

Water Quality Technical Memorandum

Interstate 215/University Parkway Interchange

08-SBD-215 - PM 11.35 to 11.95

EA: 08-0E420-0800000083

San Bernardino, CA
August 27, 2018



This page is intentionally blank.

Table of Contents

| | | |
|---|---|-----|
| 1 | Introduction..... | 1 |
| 2 | Project Description | 3 |
| | 2.1 Alternatives..... | 3 |
| | 2.1.1 Alternative 1 - No Build | 3 |
| | 2.1.2 Alternative 2 - Diverging Diamond Interchange | 3 |
| | 2.2 Purpose and Need | 10 |
| | 2.2.1 Purpose of the Project..... | 10 |
| | 2.2.2 Need for the Project | 10 |
| 3 | Regulatory Setting..... | 13 |
| | 3.1.1 Section 401 and 404 Permitting | 13 |
| | 3.1.2 Section 1602 Streambed Alteration Agreement..... | 14 |
| 4 | Affected Environment..... | 15 |
| | 4.1 Hydrology | 15 |
| | 4.2 Local Drainage | 15 |
| | 4.3 Surface Water | 15 |
| | 4.4 Groundwater..... | 17 |
| | 4.5 Floodplains | 17 |
| 5 | Environmental Consequences | 19 |
| | 5.1 Short-Term Impacts During Construction..... | 19 |
| | 5.1.1 Alternative 1 - No Build | 19 |
| | 5.1.2 Alternative 2 - Diverging Diamond Interchange | 19 |
| | 5.2 Long-Term Impacts During Operation..... | 21 |
| | 5.2.1 Alternative 1 - No Build | 21 |
| | 5.2.2 Alternative 2 - Diverging Diamond Interchange | 21 |
| 6 | Avoidance and Minimization Measures..... | 23 |
| 7 | References | 25 |
| | ATTACHMENT A | A-1 |
| | ATTACHMENT B | B-1 |

Tables

| | |
|---|----|
| Table 1. Right-of-Way Requirements..... | 9 |
| Table 2. Changes to Driveway Access on Adjacent Properties..... | 9 |
| Table 3. Existing Local Drainage Systems | 15 |
| Table 4. Proposed Modifications to Existing Local Drainage Systems..... | 19 |
| Table 5. Proposed New Drainage Systems | 20 |

Figures

| | |
|--|---|
| Figure 1. Regional Location and Project Vicinity | 5 |
| Figure 2. Project Limits | 7 |

This page is intentionally blank.

1 Introduction

The purpose of the Water Quality Technical Memorandum (WQTM) is to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and to provide information for the National Pollution Discharge Elimination System (NPDES) permitting. The WQTM includes a discussion of the proposed Interstate 215 University Parkway Interchange Project (Project), the physical setting of the area within the Project limits, and the regulatory framework with respect to water quality. The WQTM also provides pertinent information regarding the surface water resources within the Project limits and surrounding area and the water quality of these waters. In addition, the WQTM describes the water quality impairments and beneficial uses, identifies potential water quality impacts/benefits associated with the proposed Project, and recommends avoidance and minimization measures for potential impacts.

This page is intentionally blank.

2 Project Description

The San Bernardino County Transportation Authority (SBCTA), in cooperation with the California Department of Transportation (Caltrans) and the City of San Bernardino (City), is proposing to improve the I-215/University Parkway Interchange in the City and County of San Bernardino, California (Figure 1). Caltrans is the lead agency under CEQA. Caltrans is also the lead agency under NEPA, as assigned by the Federal Highway Administration (FHWA), in accordance with NEPA (42 United States Code [USC] 4321 et seq.) and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508).

A single build alternative and a No Build alternative are being evaluated as part of the proposed Project. The Project limits (Figure 2) are located within Caltrans and City right-of-way (ROW). The areas within and immediately adjacent to the Project limits are predominately developed and generally consist of commercial/retail land uses. The existing interchange serves as a main point of access for students, faculty, and visitors of California State University, San Bernardino (CSUSB).

