

DRAFT

**Initial Study and Mitigated Negative Declaration
for the
LS 1269 Sewer Force Main Replacement Project (W-270)**

Prepared for:

Western Municipal Water District

14205 Meridian Parkway
Riverside, California 92518
Contact: Sonia Huff, P.E.

Prepared by:

DUDEK

605 Third Street
Encinitas, California 92024
Contact: Wendy Worthey

FEBRUARY 2020

Table of Contents

<u>SECTION</u>	<u>PAGE NO.</u>
ACRONYMS AND ABBREVIATIONS	V
1 INTRODUCTION	1
1.1 Project Overview	1
1.2 Project Background	1
1.3 California Environmental Quality Act Compliance	1
1.4 Scope of Environmental Review	2
1.5 Public Review Process	2
2 PROJECT DESCRIPTION	5
2.1 Location and Setting	5
2.1.1 Regional Location	5
2.1.2 Local Setting	5
2.2 Project Components	6
2.2.1 Connection Point at LS 1269	6
2.2.2 Sewer Force Main	6
2.3 Construction Activities	7
2.3.1 Special Construction	8
2.4 Project Approvals	8
3 INITIAL STUDY CHECKLIST	11
3.1 Aesthetics	15
3.1.1 Environmental Setting	15
3.1.2 Impact Analysis	15
3.2 Agriculture and Forestry Resources	17
3.2.1 Environmental Setting	17
3.2.2 Impact Analysis	18
3.3 Air Quality	19
3.3.1 Environmental Setting	20
3.3.2 Impact Analysis	21
3.4 Biological Resources	29
3.4.1 Environmental Setting	29
3.4.2 Impact Analysis	34
3.5 Cultural Resources	41
3.5.1 Environmental Setting	42
3.5.2 Impact Analysis	46
3.6 Energy	48
3.6.1 Environmental Setting	48

3.6.2	Impact Analysis	49
3.7	Geology and Soils	51
3.7.1	Environmental Setting	51
3.7.2	Impact Analysis	53
3.8	Greenhouse Gas Emissions	57
3.8.1	Environmental Setting	57
3.8.2	Impact Analysis	58
3.9	Hazards and Hazardous Materials	63
3.9.1	Environmental Setting	63
3.9.2	Impact Analysis	64
3.10	Hydrology and Water Quality	66
3.10.1	Environmental Setting	66
3.10.2	Impact Analysis	67
3.11	Land Use and Planning	70
3.11.1	Environmental Setting	70
3.11.2	Impact Analysis	71
3.12	Mineral Resources	71
3.12.1	Environmental Setting	71
3.12.2	Impact Analysis	72
3.13	Noise	73
3.13.1	Environmental Setting	73
3.13.2	Impact Analysis	74
3.14	Population and Housing	76
3.14.1	Environmental Setting	76
3.14.2	Impact Analysis	77
3.15	Public Services	77
3.15.1	Environmental Setting	77
3.15.2	Impact Analysis	78
3.16	Recreation	79
3.16.1	Environmental Setting	79
3.16.2	Impact Analysis	79
3.17	Transportation	80
3.17.1	Environmental Setting	80
3.17.2	Impact Analysis	81
3.18	Tribal Cultural Resources	82
3.18.1	Environmental Setting	82
3.18.2	Impact Analysis	84
3.19	Utilities and Service Systems	85
3.19.1	Environmental Setting	85
3.19.2	Impact Analysis	86
3.20	Wildfire	87

3.20.1	Environmental Setting.....	87
3.20.2	Impact Analysis.....	88
3.21	Mandatory Findings of Significance	89
3.21.1	Environmental Setting.....	89
3.21.2	Impact Analysis.....	89
4	REFERENCES AND PREPARERS.....	93
4.1	References Cited	93
4.2	List of Preparers	98

APPENDICES

A	Air Quality and Greenhouse Gases Modeling Output
B	Biological Resources Information
C	Cultural Resources Records Search – CONFIDENTIAL
D	Geotechnical Reconnaissance Report
E	Paleontological Resources Records Search

FIGURES

1	Project Location	99
2	Existing Wastewater Infrastructure.....	101
3	Important Farmland	103
4A	Impacts to Biological Resources.....	105
4B	Impacts to Biological Resources.....	107
4C	Impacts to Biological Resources.....	109
4D	Impacts to Biological Resources.....	111
4E	Impacts to Biological Resources.....	113
4F	Impacts to Biological Resources.....	115
4G	Impacts to Biological Resources.....	117
5A	Soil Types.....	119
5B	Soils	121
5C	Soils	123
6A	Potential Jurisdictional Waters.....	125
6B	Potential Jurisdictional Waters.....	127
6C	Potential Jurisdictional Waters.....	129
6D	Potential Jurisdictional Waters.....	131
6E	Potential Jurisdictional Waters.....	133
6F	Potential Jurisdictional Waters.....	135
6G	Potential Jurisdictional Waters.....	137
7	General Plan Land Use Designations	139
8	Zoning Designations	141

TABLES

1	Project Legal Description.....	5
2	Approvals and Permits Required for the Proposed Project	9
3	Construction Scenario Assumptions	23
4	Estimated Maximum Daily Construction Emissions.....	24
5	Construction Localized Significance Thresholds Analysis	26
6	Previous Cultural Resources Studies within the Current Project Site.....	42
7	Previous Cultural Resources within or near the Project Site.....	46
8	Principal Active Faults.....	52
9	Estimated Annual Construction GHG Emissions.....	60
10	Construction Equipment Noise Levels.....	75
11	Population Growth in the Area Surrounding the Project Site	76

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
ACBCI	Agua Caliente Band of Mission Indians
ACOE	U.S. Army Corps of Engineers
ACP	asbestos cement pipe
AQMP	Air Quality Management Plan
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
dB	decibels
dBA	A-weighted sound pressure level
District	Western Municipal Water District
EGETS	Expanded Groundwater Extraction and Treatment System
EIC	Eastern Information Center
EIR	Environmental Impact Report
FRA	federal responsibility area
GHG	greenhouse gas
GIS	geographic information system
GWP	global warming potential
I-215	Interstate 215
IS/MND	Initial Study/Mitigated Negative Declaration
LACM	Natural History Museum of Los Angeles County
LF	linear feet
LRA	local responsibility area
LS	Lift Station
LST	localized significance threshold
MAFB	March Air Force Base
MARB	March Air Reserve Base
MLD	most likely descendant
MM	Mitigation Measure
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
MSHCP	Western Riverside Multiple Species Habitat Conservation Plan
MT	metric ton
MVU	Moreno Valley Utility
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards

Acronym/Abbreviation	Definition
NAHC	Native American Heritage Commission
NO ₂	nitrogen dioxide
Non-VHFHSZ	non-very high fire hazard severity zone
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	ozone
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to 10 microns
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
PPV	peak particle velocity
PRIMP	Paleontological Resources Impact Mitigation Program
RCFCWCD	Riverside County Flood Control and Water Conservation District
ROW	right-of-way
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCRRA	Southern California Regional Rail Authority
SKR HCP	Stephens' Kangaroo Rat Habitat Conservation Plan
SoCalGas	Southern California Gas
SO _x	sulfur oxides
SR	State Route
SRA	state responsibility area
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TCR	tribal cultural resource
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
WWRF	Western Water Recycling Facility

1 Introduction

1.1 Project Overview

The Western Municipal Water District (herein referred to as the District) proposes installation of approximately 21,800 linear feet (LF) of a new 14-inch diameter sewer force main from the existing Lift Station (LS) 1269 to the Western Water Recycling Facility (WWRF), within Riverside County. The LS 1269 Sewer Force Main Replacement Project W-270 (proposed project) would replace the existing 10-inch diameter sewer force main that was decommissioned in 2015, and thus provide a long-term solution to convey sewer flows from the March Air Reserve Base (MARB) area to the WWRF.

1.2 Project Background

The District provides water and wastewater services to retail customers and wholesale agencies over a 527-square-mile area in western Riverside County, including the cities of Corona, Norco, and Riverside. MARB is a United States military base, previously known as March Air Force Base (MAFB), located in Riverside County between the cities of Riverside, Moreno Valley, and Perris. MARB is bound by the Interstate 215 (I-215) freeway to the west, Cactus Avenue to the north, Heacock Street to the east, and Oleander Avenue to the south. The District took ownership of the MARB water and wastewater systems in 2006, as part of the realignment of MARB from MAFB.

The existing wastewater system collects sewage from MARB, as well as LS 1269; it includes a gravity collection system east of I-215 and approximately 19,500 LF of 10-inch diameter asbestos cement pipe (ACP) force main. LS 1269 pumps wastewater flows through the force main to the WWRF. The existing LS 1269 force main has a limited operating pressure because of a history of leaks and frequent repairs. In November 2015, a visible wastewater trace was identified within the Southern California Regional Rail Authority (SCRRA) right-of-way (ROW). The force main was shut down and sewage flows from LS 1269 diverted to the Expanded Groundwater Extraction and Treatment System (EGETS) Site 31 8-inch diameter PVC force main to allow for long-term solution to the existing force main challenges.

A feasibility study, prepared for the District in April 2018, recommended construction of a larger force main along a new alignment. The study considered the hydraulics of ultimate wastewater flows, including sewage flows from MARB, March LifeCare, and March Joint Powers Authority for different phases of development. The District then initiated the proposed project to further evaluate available force main alignment design options, and carry that concept forward through alternative analysis, preliminary design, final design, and construction. The proposed project was determined to be the preferred alignment, based on the District's June 2019 Alternative Alignments Analysis Technical Memorandum (Dudek 2019).

1.3 California Environmental Quality Act Compliance

The proposed project is subject to an environmental analysis pursuant to the California Environmental Quality Act (CEQA). In accordance with CEQA Guidelines Section 15367, the District is the lead agency with principal responsibility for considering approval of the proposed project (14 CCR 1500 et seq.).

CEQA, a statewide environmental law contained in California Public Resources Code Sections 21000–21177, applies to most public agency decisions to carry out, authorize, or approve actions that have the potential to adversely affect the environment (PRC Section 21000 et seq.). The overarching goal of CEQA is to protect the physical environment. To achieve that goal, CEQA requires that public agencies identify the environmental consequences of their discretionary actions and consider alternatives and mitigation measures that could avoid or reduce significant adverse impacts when avoidance or reduction is feasible. It also gives other public agencies and the public an opportunity to comment on the project.

1.4 Scope of Environmental Review

The environmental impact analysis included in this Initial Study/Mitigated Negative Declaration (IS/MND) is consistent with the Environmental Checklist (i.e., Initial Study) per CEQA Guidelines Sections 15063–15065. An explanation and discussion of each significance determination is included following the checklist in Sections 3.1 through 3.20.

For this IS/MND, one of the following four responses is possible for each environmental issue area:

- Potentially Significant Impact
- Less-Than-Significant Impact with Mitigation Incorporated
- Less-Than-Significant Impact
- No Impact

The checklist and accompanying explanation of checklist responses provide the information and analysis necessary to assess relative environmental impacts of the proposed project. In doing so, the District will determine the extent of additional environmental review, if any, for the proposed project.

1.5 Public Review Process

Public participation is an essential part of the CEQA process. As required by CEQA, the District shall provide adequate time for other public agencies and members of the public to review and comment on a draft CEQA document. This IS/MND is being made available to members of the public, agencies, and interested parties for a 30-day public review period in accordance with CEQA Guidelines Section 15105. Public review of the IS/MND is intended to focus “on the proposed finding that the project will not have a significant effect on the environment. If persons and public agencies believe that the project may have a significant effect, they should: (1) identify the specific effect, (2) explain why they believe the effect would occur, and (3) explain why they believe the effect would be significant” (14 CCR 15204).

This IS/MND is available for review during the 30-day public review period at the following locations:

In Person - CEQA Lead Agency

Western Municipal Water District
Engineering Department
14205 Meridian Parkway
Riverside, California 92518

Online - CEQA Lead Agency

This IS/MND document is also available at the following link: www.wmwd.com/PublicNotices

In Person – Miscellaneous

Moreno Valley Public Library

25-480 Alessandro Boulevard

Moreno Valley, California 92553

Hours: 9 a.m.–8 p.m., Monday through Thursday; 9 a.m.–6 p.m., Friday; 9 a.m.–5 p.m., Saturday;
12 p.m.–5 p.m., Sunday

Orange Terrace Library

20-010 Orange Terrace Parkway

Riverside, California 92508

Hours: 11 a.m.–7 p.m., Monday through Thursday; 10 a.m.–6 p.m., Saturday; Closed Sunday

After the 30-day public review period has concluded, the District Board of Directors shall consider the IS/MND together with any comments received during the public review process. The District Board of Directors shall adopt the proposed IS/MND if it finds there is no substantial evidence that the proposed project will have a significant effect on the environment and that the IS/MND reflects the lead agency's independent judgment and analysis. The District shall file a Notice of Determination at the Riverside County Clerk's office within 5 working days after deciding to carry out or approve the proposed project.

INTENTIONALLY LEFT BLANK

2 Project Description

This section describes the LS 1269 Sewer Force Main Replacement Project (proposed project). The project location and environmental setting are described, as well as project characteristics, construction, and required permits and approvals.

2.1 Location and Setting

2.1.1 Regional Location

The proposed project is located within the County of Riverside, approximately 80 miles north of San Diego County and 60 miles east of Los Angeles County. Regional Access to the project site is provided via I-215. Primary local access to the project site is provided via Harley Knox Boulevard, an east–west-oriented Primary Arterial roadway (City of Perris 2008). Figure 1, Project Location, shows the general location of the project site in relation to the larger Southern California region.

2.1.2 Local Setting

The proposed project would traverse MARB, the cities of Moreno Valley and Perris, and County of Riverside jurisdiction. Dominant features that intersect the project alignment include Heacock Channel, two Perris Valley storm drain channels, I-215, and SCRRA tracks. Table 1 includes the Township, Range, and Sections in which the proposed sewer force main would be constructed.

Table 1. Project Legal Description

Project Component	Section(s)	Township	Range
Proposed force main alignment	35 and 36	3 South	4 West
	30 and 31	3 South	3 West

Note: Sunnymead, Perris, Steele Peak, and Riverside East, U.S. Geological Survey 7.5-minute quadrangle maps.

Two existing sewer force mains are installed in the project vicinity, as shown in Figure 2, Existing Wastewater Infrastructure. The 10-inch diameter ACP LS 1269 Force Main is approximately 19,500 LF, and located primarily within MARB. The existing LS 1269 force main was shut down in 2015 due to limited operating pressure, a history of leaks, and frequent repairs.

Land uses adjacent to the eastern portion of the project alignment, east of MARB, are primarily developed with industrial and agricultural land uses. The project alignment crosses Heacock Channel, Perris Valley Channel Lateral A, and Perris Valley Channel Lateral B along Heacock Street. These channel crossings would require jack-and-bore installation beneath the channels to avoid impacts. Approximately 0.2 miles of the proposed sewer main, south of MARB, would be installed within an unpaved 25-foot-wide easement with the City of Perris, surrounded by agricultural lands. The proposed sewer force main would continue west and north within the paved roadway, within an area largely developed with commercial and industrial land uses. The proposed sewer force main would also require jack-and-bore installation beneath I-215 and the existing railroad tracks to avoid ground disturbance within California Department of Transportation (Caltrans) and SCRRA ROW. West of the SCRRA ROW, the proposed sewer force main would continue westerly on Nandina Avenue, where industrial development is present south of the roadway, to the connection point at the WWRF.

2.2 Project Components

The District proposes to construct approximately 21,800 LF of new 14-inch diameter HDPE force main that generally follows the same alignment as the existing EGETS Site 31 8-inch diameter PVC force main. As mentioned above, the existing LS 1269 10-inch diameter ACP force main alignment decommissioned in 2015 would be abandoned in place (Figure 2). The alignment is located within existing disturbed road ROW and areas previously excavated for other existing underground utilities. The proposed project would include three primary components: (1) connection point at LS 1269, (2) new force main, and (3) connection point at the WWRF.

2.2.1 Connection Point at LS 1269

The new force main would connect to the existing discharge at LS 1269. The proposed connection would be installed upstream of the existing connection to the EGETS Site 31 Force main (Figure 2). The existing connection to the EGETS Site 31 force main would be cut, capped and abandoned in place. The EGETS Site 31 force main would return to its original operations as a groundwater extraction and treatment system. The existing 10-inch diameter ACP force main would be cut, capped, and abandoned in place.

2.2.2 Sewer Force Main

The project alignment begins at LS 1269, traversing MARB jurisdiction for a short duration, and then traverses several predominately industrial/commercial areas of the City of Moreno Valley, the City of Perris, and Riverside County. The proposed force main would be installed at least 48 inches below the ground surface, with sufficient distance from existing buried utilities in accordance within California Department of Public Health separation requirements. Air valves and blow-offs would be installed along the force main at localized high and low spots, respectively. An estimated 11 maintenance access structures would be installed along the force main at approximately every 2,000 LF. Maintenance access structures would be accessible through a 24-inch diameter covered opening to allow adequate clearance for maintenance equipment. The following provides further characterization of the preliminary horizontal alignment.

Heacock Street

Upon exiting MARB jurisdiction, the proposed force main would cross the Riverside County Flood Control and Water Conservation District's (RCFCWCD's) 25-foot-wide Heacock Channel before turning south onto Heacock Street, within City of Moreno Valley ROW. Heacock Street is characterized as a major north-south arterial road, with MARB's eastern border on its west side and a commercial/industrial area of the City of Moreno Valley on its east side. The District has determined there is adequate corridor space beneath Heacock Street for installation of the proposed force main.

