressure [kPa]	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Expanded Uncertainty [Hz]	Result
94	101.4	1,000.18	990.00	1,010.00	0.20	Pass
114	101.1	1,000.18	990.00	1,010.00	0.20	Pass

-- End of measurement results--

Total Harmonic Distortion + Noise (THD+N)

Nominal Level [dB]	Pressure [kPa]	Test Result [%]	Lower limit [%]	Upper limit [%]	Expanded Uncertainty [%]	Result
94	101.4	0.37	0.00	2.00	0.25	Pass
114	101.1	0.32	0.00	2.00	0.25	Pass

-- End of measurement results--

Level Change Over Pressure

Tested at: 114 dB, 23 °C, 32 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
101.3	101.4	0.00	-0.30	0.30	0.04 ‡	Pass
83.0	83.0	0.00	-0.30	0.30	0.04 ‡	Pass
108.0	108.0	-0.02	-0.30	0.30	0.04 ‡	Pass
92.0	92.0	0.01	-0.30	0.30	0.04 ‡	Pass
74.0	73.8	-0.05	-0.30	0.30	0.04 ‡	Pass
65.0	65.2	-0.16	-0.30	0.30	0.04 ‡	Pass

-- End of measurement results--

Frequency Change Over Pressure

Tested at: 114 dB, 23 °C, 32 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Expanded Uncertainty [Hz]	Result
108.0	108.0	0.00	-10.00	10.00	0.20 ‡	Pass
101.3	101.4	0.00	-10.00	10.00	0.20 ‡	Pass
92.0	92.0	0.00	-10.00	10.00	0.20 ‡	Pass
83.0	83.0	-0.01	-10.00	10.00	0.20 ‡	Pass
74.0	73.8	-0.01	-10.00	10.00	0.20 ‡	Pass
65.0	65.2	-0.01	-10.00	10.00	0.20 ‡	Pass

-- End of measurement results--

Total Harmonic Distortion + Noise (THD+N) Over Pressure

Tested at: 114 dB, 23 °C, 32 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [%]	Lower limit [%]	Upper limit [%]	Expanded Uncertainty [%]	Result
108.0	108.0	0.32	0.00	2.00	0.25 ‡	Pass
101.3	101.4	0.32	0.00	2.00	0.25 ‡	Pass
92.0	92.0	0.34	0.00	2.00	0.25 ‡	Pass
83.0	83.0	0.36	0.00	2.00	0.25 ‡	Pass
74.0	73.8	0.39	0.00	2.00	0.25 ‡	Pass
65.0	65.2	0.43	0.00	2.00	0.25 ‡	Pass

-- End of measurement results--

Signatory: *Scott Montgomery*

Larson Davis, a division of PCB Piezotronics, Inc
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Provo, UT 84601, United States
716-684-0001

ACCREDITED Cert. #3622.01

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CALIBRATION CERTIFICATE FOR QUEST NOISEPRO DLX DOSIMETER

INSTRUMENT CALIBRATION REPORT

Advanced Labs, Inc.

Pine Environmental Services, Inc

Instrument ID 11571
Description Quest NoisePro DLX Dosimeter
Calibrated 3/30/2016

Manufacturer Quest
Model Number NoisePro DLX Dosimeter
Serial Number NXG070063
Location New Jersey
Temp 77

Classification
Status pass
Frequency Yearly EOM
Department Lab
Humidity 20

Calibration Specifications

Group # 1
Group Name Acoustic Tests Performed
Test Performed: Yes **As Found Result: Fail** **As Left Result: Pass**

Test Instruments Used During the Calibration

				(As Of Cal Entry Date)	
Test Instrument ID	**Description**	**Manufacturer**	**Serial Number**	**Last Cal Date**	**Next Cal Date**
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	3/15/2016	3/15/2017
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	3/15/2016	3/15/2017
FLUKE 114	Fluke 114 NIST Traceable Multimeter	Fluke	15310288	4/25/2015	4/25/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Kevin Cole

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

Appendix C. Predicted Future Noise Levels

This appendix contains tables that summarize the traffic noise modeling results for Existing, Future No Build, and Future Build conditions.

Table C-1: Predicted Future Noise Levels

Receptor No.	Location	Land Use	No. of Dwelling Units/Receptors	Existing Noise Level, dBA L_{eq}(h)	Future (2040) Noise Levels, dBA L_{eq}(h)					
					Future No Build	Future Build	Future Build Minus No Build Conditions	Future Build Minus Existing Conditions	Activity Category	Impact Type
R-1	Base Line	Commercial/Retail	1	57	58	60	2	3	F	None
R-2	Boulder Avenue	Restaurant	1	63	66	66	0	3	E	None
R-3	Boulder Avenue	Commercial/Retail	1	57	61	61	0	4	F	None
R-4	Base Line	Vacant Land	1	64	66	67	1	3	G	None
R-5	Peach Blossom Court	Residential	1	59	61	62	1	3	B(67)	None
R-6	Peach Blossom Court	Residential	1	55	57	57	0	2	B(67)	None
R-7	Mountain Laurel Drive	Residential	1	57	59	59	0	2	B(67)	None
R-8	Peach Blossom Court	Residential	1	42	44	44	0	2	B(67)	None
R-9	Peach Blossom Court	Residential	1	42	44	45	1	3	B(67)	None
R-10	Peach Blossom Court	Residential	1	47	49	50	1	3	B(67)	None
R-11	Peach Blossom Court	Residential	1	46	47	48	1	2	B(67)	None
R-12	Mountain Laurel Drive	Residential	1	49	51	51	0	2	B(67)	None
R-13	Mountain Laurel Drive	Residential	1	46	48	48	0	2	B(67)	None

Source: LSA (April 2017).
dB = decibel(s)
dBA = A-weighted decibel(s)
L_{eq}(h) =1-hour A-weighted equivalent continuous sound level

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