2.1 Alternatives

2.1.1 Alternative 1 - No Build

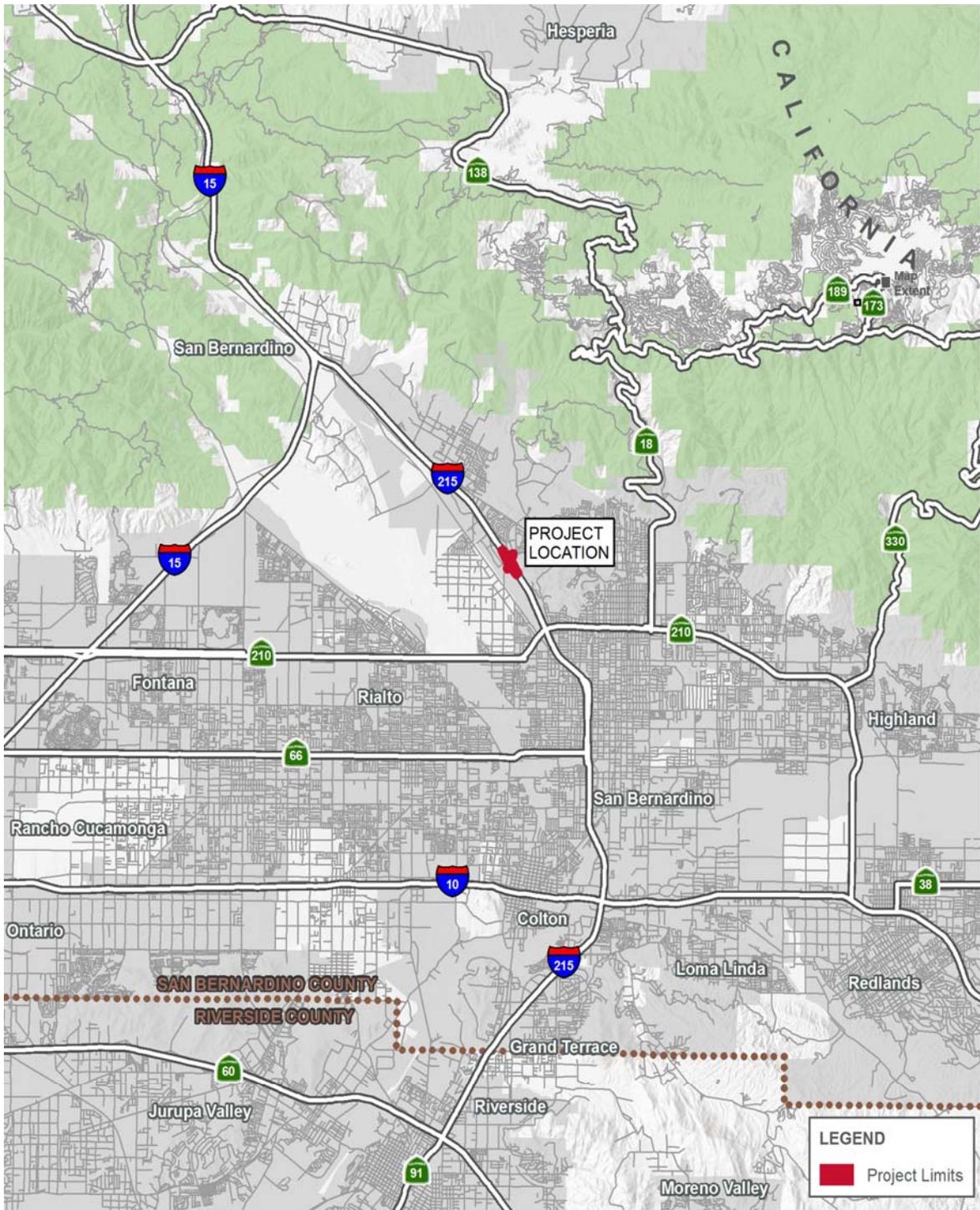
Alternative 1 - No Build would maintain the facility in its current condition. No improvements would be implemented at this time and therefore, no capital cost is associated with this alternative. As traffic demand increases due to the planned growth in the area, specifically at CSUSB, traffic operational characteristics would further deteriorate. The Alternative 1 - No Build would not address or alleviate the forecasted operational and existing safety issues attributed to the severe congestion within the University Parkway Interchange and would not satisfy the purpose and need.

2.1.2 Alternative 2 - Diverging Diamond Interchange

Alternative 2 - Diverging Diamond Interchange (DDI) would provide operational improvements to traffic flow associated with the I-215/University Parkway interchange. Alternative 2 proposes to replace the existing University Parkway tight diamond interchange configuration with a DDI configuration. The existing undercrossing would remain in place. This alternative would improve both ramp intersections of the current interchange, as well as directional movement through the system. Using the DDI configuration, the interchange would allow more efficient left-turn and right-turn movements at ramp terminals.

A DDI is the proposed design configuration for the I-215/University Parkway Interchange because of its ability to eliminate multiple traffic signal phases, which would reduce delay and improve traffic flow for multiple movements within the constrained area. A DDI would alleviate congestion within the interchange, along University Parkway and both ramp intersections.

This page is intentionally blank.