The proposed force main would cross beneath the RCFCWCD's 40-foot-wide Perris Valley Channel Lateral A, approximately 140 feet south of the intersection of Heacock Street and Krameria Avenue. At the intersection of Heacock Street and Old Oleander Avenue, the proposed force main would cross beneath the 50-foot-wide Perris Valley Channel Lateral B. Overall, approximately 10,600 LF of force main would be installed along Heacock Street before turning west at the intersection of Heacock Street and Old Oleander Avenue through an existing 25-foot-wide easement with the City of Perris. The existing easement also includes the EGETS Site 31 8-inch diameter PVC force

main, as well as an existing 8-inch diameter gas line. The proposed force main would continue westerly approximately 1,000 LF before intersecting with Harley Knox Boulevard.

Harley Knox Boulevard and Western Way

Approximately 4,700 LF of the proposed force main would be installed within Harley Knox Boulevard, including an “S” curve as it traverses north and westerly toward I-215. Harley Knox Boulevard is characterized as a primary east–west arterial road within the City of Perris, bordered by commercial and industrial land uses and developing areas. The District has determined there is adequate corridor beneath Harley Knox Boulevard for installation of the proposed force main.

At the intersection of Harley Knox Boulevard and Western Way, the proposed force main would turn north on Western Way for approximately 1,300 feet before turning west on Nandina Avenue.

Nandina Avenue

Approximately 3,000 LF of the proposed force main would be installed within Nandina Avenue. After approximately 1,200 LF on Nandina Avenue, the proposed force main would be auger bored beneath the I-215 and SCRRA ROW (350–400 LF). The alignment would continue on Nandina Avenue west of the SCRRA ROW to the WWRF.

Installation of the proposed force main beneath the I-215 and SCRRA tracks would require an encroachment permit from Caltrans and an encroachment permit/license agreement from SCRRA. In addition, the jack-and-bore crossing would require a soils report and settlement monitoring contingency plan, as well as detailed shoring plans.

WWRF Connection Point

Approximately 1,000 LF from the intersection of Harvill Avenue and Nandina Avenue at the southwestern corner of the WWRF, the proposed force main would turn north following an access road on the western border of the WWRF, parallel to the existing 27-inch diameter PVC sewer pipeline from the District’s Markham Lift Station. The proposed force main would continue north and then east with connection to a manhole south of the WWRF headworks in the northern portion of the WWRF site.

2.3 Construction Activities

The proposed project would be installed via open-trench construction methods and in accordance with the District standard detail W-1540. Construction would occur in a linear fashion and is anticipated to be contained within one lane of traffic (approximately 12-feet wide). In the event construction activities must extend beyond a single lane in a particular area, the implementation of the traffic control plan required pursuant to regulations set forth by the applicable jurisdiction would ensure that no full road closures are required and traffic safety is maintained. Excavation equipment would straddle the trench and deposit spoil material into trucks for storage outside the roadway or stockpiled behind the open trench within the closed traffic lane. The pipe would be staged along the force main alignment, typically within the road shoulder and outside the trench excavation path. Per the District standards, the maximum length of trench that would be opened or partially opened at any one time would be limited to 500 LF. Upon completion of a shift, the contractor would be responsible for backfilling and/or plating open excavations, as well as cleaning, removing barricades, and removing equipment from the roadway.

The roadways through which the alignment traverses may not provide sufficient area for overnight construction equipment storage. Additional construction staging areas outside the project alignment are unknown at this time.

The contractor will coordinate the use of empty parking lots and other disturbed areas near the project alignment. No project staging would occur within existing disturbed habitat or non-native grasslands. Furthermore, the contractor must comply with applicable mitigation measures to ensure potential environmental impacts would be less than significant.

Pavement restoration would be conducted per the agency with jurisdiction, such as MARB, City of Moreno Valley, City of Perris, and/or Riverside County. The contractor will coordinate with jurisdictional agencies to ensure all paving requirements are met during trenching, backfilling, and grading.

Some of the construction activities would occur in the secured cantonment area of MARB. Contractors must adhere to the security policies and procedures in place at MARB, including but not limited to the following:

- Completion of contractor identification form (Security Forces Pass-Information Sheet)
- Procurement of a contractor badge
- Adherence to proper protocols for notification for on-base deliveries and non-essential visitors
- All other base regulations, procedures, and requirements

2.3.1 Special Construction

Open-cut construction has potential to impact existing channels/waterways, large underground utilities, culverts, or bridges along the alignment. Where open-cut trenching would result in impacts to channels/waterways or Caltrans and railroad ROW, trenchless construction is proposed. Auger boring construction, also referred to as jack-and-bore construction, is suitable for the trenchless construction undercrossings that have been identified at Heacock Channel, Perris Valley Channel Lateral A, Perris Valley Channel Lateral B, and the I-215/SCRRA ROW.

Auger boring uses a cutting head attached to an auger string. A steel casing pipe would be simultaneously jacked into the bore hole as the auger is advanced. The auger string would be lengthened through the bore to the receiving site. Each pit location would be constructed with depths sufficient to maintain the desired pipe alignment. The carrier pipe would be subsequently installed within the steel casing pipe.

Auger bore installations are suitable for short installations, less than approximately 450 to 500 feet, and can only be constructed in linear alignments. If groundwater is present, the auger does not control the water and can flood the jacking and/or receiving pits. Other trenchless construction methods, such as microtunneling and horizontal directional drilling, are more appropriate where groundwater is a consideration. It is assumed auger bore installations would be sufficient for all necessary trenchless construction associated with the proposed project.

2.4 Project Approvals

As the lead agency under CEQA, the District has the primary responsibility for approving and carrying out the proposed project and for ensuring that CEQA regulations and all other applicable regulations are met. Other agencies that may also have permitting approval or review authority over portions of the proposed project are listed in Table 2.

Table 2. Approvals and Permits Required for the Proposed Project

Agency	Applicable Regulation/Approval/Permit
MARB	Dig Permit – must be obtained for all work within the MARB cantonment area prior to start of work
Caltrans	Encroachment Permit – must be obtained prior to installation of the force main beneath the Interstate 215 within Caltrans ROW
Southern California Regional Rail Authority	Encroachment Permit/License Agreement – must be obtained prior to installation of the force main beneath the Metrolink Railway ROW
State Water Resources Control Board	Construction General Permit required for discharges of stormwater associated with construction activities
Regional Water Quality Control Board - Santa Ana Region (Region 8)	Stormwater Pollution Prevention Plan – must be prepared prior to project construction and implemented during construction activities, pursuant to Construction General Permit
City of Moreno Valley	Encroachment Permit – must be obtained for all work within the City of Moreno Valley ROW
City of Perris	Encroachment Permit and Excavation Permit – must be obtained prior to construction activities within the City of Perris ROW
County of Riverside	Encroachment Permit – must be obtained for all work within Riverside County ROW
CEQA Compliance	Approval of IS/MND – must conduct environmental review pursuant to Section 21000 et seq. of Public Resources Code and Section 15000 et seq. of the CEQA Guidelines
NEPA Compliance	AF Form 813 – must comply with Air Force Impact Analysis Process, pursuant to 32 CFR 989

Notes: MARB = March Air Reserve Base; Caltrans = California Department of Transportation; ROW = right-of-way; CEQA = California Environmental Quality Act; IS/MND = Initial Study/Mitigated Negative Declaration; NEPA = National Environmental Policy Act; CFR = Code of Federal Regulations.

INTENTIONALLY LEFT BLANK

3 Initial Study Checklist

1. Project title:

LS 1269 Sewer Force Main Replacement Project

2. Lead agency name and address:

Western Municipal Water District
14205 Meridian Parkway
Riverside, California 92518

3. Contact person and phone number:

Sonia Huff, P.E., Senior Civil Engineer
951.571.7232

4. Project location:

The approximately 21,800 LF alignment would traverse MARB, City of Moreno Valley, City of Perris, and County of Riverside jurisdictions. The proposed project would cross I-215 within Caltrans ROW, and cross existing railroad tracks within the SCRRA ROW. The remainder of the proposed project would be constructed within public ROW.

5. Project sponsor's name and address:

Western Municipal Water District
14205 Meridian Parkway
Riverside, California 92518

6. General plan designation:

Surrounding Land Use Designations

City of Moreno Valley: Business Park, Commercial, Open Space

City of Perris: Industrial and Light Industrial

County of Riverside: Light Industrial and Public Facilities

7. Zoning:

Surrounding Zoning Designations

City of Moreno Valley: SP 2081, SP 208 CZ

City of Perris: PVCC SP

County of Riverside: M-M, I-P, R-R

8. Description of project. (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary):

The proposed project would involve installation of a new 14-inch diameter sewer force main, approximately 21,800 LF, between MARB and the WWRF. The majority of construction would take place within existing

roadways, in the public ROW, via trenching methods. Special construction via jack-and-bore method would be required to avoid impacts when traversing waterways, the I-215, and existing railroad tracks.

9. Surrounding land uses and setting (Briefly describe the project's surroundings):

Two existing sewer force mains are installed in the project vicinity, as shown in Figure 2. The 10-inch diameter ACP LS 1269 Force Main is approximately 19,500 LF and located primarily within the MARB. The existing LS 1269 force main was shut down in 2015 due to limited operating pressure, a history of leaks, and frequent repairs.

Land uses adjacent to the eastern portion of the project alignment, east of MARB, are primarily developed with industrial and agricultural land uses. The project alignment crosses Heacock Channel, Perris Valley Channel Lateral A, and Perris Valley Channel Lateral B along Heacock Street. These channel crossings would require jack-and-bore installation beneath the channels to avoid impacts. Approximately 0.2 miles of the proposed sewer force main, south of MARB, would be installed within an unpaved 25-foot-wide easement with the City of Perris, surrounded by agricultural lands. The proposed sewer force main would continue west and north within the paved roadway, within an area largely developed with commercial and industrial land uses. The proposed sewer force main would also require jack-and-bore installation beneath I-215 and the existing railroad tracks to avoid ground disturbance within Caltrans and SCRRA ROW. West of the SCRRA ROW, the proposed sewer force main would continue westerly on Nandina Avenue—where industrial development is present south of the roadway—to the connection point at the WWRF.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

March Air Reserve Base

City of Moreno Valley

City of Perris

County of Riverside

California Department of Transportation

Southern California Regional Rail Authority

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Yes. Refer to Section 3.18, Tribal Cultural Resources, for more information.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology and Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Land Use and Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population and Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities and Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Sonia S. Huff

Signature

Digitally signed by Sonia S. Huff
Date: 2020.02.20 17:56:05 -08'00'

02/20/2020

Date

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are “Less Than Significant With Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
 - a. The significance criteria or threshold, if any, used to evaluate each question; and
 - b. The mitigation measure identified, if any, to reduce the impact to less than significance

3.1 Aesthetics

3.1.1 Environmental Setting

Existing Conditions

The project site is located within a relatively flat valley floor with visible hills and mountain to the north, east, and southwest. Topographic features visible from the project site include the Box Springs Mountain (approximately 9 miles to the north) and Lake Perris State Recreation Area (approximately 2.3 miles to the east).

The nearest officially designated State Scenic Highway to the project site is Highway 243, located approximately 24 miles east of the project site, within the San Bernardino National Forest. The project site is located approximately 5.5 miles north of I-215, which is the only facility within the project vicinity that is eligible for designation as a State Scenic Highway. In addition, the project site is located approximately 3.75 miles south of State Route (SR) 60, which is identified as a Scenic Route by the City of Moreno Valley (City of Moreno Valley 2016).

3.1.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
I. AESTHETICS – Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Would the project have a substantial adverse effect on a scenic vista?*

The project site is in an area primarily developed with industrial land uses interspersed with vacant land. Views of the project site from surrounding development, roadways, and vistas are partially blocked by large industrial structures developed along the project alignment, largely east of I-215. The nearest topographic features to the project site are Box Springs Mountains and the Lake Perris State Recreation Area, approximately 9 and 2.3 miles from the project site, respectively. Due to their distance from project site, short-term construction activities associated with the proposed project would not be discernable for visitors to the local scenic vistas compared to the existing urban development. Furthermore, the proposed force main would be located underground or within existing facilities, including the lift station and WWRF. As such, the proposed project would have **no impact** on a scenic vista.

b) *Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

Scenic resources within the vicinity of the project site include distant views of mountains and hillsides to the north, east and southwest. There are no eligible or designated State Scenic Highways near the project site. I-215, between SR 74 near Romoland and SR 74 near Perris, is the nearest eligible State Scenic Highway to the project site, located approximately 5.5 miles to the south. The project site is also located approximately 3.75 miles south of Highway 60, which is identified as a Scenic Route by the City of Moreno Valley (City of Moreno Valley 2016). Due to the distance and intervening topography and development, neither the short-term construction activities nor the underground force main would be visible from I-215, Highway 243, or SR 60.

Furthermore, proposed project construction would take place primarily within existing paved roadways within public ROW. Construction of the proposed project would not affect any trees, rock outcroppings, historic buildings, or other scenic resources. Therefore, **no impact** would occur.

c) *In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

For the same reasons discussed in Sections 3.12(a) and 3.12(b), the proposed project would not substantially degrade the existing visual character or quality of the project site or its surroundings. While project construction would temporarily alter the visual character of the affected roadways, as experienced by motorists, recreationists, and employees at adjacent industrial and commercial developments, the force main will be underground, and therefore, the existing visual quality would be returned after completion of the proposed project. This effect is not considered to be substantial or conflict with any regulations governing scenic quality. Therefore, the impact would be **less than significant**.

d) *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Construction of the proposed project may create temporary new sources of light and glare from construction equipment parked on site. In the event that construction activities must be conducted during non-daylight hours, contractors would require the use of additional lighting to provide adequate visibility at the

construction site. Per the District standards, the maximum length of trench that would be opened at any one time, including at night, is 500 LF. As such, new sources of light and/or glare caused by nighttime construction activities would be limited to a small area for a temporary period. The area surrounding the project site is primarily industrial, and the nearest residence to any part of the project alignment is located approximately 0.12 miles south of Harley Knox Boulevard. If nighttime construction is required in the proximity of the identified residence, construction lighting would be directed downward to reduce overflow illumination from the construction site. No permanent lighting would be required for the operation of the proposed project.

Because nighttime construction would only be conducted if necessary, and any nighttime lighting would be ceased when associated construction activities are completed, impacts associated with light and glare would be temporary only and **less than significant**.

3.2 Agriculture and Forestry Resources

3.2.1 Environmental Setting

The project site is mostly bordered by developed land designated as Urban and Built-Up Land and Other Land by the California Department of Conservation Farmland Mapping and Monitoring Program (DOC 2017a). Approximately 0.1 miles of the project site at the southern end of Heacock Street is bordered to the east by land designated as Prime Farmland (DOC 2017a). In addition, the project site bisects two areas designated as Farmland of Local Importance, including approximately 0.2 miles of the alignment within an unpaved, vegetated area immediately south of MARB, between Heacock Street and the connection to Harley Knox Boulevard (DOC 2017a). No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance exists within the project site and no adjacent properties are zoned for agricultural use. Figure 3 shows the Important Farmland designations for the project site and adjacent properties. There is no designated forest land or timberland within the proposed project footprint or immediate vicinity.

3.2.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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 non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) ***Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?***

The proposed project would be developed within existing roadways with the exceptions of approximately 1,500 LF of the sewer alignment. Approximately 18,800 LF of the proposed sewer alignment is designated Urban and Built-Up Land and Other Lands, and approximately 3,000 LF of the proposed alignment is designated Farmland of Local Importance (DOC 2017a). Approximately 0.1 miles of the project site at the southern end of Heacock Street is bordered by land designated as Prime Farmland to the east (DOC

2017a), but no disturbance is proposed outside of the existing roadway in this area. The project site does not contain any lands mapped by the California Department of Conservation as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As such, the proposed project would have **no impact** on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

As shown in Figure 3, no properties within or adjacent to the project site are zoned for agricultural use. There are no lands under Williamson Act contract within or adjacent to the project site (City of Moreno Valley 2016; City of Perris 2005; County of Riverside 2015). No farmland would be converted to non-agricultural use and **no impact** would occur with respect to existing agricultural zoning or Williamson Act Contract.

c) *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?*

The project site and adjacent properties are not currently zoned and is not utilized for forest land, timberland, or within a designated Timberland Production area. As such, the proposed project would not conflict with zoning of forest land, timberland, or timberland production. **No impact** would occur.

d) *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

The proposed project would be developed within existing roadways, with the exceptions of approximately 1,500 LF of the sewer alignment. No forest land or timberland exists within the proposed project footprint. There would be no conflict with existing forest land or timberland zoning and there would be no loss or conversion of forest land or timberland. **No impact** would occur with respect to forest land or timberland.

e) *Would the project 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 non-forest use?*

There are no active agricultural uses on the subject property under existing conditions. As previously discussed in Section 3.2.2(a), approximately 3,000 LF of the project alignment is classified as Farmland of Local Importance (DOC 2017a). Construction of approximately 2,100 LF within this designation would take place within existing paved roadways. The remaining 900 LF would be constructed in a vacant land with moderate cover of non-native grasses. Upon completion of construction activities, the affected area would be restored to pre-project conditions. As such, the proposed project would not result in conversion of farmland or forest land. **No impact** would occur.

3.3 Air Quality

The impact analysis for this section relies on a quantitative analysis conducted by Dudek to determine whether proposed construction activities would result in emissions of criteria air pollutants that may cause exceedances of the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS), or contribute to existing nonattainment of ambient air quality standards.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions for construction of the proposed project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction activities from a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters—including the land use type used to represent the project and size, construction schedule, and anticipated construction equipment utilization—were based on information provided by the District and/or default model assumptions.