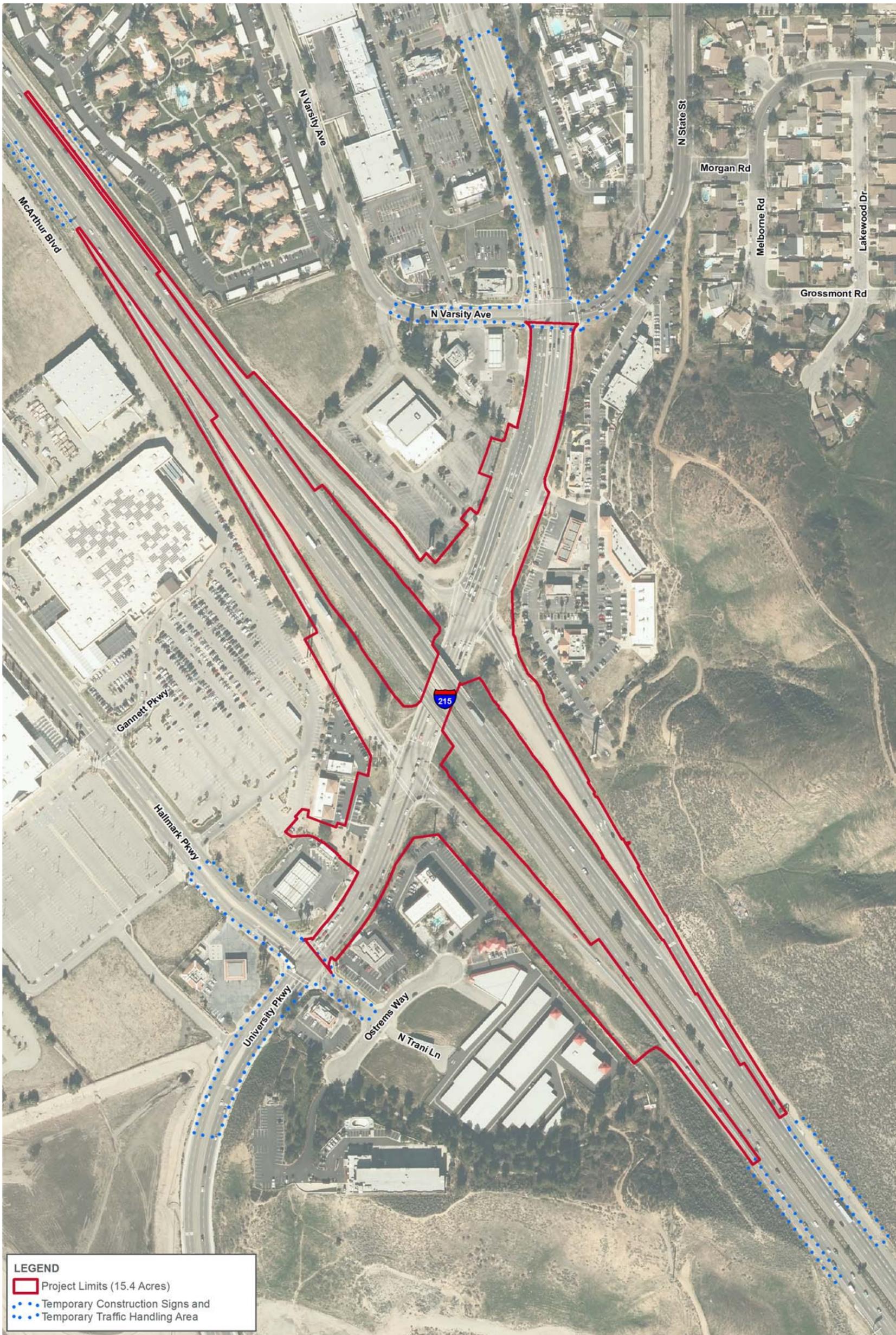


I-215: PM 11.35/11.95
EA No: 0E420

I-215/University Parkway Interchange Improvement Project

Figure 1. Regional Location and Project Vicinity

This page is intentionally blank.



I-215: PM 11.35/11.95
EA No: 0E420

I-215/University Parkway Interchange Improvement Project

Figure 2. Project Limits

This page is intentionally blank.

Improvements under the proposed Project (Alternative 2) would occur within areas of previously disturbed soils located in the general vicinity of the existing I-215/University Parkway Interchange. No building structures would be disturbed as part of the proposed Project, including the existing University Parkway undercrossing and I-215 bridge structure. ROW requirements would potentially include partial acquisitions and temporary construction easements (TCE), as shown in Table 1.

Table 1. Right-of-Way Requirements

| Property | Assessor Parcel Number | Location | Type of Impact |
|------------------------|------------------------|--------------------------------|---|
| Mobil | 0266-363-40 | 3909 Hallmark Parkway | Partial acquisition |
| Vacant Lot | 0266-363-39 | 4001 Hallmark Parkway | Partial acquisition and temporary construction easement |
| Retail Plaza | 0266-072-33 | 4000-4016 N University Parkway | Temporary construction easement |
| Jack in the Box | 0266-072-32 | 4020 N University Parkway | Temporary construction easement |
| Scottish Rite Property | 0266-591-08 | 4400 N Varsity Avenue | Temporary construction easement |

Although no property relocations are anticipated as part of the proposed Project, changes to vehicular access at two areas along University Parkway are anticipated. These access changes are described in Table Error! Reference source not found.2.

Table 2. Changes to Driveway Access on Adjacent Properties

| Property | Location | Changes to Access |
|------------------------|------------------------------|---|
| Scottish Rite Property | 4400 N Varsity Avenue | Primary driveway access for the Scottish Rite property exists off of North Varsity Avenue. A secondary driveway for the property is located off of University Parkway. This secondary driveway access will be relocated just north of the existing secondary driveway on University Parkway, as part of the proposed Project. |
| Retail Plaza | 4004-4020 University Parkway | The southern driveway for this retail plaza located off of University Parkway will be modified to improve vehicular access. The northern driveway, which currently serves as the main point of access for the Jack in the Box restaurant within this retail strip plaza off of University Parkway, would be removed after modifications to the southern driveway are complete. |

As discussed in Table 2, two driveways currently serve the Scottish Rite property, located at 4400 N Varsity Ave. Primary driveway access for this property exists off of North Varsity Avenue, and secondary driveway access exists off of University Parkway, just north of the I-215 northbound (NB) on-ramp. The secondary driveway access for the Scottish Rite property, would be relocated north of its current location along University Parkway. Removal of the existing secondary driveway off of University Parkway would occur after the relocated secondary driveway is complete.

A retail plaza located at 4004 – 4020 University Parkway, would also experience changes to vehicular and pedestrian access. This retail plaza currently includes a standalone Jack in the Box restaurant and a retail strip mall that currently includes the following four retail business: Verizon Wireless, Mimi's Donuts and Ice Cream, Honey's Fashion, and a dental office.

Two driveways located off of University Avenue currently serve this retail plaza. The northern driveway serving this retail plaza that is closest to the southbound (SB) I-215 off-ramp, would be removed as part of the proposed Project. Prior to removal of the northern driveway, the southern driveway (also located on University Parkway) would be modified to improve vehicular access to the retail plaza. Parking within the retail plaza would be modified as part of the proposed Project. However, at a minimum, the number of parking spaces removed would be replaced.

Additional improvements as part of the proposed Project include the provision of street lighting; traffic signal modifications; minor paving; minor utility relocations; signage changes; restriping, turn lanes; and bicycle, pedestrian, and median streetscape improvements. Bicycle and pedestrian access within the Project limits will be maintained throughout construction activities. No transmission towers are located within the Project limits.

The areas where temporary construction-related signage and temporary delineation for traffic lanes are expected to occur are identified in Figure 2. Construction-related signage would require ground disturbance of approximately 15 feet below ground surface (bgs), with the disturbance area measuring 8 inches in diameter for temporary construction area sign posts. The construction staging is anticipated to occur within the existing ROW and the limits shown in Figure 2.

2.2 Purpose and Need

2.2.1 Purpose of the Project

The purpose of the proposed Project is to plan for the projected regional population growth, CSUSB enrollment increases, and increased traffic demands at the existing I-215/University Parkway interchange for the planning design year of 2040. The Project proposes to reconfigure the interchanges to improve traffic operations. The Project objectives are to:

- Support planned regional growth and proposed local-area projects
- Relieve traffic congestion and related GHG emissions by providing improved signalized intersection operational efficiency through the interchange area
- Improve vehicular, bicycle, pedestrian and transit access through the freeway ramp intersections accommodating all modes of transportation (Complete Street).

2.2.2 Need for the Project

Ongoing growth and development in the area has increased commuter traffic at the I-215/University Parkway interchange. The interchange is the primary freeway access for CSUSB, as well as a number of businesses and area residents. This has caused inadequate interchange queuing capacity and existing geometric deficiencies, including the following:

- Southbound I-215 entrance and exit ramps are operating near or over the design capacity during peak period traffic volumes
- Northbound I-215 entrance and exit ramps are operating near or over the design capacity during peak period traffic volumes
- Intersection delays attributable to excessive traffic and deficient traffic signal operations

The accident analysis provided in the *Project Study Report* (PSR) (dated October 2016) indicates the collision rates at the northbound exit and southbound entrance interchange ramps have higher than state average accident rates. Improvements at these locations would alleviate traffic collisions related to congestion by making the intersection operations more efficient for commuters.

To accommodate the anticipated increase in traffic vehicular volumes and future operational needs within the corridor, the existing interchange would require improved operational efficiency and employ improved vehicular, bicycle, and pedestrian access. The proposed Project would address these local circulation issues.

This page is intentionally blank.

3 Regulatory Setting

There are federal, state, and local regulations that are designed to protect water quality. These regulations include the Federal Clean Water Act (CWA) and the California Porter-Cologne Water Quality Control Act. In addition, Section 13240 of the Porter-Cologne Water Quality Control Act requires each local Regional Water Quality Control Board (RWQCB) to formulate and adopt water quality control plans, or basin plans, for all areas within the region. Water quality in the Project area is regulated by the Santa Ana RWQCB through the Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin (1995, last updated 2016).

This Project must conform to all applicable water quality regulations and/or permit requirements of the State Water Resources Control Board (SWRCB) and any applicable local RWQCB requirements including, but not limited to:

- National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009-DWQ, NPDES No. CAS000002), as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ
- National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit Waste Discharge Requirements for the State of California, Department of Transportation (Caltrans) (Order No. 2012-0011-DWQ, NPDES No. CAS000003, adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014) and Order No. 2015-0036-EXEC (effective April 7, 2015)
- Caltrans Storm Water Management Plan (SWMP) (July 2016)

3.1.1 Section 401 and 404 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 United States Army Corps of Engineers (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 prescribe a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act). WDRs may specify the inclusion of additional project 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.

3.1.2 Section 1602 Streambed Alteration Agreement

In compliance with California Fish and Game Code Section 1602, the California Department of Fish and Wildlife (CDFW) issues 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, banks, and perennial, intermittent, or ephemeral flow of water. CDFW typically extends the limits of their jurisdiction laterally beyond the channel banks for streams to the outer edges of riparian vegetation. The permit governs activities that modify the physical characteristics of the stream as well as activities that may affect fish and wildlife that use the stream and surrounding habitat.

4 Affected Environment

4.1 Hydrology

The proposed Project is located within the Upper Santa Ana River Hydrologic Area and the Bunker Hill Hydrologic Sub-Area (801.52). In addition, the proposed Project is located within the Upper Santa Ana River Watershed and the Warm Creek-Santa Ana River Sub-Watershed (see Attachment A).

There are no natural drainage courses or surface water resources that cross the Project limits. Drainage flows are, in general, from north to south towards the Pacific Ocean. Drainage in the University Parkway flows in the southerly direction. On I-215, storm water flows outside the roadway via an asphalt concrete overside drain (OSD), and flows into the channel that runs in a south-east direction. Drainage flow from the area of the Project limits, including the southern and northern I-215 ramps and University Parkway, are collected and directed into a 75-inch reinforced concrete pipe culvert running parallel to the westbound corridor of University Parkway, and discharges into Macy Basin, a detention basin located approximately 0.30 mile southwest of the Project limits. Macy Basin discharges into a storm drain and eventually into Lytle Creek, which is a tributary to the Santa Ana River Reach 4.

4.2 Local Drainage

The existing onsite local drainage system consists of inlets, ditches, and storm drain systems to capture and convey storm water runoff away from the Project. Table 3 provides a summary of the local storm drainage systems within or near the proposed Project.

Table 3. Existing Local Drainage Systems

| Approximate Station Limits | Size and Type of Facility | Description of Location |
|-------------------------------|---------------------------|---|
| 39+90 (I-215) | Double 24-inch RCP | Crosses I-215 at approximately Sta 39+90 |
| 41+30 (University Parkway) | 75-inch RCP | Runs parallel to University Parkway southbound / westbound and crosses I-215 at approximately Sta 41+30 |
| 42+70 (I-215) | Double 24-inch RCP | Crosses I-215 at approximately Sta 42+70 |
| 36+00 to 41+20 (I-215) | 18-inch RCP | I-215 northbound off-ramp between Sta 36+00 and 41+20 |

Source: Preliminary Drainage Report (HDR 2018a)

RCP: Reinforced Concrete Pipe

4.3 Surface Water

There are no natural drainage courses or surface water resources that cross the Project limits. As previously mentioned, storm water runoff from the Project site is collected and conveyed to Macy Basin, which eventually discharges to Lytle Creek. The Santa Ana RWQCB Basin Plan has designated the following surface water beneficial uses for Lytle Creek:

Municipal and Domestic Supply (MUN) waters are used for community, military, municipal, or individual water supply systems. These uses may include, but are not limited to, drinking water supply.