3.3.1 Environmental Setting

Criteria air pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide, particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and lead. Pollutants that are evaluated herein include volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), which are important because they are precursors to O_3 , as well as CO, sulfur oxides (SO_x), PM_{10} , and $PM_{2.5}$.

The project site is located within the South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County. The SCAB is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD). Regarding NAAQS and CAAQS attainment status,¹ the SCAB is designated as a nonattainment area for federal and state O_3 standards and federal and state $PM_{2.5}$ standards (CARB 2017a; EPA 2017). The SCAB is designated as a nonattainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. The SCAB is designated as an attainment area for federal and state CO standards, federal and state NO_2 standards, and state sulfur dioxide standards. Although the SCAB has been designated as nonattainment for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard.²

Appendix G of the CEQA Guidelines indicates that, where available, the significance criteria established by the applicable air district may be relied upon to determine whether a project would have a significant impact on air quality. The SCAQMD has established Air Quality Significance Thresholds, as revised in March 2015, which set forth quantitative emissions significance thresholds below which a project would not have a significant impact on ambient air quality under project-level and cumulative conditions (SCAQMD 2015). The quantitative air quality analysis provided herein applies the SCAQMD thresholds to determine the potential for the project to result in a significant impact under CEQA. The SCAQMD mass daily construction thresholds are as follows: 75 pounds per day for VOCs, 100 pounds per day for NO_x , 550 pounds per day for CO, 150 pounds per day for SO_x , 150 pounds per day for PM_{10} , and 55 pounds per day for $PM_{2.5}$.

The SCAQMD administers the Air Quality Management Plan (AQMP) for the SCAB, which is a comprehensive document outlining an air pollution control program for attaining all CAAQS and NAAQS. The most recent adopted AQMP is the 2016 AQMP (SCAQMD 2017), which was adopted by the SCAQMD Governing Board in March 2017. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017).

¹ An area is designated as in attainment when it is in compliance with the NAAQS and/or the CAAQS. These standards are set by the Environmental Protection Agency and California Air Resources Board (CARB), respectively, for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare. Attainment = meets the standards; attainment/maintenance = achieves the standards after a nonattainment designation; nonattainment = does not meet the standards.

² The phase out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the proposed project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

3.3.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Construction of the proposed project could result in a temporary addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. The purpose of a consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and, thus, if it would interfere with the region's ability to comply with federal and state air quality standards. The SCAQMD has established criteria for determining consistency with the currently applicable AQMP in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD CEQA Air Quality Handbook. The criteria are as follows (SCAQMD 1993):

- Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- Whether the project would exceed the assumptions in the AQMP, or increments based on the year of project buildout and phase.

To address the first criterion regarding the proposed project's potential to result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP, project-generated criteria air pollutant emissions were estimated and analyzed for significance and are addressed under Section 3.3.2(b). Detailed results of this analysis are included in Appendix A, Air Quality and Greenhouse Gases Modeling Output. As presented in Section 3.3.2(b), proposed project construction would

not generate criteria air pollutant emissions that would exceed the SCAQMD thresholds, and the proposed project is not anticipated to generate operational criteria air pollutant emissions.

The second criterion regarding the proposed project's potential to exceed the assumptions in the AQMP or increments based on the year of project buildout and phase is primarily assessed by determining consistency between the proposed project's land use designations and potential to generate population growth. In general, projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016), which is based on general plans for cities and counties in the SCAB, for the development of the AQMP emissions inventory (SCAQMD 2017).³ The SCAG 2016 RTP/SCS, and associated Regional Growth Forecast, are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans.

As discussed in Section 2, Project Description, of this IS/MND, the proposed project would occur entirely within existing roadway ROW, with the exception of approximately 15,530 LF of the proposed sewer alignment to be installed in unpaved areas within MARB, directly south of MARB, adjacent to I-215 and SCRRA ROW, and west of the SCRRA ROW. After construction is complete, the proposed sewer force main would not change or affect the existing zoning or land use designations in the area surrounding the project site. Accordingly, the proposed project would be consistent with the SCAG RTP/SCS forecasts used in the SCAQMD AQMP development.

In summary, based on the considerations presented for the two criteria, impacts relating to the proposed project's potential to conflict with or obstruct implementation of the applicable AQMP would be **less than significant**.

b) *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

Construction of the proposed project could result in a temporary addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. The following discussion quantitatively evaluates project-generated construction impacts and qualitatively evaluates operational impacts that would result from implementation of the proposed project.

Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and

³ Information necessary to produce the emission inventory for the SCAB is obtained from the SCAQMD and other governmental agencies, including CARB, Caltrans, and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into its Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socioeconomic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017).

off-site sources (i.e., on-road haul trucks, delivery trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

For the purpose of conservatively estimating project emissions, it is assumed that construction of the proposed project would start in March 2020 and last approximately 10 months. The construction phasing schedule and duration, vehicle trip assumptions, and construction equipment mix used for estimating the project-generated emissions are shown in Table 3.

Table 3. Construction Scenario Assumptions

Construction Phase	Average Daily Workers	Average Daily Delivery Truck Trips	Total Haul Truck Trips	Equipment	Quantity	Usage Hours	Start Date	Finish Date
Open Trench Excavation	16	2	1,200	Excavators	2	8	03/02/2020	12/31/2020
				Paving Equipment	2	8		
				Tractors/ Loaders/ Backhoes	2	8		
Jack-and-Bore Construction	26	2	800	Bore/ Drill Rigs	1	8	03/02/2020	12/29/2020
				Excavators	2	8		
				Paving Equipment	2	8		
				Tractors/ Loaders/ Backhoes	2	8		
				Welders	3	8		
Paving	14	2	0	Cement and Mortar Mixers	1	6	11/16/2020	12/14/2020
				Pavers	1	6		
				Paving Equipment	1	8		
				Rollers	1	7		
				Tractors/ Loaders/ Backhoes	1	8		
Architectural Coating	6	0	0	Air Compressors	1	6	12/01/2020	12/14/2020

Notes: See Appendix A for details.

Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO_x, CO, PM₁₀, and PM_{2.5}. PM₁₀ and PM_{2.5} emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. It was assumed that construction would require a total of 1,200 truck trips during open trench excavation and 800 truck trips during jack-and-bore construction. The proposed project would be required to comply with

SCAQMD Rule 403 to control dust emissions during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active grading areas two times per day, with additional watering depending on weather conditions. The application of asphalt pavement would also produce VOC emissions; however, the contractor is required to procure asphalt from a supplier in compliance with the requirements of SCAQMD's Rules 1108 (Cutback Asphalt) and/or 1108.1 (Emulsified Asphalt).

Estimated maximum daily construction criteria air pollutant emissions from all on-site and off-site emission sources is provided in Table 4.

Table 4. Estimated Maximum Daily Construction Emissions

	VOC	NO _x	CO	SO _x	PM ₁₀ ^a	PM _{2.5} ^a
Year	<i>pounds per day</i>					
2020	6.30	46.25	51.16	0.09	3.10	2.33
SCAQMD Threshold	75	100	550	150	150	55
Threshold exceeded?	No	No	No	No	No	No

Source: SCAQMD 2015.

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; SCAQMD = South Coast Air Quality Management District.

See Appendix A for detailed results.

^a These estimates reflect control of fugitive dust (watering two times daily) required by SCAQMD Rule 403 (SCAQMD 2005).

As shown in Table 4, daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO_x, CO, SO_x, PM₁₀, or PM_{2.5} during proposed project construction.

Operational Emissions

Once project construction is complete, no operational activities associated with the proposed project would occur. Because the proposed project would not result in any long-term operational activities, there would be no potential air quality impacts associated with operational air pollutant emissions.

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are used to determine whether a project's individual emissions would have a cumulatively considerable contribution on air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003).

As discussed in Section 3.3.1, the SCAB has been designated as a federal nonattainment area for O₃ and PM_{2.5} and a state nonattainment area for O₃, PM₁₀, and PM_{2.5}. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Proposed construction activities would generate VOC and NO_x emissions (which are precursors to O₃) and emissions of PM₁₀ and PM_{2.5}. However, as indicated in Table 4, project-generated construction emissions would not exceed the SCAQMD emission-based significance thresholds for VOC, NO_x, PM₁₀, or PM_{2.5}.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative.⁴ However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM₁₀ and PM_{2.5} emissions would also be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD. Based on the previous considerations, the proposed project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts would be **less than significant**.

c) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The closest sensitive receptor land uses are single-family residences located approximately 600 feet south of the project, on Nevada Avenue. Localized project impacts associated with construction criteria air pollutants emissions are assessed below.

Localized Significance Thresholds

The SCAQMD recommends a localized significance threshold (LST) analysis to evaluate localized air quality impacts to sensitive receptors in the immediate vicinity of the project site as a result of construction activities. The impacts were analyzed using methods consistent with those in the SCAQMD's Final Localized Significance Threshold Methodology (SCAQMD 2009). The project is located in Source Receptor Area 23 (Metropolitan Riverside County). The proposed project's sewer force main construction activities would occur over a 1.51-acre disturbance area; therefore, for the purposes of the LST analysis, emissions thresholds based on a 1-acre site were utilized. This is a conservative approach, as LSTs increase with the size of project site. As mentioned previously, the closest sensitive receptors are single-family homes located adjacent to the project. The shortest receptor distance available in the SCAQMD LST Methodology is 25 meters (82 feet) and is what was conservatively assumed for this analysis.

Project construction activities would result in temporary sources of on-site criteria air pollutant emissions associated with construction equipment exhaust and dust-generating activities. Off-site emissions from trucks and worker vehicle trips are not included in the LST analysis because they occur off site. The maximum daily on-site construction emissions generated during construction of the proposed project is presented in Table 5, and compared to the SCAQMD localized significance criteria for Source Receptor Area 23 to determine whether project-generated on-site construction emissions would result in potential LST impacts.

⁴ The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

Table 5. Construction Localized Significance Thresholds Analysis

Year	NO ₂	CO	PM ₁₀	PM _{2.5}
	<i>pounds per day (on site)</i>			
2020	21.54	23.52	1.08	1.01
SCAQMD LST Criteria	118	602	4	3
Threshold Exceeded?	No	No	No	No

Source: SCAQMD 2009.

Notes: NO₂ = nitrogen dioxide; CO = carbon monoxide; PM₁₀ = particulate matter; PM_{2.5} = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.

See Appendix A for detailed results.

Localized significance thresholds are shown for a 1-acre project site corresponding to a distance to a sensitive receptor of 25 meters (82 feet).

As shown in Table 5, proposed construction activities would not generate emissions in excess of site-specific LSTs; therefore, localized project construction impacts would be **less than significant**.

CO Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed CO “hotspots.” CO transport is extremely limited, because CO disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, which can affect sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections. Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots. During construction of the proposed project, construction traffic would affect the intersections near the project site. However, the proposed project would be temporary and would not be a source of daily, long-term mobile-source emissions. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Finally, as discussed in Section 3.17, Transportation, of this IS/MND, impacts from construction traffic impacts would be less than significant. Furthermore, the proposed project would not require operational staff because it is a sewer force main installation. Therefore, the proposed project would not generate additional traffic volumes and impacts related to CO hot spots would be **less than significant**.

Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. As discussed under the LST analysis, the nearest sensitive receptors to the proposed project are residences located adjacent to the project site.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SCAQMD recommends an incremental cancer risk threshold of 10 in 1 million. “Incremental cancer risk” is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some

TACs have non-carcinogenic effects. The SCAQMD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-carcinogenic effects.⁵ One TAC that would potentially be emitted during construction activities associated with the proposed project would be diesel particulate matter.

Diesel particulate matter emissions would be emitted from heavy equipment operations and heavy-duty trucks. Heavy-duty construction equipment is subject to a California Air Resources Board (CARB) Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions. As described for the LST analysis, PM₁₀ and PM_{2.5} (representative of diesel particulate matter) exposure would be minimal. According to the Office of Environmental Health Hazard Assessment, health risk assessments (which determine the exposure of sensitive receptors to toxic emissions) should be based on a 30-year exposure period for the maximally exposed individual resident. However, such assessments should also be limited to the period/duration of activities associated with the project. The duration of the proposed construction activities would constitute a small percentage of the total 30-year exposure period. The construction period for the proposed project would be approximately 10 months, after which construction-related TAC emissions would cease. Due to this relatively short period of exposure and minimal particulate emissions on site, TACs generated during construction would not be expected to result in concentrations sufficient to cause significant health risks. Additionally, due to the linear nature of the proposed project, emissions would not be concentrated in any one work area for the entire construction duration. Proposed project construction would not generally remain in a single location for more than 1 to 2 days.

Following completion of on-site construction activities, the proposed project would not involve routine operational activities that would generate TAC emissions. Operation of the proposed project would not result in any non-permitted direct emissions (e.g., those from a point source, such as diesel generators).

For the reasons described above, the proposed project would not result in substantial TAC exposure to sensitive receptors in the vicinity of the proposed project, and impacts would be **less than significant**.

Health Impacts of Criteria Air Pollutants

Construction of the proposed project would generate criteria air pollutant emissions; however, the proposed project would not exceed the SCAQMD mass-emission thresholds, as shown in Table 4, Estimated Maximum Daily Construction Emissions.

The SCAB is designated as nonattainment for O₃ for the NAAQS and CAAQS. Thus, existing O₃ levels in the SCAB are at unhealthy levels during certain periods. The health effects associated with O₃ are generally associated with reduced lung function. Because the proposed project would not involve construction activities that would result in O₃ precursor emissions (VOC or NO_x) in excess of the SCAQMD thresholds, the proposed project is not anticipated to substantially contribute to regional O₃ concentrations and the associated health impacts.

In addition to O₃, NO_x emissions contribute to potential exceedances of the NAAQS and CAAQS for NO₂. Exposure to NO₂ and NO_x can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Proposed project construction would not exceed the SCAQMD NO_x threshold, and existing ambient NO₂ concentrations are below the NAAQS and CAAQS. Thus, proposed project construction is not expected to exceed the NO₂ standards or contribute to associated health effects.

⁵ Non-cancer adverse health risks are measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentrations of the various non-carcinogens from the project to published reference exposure levels that can cause adverse health effects.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. CO hotspots were discussed previously as a less-than-significant impact. Thus, the proposed project's CO emissions would not contribute to the health effects associated with this pollutant.

The SCAB is designated as nonattainment for PM₁₀ under the CAAQS and nonattainment for PM_{2.5} under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing (EPA 2016). As with O₃ and NO_x, the proposed project would not generate emissions of PM₁₀ or PM_{2.5} that would exceed the SCAQMD's thresholds. Additionally, the proposed project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Accordingly, the proposed project's PM₁₀ and PM_{2.5} emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the proposed project would not result in a potentially significant contribution to regional concentrations of non-attainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be **less than significant**.

d) *Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

The occurrence and severity of potential odor impacts depend on numerous factors. The nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying, cause distress among the public, and generate citizen complaints.

During proposed project construction, exhaust from equipment may produce discernible odors typical of most construction sites. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and asphalt pavement application. However, such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Accordingly, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993). Operation of the proposed project would not entail any of these potentially odor-causing land uses. Rather, operation would primarily involve passive operation of the proposed sewer force main, as well as occasional, routine maintenance activities conducted by the District. Therefore, the proposed project would not create any new sources of odor during operation, and proposed project operations would result in an odor impact that is **less than significant**.

3.4 Biological Resources

3.4.1 Environmental Setting

Existing Conditions

The existing conditions and impact analysis for this section relies on Biological Resources Information compiled by Dudek in October 2019 (Appendix B). This assessment included a pre-field review of the latest available relevant literature, published research, maps, soil data, data on biological baselines, special-status vegetation communities, and special-status species distributions to determine those resources that have the potential to occur within the project site and surrounding 500-foot buffer (the study area) (Figure 4, Impacts to Biological Resources). Dudek used the following definitions of special-status biological resources for the CEQA analysis:

- Plants – species listed as threatened or endangered under the federal and state Endangered Species Acts; species listed as rare, special, or Species of Special Concern as defined by the California Department of Fish and Wildlife (CDFW); and species with a California Rare Plant Rank of 1 or 2 as defined by the California Native Plant Society
- Wildlife – species listed as threatened or endangered under the federal and state Endangered Species Acts; Birds of Conservation Concern as defined by the U.S. Fish and Wildlife Service (USFWS); and species with state designations such as Migratory Nongame Birds of Management Concern, California Species of Special Concern, Special Animals List species, and Fully Protected species as defined by the CDFW
- Vegetation communities – natural communities designated as sensitive by CDFW (Global Rank 1–3, State Rank 1–3) and riparian habitat

A search of the California Natural Diversity Database (CDFW 2019a) and the California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2019) was conducted to identify sensitive biological flora and fauna documented for the U.S. Geological Survey Sunnymead, Steele Peak, and Perris 7.5-minute quadrangles where the site occurs and the 12 surrounding 7.5-minute quadrangles (i.e., San Bernardino South, Redlands, Yucaipa, Riverside East, El Casco, Lakeview, Riverside West, Lake Mathews, Alberhill, Lake Elsinore, Romoland, and Winchester).