Agricultural Supply (AGR) waters are used for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.

Industrial Service Supply (IND) waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.

Industrial Process Supply (PROC) waters are used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.

Groundwater Recharge (GWR) waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality, or halting saltwater intrusion into freshwater aquifers.

Hydropower Generation (POW) waters are used for hydroelectric power generation.

Water Contact Recreation (REC1: Primary Contact Recreation) waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs.

Non-contact Water Recreation (REC2: Secondary Contact Recreation) waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.

Cold Freshwater Habitat (COLD) waters support coldwater ecosystems that may include, but are not limited to, preservations and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.

Wildlife Habitat (WILD) waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.

Rare, Threatened, or Endangered Species (RARE) waters support the habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened, or endangered.

Spawning, Reproduction and Development (SPWN) waters support high quality aquatic habitats necessary for reproduction and early development of fish and wildlife.

Based on the Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) approved by the SWRCB and United States Environmental Protection Agency (USEPA), Lytle Creek is not listed on the 303(d) list for Total Maximum Daily Load requirements.

4.4 Groundwater

The Santa Ana RWQCB Basin Plan has designated the following beneficial uses for groundwater in the Bunker Hill – A Groundwater Management Zone:

Municipal and Domestic Supply (MUN) waters are used for community, military, municipal, or individual water supply systems. These uses may include, but are not limited to, drinking water supply.

Agricultural Supply (AGR) waters are used for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.

Industrial Service Supply (IND) waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.

Industrial Process Supply (PROC) waters are used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.

According to the Storm Water Data Report, Long Form (HDR 2018b), during geotechnical field exploration activities that were conducted for the construction of the original bridge over University Parkway, groundwater was not encountered to depths of about 50 feet. A review of available groundwater data obtained from the Department of Water Resources (California Department of Water Resources, 2017) indicated Well Number 01N04W20M001S, located approximately 0.75 mile south of the Project limits, had recorded groundwater data dating from 1951 that indicated the water level at the well was approximately 105 feet bgs.

4.5 Floodplains

According to Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) Number 06071C7940J (Map Revised September 2, 2016), the Project is located within an area classified as Zone X, which is outside of the 100-year floodplain zone (see Attachment B). However, the area within the Project limits drains to a detention basin known as Macy Basin, located approximately 0.30 mile to the southwest. Macy Basin is classified as Zone A, which is within the 100-year floodplain zone with a 1 percent annual chance of flood. Macy Basin is outside of the Project limits.

This page is intentionally blank.

5 Environmental Consequences

5.1 Short-Term Impacts During Construction

5.1.1 Alternative 1 - No Build

Under the No Build (Alternative 1), no change would result in existing water quality conditions. Therefore, this alternative would not result in short-term impacts on water quality.

5.1.2 Alternative 2 - Diverging Diamond Interchange

The proposed Project would include adding paved areas; improving freeway ramps and street lighting; traffic signal modifications; minor paving; minor utility relocations; signage changes; restriping; turn lanes; and bicycle, pedestrian, and median streetscape improvements. To accommodate the Project, some existing drainage systems will need to be modified to contain the required design flows within the Project limits. Proposed drainage modifications may include relocation of existing systems in case of a conflict. Other modifications may include abandoning some drainage systems, or adjusting them with respect to the finished grade. When feasible, the existing drainage patterns will be maintained on the ramps and on University Parkway. The proposed drainage system will be as similar to the existing drainage systems as possible consisting of grate inlets, curb opening inlets and down drains, overside drains, and storm drain pipes. Table 4 contains a list of the proposed relocations, extensions, and adjustments for the onsite drainage facilities for the Build Alternative (Alternative 2).

Table 4. Proposed Modifications to Existing Local Drainage Systems

| Approximate Station Limits | Size and Type of Facility | Description of Location | Proposed Modification |
|----------------------------|---------------------------|---|---|
| 39+90 (I-215) | Double 24-inch RCP | Crosses I-215 at approximately Sta 39+90 | To be partially replaced, relocated, and extended by a 42 inch RCP at certain U/S and D/S reaches |
| 41+30 (I-215) | 75-inch RCP | Runs parallel to University Parkway, crosses I-215 at approx. Sta 41+30 | No change is expected, except for change in locations of some lateral tributaries |
| 42+70 (I-215) | Double 24-inch RCP | Crosses I-215 at approximately Sta 42+70 | Add an inlet to the U/S reach. Provide more cover at certain locations. |
| 36+00 to 41+20 (I-215) | 18-inch RCP | I-215 northbound off-ramp between Sta 36+00 and 41+20. | Relocate the D/S reach towards the north |

Source: Preliminary Drainage Report (HDR 2018a)

D/S: Downstream

RCP: Reinforced Concrete Pipe

U/S: Upstream

In areas where existing drainage systems are not present or cannot be modified, installation of new drainage systems will be proposed. Table 5 lists proposed new drainage systems to be installed as part of the Build Alternative (Alternative 2).

Table 5. Proposed New Drainage Systems

| Approximate Station Limits | Size and Type of Facility | Description of Location | Proposed Design |
|--|---------------------------|---|--|
| 43+25 to 45+75 (University Parkway) | 18-inch RCP | On-ramp to I-215N from University Parkway | To collect runoff from ramp. To be connected to an existing 18 inch RCP. |

Source: Preliminary Drainage Report (HDR 2018a)
 RCP: Reinforced Concrete Pipe

The total disturbed soil area (DSA) for the Project is estimated to be 8.08 acres and includes areas for construction, access, and staging. Potential temporary impacts to water quality that can be anticipated during construction for the Build Alternative (Alternative 2) include sediments caused by the temporary access of construction equipment, excavation and grading for the new roadway, vegetation removal, concrete waste from the construction, trash from workers and construction waste, petroleum products from construction equipment and/or vehicles, sanitary wastes from portable toilets and any other chemicals used for construction such as coolants used for equipment and/or concrete curing compounds.