Following the pre-field literature review, Anna Cassady conducted a reconnaissance-level survey of the project site on August 28, 2019, to identify existing biological resources and confirm potential biological constraints. The site visit occurred from 8:05 a.m. to 2:35 p.m. Temperature ranged from 73°F to 91°F, there was no cloud cover, and winds ranged from 1 to 4 miles per hour. On October 23, 2019, a follow-up site visit was conducted to access a southern section of the study area where access had not previously been granted. During the field survey, vegetation communities and land covers on site were mapped directly in the field onto a 200-foot-scale (1 inch = 200 feet), aerial photograph-based field map of the study area. Following completion of the fieldwork, all vegetation polygons were digitized using ArcGIS and a geographic information system (GIS) coverage was created. Vegetation community classifications used in this report follow the Manual of California, second edition (Sawyer et al. 2009), where feasible, with modifications made to accommodate the lack of conformity of the observed communities using Oberbauer et al. (2008) and Holland (1986). Each natural community was mapped to the association level, where feasible. Non-native grasslands were not mapped by semi-natural stand type because none of these stand types are considered high priority for inventory, or special status, by CDFW (CDFW 2019b). Additionally, a general inventory of plant and wildlife species detected by sight, calls, tracks, scat, or other field indicators were compiled, and a determination was made

concerning the potential for special-status species to occur within the study area. Note that the survey was not conducted during the peak bloom period for most flowering plants; however, the goal of the survey was to identify suitable habitat for special-status species with the intent of determining their potential for occurrences. Additionally, a preliminary investigation was conducted of the extent and distribution of U.S. Army Corps of Engineers (ACOE) jurisdictional waters of the United States, Regional Water Quality Control Board jurisdictional waters of the state, and CDFW jurisdictional streambed and associated riparian habitat.

The site visit conducted on October 23, 2019, of the southern section of the study area, also included a focused special-status plant survey meant to detect the presence or absence of smooth tarplant (*Centromadia pungens* ssp. *laevis*). Focused plant surveys were floristic in nature and conformed to the California Native Plant Society Botanical Survey Guidelines (CNPS 2001), Protocols for Surveying and Evaluating Impacts to Special-Status Native Populations and Natural Communities (CDFG 2009), and the General Rare Plant Survey Guidelines (Cypher 2002). The plant species detected during the field surveys were identified to subspecies or variety, if applicable and feasible, to determine sensitivity status. The survey was conducted by walking meandering transects within all suitable habitat to detect special-status species.

Existing Conditions

Vegetation Communities and Land Covers

The study area was composed of four vegetation communities: black willow thickets (0.41 acres), tall *Cyperus* alliance (0.42 acres), non-native grasslands (62.57 acres), and disturbed California buckwheat scrub (14.30 acres) (Sawyer et al. 2009). The study area also consists of three non-natural land covers: disturbed habitat (123.87 acres), urban/developed (299.26 acres), and flood control channel (7.60 acres) (Gray and Bramlet 1992). No small-mammal burrows were observed on site at the time of the reconnaissance survey, likely due to the recent tilling and mowing conducted with MARB.

Black Willow Thickets

The black willow thickets vegetation community is dominated by black willow (*Salix gooddingii*) in the tree canopy where the canopy is typically open to continuous. Vegetation height is less than 30 meters with an open to continuous shrub layer and variable herbaceous layer. This community typically forms along river terraces, canyons, and along rocky floodplains or intermittent streams (Sawyer et al. 2009).

Within the study area, this vegetation community is located within the central portions of the alignment, west of Heacock Street within an artificial wetland that seems to have been created in association with the Amazon airport. This community is dominated by black willow, but also contains red willow (*Salix laevigata*) and broadleaf cattail (*Typha latifolia*).

Tall Cyperus

The tall *Cyperus* vegetation community is not recognized by the Natural Communities List; however, it was the dominant species found within a vegetation community in the study area. This community was dominated by tall *Cyperus* (tall flatesedge) (*Cyperus eragrostis*) in the herbaceous layer adjacent to an intermittent water source.

Within the study area, this vegetation association is located within the central portions of the alignment, west of Heacock Street within an artificial wetland that seems to have been created in association with the Amazon airport. This community is dominated by tall *Cyperus*, but also contains a low cover of broadleaf cattail.

Disturbed Buckwheat Scrub

The California buckwheat vegetation community is dominated by California buckwheat (*Eriogonum fasciculatum*) in the shrub canopy that is continuous to intermittent. Vegetation height is typically less than 2 meters with a variable herbaceous layer that can be grassy (Sawyer et al. 2009).

A disturbed form of this community occurs in the western portion of the study area, west of the wastewater treatment plant at the western end of the alignment. This community is primarily dominated by California buckwheat; however, it also contains a moderate cover of non-native grasses, including red brome (*Bromus madritensis* ssp. *rubens*) and ripgut brome (*Bromus diandrus*), as well as bare ground.

Non-native grasslands

As defined by Klein and Evens (2006), Mediterranean California naturalized annual and perennial grassland is usually dominated by annual grasses and herbs of various assortments that are in upland habitats. Specifically, red brome or ripgut brome are abundant with other non-native and native species.

Non-native grassland occupies numerous patches within the alignment, with the highest proportion occurring within land owned by MARB at the northern end of the alignment. This community is comprised primarily of weedy species including red brome, ripgut brome, and common Mediterranean grass (*Schismus barbatus*). Other associated species include puncture vine (*Tribulus terrestris*), vinegar weed (*Trichostema lanceolatum*), and jimsonweed (*Datura wrightii*). This community also included common tarweed (*Centromadia pungens* ssp. *pungens*); however, this species was intermittent in cover and did not warrant the creation of its own vegetation community.

Disturbed Habitat

Although not recognized by the Natural Communities List, the classification of disturbed habitat is due to the predominance of bare ground and compacted soils with a sparse covering of non-native plant species, and other disturbance-tolerant plant species. Oberbauer et al. (2008) describes disturbed habitat as areas that have been physically disturbed by previous human activity and are no longer recognizable as a native or naturalized vegetation association but that continue to retain a soil substrate.

Within the study area, disturbed habitat is located within the majority of the undeveloped landscape, particularly associated with vacant lots along Heacock Street and along Harley Knox Boulevard. This land cover is primarily comprised of bare ground; however, there is also moderate cover of non-native grasses, short podded mustard (*Hirschfeldia incana*), vinegar weed, dove weed (*Croton setiger*), and stinknet (*Oncosiphon piluliferum*).

Flood Control Channel

The flood control channel is not recognized by the Natural Communities List, but is described by Gray and Bramlet (1992). This land cover is characterized as an intermittent stream channel that is barren or sparsely vegetated. Within the study area, this land cover occurs along Heacock Street, as well as along Oleander Avenue, and within MARB. These features are unvegetated, concrete, rectangular channels that did not contain running water at the time of the reconnaissance survey.

Urban/Developed

The urban/developed land cover is not recognized by the Natural Communities List, but is described by Gray and Bramlet (1992). This land refers to areas supporting built structures, including homes, yards, sidewalks, and other highly modified lands supporting structures associated with dwellings or other permanent structures. Vegetation in these areas, if present at all, is typically associated with ornamental landscaping that has been included in the development footprint. Within the study area, the urban land cover consists of warehouse and residential buildings, pavement, roads, truck parking, and ornamental plantings.

Soils

Nine soil types are mapped in the study area: Arlington fine sandy loam, Domino silt loam, Exeter sandy loam, Greenfield sandy loam, Hanford coarse sandy loam, Hanford fine sandy loam, Monserate sandy loam, Pachappa fine sandy loam, and Ramona sandy loam (USDA 2019) (Figure 5, Soil Types). These soil types are described in further detail as follows:

- **The Arlington series** consists of well-drained soils that are underlain with weakly cemented duripans. These soils are typically found along alluvial fans and terraces (USDA 2019). This soil series makes up the southwestern corner of the study area, including the project site.
- **The Domino series** consists of moderately deep, moderately well-drained soils that are formed over lime-cemented hardpans. These soils are typically found within basin areas and at the toe of alluvial fans. This soil series is considered moderately alkaline (USDA 2019). This soil series makes up a small portion of the western side of the study area, outside of the project site.
- **The Exeter series** consists of moderately deep, moderately well-drained soils that are formed from granitic sources. These soils are typically found within gently rolling alluvial fans and stream terraces (USDA 2019). This soil series is found throughout the study area, including the project site.
- **The Greenfield series** consists of deep, well-drained soils that are formed in alluvium from granitic and mixed rock sources. These soils are typically found within fans and terraces (USDA 2019). This soil series makes up portions of the northern and central study area, including the project site.
- **The Hanford series** consists of very deep, well-drained soils that are formed in alluvium from granitic sources. These soils are typically found within floodplains, stream bottoms, and alluvial fans (USDA 2019). This soil series makes up portions of the northern and western portions of the study area, including the project site.
- **The Monserate series** consists of moderately to well-drained soils formed in alluvium derived from granitic rocks. These soils are typically found within interior valleys (USDA 2019). This soil series is found throughout the study area, including the project site.
- **The Pachappa series** consists of well-drained soils that are formed in alluvium. These soils are typically found within inland valleys (USDA 2019). This soil series is found within the northern and western portions of the study area, but not within the project site.
- **The Ramona series** consists of well-drained, moderately slow permeability soils that are formed in alluvium from granitic and related rock. These soils are typically found on terraces and alluvial fans (USDA 2019). This soil series is found throughout the study area, including the project site.

Floral Diversity

A total of 34 species of native or naturalized plants—19 native (56%) and 15 non-native (44%)—were recorded within the study area. This high proportion of non-native species reflects the study area's developed nature. Plant species observed within the study area are listed in Appendix B.

Wildlife

Wildlife diversity was limited due to the monotypic nature of the project site and developed landscape of the surrounding area. Wildlife species detected within the study area are provided in Appendix B. No active bird nesting was observed during the site visit; however, the survey was not conducted during nesting season and the grassland and disturbed habitat within the project site could support nesting birds such as horned lark (*Eremophila alpestris*) and western meadowlark (*Sturnella neglecta*). Additionally, the bare ground would be suitable for ground-nesting birds such as killdeer (*Charadrius vociferus*).

Jurisdictional Waters

The study area contains multiple flood control features throughout the proposed sewer alignment. A routine jurisdictional waters delineation was not performed as a part of the reconnaissance survey; however, flood control features were noted when observed, with all observed features assumed to be jurisdictional (Figure 6, Potential Jurisdictional Waters). A concrete, rectangular, flood control channel flows north to south on the western side of Heacock Street before crossing beneath Heacock Street near the southern portions of MARB and flowing southeast as Perris Valley Channel outside of the study area. A flood control basin lies on the east side of Heacock Street and appears to convey runoff associated with the surrounding warehouses. An artificial wetland was observed in the northwest corner of the intersection of Heacock Street and San Michele Road. This feature supported black willow thickets and marsh habitat, and appeared to convey overflow from an earthen channel that continued on the west side of Heacock Street. The earthen channel on the west side of Heacock Street runs parallel to the proposed alignment until it dissipates close to the terminus of Heacock Street. An additional concrete, trapezoidal channel was observed moving west to east at the intersection of Heacock Street and Harley Knox Boulevard. Finally, the wastewater treatment facility in the western portion of the study area contains two earthen flood control channels that appear to convey runoff through the facility. All features observed are assumed to connect either directly or via storm drain systems to the Santa Ana River. The Santa Ana River flows west until it reaches the Pacific Ocean. Because these features connect with the Santa Ana River, they would be regulated under the jurisdiction of the ACOE, Regional Water Quality Control Board, and CDFW. Based on the proposed project description and construction methods, this analysis assumes that all jurisdictional waters can be avoided.

3.4.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) ***Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?***

The study area includes the construction footprint of the proposed project, which is expected to traverse approximately 21,800 LF. In total, the proposed project would be a 1.51-acre disturbance area, plus a 500-foot buffer around the project site (Figure 4, Impacts to Biological Resources). All staging areas associated with the proposed project would be within developed land adjacent to the alignment. No project staging would occur within existing disturbed habitat or non-native grasslands.

Special-Status Plant Species

No special-status plant species were detected within the study area during the reconnaissance survey or the focused special-status plant survey conducted within a subset of the study area. Dudek reviewed literature, existing documentation, and GIS data to evaluate the potential for special-status plant species to occur within the study area. Each special-status plant species was given a rating of not expected, low, medium, or high based on relative location to known occurrences, vegetation communities, soils, and elevation. Based on the results of the literature review and database searches, 55 special-status plant species were identified as previously occurring within the region. Of these, one federally endangered species has a low potential to occur: the federally endangered San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*). Additionally, 10 non-listed special-status species have a moderate potential to occur: chaparral sand-verbena (*Abronia villosa* var. *aurita*; CRPR 1B.1), Jaeger's bush milk-vetch (*Astragalus pachypus* var. *jaegeri*; CRPR 1B.1), bristly sedge (*Carex comosa*; CRPR 2B.1), smooth tarplant (CRPR 1B.1), mesa horkelia (*Horkelia cuneata* var. *puberula*; CRPR 1B.1), California satintail (*Imperata brevifolia*; CRPR 2B.1), Parish's desert-thorn (*Lycium parishii*; CRPR 2B.3), Parish's bush-mallow (*Malacothamnus parishii*; CRPR 1A), salt spring checkerbloom (*Sidalcea neomexicana*; CRPR 2B.2), and California screwmoss (*Tortula californica*; CRPR 1B.2). The complete results of this potential to occur evaluation for special-status plants are included in Appendix B of this document. Additionally, there is no USFWS-designated critical habitat for listed plant species within the study area.

All of the aforementioned species except for smooth tarplant are not expected to occur within developed land or disturbed habitat. Smooth tarplant is known as a disturbance follower and was determined to have potential to occur within the southern portion of the study area where the alignment is proposed to cross through disturbed habitat. A focused special-status plant survey conducted on October 23 within this area did not detect smooth tarplant. As such, smooth tarplant is considered absent from the project site. Therefore, direct impacts to special-status plant species would be **less than significant**.

Potential indirect impacts to special-status plants include the generation of fugitive dust, the release of chemical pollutants, and the adverse effect of invasive plant species. Indirect impacts to special-status plants would be reduced with implementation of **Mitigation Measure (MM)-BIO-1**. As such, the proposed project's impact on special-status plant species would be **less than significant within mitigation incorporated**.

Special-Status Wildlife Species

No special-status wildlife species were detected within the study area during the reconnaissance survey. Dudek performed a review of literature, existing documentation, and GIS data to evaluate the potential for special-status wildlife species to occur within the study area. Each special-status wildlife species was given a rating of not expected, low, moderate, or high based on relative location to known occurrences, vegetation communities, elevation, and species range. Based on the results of the literature review and database searches, 52 special-status wildlife species were identified as occurring within the region. One federally threatened species (coastal California gnatcatcher [*Polioptila californica californica*]) and one federally endangered species (Stephens' kangaroo rat [*Dipodomys stephensi*]) each have a low potential to occur in the study area. All non-listed species have either a low potential to occur or are not expected to occur. This is largely due to the developed nature of the surroundings, the vegetation communities present, elevation ranges, previous known locations, and species range. The complete results of this potential to occur evaluation for special-status plants are included as Appendix B of this document.

Coastal California gnatcatcher is not expected to occur within developed land or disturbed habitat. As such, direct impacts to coastal California gnatcatcher are not expected. Stephens' kangaroo rat is associated with disturbed habitat and has a low potential to occur within some portions of the project site; however, the segment of the disturbed habitat that overlaps the proposed project in the southern end of the study area is not expected to support Stephens' kangaroo rat. This section of land is enveloped on all sides by development and a review of historic aerial imagery indicates that this entire area has been previously graded in support of adjacent development (Google Earth 2019). As such, Stephens' kangaroo rat is not expected to occur within the project study area.

Special-Status Fairy Shrimp

Due to documented occurrences of Riverside fairy shrimp (*Streptocephalus woottoni*) within the project vicinity, the proposed project was evaluated for potential to support special-status fairy shrimp species. The impact area does not contain evidence of vernal pools, and it is not mapped as containing clay soils typically associated with areas that can support inundation. Additionally, a detailed examination was conducted on foot within the portions of the project site where disturbed habitat overlaps the proposed impact footprint. This assessment did not indicate any topographic relief or evidence of ephemeral ponding (e.g., depressions, cracked soils, salt rings, standing waters). As such, special-status fairy shrimp species, such as Riverside fairy shrimp and vernal pool fairy shrimp (*Branchinecta lynchi*), are not expected to occur.

Direct impacts to special-status wildlife species are not expected to occur. Potential indirect impacts could include noise, dust, pollution, and entrapment during construction activities. Indirect impacts to special-status wildlife would be significant absent mitigation. **MM-BIO-1** would be incorporated to require avoidance and minimization measures that would reduce the likelihood for indirect impacts to Fairy Shrimp. Therefore, the proposed project would result in a **less-than-significant impact with mitigation incorporated**.

Nesting Birds

The study area around the project site contains trees, shrubs, and bare ground that would potentially be used by migratory birds for breeding. Direct impacts to migratory nesting birds must be avoided to comply with the Migratory Bird Treaty Act (16 U.S.C. 703–712) and California Fish and Game Code. The proposed project would be limited to disturbed areas, and removal of off-site trees or other nesting habitat is not expected to occur; however, grading of the project site within disturbed habitat has potential to impact ground-nesting bird species. Indirect impacts to nesting birds from short-term, construction-related noise could result in decreased reproductive success or abandonment of an area as nesting habitat if construction were conducted during the breeding/nesting season (i.e., January through August). Direct and indirect impacts to nesting birds are significant absent mitigation. Implementation of **MM-BIO-2** would ensure nesting birds would not be impacted by project construction activities during nesting season. As such, the proposed project would result in a **less-than-significant impact with mitigation incorporated**.

Burrowing Owl

The project site has low potential for supporting nesting habitat for burrowing owl (*Athene cunicularia*). The project site contains non-native grasslands and disturbed habitat with flat, open vegetation cover that could be suitable for burrowing owl; however, these areas lacked suitable burrows or burrow surrogates (i.e., features with openings 4-inches or greater) that are necessary for this species. Because site conditions could change to include suitable burrow features between the time of the reconnaissance survey and

project implementation, a burrowing owl pre-construction survey will be required. **MM-BIO-3** would be implemented to avoid potential direct or indirect impacts to burrowing owl. As such, impacts on burrowing owls would be **less than significant with mitigation incorporated**.