Since the Project causes a DSA greater than 1.0 acre, the Project would need to comply with the NPDES Construction General Permit. The Build Alternative (Alternative 2) would be required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would identify temporary Best Management Practices (BMP) to address the potential temporary impacts to water quality. The temporary BMPs identified in the Project SWPPP may include, but not be limited to measures such as temporary slope reinforcement and stabilization measures (e.g. hydraulic mulch [bonded fiber mix], temporary cover), linear sediment barriers (e.g. fiber rolls, gravel bag berms), construction site waste management (e.g. street sweeping, concrete washout), as well as temporary construction entrance and drainage inlet protection.

Although modification of some existing drainage systems would be required to accommodate the proposed Project, the following environmental permits are not anticipated to be required: 401 Water Quality Certification from the Santa Ana RWQCB, Section 404 Permit from the U.S. Army Corps of Engineers (USACE), and 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife. According to the Project's Natural Environment Study (Minimal Impacts) [NES(MI)] (HDR 2018c), the drainage features identified within the Biological Study Area (BSA) consist of ditches constructed in uplands in order to contain freeway runoff. As-built drawings from 1955 show that all drainage features within the BSA were constructed as part of the original interchange project and were constructed solely in uplands to convey surface flow off of the roadway and shoulders into Macy Basin, located approximately 0.30 mile southwest of the Project limits. Macy Basin serves as a detention basin and only outlets to downstream channels when unusually high amounts of rainfall occur. Since the USACE generally does not assert jurisdiction over drainages excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water, drainages within the BSA would not be subject to USACE jurisdiction under Section 404 of the CWA and would not require a 401 certification from the Santa Ana RWQCB.

CDFW regulates substantial modification of bed and bank or diversion or obstruction of flows of a stream pursuant to Section 1600 of the California Fish and Game Code and requires a Streambed Alteration Agreement when it determines that the activity may substantially adversely affect existing

fish or wildlife resources. Since drainage features within the BSA are ephemeral concrete-lined or earthen ditches located wholly within freeway gore areas, they likely do not provide habitat for aquatic or other wildlife species. Additionally, since flows are conveyed from these drainages into a mostly-isolated detention basin, downstream habitat would also not be affected. Therefore, drainage features within the BSA are likely not subject to CDFW jurisdiction under Section 1600 of the California Fish and Game Code.

5.2 Long-Term Impacts During Operation

5.2.1 Alternative 1 - No Build

Under the No Build (Alternative 1), no change would result in existing water quality conditions. Therefore, this alternative would not result in long-term impacts on water quality.

5.2.2 Alternative 2 - Diverging Diamond Interchange

Under the Build Alternative (Alternative 2), the Project would increase the impervious area by 1.50 acres. Project elements contributing to the net impervious area increase include: roadway surfaces, sidewalks, and signals and lighting. The additional impervious surface area has the potential to increase typical pollutants generated during the operation of a transportation facility (sediment/turbidity, nutrients, trash, and debris, bacteria and viruses, oxygen demanding substances, organic compounds, oil and grease, pesticides and metals). The proposed Project would implement post construction source control BMPs (Design Pollution Prevention BMPs), such as preservation of existing vegetation and slope/surface protection systems (permanent soil stabilization), as well as concentrated flow conveyance systems such as concrete ditches, oversize drains, inlets, down drains, and storm drain pipes. These Design Pollution Prevention BMPs would help control runoff and prevent soil erosion and sedimentation caused by concentrated flows of runoff.

The proposed Project would also include treatment BMPs to treat storm water runoff collected from the new impervious surfaces areas, which may include two bio-swales and two bio-strips. The treatment BMPs would include maintenance accessibility through the implementation of maintenance vehicle pullouts at each location. Two unlined bio-swales are proposed to be located along I-215 SB and I-215 NB off-ramps. In addition, two bio-strips are proposed to be located along I-215 SB and I-215 NB on-ramps. The post construction treatment area is estimated to be 2.92 acres. The proposed treatment BMPs would treat 5.61 acres within the Caltrans ROW. During the Plans, Specifications, and Estimates (PS&E) phase, the treatment areas will be determined when more design information is available and the treatment BMPs will be evaluated to determine if they meet the requirements for post construction storm water treatment controls under the Caltrans Statewide NPDES Storm Water Permit (Order No. 2012-0011-DWQ).

Groundwater

As previously discussed, groundwater was not encountered to depths of about 50 feet during geotechnical field exploration activities that were conducted for the construction of the original bridge over University Parkway. Additionally, groundwater data from 1951 for Well Number 01N04W20M001S, located approximately 0.75 mile south of the Project limits, indicated the recorded water level was approximately 105 feet bgs. The maximum excavation depth for the proposed Project is not anticipated to exceed 15 feet bgs and therefore, groundwater is not expected to be encountered

during construction activities. No impacts to groundwater are anticipated, and no construction dewatering activities are anticipated.

Floodplains

The Project is not located within a 100-year floodplain. However, the Project does drain to a detention basin known as Macy Basin that is located within 100-year floodplain with a 1 percent annual chance of flood. The Project's proposed drainage system will be designed to manage the increase in storm water runoff from new impervious surface areas. No impacts to Macy Basin or to floodplains are anticipated.