MM-BIO-1 General Avoidance and Minimization Measures

The following avoidance and minimization measures shall be implemented during project construction activities.

- In areas where construction is adjacent to open space, construction limits along the boundaries of the project shall be clearly flagged so that adjacent vegetation is avoided.
- Construction work and operations and maintenance areas shall be kept clean of debris, such as trash and construction materials. Fully covered trash receptacles that are animal-proof shall be installed and used during construction to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Trash contained within the receptacles shall be removed at least once a week from the project site.
- Nighttime construction shall be avoided to the extent possible. However, if nighttime activity (e.g., equipment maintenance) is necessary, then the speed limit shall be 10 mph and night-lighting shall be faced away from adjacent open areas.
- Staging and storage areas for spoils, equipment, materials, fuels, lubricants, and solvents shall be located within the designated impact area or adjacent developed areas.
- To prevent inadvertent entrapment of special-status wildlife during construction, all excavated steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or be provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped wildlife. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape.
- All pipes, culverts, or similar structures with a diameter of 4 inches or more that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by a qualified biologist.

The following avoidance and minimization measure shall be implemented as part of project operations:

- The project landscape plan shall avoid the use of any invasive, non-native plant species rated as “high” or “moderate” by the California Invasive Plant Council’s Invasive Plant Inventory (Cal-IPC 2019).
- The project landscape plan shall avoid the use of all plants listed in Table 6-2 of the Western Riverside Multiple Species Habitat Conservation Plan (County of Riverside 2003).

MM-BIO-2 Nesting Birds

In conformance with the requirements of the Migratory Bird Treaty Act and California Fish and Game Code, should vegetation clearing, cutting, or removal activities be required during the nesting

season (i.e., January 1 through August 31), a qualified biologist shall conduct a nesting bird survey within 72 hours of such activities. The survey shall consist of full coverage of the project footprint and an appropriate buffer, as determined by the biologist. If no occupied nests are found, no additional steps shall be required. If nests are found that are being used for breeding or rearing young by a native bird, the biologist shall recommend further avoidance measures, including establishing an appropriate buffer around the occupied nest. The buffer shall be determined by the biologist based on the species present, surrounding habitat, and existing environmental setting/level of disturbance. No construction or ground-disturbing activities shall be conducted within the buffer until the biologist has determined that the nest is no longer being used for breeding or rearing.

MM-BIO-3 Burrowing Owl

Two preconstruction surveys for burrowing owl (*Athene cunicularia*) shall be conducted prior to any site preparation or construction activities to ensure that burrowing owls have not occupied the project site. The surveys shall follow the Staff Report on Burrowing Owl Mitigation (CDFG 2012), which states the first survey will occur within 30 days of site disturbance and the second will occur within 24 hours. If burrowing owls are detected on site, a passive relocation plan shall be prepared following accepted protocol and approved by the California Department of Fish and Wildlife. The plan shall include, but is not limited to the following:

- Confirmation with site surveillance that burrow/burrows are vacated prior to burrow scoping;
- Information on scope type and timing of scoping events;
- Metrics to determine vacancy and burrow excavation timing;
- Details regarding how burrow/burrows will be excavated, including proposed tools;
- Removal of other potential surrogate burrows and/or refugia within the disturbance footprint;
- Photo documentation;
- Metrics for determining relocation success;
- Monitoring to evaluate success criteria and implement remedial measures, as necessary;
- Details regarding how the project will continue to maintain an inhospitable environment for burrowing owl during construction activities and project operations

b) *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

The study area contains black willow and tall Cyperus vegetation communities, both of which comprise riparian vegetation communities subject to protection by the CDFW. The proposed project would not impact either of these communities. As a result, there would be no direct or indirect impacts to riparian vegetation or other sensitive or special-status vegetation communities. The project would be subject to the typical restrictions (e.g., best management practices [BMPs]) and requirements that address erosion and runoff, including those of the Clean Water Act and NPDES permit. With implementation of BMPs and permit conditions, **no impact** would occur.

- c) ***Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?***

While waters of the United States and waters of the state occur within the study area, they would not be impacted by the proposed project. The proposed project includes the trenching for a sewer force main that would occur primarily within existing roadways. The proposed project would cross beneath one concrete flood control channel; however, no direct impacts to jurisdictional waters are expected due to the use of jack-and-bore technology to drill beneath the concrete bed of the channel. Because the bed of the channel is comprised of concrete, no direct or indirect impacts are expected to beneficial uses associated with the channel. The proposed project would be subject to the typical restrictions (e.g., BMPs) and requirements that address erosion and runoff, including those of the Clean Water Act and NPDES permit. With implementation of BMPs and permit conditions, no indirect impacts would occur. Therefore, the proposed project would result in **no impact** on federally or state-protected wetlands.

- d) ***Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?***

The project site is not located within an area that functions as a wildlife movement or migration corridor. The project site is located within a matrix of development associated with multiple jurisdictions. Additionally, the sewer force main would be placed below ground, and therefore, would not negatively affect the aboveground conditions. As such, the proposed project would not constrain natural wildlife movement in its vicinity and **no impact** would occur.

- e) ***Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

The approximately 21,800-LF alignment would traverse MARB, City of Moreno Valley, City of Perris, and County of Riverside jurisdictions. The proposed project would cross I-215, within Caltrans ROW, and cross existing railroad ROW within the SCRRRA ROW. The remainder of the proposed project would be constructed within public ROW.

The proposed project would not conflict with any local policies or ordinances protecting biological resources in the City of Moreno Valley. The County of Riverside established Ordinance Number 559, Regulating the Removal of Trees (County of Riverside 1997). The ordinance was established to ensure protection of timberlands within the county. The ordinance applies to parcels greater than 0.5 acres in size and above 5,000 feet in elevation in unincorporated areas of the county. As such, Ordinance No. 559 does not apply to the proposed project.

The City of Perris has an ordinance for Urban Forestry Establishment and Care, detailed in Section 19.71.050 of the City's municipal code (City of Perris 2009). The ordinance provides guidelines to establish, maintain, and protect the urban forest within the city. In the event that tree removal is required within the public ROW, the City of Perris requires issuance of a tree removal permit. The proposed project would be constructed primarily within existing roadways in the public ROW, with the exception of approximately 900 feet at the southern end of Heacock Street where the alignment veers to the west before it connects with Harley Knox Boulevard.

f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

The proposed project is located within the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) and the Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) areas. The District is not a Permittee under either plan, and the District is not seeking any discretionary permit from a Permittee. Therefore, the proposed project would not be subject to review for consistency with the MSHCP or the SKR HCP. However, pursuant to CEQA, the proposed project must not conflict with either plan.

Regarding the SKR HCP, the proposed project would not be located within an SKR HCP core area. Furthermore, Stephens' kangaroo rat is not expected to occur within the project impact area. Because the District is not a Permittee, payment of the associated Development Mitigation Fee is not required.

The following discussion provides information demonstrating that there would be no conflicts with Section 6.0 of the MSHCP (County of Riverside 2003).

The project site is located in the MSHCP Reche Canyon/Badlands Area Plan and the Mead Valley Area Plan. The project site is not located within an MSHCP Criteria Cell or Cell Group.

MSHCP Section 6.1.2 Riparian/Riverine Resources

The MSHCP defines riparian/riverine areas as "lands which contain habitat dominated by trees, shrubs, persistent emergent, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year." The MSHCP further clarifies the definition of riparian/riverine areas as those "demonstrating characteristics as described above which are artificially created are not included in these definitions" (RCA 2003).

In addition, the MSHCP defines vernal pools as, "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season."

It further states that "[t]he determination that an area exhibits vernal pool characteristics, and the definition of the watershed supporting vernal pool hydrology, must be made on a case-by-case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland."

As detailed in Sections 3.4.2(b)–(c), no impacts to riparian/riverine or vernal pool resources would occur as a result of the proposed project. Furthermore, impacts to species associated with these resources, such as least Bell's vireo (*Vireo bellii pusillus*) and fairy shrimp, would not occur. Refer to Sections 3.4.2(a)–(c).

MSHCP Section 6.1.3 Narrow Endemic Plant Species Survey Area

The proposed project is not located with a Narrow Endemic Plant Species Survey Area. Nevertheless, pursuant to CEQA, the site was assessed for suitable habitat for some of these same species. Refer to Section 3.4.2(a).

MSHCP Section 6.3.2 Additional Survey Needs and Procedures

The MSHCP establishes habitat assessment requirements for certain species of plants, birds, mammals, and amphibians depending on a project's location relative to the required survey area. With the exception of burrowing owl, the proposed project is not located with any of these mapped survey areas. Nevertheless, pursuant to CEQA, the site was assessed for suitable habitat for some of these same species (e.g., smooth tarplant, burrowing owl, and San Jacinto Valley crowscale). Refer to Section 3.4.2(a). The project site overlaps the required habitat assessment area for burrowing owl.

As mentioned, the project site overlaps the required habitat assessment area for burrowing owl. Although the proposed project is not subject to MSHCP requirements, for the purposes of CEQA compliance, the project site was assessed for burrowing owl as described in Section 3.4.2(a). The project site does not contain suitable habitat for burrowing owl. As such, there are no potential impacts to these resources. As described Section 3.4.2(a), it is possible that site conditions could change between the time of the burrowing owl habitat assessment and proposed project construction, thus resulting in burrowing owl moving into the project site. If this occurred, potential direct impacts to burrowing owl could occur and would be considered significant. **MM-BIO-3** would reduce impacts to less than significant.

MSHCP Section 6.1.4 Urban/Wildlands Interface Guidelines

According to the MSHCP, the Urban/Wildlands Interface Guidelines are intended to address indirect effects associated with locating development in proximity to the MSHCP Conservation Area (pp. 6–42, County of Riverside 2003). The project site is located adjacent to Public/Quasi-Public land associated with Perris Valley Channel adjacent to and beneath Heacock Street. As such, the proposed project would implement general BMPs, as described in **MM-BIO-1**, which correspond to the MSHCP Urban/Wildlands Interface Guidelines. These guidelines work to manage drainage, toxicants, lighting, noise, invasive species, fencing, and manufactured slopes in areas adjacent to or directly connecting to the MSHCP Conservation Area.

In summary, relative to potential conflict with any adopted habitat conservation plan, the District is not subject to any specific habitat conservation plan policies. However, implementation of bio-related mitigation would still ensure that no impacts to any MSHCP-covered resources would occur. Because there are no regional Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plan applicable to the proposed project, there would be **no impacts**.

3.5 Cultural Resources

The existing conditions and impact analysis for this section rely on a records search prepared for the proposed project to assess information on all documented cultural resources and previous archaeological investigations within 1 mile of the project site. The cultural resources records search was conducted on November 22, 2019, at the Eastern Information Center (EIC) at University of California, Riverside by Dudek personnel (Appendix C – Confidential). Resources consulted during the records search conducted at EIC included the National Register of Historic Places (NRHP), California Historical Landmarks, California Points of Historical Interest, and the California State Historic Resources Inventory.

3.5.1 Environmental Setting

Existing Conditions

Based upon the records search conducted at the EIC, 22 cultural resource studies have previously been completed within the project site and 1-mile buffer area. In addition, 95 studies have been conducted within 1 mile of the Area of Potential Effect. Table 6 lists previous cultural resources studies within the current project site.

Table 6. Previous Cultural Resources Studies within the Current Project Site

Report Number	Year	Author	Title	Resources
RI-02084	1987	Hammond, S.R.	Negative Archaeological Survey Report: Route 215, P.M. 27.4/33.7	N/A
RI-02171	1987	McCarthy, Daniel F.	Cultural Resources Inventory for The City of Moreno Valley, Riverside County, California	33-000361, 33-000395, 33-000497, 33-000857, 33-000860, 33-001063, 33-001064, 33-003223, 33-003224, 33-003225, 33-003226, 33-003227, 33-003228, 33-003229, 33-003230, 33-003231, 33-003232, 33-003233, 33-003234, 33-003235, 33-003236, 33-003237, 33-003238, 33-003239, 33-003240, 33-003241, 33-003242, 33-003243, 33-003244, 33-003245, 33-003246, 33-003247, 33-003248, 33-003249, 33-003250, 33-003254, 33-003258, 33-003259, 33-003260, 33-003261, 33-003262, 33-003263, 33-003264, 33-003265, 33-003266, 33-003267, 33-003268, 33-003269, 33-003270, 33-003271, 33-003272, 33-003273, 33-003304, 33-003305, 33-003306, 33-003341, 33-003342, 33-003343, 33-003344, 33-003345, 33-003346, 33-003347, 33-003351, 33-003352, 33-003353
RI-03189	1990	Peak and Associates, and Brian F. Mooney Associates	Cultural Resources Assessment of AT&T's Proposed San Bernardino To San Diego Fiber Optic Cable, San Bernardino, Riverside and San Diego Counties, California	N/A

Table 6. Previous Cultural Resources Studies within the Current Project Site

Report Number	Year	Author	Title	Resources
RI-03510	1996	McDonald, Meg and Barb Giacomini	An Intensive Survey Of Approximately 2,500 Acres of March Air Force Base, Riverside County, California	33-005399, 33-005400, 33-005401, 33-005402, 33-005403, 33-005404, 33-005405, 33-005406, 33-005407, 33-005408, 33-005409, 33-005410, 33-005411, 33-005412, 33-005413, 33-005414, 33-005415, 33-005416, 33-005417, 33-005418, 33-005419, 33-005420, 33-005421, 33-005422, 33-005424, 33-005425, 33-005426, 33-005428, 33-005429, 33-005430, 33-005431, 33-005432, 33-005433, 33-005434, 33-005435, 33-005436, 33-005437, 33-005438, 33-005439, 33-005440, 33-005441, 33-005442, 33-005443, 33-005444, 33-005445, 33-005446, 33-005447, 33-005448, 33-005449, 33-005450, 33-005451, 33-005453, 33-005454, 33-005455, 33-005456, 33-007721, 33-007722, 33-007723, 33-007743, 33-007744, 33-007745, 33-007746, 33-007747, 33-007748, 33-007749
RI-03704	1993	White, Robert S.	An Archaeological Assessment Of The Perris Lateral "A", A 2.1 Mile Daylight Channel Located in the City Of Moreno Valley, Riverside County	N/A
RI-04766	2004	Hogan, Michael, Bai Tang, and Josh Smallwood	Historical/Archaeological Resources Survey Report, Specific Plan No. 341/EIR 466, Near the City of Perris, Riverside County, California	33-003500, 33-003501, 33-005386, 33-005389, 33-005390, 33-005391, 33-005392, 33-005394, 33-013446, 33-013447, 33-013449, 33-013450, 33-013488
RI-04767	2004	Hogan, Michael, Bai Tang, Josh Smallwood, and Dicken Everson	Archaeological Testing and Site Evaluations, Specific Plan No. 341/466, Near the City of Perris, Riverside County, California	33-003500, 33-003501, 33-005386, 33-005389, 33-005390, 33-005391, 33-005392, 33-005393, 33-005394, 33-013446, 33-013447, 33-013448, 33-013449, 33-013450, 33-013788

Table 6. Previous Cultural Resources Studies within the Current Project Site

Report Number	Year	Author	Title	Resources
RI-05408	2005	Love, Bruce, and Bai Tang, Melissa Hernandez	Identification And Evaluation Of Historic Properties, March Arb Wastewater Treatment Plant Expansion and Recycled Water Pipeline, Near March Air Reserve Base, Riverside County, CA	N/A
RI-06660	2006	Bai Tang, Michael Hogan, Clarence Bodmer, Thomas Meltzer, and Laura H. Shaker	Historical/Archaeological Resources Survey Report, Nandina Distribution 1 and 2, City of Moreno Valley, Riverside County, California	N/A
RI-07538	2007	Bai Tang, Michael Hogan, Clarence Bodmer, Josh Smallwood, and Melissa Hernandez	Cultural Resources Technical Report, North Perris Industrial Specific Plan, City Of Perris, Riverside County, California	N/A
RI-07568	2007	McGinnis, Patrick	Archaeological Survey Report of the I-215/Van Buren Boulevard Interchange Project Riverside County, California	N/A
RI-08272	1995	William Manely Consulting and Earth Tech	Historic Building Inventory And Evaluation, March Air Force Base, Riverside County, California	33-001021
RI-08433	2007	Katherine H. Pollack	Archaeological Assessment Of Southern Half of Hammock 33kv Overhead DSP Project, March Air Reserve Base, Riverside County California.	N/A
RI-09528	2015	Mary M. Lenich and Brian F. Smith	Phase I Cultural Resources Survey for the Moreno Valley Logistics Center Project City of Moreno Valley, County of Riverside	N/A

Table 6. Previous Cultural Resources Studies within the Current Project Site

Report Number	Year	Author	Title	Resources
RI-09781	2016	Brian F. Smith, Tracy A. Stropes, and Jennifer R. Kraft	An Updated Phase I Cultural Resource Assessment for the Nandina Business Center Project	N/A
RI-09848	2016	Brian F. Smith	Phase I Cultural Resources Survey of APNs 316-210-014 Through - 018, City of Moreno Valley, County of Riverside	N/A
RI-10093	1996	Urban Futures, Inc.	Environmental Impact Report for the March Air Force Base Redevelopment Project	N/A
RI-10199	2014	Phil Fulton	Discovery and Monitoring Plan for the Mid County Parkway	33-016598, 33-019862, 33-019863, 33-019864, 33-019865, 33-019866
RI-10277	2017	Brian F. Smith	Cultural Resources Monitoring Report for the First Nandina Logistics Center Project, City of Moreno Valley, Riverside County, California	N/A
RI-10339	2016	Josh Smallwood, Joan George, and Michael Mirro	Cultural Resources Assessment of March Inland Airport Parcel D1 Project, Riverside County, California	33-024853, 33-024854
RI-10378	2018	Brian F. Smith	Cultural Resources Monitoring Report for the Nandina Business Center Project, Unincorporated Riverside County, California	33-005386, 33-005389, 33-005390, 33-005391, 33-005392, 33-005393, 33-013447
RI-10404	2016	Josh Smallwood, Joan George, and Michael Mirro	Cultural Resource Assessment of March Inland Airport Parcel D2 Project, Riverside County, California	33-024850, 33-024851, 33-024852

Based upon the records search conducted at the EIC, 376 previously recorded cultural resources were identified within the study area. The high number of previously identified cultural resources within the study area is a result of two factors. First, the linear nature of the project site creates a large 1-mile buffer encompassing a large land area respective to the actual project footprint. Second, the study area contains high-density areas that will be unaffected by the current undertaking. These high-density cultural resources areas include sections of the March

Field Historic District and a dense cluster of prehistoric sites located among the hills far west of the proposed project alignment (on the Steele Peak quadrangle).

Of the 376 resources identified with the study area, only 5 are within or very near the project site (Table 7).

Table 7. Previous Cultural Resources within or near the Project Site

Primary Number	Trinomial	Resources Name	Site Description
P-33-7650	N/A	Camp Haan Barracks (reconstructed)	Historic building located at 23960 Oleander. Built in 1941 and moved to present location in 1982.
P-33-24854	N/A	AE-3375-5H (Lateral B Feeder Channel)	Earthen flood control channel constructed by ACOE circa 1955
P-33-24867	N/A	AE 3454-1H (Lateral B-Oleander Channel)	Composite flood control channel constructed by ACOE in 1955
P-33-24868	N/A	AE-3454—2H (Segment of Webster Avenue)	Historic road segment dating to the 1890s. No associated artifacts or features are present.
P-33-28073	CA-RIV-12674	Historic period refuse deposits	Two discrete deposits containing ~1,800 artifacts. Majority of assemblage dates to the 1920s.

Note: ACOE = U.S. Army Corps of Engineers.

No significant archaeological resources were identified within the project site or immediate vicinity as a result of the records search. The five resources identified very near the project site lack integrity and all have been recommended as “not eligible for listing” in the NRHP or the California Register of Historical Resources (CRHR).

3.5.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

The records search conducted for the proposed project (Appendix C – Confidential) resulted in the identification of 95 previously conducted projects with the 1-mile study area and of these 95 projects, 22

have either intersected or covered the project site. The entire project site has been subject to previous archaeological investigations. In addition, the records search indicates that 376 previously recorded cultural resources were located within the 1-mile study area buffer. Based upon the records search conducted at the EIC, 4 of the 376 previously recorded cultural resources were located within (or very near) the project site.

Pursuant to CEQA Guidelines, Section 15064.5(a)(3), a resource may be considered to be “historically significant” by the lead agency if the resource meets the criteria for listing. A resource is eligible for listing in the CRHR if the State Historical Resources Commission determines that it is a significant resource and that it meets any of the following NRHP criteria (PRC Section 5024.1[c]):

1. Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Resources less than 50 years old are not considered for listing in the CRHR, but they may be considered if it can be demonstrated that sufficient time has passed to understand the historical importance of the resource (see 14 CCR 4852[d][2]). No historic built environment resources were identified within the project site as a result of the records search. Therefore, the proposed project would have **no impact** to historic built environment resources.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

The records search resulted in the identification of 95 previously conducted projects with the 1-mile study area and of these 95 projects, 22 have either intersected or encompassed the project site. The entire project site has been subject to previous archaeological investigations. In addition, the records search indicates that 376 previously recorded cultural resources were located within the 1-mile study area buffer. Based upon the records search conducted at the EIC, 5 of the 376 previously recorded cultural resources were located within (or very near) the project site.

No significant archaeological resources were identified within the project site or immediate vicinity as a result of the records search. The five resources lack integrity and all have been recommended not eligible for listing in the NRHP or the CRHR.

The proposed project site is within a largely developed and previously disturbed area, which means much of the ground disturbance would be within areas of low sensitivity for cultural resources or archaeological deposits. The proposed project alignment is located primarily within existing road ROW and areas where other underground utilities (e.g., pipelines) already exist. However, despite the low probability of encountering archaeological deposits, it is always possible that such deposits exist subsurface. Therefore, **MM-CUL-1** is recommended to reduce potential impacts to unanticipated archaeological resources during ground-disturbing activities. As such, impacts to archaeological resources would be **less than significant with mitigation incorporated**.

MM-CUL-1 In the event that any archaeological materials are encountered during ground-disturbing construction activities, all construction activities shall be suspended in the vicinity of the find. The discovery shall be reported to the Western Municipal Water District (District) and shall be protected from disturbance and vandalism until the find is fully recorded and evaluated by a qualified archaeologist. Work shall not proceed until the District has granted authorization to proceed.

c) ***Would the project disturb any human remains, including those interred outside of dedicated cemeteries?***

There are no previously recorded significant cultural resources on the project site. Because the project site has been previously disturbed, construction activities such as grading are unlikely to uncover previously unknown archaeological resources. Nonetheless, in accordance with California Health and Safety Code Section 7050.5, if human remains are discovered during project construction, work in the immediate vicinity of the discovered remains would cease until the County Coroner has made the necessary findings as to the origin of the remains. Furthermore, pursuant to California Public Resources Code Section 5097.98(b), remains would remain in place and free from disturbance until recommendations for treatment have been made. As such, mitigation measure **MM-CUL-2** has been incorporated into the proposed project to ensure that potential impacts are **less than significant with mitigation** by providing standard procedures in the event that human remains are encountered during proposed construction.

MM-CUL-2 In accordance with Section 7050.5 of the California Health and Safety Code, if potential human remains are found, earth-disturbing work in the vicinity (generally 100 feet is sufficient) shall immediately halt, and the County Coroner shall be notified of the discovery. The Coroner will provide a determination within 48 hours of notification. No further excavation or disturbance of the identified material, or any area reasonably suspected to overlie additional remains, shall occur until a determination has been made. If the County Coroner determines that the remains are, or are believed to be, Native American, they shall notify the Native American Heritage Commission (NAHC) within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify those persons believed to be the most likely descendant (MLD) from the deceased Native American. The MLD may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner or the person responsible for the excavation work, the means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The MLDs shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site.

3.6 Energy

3.6.1 Environmental Setting

Energy resources include electricity, natural gas, and other fuels. The production of electricity requires the consumption of conversion of energy resources—including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources—into energy. Both the production and the use of energy result in the depletion of nonrenewable resources and emission of pollutants.

Energy Overview

Electricity

Southern California Edison (SCE) and Moreno Valley Utility (MVU) are the utility providers in the area surrounding the project site. According to the California Energy Commission, SCE customers consumed approximately 84 billion kilowatt-hours of electricity and MVU customers consumed approximately 193 million kilowatt-hours in 2018 (CEC 2019a). SCE and MVU receive electric power from a variety of sources. According to the 2017 Power Content Label, 29% of both SCE's and MVU's power came from renewable energy sources in 2017, including biomass/waste, geothermal, hydroelectric, solar, and wind sources (CEC 2018).

Natural Gas

Southern California Gas (SoCalGas) serves the area surrounding the project site. SoCalGas serves 21.8 million customers in a 24,000-square-mile service area that includes over 500 communities (SoCalGas 2019). In 2018 (the most recent year for which data is available), SoCalGas delivered 5,156 million therms of natural gas, with the majority going to residential uses (CEC 2019b). Demand for natural gas can vary depending on factors such as weather, price of electricity, the health of the economy, environmental regulations, energy-efficiency programs, and the availability of alternative renewable energy sources. Natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand.

Petroleum

Transportation accounts for the majority of California's total energy consumption (CEC 2018). There are more than 35 million registered vehicles in California, and those vehicles consume an estimated 17 billion gallons of fuel each year (CEC 2019c; DMV 2019). Gasoline and other vehicle fuels are commercially provided commodities. Petroleum currently accounts for approximately 92% of California's transportation energy consumption (CEC 2017b). However, technological advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total. At the federal and state levels, various policies, rules, and regulations have been enacted to improve vehicle fuel efficiency, promote the development and use of alternative fuels, reduce transportation-source air pollutants and GHG emissions, and reduce vehicle miles traveled.

3.6.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VI. Energy – Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) *Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

The service providers, supply sources, and estimated consumption for electricity, natural gas, and petroleum is discussed below.

Construction Energy Use

Electricity

Temporary electric power for as-necessary lighting and electronic equipment would be provided by SCE. The amount of electricity used during construction would be minimal, because typical demand would stem from electrically powered hand tools. The electricity used for construction activities would be temporary and minimal; therefore, proposed project construction would not result in wasteful, inefficient, or unnecessary consumption of electricity. Impacts would be **less than significant**.

Natural Gas

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the subsection "Petroleum." Any minor amounts of natural gas that may be consumed as a result of proposed project construction would be temporary and negligible and would not have an adverse effect; therefore, proposed project construction would not result in wasteful, inefficient, or unnecessary consumption of natural gas. Impacts would be **less than significant**.

Petroleum

Petroleum would be consumed throughout construction. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction. Transportation of construction materials and construction workers would also result in petroleum consumption. Heavy-duty construction equipment, vendor trucks, and haul trucks would use diesel fuel. Construction workers would likely travel to and from the project site in gasoline-powered vehicles. Construction is expected to take approximately 10 months, beginning in March 2020. Once construction activities cease, petroleum use from off-road equipment and transportation vehicles would end. Because of the short-term nature of construction and relevantly small scale of the proposed project, impacts would be **less than significant**.

Operational Energy Use

It is anticipated that maintenance activities for the proposed force main would be similar in scope and scale to the maintenance activities that are currently conducted for the existing pipelines that would be connected and other pipelines throughout the District's service area under existing conditions. Anticipated maintenance activities would be minimal and similar to maintenance activities currently occurring for the existing pipelines in the project site; therefore, the proposed project's energy demand for maintenance would be similar to existing conditions. In addition, energy used for maintenance purposes would decrease over time, as worker vehicles and equipment become increasingly efficient, in accordance with the energy efficiency and GHG reduction standards. As such, energy use for maintenance purposes would not substantially change under the proposed project, and **no impacts** would occur as a result of project operations and maintenance.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The proposed project would follow applicable energy standards and regulations during the construction phases. In addition, the proposed project would be built and operated in accordance with all existing, applicable regulations at the time of construction. As such, impacts related to the proposed project's potential to conflict with plans for renewable energy and energy efficiency would be **less than significant**.

3.7 Geology and Soils

3.7.1 Environmental Setting

Existing Conditions

The existing conditions and impact analysis for this section relies on a Geologic Reconnaissance Report prepared by Ninyo and Moore (Appendix D), which was based on field reconnaissance, review of published and non-published reports, aerial photographs, and in-house data. The impact analysis for paleontological resources for this section relies on a Paleontological Resources Records Search prepared by Dudek (Appendix E). The Paleontological Resources Records Search was requested from the Natural History Museum of Los Angeles County (LACM) on October 24, 2019. Results were received on November 7, 2019.

Topography

The project site is located within a relatively flat valley floor with visible hills and mountains to the north, east, and southwest. Site topography ranges from approximately 1,470 feet above mean sea level in the southern portion of the project site where the project alignment turns west from Heacock Street, to approximately 1550 feet mean sea level in the northwestern corner at the connection with the WWRF.

Regional Geology

The project site is situated in the northern portion of the Peninsular Ranges Geomorphic Province, which encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin south to the southern tip of Baja California (Harden 1998, as cited in Appendix D; Norris and Webb 1990, as cited in Appendix D). The portion of the province in western Riverside County that includes the project site consists generally of Cretaceous-age granitic rocks overlain by Quaternary-age young alluvial deposits.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest. Several of these faults are considered to be active. The San Jacinto and San Andreas faults are active fault systems located east of the project site, and the Rose Canyon, Coronado Bank, San Diego Trough, San Clemente, and Elsinore faults are active fault systems located west of the project site. Major tectonic activity associated with these and other faults within this regional tectonic framework consists primarily of right-lateral, strike-slip movement. The San Jacinto Fault Zone, the nearest active fault system, has been mapped approximately 7 miles northeast of the project site.

Site Geology

The project site is generally underlain by fill, Quaternary-age alluvium, and bedrock consisting of granitic rock. Fill soils were observed at the site along the unpaved roads and in graded slopes (Appendix D). The alluvium includes alluvial sand and clay of valley areas and older alluvial deposits mapped in the southwest portion of the project site west of I-215. The alluvium is anticipated to consist of loose to very dense silt, sand, and clay with scattered gravel, cobbles, and possible boulders. Underneath the alluvium in the project site is Cretaceous-age granitic rock consisting of quartz diorite (Dibblee and Minch 2003a, 2003b, 2003c).

Seismicity

The project site is not located within a State of California Earthquake Fault Zone (formerly known as Alquist-Priolo Special Studies Zone) (DOC 2012). However, the site is located in a seismically active area, as is the majority of Southern California. The approximate locations of major faults in the region and their geographic relationship to the site are shown in Table 8.

Table 8. Principal Active Faults

Fault	Approximate Fault-to-Site Distance (miles)	Maximum Moment Magnitude
San Jacinto (San Jacinto Valley Segment)	7	7.0
San Jacinto (Anza Segment)	8	7.3
San Jacinto (San Bernardino Valley Segment)	9	7.1
Elsinore (Glen Ivy Segment)	15	6.9
San Andreas (South San Bernardino Segment)	17	7.0
Elsinore (Temecula Segment)	17	6.9
San Andreas (North San Bernardino Segment)	18	6.9
Chino	19	6.7
Whittier	20	7.0
Cucamonga	23	6.7
San Andreas (Banning/Garnet Hill Segment)	26	7.1
Cleghorn	27	6.8
North Frontal (West)	30	7.2
San Jose	30	6.7
San Joaquin Hills	32	7.1
Pinto Mountain	32	7.3
Sierra Madre	33	7.2

Source: Appendix D.

Paleontological Sensitivity

No known paleontological resources are present within the project site, but two resources were identified within 1 mile of the project site (Appendix E). According to the LACM, the closest known fossil locality is LACM 4540 from the gravel pits west of Jack Rabbit trail and east of the northernmost area of the project site, yielded the remains of an extinct horse (*Equus*). A second locality, LACM 5168, also produced a fossil specimen of horse south of the project site, around Railroad Canyon Reservoir. Further south-southwest of the project site, localities LACM (CIT) 572 and LACM 6059 yielded specimens of fossil horse and camel (*Camelops hesternus*) (Appendix E).

The County of Riverside General Plan Paleontological Sensitivity map was also reviewed for relative sensitivity, and it indicates high sensitivity throughout the project site (County of Riverside 2019a). This sensitivity classification is based on geologic units with the potential to encounter paleontological resources at depths of 4 feet or greater below the surface. Older Quaternary alluvial deposits, characteristically reddish-brown in color, have been known to produce Ice-Age mammals in the project vicinity and throughout Riverside County, as confirmed by the records search results obtained from the LACM (Appendix E).

3.7.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a) ***Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:***

i) ***Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.***

The location of surface rupture generally can be assumed to be along an active or potentially active major fault trace. The damage from surface fault rupture is generally limited to a linear zone that is a few yards wide. No active or potentially active faults have been mapped on the project site (DOC 2012). The active San Jacinto Valley segment of the San Jacinto Fault Zone is located approximately 7 miles northeast of the site. Therefore, the probability of damage from surface ground rupture is considered to be low (Appendix D).

In addition, the proposed project would include replacement and realignment of sanitary sewer infrastructure that serves existing development. It would not include construction, nor would it indirectly foster the construction of, structures for human habitation. Thus, surface fault rupture would be unlikely to occur, and there would be no impact. Therefore, **no impact** would occur with regard to increased exposure of persons or structures to surface fault rupture hazards.

ii) ***Strong seismic ground shaking?***

The project site is located in a seismically active area of Southern California and is expected to experience moderate to severe ground shaking during the lifetime of the proposed project (Appendix D). Intensity of ground shaking at a given location depends primarily upon earthquake magnitude, site distance from the source, and site response (soil type) characteristics. The site-specific seismic coefficients identify the project site as a Class D (Appendix D). A Class D site is characterized by high seismic vulnerability that is expected to experience severe and destructive ground shaking.

Although the project site is expected to experience moderate to severe ground shaking, the proposed project would include replacement and realignment of existing sewer infrastructure to serve existing and planned levels of development in the area. The proposed project would not include construction, nor would it indirectly foster the construction of, structures for human habitation.

In addition, the proposed project would likely improve the seismic performance of the replaced project elements by comparison with the existing facilities that were decommissioned in 2015. Construction of the proposed sewer force main would be designed and constructed consistent with local, regional and State standards which are required to adhere to state seismic design parameters identified in the California Building Code. Therefore, impacts related to strong seismic ground shaking would be **less than significant** overall.

iii) ***Seismic-related ground failure, including liquefaction?***

Liquefaction occurs primarily in saturated, loose, fine- to medium-grained soils in areas where the groundwater table is within approximately 50 feet of the surface. Shaking causes the soils to lose strength and behave as liquid. Liquefaction-related effects include loss of bearing strength, ground oscillations, lateral spreading, and flow failures or slumping.

The State of California has not yet issued seismic hazards mapping for the project site (DOC 2015). The County of Riverside established liquefaction sensitivity areas based on liquefaction potentials such as soil type and groundwater depth. The portion of the project site east of I-215, within the Cities of Moreno Valley and Perris, has been identified to have low to moderate susceptibility to liquefaction (County of Riverside 2019b). The portion of the project site west of I-215 is identified as highly susceptible to liquefaction (County of Riverside 2019b).