6 Avoidance and Minimization Measures

The following avoidance and minimization measures have been identified to minimize impacts to water resources and water quality:

- WQ-1** The San Bernardino County Transportation Authority (SBCTA) will comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009-DWQ, NPDES No. CAS000002), as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ.
- WQ-2** The San Bernardino County Transportation Authority (SBCTA) will comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit by preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP will identify the sources of pollutants that may affect the quality of storm water and include Best Management Practices (BMP) to control the pollutants, such as sediment control, storm drain inlet protection, construction materials management and non-storm water BMPs. All work must conform to the Construction Site Best Management Practice Requirements specified in the latest edition of the *Storm Water Quality Handbooks: Construction Site Best Management Practices Manual* to control and minimize impacts of construction and construction related activities, materials, and pollutants on the watershed. These include, but are not limited to temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-storm water BMPs.
- WQ-3** The San Bernardino County Transportation Authority (SBCTA) will ensure that Design Pollution Prevention Best Management Practices (BMP) are implemented, such as preservation of existing vegetation and slope/surface protection systems (permanent soil stabilization), as well as concentrated flow conveyance systems such as concrete ditches, oversize drains, inlets, down drains, and storm drain pipes.
- WQ-4** The San Bernardino County Transportation Authority (SBCTA) will ensure that Caltrans approved treatment Best Management Practices (BMP) are implemented, consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit Waste Discharge Requirements for the State of California, Department of Transportation (Caltrans) (Order No. 2012-0011-DWQ, NPDES No. CAS000003, adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014) and Order No. 2015-0036-EXEC (effective April 7, 2015). Treatment BMPs may include bio-swales and bio-strips.

This page is intentionally blank.

7 References

Caltrans

- 2018 Caltrans Water Quality Planning Tool. <http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx> Site accessed August 2018.

HDR

- 2018a I-215 University Parkway Interchange Improvement Project: Preliminary Drainage Report PA/ED (August 2018).
- 2018b I-215 University Parkway Interchange Improvement Project: Draft Long-Form Stormwater Data Report (July 2018).
- 2018c I-215 University Parkway Interchange Improvement Project: Natural Environment Study (Minimal Impacts) (July 2018)

Santa Ana Regional Water Quality Control Board

- 1995 Water Quality Board Plan for the Santa Ana River Basin (January 24, 1995; last updated February 2016).
https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/.
Accessed August 2018.

State Water Resources Control Board

- 2016 Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report).
https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml?wbid=CAR8014100019990211103501 Accessed August 2018.

This page is intentionally blank.

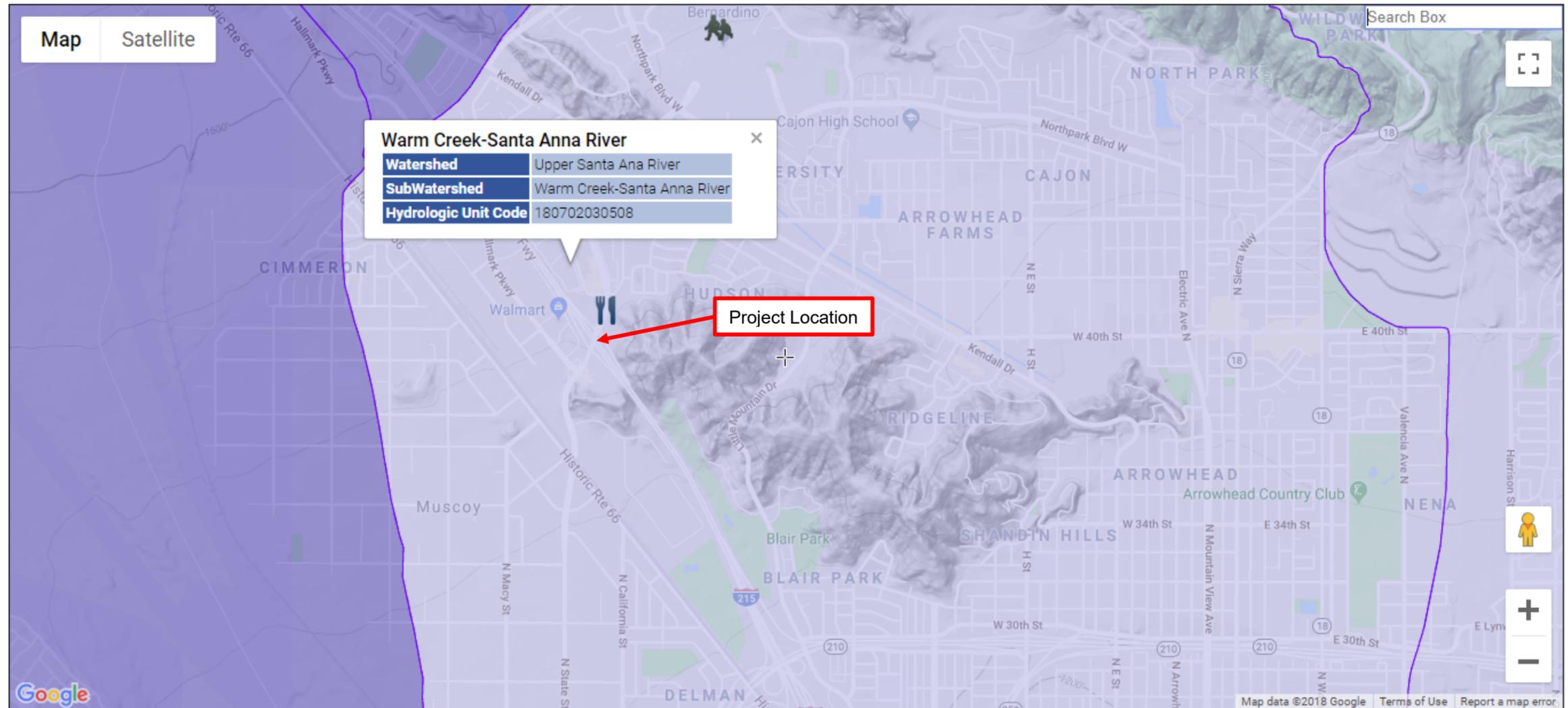
ATTACHMENT A

LOCATION OF WATERSHED PER CALTRANS WATER QUALITY PLANNING TOOL

This page is intentionally blank.