Although the project site is located within a geologic unit with potential to become unstable during a seismic event, the proposed project would be designed and constructed consistent with recommendations from a project-specific geotechnical investigation. The proposed project would also be required to adhere to all applicable local and regional design standards to meet state seismic design parameters as identified in the California Building Code. Therefore, impacts associated with seismic ground failure would be **less than significant**.

iv) Landslides?

The proposed project is not located within a landslide zone (County of Riverside 2019b). Based on the relatively flat topography and lack of any significant slopes in the vicinity of the proposed project, there is no potential for landslides. Consequently, there would be **no impact**.

b) *Would the project result in substantial soil erosion or the loss of topsoil?*

Construction activities associated with the proposed project would include minor earth-disturbing activities (i.e., cut and fill, vegetation removal, grading, trenching, excavation, and movement of soil) that could expose disturbed areas and stockpiled soils to winter rainfall and stormwater runoff. Areas of exposed or stockpiled soils could also be subject to wind or water erosion.

During proposed construction, contractors would be required to comply with federal, state, and local requirements and guidelines to minimize the potential for soil erosion, including the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, 2009-0009-DWQ, as amended by 2010-0014-DWQ (General Construction Permit) and the each jurisdiction's stormwater permit. A Stormwater Pollution Prevention Plan (SWPPP) would be prepared, outlining BMPs to minimize stormwater pollution resulting from erosion and sediment migration from the construction areas. As such, the impact would be **less than significant**.

c) *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

As discussed in Section 3.7.2(a), based on topography and lack of significant slopes in the vicinity of the project site, there is no potential for landslides at the site. The portion of the project site generally east of I-215 has low to moderate susceptibility to liquefaction and the project site generally west of I-215 has high susceptibility for liquefaction (County of Riverside 2019b). Liquefaction could result in sand boiling, ground subsidence and failure, differential settlement, and lateral spreading of the ground. As discussed 3.7.2(a.iii), the proposed project would be designed and constructed consistent with recommendations from a project-specific geotechnical investigation. The proposed project would also be required to adhere to all applicable local and regional design standards to meet state seismic design parameters as identified in the California Building Code. Therefore, impacts associated with unstable soils would be less than significant.

d) *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

According to the U.S. Department of Agriculture Natural Resources Conservation Services Web Soil Survey, the soil underlain the project site is comprised of a variety of Sandy Loams, which generally have low water storage ability, are well-drained, and have a low capacity to transmit water (NRCS 2019).

As identified in Section 3.7.2(a), the proposed project would be designed with recommendations set forth in a site-specific geotechnical investigation, as applicable, to ensure the project design is appropriate to local soil/substrate conditions. In addition, the proposed project would be designed and constructed consistent with all applicable local and regional design standards which are required to adhere to state seismic design parameters identified in the California Building Code. Consequently, impacts associated with expansive soils would be **less than significant**.

e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

Use of septic tanks or other alternative wastewater disposal systems would not be a part of the proposed project. The proposed project would increase the resiliency of the existing wastewater system and support existing and planned wastewater demands in the area surrounding the project site. As such, **no impact** would occur.

f) *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

The entire project site is within an area of high sensitivity for paleontological resources (County of Riverside, High B) (County of Riverside 2019a). This sensitivity classification is based on geologic units with the potential to encounter paleontological resources at depths of 4 feet or greater below the surface.

The younger alluvial deposits present within the project site have a low paleontological resource sensitivity at the surface and at shallow depths; however, older, Pleistocene alluvial deposits presumably underlie the younger alluvial deposits. Pleistocene or "Ice-Age" alluvial deposits have produced scientifically significant vertebrates in the region and have a high paleontological resource sensitivity (Appendix E). The artificial fill mapped in the south westernmost project alignment has no potential to yield significant paleontological resources, and thus, has no paleontological resource sensitivity.

Older Quaternary alluvial deposits, characteristically reddish-brown in color, have been known to produce Ice-Age mammals in the project vicinity and throughout Riverside County, as confirmed by the records search results obtained from LACM (Appendix E). According to LACM, their closest fossil locality is LACM 4540 from the gravel pits west of Jack Rabbit trail and east of the northernmost area of the project site, which yielded the remains of an extinct horse. A second locality, LACM 5168, also produced a fossil specimen of horse south of the project site, around Railroad Canyon Reservoir. Further south-southwest of the project site, localities LACM (CIT) 572 and LACM 6059 yielded specimens of fossil horse and camel (Appendix E).

No paleontological resources were identified within the project site as a result of the institutional records search or desktop geological review. However, intact paleontological resources may be present below the original layer of younger, Holocene-age alluvial deposits. Given the proximity of past fossil discoveries in

the surrounding area and the underlying older Pleistocene-age deposits, the project site is moderately to highly sensitive for supporting paleontological resources at depth. In the event that intact paleontological resources are located on the project site, ground-disturbing activities associated with construction of the proposed project, such as grading during site preparation, have the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. However, implementation of **MM-GEO-1** would ensure that soils with potential to yield paleontological resources are monitored as needed and any resources identified are treated properly. As such, impacts of the proposed project would be **less than significant with mitigation incorporated** during construction.

MM-GEO-1 Prior to commencement of any grading activity on site, the applicant shall retain a qualified paleontologist per the Society of Vertebrate Paleontology (SVP) (2010) guidelines. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed project. The PRIMP shall be consistent with the SVP (2010) guidelines and outline requirements for preconstruction meeting attendance and worker environmental awareness training, where monitoring is required within the project site based on construction plans and/or geotechnical reports, procedures for adequate paleontological monitoring and discoveries treatment, and paleontological methods (including sediment sampling for microvertebrate fossils), reporting, and collections management. The qualified paleontologist shall attend the preconstruction meeting and a paleontological monitor shall be on site during all rough grading and other significant ground-disturbing activities in previously undisturbed, fine-grained older Quaternary (e.g., Pleistocene-age) alluvial deposits. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find.

3.8 Greenhouse Gas Emissions

3.8.1 Environmental Setting

Climate change refers to any significant change in measures of climate—such as temperature, precipitation, or wind patterns—lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system, and many factors (natural and human) can cause changes in Earth's energy balance. The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature, and it creates a livable environment on Earth. Human activities that emit additional GHGs to the atmosphere that increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (see also 14 CCR 15364.5). The three GHGs evaluated for GHG emission impacts are CO₂, CH₄, and N₂O. Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride were not evaluated or estimated in this analysis because the proposed project would not generate them in measurable quantities.

Gases in the atmosphere can contribute to climate change both directly and indirectly.⁶ The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The reference gas used is CO₂; therefore, GWP-weighted emissions are measured in metric tons (MT) of CO₂ equivalent (CO₂e). Consistent with CalEEMod Version 2016.3.2, this GHG emissions analysis assumed the GWP for CH₄ is 25 (emissions of 1 MT of CH₄ are equivalent to emissions of 25 MT of CO₂), and the GWP for N₂O is 298, based on the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC 2007).

3.8.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

As discussed in Section 3.3, Air Quality, of this IS/MND, the project site is located within the jurisdictional boundaries of the SCAQMD. In October 2008, the SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008). This document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 MT

⁶ Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2017).

CO₂e per-year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008).

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

- Tier 1.** Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.
- Tier 2.** Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.
- Tier 3.** Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO₂e per-year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO₂e per year), commercial projects (1,400 MT CO₂e per year), and mixed-use projects (3,000 MT CO₂e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO₂e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.
- Tier 4.** Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of Assembly Bill (AB) 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO₂e per-service population for project-level analyses and 6.6 MT CO₂e per-service population for plan-level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.
- Tier 5.** Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

Section 15064.7(c) of the CEQA Guidelines specifies that “[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.” The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, establish specific thresholds of significance, or mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency’s discretion to determine the appropriate methodologies and thresholds of significance that are consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009).

To determine the proposed project's potential to generate GHG emissions that would have a significant impact on the environment, its GHG emissions were compared to the non-industrial land project quantitative threshold of 3,000 MT CO₂e per year. Because the proposed project does not include operational sources of emissions, and because the proposed project does not conform to the standard land use types, the 3,000 MT CO₂e per year threshold, which was identified under Tier 3 Option 1, was applied herein. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project (SCAQMD 2008). The life of the sewer force main is anticipated to be 100 years, and the valves are anticipated to have an operational life of 70 years. As such, a project lifetime of 70 years was conservatively assumed. This impact analysis, therefore, compares amortized construction emissions to the proposed SCAQMD threshold of 3,000 MT CO₂e per year.

Construction Emissions

Construction of the proposed project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road trucks, and worker vehicles. A depiction of expected construction schedules (including information regarding phasing, equipment used during each phase, truck trips, and worker vehicle trips) assumed for the purposes of emissions estimation is provided in Table 3, Construction Scenario Assumptions, and in Appendix A. On-site sources of GHG emissions include off-road equipment; off-site sources include trucks and worker vehicles. Table 9 presents construction GHG emissions for the proposed project from on-site and off-site emissions sources.

Table 9. Estimated Annual Construction GHG Emissions

Year	CO ₂	CH ₄	N ₂ O	CO ₂ e
	<i>Metric Tons per Year</i>			
2020	756.56	0.20	0.00	761.54
Amortized Construction Emissions				10.88

Source: See Appendix A for complete results.

Notes: GHG = greenhouse gas; CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide; CO₂e = carbon dioxide equivalent.

As shown in Table 9, the estimated total GHG emissions in 2020 would be 762 MT CO₂e, respectively. Amortized over 70 years, construction GHG emissions would be approximately 11 MT CO₂e per year. In addition, as with project-generated construction criteria air pollutant emissions, GHG emissions generated during proposed construction activities would be short term, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operational Emissions

Once project construction is complete, no operational activities associated with the proposed project would occur (i.e., no routine daily equipment operation or vehicle trips would be required). Because the proposed project would not result in any long-term operational activities, there would be no potential GHG emissions impacts associated with operational GHG emissions.

As shown in Table 9, amortized project-generated construction emissions would not exceed the 3,000 SCAQMD threshold. Therefore, GHG emissions impacts would be **less than significant**.

b) *Would the project generate conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

The proposed project would result in less-than-significant impacts related to conflicts with GHG emission reduction plans, for the reasons described below.

Consistency with the Riverside County Climate Action Plan

The Riverside County Climate Action Plan (CAP) Update was adopted in November 2019. The Riverside County CAP includes measures and goals set forth in order to reduce GHG emissions and meet the county's 2030 and 2050 goals. The reduction targets for 2030 and 2050 are based on 49% and 83% decreases from Riverside County's 2008 emissions inventory, which was approximately 7,012,938 MT CO₂e. The reduction measures are categorized by source category (transportation, energy efficiency, clean energy, advanced measures, water efficiency, and solid waste). Furthermore, if a project exceeds a threshold level of 3,000 MT CO₂e per year, then it would need to utilize the Riverside County CAP's screening tables or analyze the GHG emissions and provide additional mitigation (County of Riverside 2019c). As discussed in Section 3.8.2(a), construction of the proposed project would not exceed the threshold of 3,000 MT CO₂e per year. The proposed project would result in approximately 762 MT CO₂e. Project construction emissions amortized over 70 years would be approximately 11 MT CO₂e. Therefore, the proposed project would not conflict with the Riverside County CAP.

Consistency with CARB's Scoping Plan

The CARB Scoping Plan, approved by CARB in 2008 and updated in 2014 and 2017, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.⁷ Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

Consistency with the Southern California Association of Governments 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2016 RTP/SCS is not directly applicable to the proposed project because the purpose of the 2016 RTP/SCS is to provide direction and guidance by making the best transportation and land use choices for future development. The proposed project would not conflict with implementation of the strategies identified in the 2016 RTP/SCS that would reduce GHG emissions.

⁷ The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

Consistency with Executive Order S-3-05 and Senate Bill 32

The proposed project would not impede the attainment of the GHG reduction goals for 2030 or 2050, as identified in Executive Order S-3-05 and Senate Bill (SB) 32. Executive Order S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that “California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32” (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states that the level of reduction is achievable in California (CARB 2014). CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and Executive Order S-3-05. This is confirmed in the Second Update, which states (CARB 2017b):

The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197.

The proposed project would not interfere with implementation of any of the above-described GHG reduction goals for 2030 or 2050 because the project would not exceed the SCAQMD’s recommended threshold of 3,000 MT CO₂e per year (SCAQMD 2008). Because the proposed project would not exceed the threshold, this analysis provides support for the conclusion that the project would not impede the state’s trajectory toward the above-described statewide GHG reduction goals for 2030 or 2050.

The proposed project’s consistency with the State’s Scoping Plan would assist in meeting each jurisdiction’s contribution to GHG emission reduction targets in California. With respect to future GHG targets under SB 32 and Executive Order S-3-05, CARB has also made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet the SB 32 40% reduction target by 2030 and the Executive Order S-3-05 80% reduction target by 2050. This legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the trajectory toward meeting these future GHG targets.

Based on the above considerations, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. This impact would be **less than significant**.

3.9 Hazards and Hazardous Materials

3.9.1 Environmental Setting

A regulatory records search was performed for the proposed project and immediate vicinity using the State Water Resources Control Board GeoTracker database (SWRCB 2019) and the California Department of Toxic Substances Control EnviroStor database (DTSC 2019). These lists are a compilation of information from various sources listing potential and confirmed hazardous waste and hazardous substances sites in California in accordance with Section 65962.5 of the California Government Code.

The GeoTracker database search identified 30 sites within approximately 1 mile of the project site, 24 of which are located within the MARB. A total of 15 sites within MARB are listed as closed military cleanup sites. Nine sites within MARB are listed as open military cleanups. Two closed leaking underground storage tank sites were identified near Nandina Avenue east of I-215, and two closed cleanup sites were identified within the WWRF west of I-215. One active cleanup site was identified within the WWRF.

The California Department of Toxic Substances Control Envirostor Database identified two active sites within approximately 1 mile of the project site and six inactive sites that have been previously certified. One federal Superfund is located in the northern portion of MARB to remediate contamination caused by past activities, including burning waste in firefighting training exercises and discharges to sanitary sewers and storm drains. Groundwater was contaminated with petroleum hydrocarbons, chlorinated solvents and non-chlorinated solvents. Soil was impacted by solvents and polycyclic aromatic hydrocarbons. The site is divided into five operable units for remediation activities. In addition, an active State Response site is located west of the WWRF, where soil contamination was caused by a former landfill and incinerator that served Camp Haan, which was developed in 1940.

The nearest school to the project site is the Val Verde Academy, located approximately 1 mile east of Heacock Street. No other schools are located within 1 mile of the project site.

Approximately 1,000 LF of the proposed sewer force main would be installed within the MARB, originating at the connection for the LS 1269. Approximately 11,800 LF of the proposed sewer force main would be installed near the eastern and southern boundary of the MARB. The entire proposed project alignment is within compatibility zones for the MARB Inland Port Airport Land Use Compatibility Plan. The project site traverses Compatibility Zones M (Military), B2 (High Noise Zone), A (Clear Zone), and C2 (Flight Corridor Zone) (ALUC 2014).

The California Department of Forestry and Fire Protection (CAL FIRE) classifies land in California based on fire hazard severity. An area that is not located within State of California CAL FIRE jurisdiction (state responsibility area [SRA]) is designated as either a local responsibility area (LRA) or federal responsibility area (FRA) for fire protection. The portion of the project site within city or county jurisdictions is designated as an LRA and the portion of the project site within the MARB is designated as a FRA. The entire project site is classified as a non-very high fire hazard severity zone (Non-VHFHSZ) (CAL FIRE 2009a, 2009b, 2009c).

3.9.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Proposed project construction would involve the incidental transport and use of small quantities of common hazardous materials to operate construction equipment, such as oils, lubricants, and fuels, as well as specific materials for building construction, such as asphalt and concrete. Hazardous materials would be stored in designated areas away from environmentally sensitive areas in quantities that would not pose significant hazard to the public in the event of a release.

The California Department of Toxic Substances Control has primary regulatory authority for enforcing hazardous materials regulations. State hazardous waste regulations are contained primarily in Title 22 of the California Code of Regulations. The California Occupational Safety and Health Administration has developed rules and regulations regarding worker safety around hazardous and toxic substances. If used, transported, and stored or disposed of properly, these materials do not pose a substantial risk or hazard to the public or the environment. Any potential impacts associated with the routine transport, use, or disposal of hazardous materials, although minimal, would be further minimized with adherence to applicable regulations. As such, impacts would be **less than significant**.

- b) ***Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?***

Accidental spills or releases of hazardous materials during proposed project construction could result in the exposure of workers and the environment to hazardous materials. As noted in Section 3.9.2(a), proposed project construction activities would only require the use of minor amounts of hazardous materials. However, as described in Section 2.4, Project Approvals, a SWPPP would be prepared prior to issuance of grading permits and implemented during all ground-disturbing activities. The BMPs identified in the SWPPP would minimize the potential for hazardous, toxic, or petroleum substances release at the project site during construction and establish emergency response procedures in the unlikely event a release would occur. Occasional maintenance activities during project operation would not require use of hazardous materials. As such, impacts associated with accidental release of hazardous materials would be **less than significant**.

- c) ***Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

There are no schools located within 0.25 miles of the project site. Therefore, the proposed project poses no risk to emit hazardous emissions or handle hazardous materials within close proximity of a school. **No impact** would occur.