- Layers**
- 303(d) List and TMDLs 2014-2016 ([Legend](#))
 - Areas of Special Biological Significance
 - Arid and Semi-Arid Regions
 - Caltrans Districts
 - Caltrans Facilities
 - Caltrans Tier 1 Monitoring Sites
 - Calwater Watersheds
 - Coastal Zone
 - Counties
 - Geologic Map ([Legend](#))
 - High Risk Receiving Watersheds
 - Monthly Precipitation
 - MS4 Areas
 - Post Miles
 - Rainfall Distribution
 - RWQCB Boundaries
 - USGS Topo Maps
 - Watershed Boundary Dataset
 - Zip Codes
- Risk Level Determination**

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
[Help](#)



Watershed Information

CALWATER WATERSHED

| | | | | | |
|--------------------------|--------------------|--------------------|-----------------------|-----------------------|--------|
| Hydrologic Unit | SANTA ANA RIVER | Hydrologic Area | Upper Santa Ana River | Hydrologic Sub-Area # | 801.52 |
| Hydrologic Sub-Area Name | Bunker Hill | Planning Watershed | 4801520000 | HSA Area (acres) | 124791 |
| Latitude, Longitude | 34.1633, -117.3189 | | | | |

WATERSHED BOUNDARY DATASET

| | | | | | |
|---------------------------------------|-----------------------|--------------|-----------------------------|----------------------|--------------|
| Watershed | Upper Santa Ana River | Subwatershed | Warm Creek-Santa Anna River | Hydrologic Unit Code | 180702030508 |
| Average Annual Precipitation (inches) | 18.45 | | | | |

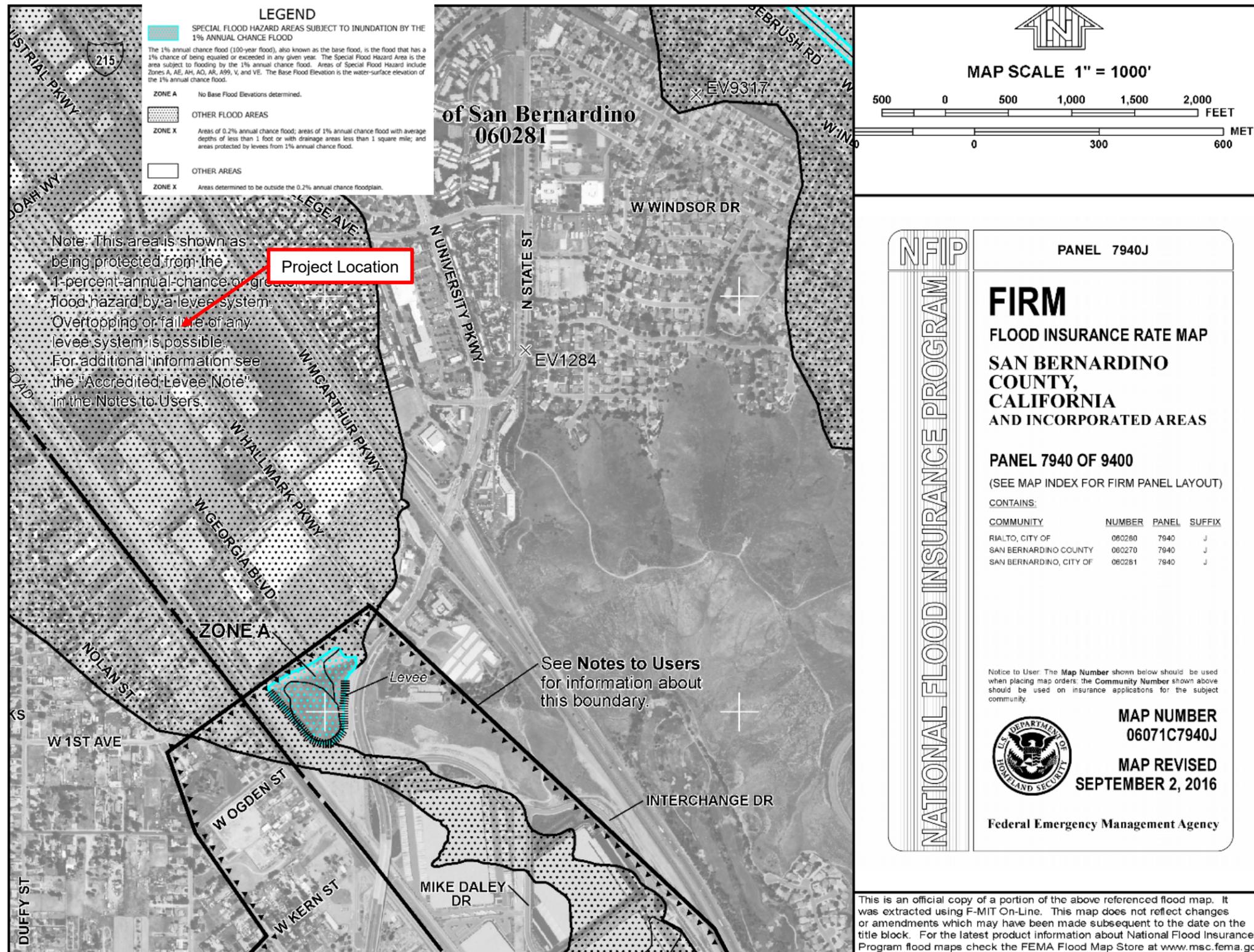
Upper Santa Ana River Watershed

This page is intentionally blank

ATTACHMENT B

FEMA FLOOD INSURANCE RATE MAP

This page is intentionally blank.



FEMA Flood Insurance Rate Map

This page is intentionally blank.