- d) ***Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?***

A search of publicly available databases indicated a total of 12 listed active sites within 1 mile of the project site, including 10 that are located within MARB. However, only 1 listed site, MARB (Envirostor ID 33970004) is located within the project site. Some residual groundwater contamination plumes contaminated with chlorinated VOCs in excess of maximum contaminant levels, established by the U.S. Environmental Protection Agency and California Environmental Protection Agency, are present within the proposed project alignment within MARB and along Heacock Street. Depths to groundwater beneath the MARB have been measured at a depth of 28 feet below ground surface (Appendix D); therefore, groundwater is not anticipated to be encountered in the vicinity of these sites during proposed project construction. As such, it is unlikely that the sites pose any remaining significant hazard to the public or the environment. The impact would be **less than significant**.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

The proposed project is located within and adjacent to the MARB. The project alignment traverses Compatibility Zones M, B2, A, and C2 within the MARB Inland Port Airport Land Use Compatibility Plan (ALUC 2014). Construction activities within the project site would be temporary, with a maximum of 500 LF of open trench at any given time. Upon completion of construction, the project site would be restored to existing conditions. As such, the proposed project would not result in long-term impacts within a Riverside County Airport Land Use Commission compatibility zone. As such, impacts would be **less than significant**.

- f) *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The project site does not contain any emergency facilities, nor does it serve as an emergency evacuation route. During construction, the proposed project would be required to maintain adequate emergency access for emergency vehicles as required by the applicable jurisdiction. Because the proposed project would not interfere with an adopted emergency response or evacuation plan, impacts would be **less than significant**.

- g) *Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?*

According to CAL FIRE (2009a, 2009b, 2009c), the entire project site is classified as a Non-VHFHSZ within a designated LRA and FRA. In addition, the project site is located within an area largely developed with industrial land uses. As such, the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **No Impact** would occur.

3.10 Hydrology and Water Quality

3.10.1 Environmental Setting

The project site is located in the Santa Ana River Watershed (San Jacinto Sub-Watershed). The Santa Ana River Watershed drains a 2,650-square-mile area and is the principal surface flow water body within the region. The Santa Ana River's headwaters are in the San Bernardino Mountains from which the river flows southwesterly for approximately 96 miles across San Bernardino, Riverside, Los Angeles, and Orange Counties before spilling into the Pacific Ocean.

Three existing drainages transect the project alignment. The Heacock Channel is an existing concrete-lined trapezoidal channel with a northern terminus at Alessandro Boulevard and southern terminus at Cactus Avenue. Currently, construction is underway to extend Heacock Channel south where it would terminate at the recently improved Heacock Street Bridge at Perris Valley Channel Lateral A. The Perris Valley Channel Lateral Perris Valley Storm Drain Channel Lateral-A is a soft-bottom improved channel with segments of side slope riprap stone protection. The Perris Valley Channel Lateral B is a soft-bottom improved channel with concrete sides. The Perris Valley Channel has the ability of convey the 100-year level event. Lateral A and B drain to the Perris Valley Channel, then to the San Jacinto River, and ultimately to the Santa Ana River via Prado Dam.

According to Federal Emergency Management Agency Flood Insurance Rate Map Panels 06065C0745G and 06065C1410G, the land west of Heacock Street within MARB and also the area within the WWRF are located within Flood Zone D, while an area east of Heacock Street is designated as Zone AE. The remaining portions of the project site are located within Flood Zone X (FEMA 2008a; FEMA 2008b; FEMA 2017). The Zone AE designation indicates an area within a Special Flood Hazard Zone susceptible to the 100-year design flood. The Zone D designation is used for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted. Flood Zone X is classified by the Federal Emergency Management Agency as an area of minimal flood hazard and is located above the 0.2% annual flood chance floodplain.

3.10.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on or off site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

The proposed project involves construction of an approximately 21,800 LF sewer force main that traverses the MARB, City of Moreno Valley, City of Perris, Caltrans ROW, SCRRA ROW, and unincorporated Riverside County. Construction activities associated with the proposed project would include minor earth-disturbing activities (i.e., cut and fill, vegetation removal, grading, trenching, excavation, and movement of soil) that could expose disturbed areas and stockpiled soils to winter rainfall and stormwater runoff. Areas of exposed or stockpiled soils could also be subject to wind or water erosion.

As described in Section 2, a SWPPP would be prepared prior to issuance of grading permits and implemented during all ground-disturbing activities. The SWPPP would include BMPs to prevent discharge of polluted runoff from the project site to storm drains and surface waterways, and to prevent wind and water erosion from preconstruction through construction site restoration activities.

During proposed construction, contractors would be required to comply with federal, state, and local requirements and guidelines to minimize the potential for polluted stormwater runoff, including the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, 2009-0009-DWQ, as amended by 2010-0014-DWQ (General Construction Permit) and each applicable jurisdiction's Municipal Separate Storm Sewer System (MS4) permit.

Following construction of the proposed project, the sewer system would be operated and maintained in accordance with each jurisdiction's MS4. Adherence to construction BMPs and the various regulatory requirements governing construction, the proposed project would not violate any applicable water quality standards or otherwise degrade water quality. As such, impacts would be **less than significant**.

b) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

The project site is located within the Perris North Groundwater Basin (RWQCB 2019). The proposed project would not result in the construction of new impervious surfaces that would prevent water from infiltrating into the groundwater. In addition, the proposed project would not include development that would increase water demand in the area surrounding the project site. As such, the proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge. Impacts would be **less than significant**.

c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

i) *result in substantial erosion or siltation on or off site;*

Construction of the proposed project could temporarily alter the existing drainage patterns surrounding the sewer force main trench. Excavated soils would be susceptible to water and wind erosion. Implementation of the SWPPP during construction activities would minimize erosion of loose excavated soils. In addition, trenching activities would be limited to a 500 LF segment at any given time, which would minimize the amount of soil subject to erosion. Upon completion of construction activities, the project alignment would be restored to existing conditions. As such, the

proposed project would not permanently alter the existing drainage pattern of the site resulting in substantial erosion or siltation. Impacts would be **less than significant**.

ii) *substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;*

Construction of the proposed project could temporarily alter the existing drainage patterns surrounding the sewer force main trench. Construction trenching would be limited to a 500 LF segment at any given time, and the construction area would be restored to existing conditions upon completion of construction within the segment. As such, the construction footprint would be small (approximately 5,000 square feet) and would not significantly impact the rate or amount of surface water within the project site that could result in flooding on or off site. Therefore, impacts would be **less than significant**.

iii) *create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or*

Construction of the proposed project would temporarily alter the existing drainage pattern surrounding the active project footprint. Upon completion of construction, the project site would be restored to existing conditions. As such, the proposed project would not result in permanent changes to the drainage system that would create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems. Impacts would be **less than significant**.

iv) *impede or redirect flood flows?*

Construction of the proposed project would temporarily alter the existing drainage pattern surrounding the active project footprint. Upon completion of construction, the project site would be restored to existing conditions. As such, the proposed project would not result in permanent changes to the drainage system that would impede or redirect flood flows. **No Impact** would occur.

d) *In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?*

The Pacific Ocean is located more than 40 miles from the project site; therefore, there is no potential for tsunamis to impact the proposed project. In addition, the project site and immediate surrounding area do not contain steep hillsides subject to mudflow. The nearest water body to the project site is Lake Perris, which is located approximately 2.75 miles southeast and downstream of the project site. Due to distance from the nearest water bodies and hillsides, the proposed project would not be subject to seiches, mudflows, and/or tsunamis.

Approximately 2,400 feet of the project alignment along Heacock Street, south of Iris Avenue, is within a 100-year flood zone (FEMA 2008a). The remainder of the project site is designated Zone X (FEMA 2008a; FEMA 2008b). The proposed project would result in temporary impacts within the 100-year flood zone because the sewer force main would be installed below ground, primarily within existing paved roadways. Upon completion of construction, the project site would be restored to existing conditions. As such, the proposed project would not result in long-term impacts within a 100-year flood zone that would risk release of pollutants due to project site inundation. Impacts would be **less than significant**.

e) ***Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

Refer to Section 3.10.2(a) and 3.10.2(b). The proposed project would comply with applicable stormwater quality standards during short-term construction activities and appropriate BMPs would be implemented to address potential water quality impacts. As such, the proposed project would not conflict with implementation of a water quality control plan or groundwater management plan. **No impact** would occur.

3.11 Land Use and Planning

3.11.1 Environmental Setting

The proposed project is located within the Cities of Perris and Moreno Valley, and unincorporated areas of Riverside County. Figures 7 and 8 illustrate the general plan land use and zoning designations within the project alignment, respectively. Note that portions of the project alignment within MARB, Caltrans, and SCRRA ROW do not have a general plan land use or zoning designation.

From the LS 1269 connection point within MARB, the project alignment turns south along Heacock Street. The land east of Heacock Street is within the City of Moreno Valley. The majority of this area has a Business Park general plan land use designation, with Commercial designations at street intersections. A triangular parcel at the south end of Heacock Street is designated as Open Space. Zoning in this area is Moreno Valley Industrial Area Plan (SP 208). The Moreno Valley Industrial Area Plan allows a variety of industrial land uses, with the exception of the Clear Zone of the MARB runway located east of the southern extent of Heacock Street. The Clear Zone has a high accident potential and requires that no structures be allowed in this area. Compatible land uses include roads, agriculture, and open space.

From Heacock Street, the project alignment would continue west within and unpaved 25-foot easement within the City of Perris and continue west along Harley Knox Boulevard, north on Western Way and west on Nandina Avenue toward I-215. The general plan land use and zoning designation within this area is Perris Valley Commerce Center Specific Plan (PVCC SP). Land use designations along the project alignment are primarily General Industrial and Light Industrial, with a Commercial Designation south of Harley Knox Boulevard and west of Patterson Avenue.

Once the project alignment crosses east beneath I-215 and SCRRA ROW, the remainder of the project alignment would be within unincorporated Riverside County. The general plan land uses along this portion of the project alignment are Light Industrial south of Nandina Avenue and Public Facilities to the north. Zoning designations south of Nandina Avenue are Manufacturing-Medium (M-M) and Industrial Park (I-P) and zoning to the north is Rural Residential (R-R).

3.11.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Would the project physically divide an established community?*

The entire sewer force main would be installed below ground. Once construction is complete, all construction areas would be restored to existing conditions, consistent with all design standards applicable in each respective jurisdiction. As such, the proposed project would not include permanent features that would physically divide an established community. The proposed project would be implemented to replace the existing sewer force main connected to LS 1269 that was decommissioned in 2015, and provide adequate wastewater services for the existing and planned wastewater demand within the service area. Therefore, **no impact** would occur.

b) *Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

The installation, operation, and maintenance of utilities are considered to be an allowable use on lands within the proposed project footprint. As such, the proposed project would be consistent with the general plan land use and zoning designations for the project site. Furthermore, as discussed in Section 3.11.2(a), the proposed project concerns existing wastewater infrastructure, and would not create aboveground features. As the project is solely proposed to support existing local jurisdiction land use planning, there would be **no impact** related to conflict with applicable land use plans, policies, or regulations.

3.12 Mineral Resources

3.12.1 Environmental Setting

Mineral resources within western Riverside County are located in Temescal Valley near the I-215 and along the Santa Ana River within the City of Riverside (County of Riverside 2015a). The California Geological Survey has established a classification system to denote both the location (i.e., zone) and significance of key extractive mineral resources. Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists are classified as a Mineral Resource Zone (MRZ)-2.

The proposed project is mapped in MRZ-3, indicating that it is located in an area that contains mineral deposits, but the significance of which cannot be determined from available data. Although it is mapped in MRZ-3, there are no known mineral resource deposit sites within or near the project site (County of Riverside 2015a). Moreover, any potential mineral resources located within or adjacent to the project site would not be commercially viable to extract because all properties in the immediate vicinity have either been previously developed with incompatible land uses or are designated for development as industrial land uses.

3.12.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XII. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

Construction of the proposed project would involve cut and fill activities for the installation of the sewer force main; however, to the extent feasible material excavated for the installation of the sewer force main would be reused as backfill. Proposed project construction would require use of common construction materials, such as asphalt, concrete, and gravel. These materials are widely available throughout the region; therefore, the proposed project would not result in the loss of regionally or locally designated “significant” deposits of mineral resources (i.e., deposits classified by the California Geological Survey as MRZ-2 or deposits listed as locally important on a general plan).

In addition, the project site is not located within an area known to be underlain by regionally or locally important mineral resources or within an area that has the potential to be underlain by regionally or locally important mineral resources (County of Riverside 2015a). Therefore, the proposed project would not result in loss of a known mineral resource. **No impact** would occur.

b) *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?*

The project site is not located within an area known to be underlain by regionally or locally important mineral resources (County of Riverside 2015a). In addition, the proposed project alignment would be installed primarily within existing roadways in a developing industrial business park area. The existing land uses would preclude the use of the project site for future mining activities. As such, implementation of the proposed project would not result in the loss of availability of a locally important mineral resource recovery site. **No impact** would occur.

3.13 Noise

3.13.1 Environmental Setting

Noise Background

Noise is unwanted sound that disturbs human activity. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). Because of the way the human ear works, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1–2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40–50 dBA, while arterial streets are in the 50–60+ dBA range. Normal conversational levels are in the 60–65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources (such as construction equipment). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance; while noise from a point source typically attenuates at about 6 dBA per doubling of distance. Noise levels may also be reduced by the introduction of intervening structures. For example, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm that breaks the line-of-sight reduces noise levels by 5–10 dBA. The construction style for dwelling units in California generally provides a reduction of exterior-to-interior noise levels of about 30 dBA with closed windows (DOT 2006).

Sensitive Receptors

Some land uses are more sensitive to ambient noise levels than other uses due to the amount of noise exposure and the types of activities involved. For example, residences, motels, hotels, schools, libraries, churches, nursing homes, auditoriums, museums, cultural facilities, parks, and outdoor recreation areas are more sensitive to noise than commercial and industrial land uses. The closest sensitive receptor land uses are single-family residences located approximately 600 feet south of the proposed project, on Nevada Avenue.

3.13.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIII. NOISE – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) ***Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

Construction Noise

Construction of the proposed project would require the use of heavy equipment for excavation, trenching and pipeline installation, installation of the tank, and paving. Construction activities would also involve the use of smaller power tools, generators, and other sources of noise for construction of the proposed tank, as well as noise from construction-related vehicular traffic. Each construction activity would create elevated short-term construction noise impacts. Construction activities would be temporary and generally limited to daytime hours in accordance with Sections 11.80.030 and 8.14.040 of the City of Moreno Valley Municipal Code, which regulate construction times and noise emissions related to construction activities. Construction within the City of Moreno Valley is permitted Monday through Friday from 7:00 a.m. to 7:00 p.m., and on Saturdays from 8:00 a.m. to 4:00 p.m. No construction is permitted on Sunday or on holidays unless approval is obtained from the city building official or city engineer. Equipment that would be in operation during construction would include a trencher, excavator, drill rig, boom lift, small crane, and hand tools. None of the equipment would produce high levels of impact-type noise (which would be generated by pile driving, for example, but will not be utilized as part of the proposed project). Typically, construction equipment operates in alternating cycles of full power and low power, producing average noise levels less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of the construction activities during that time. The typical noise levels

for various pieces of construction equipment at 50 feet are presented in Table 10. For example, the measured maximum sound level from a backhoe is 78 dBA at a distance of 50 feet. The term dBA is an expression of the relative loudness of sounds in air as perceived by the human ear.

Table 10. Construction Equipment Noise Levels

Equipment Description	Acoustical Use Factor (%)	Measured L _{max} at 50 Feet (dBA, slow)
Compressor (air)	40	78
Crane	16	81
Dump truck	40	76
Excavator	40	81
Flat-bed truck	40	74
Front-end loader	40	79
Man lift	20	75
Paver	50	77
Pickup truck	40	75
Pneumatic tools	50	85
Warning horn	5	83
Welder/torch	40	74

Source: DOT 2006.

Note: L_{max} = maximum sound level recorded during the measurement interval; dBA = A-weighted decibels.

As presented in Table 10, the excavator and crane are anticipated to produce the highest noise levels during construction activities, with a maximum noise level of 81 dBA at 50 feet. The sound intensity level decreases by 6 dB with the doubling of distance. As such, the highest noise levels at the nearest sensitive receptor, the residences located approximately 600 feet south of the proposed project's southern boundary, would be approximately 60 dBA. Temporary increases in daytime noise levels from construction could approach 60 dB at the nearest noise-sensitive receptors; however, these levels are unlikely to be sustained over the workday and would fluctuate as activities start and stop and as workers and equipment move around the site. Construction activities are anticipated to take place over a 10-month (or shorter) period and would generally occur within daytime hours, Monday through Friday. Limiting construction activities to daytime hours would avoid noise impacts during evening and nighttime, when most people are resting or sleeping. Should construction activities need to occur at night (such as concrete pouring activities that require air temperatures to be lower than occur during the day), the District or their contractor(s) would be required to obtain authorization for nighttime work from the City of Moreno Valley under Municipal Code Section 11.80.030(E) or Section 11.80.040.

Further, the District would require the contractor to implement measures and methods that would ensure compliance with each jurisdiction's Noise Ordinance's average sound level limits, as applicable. As such, temporary construction noise levels would not exceed levels established by the applicable Noise Ordinance for each jurisdiction and noise impacts during the daytime would be **less than significant**.

Operational Noise

Operational noise would be limited to occasional maintenance activities along the project alignment. As such, operational noise would be negligible.

b) *Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*

Construction activities that might expose persons to excessive groundborne vibration or groundborne noise have the potential to cause a significant impact. Groundborne vibration information related to construction/heavy equipment activities has been collected by Caltrans. Information from Caltrans indicates that transient vibrations (such as from demolition activity) with a peak particle velocity (PPV) of approximately 0.035 inches per second may be characterized as barely perceptible, and vibration levels of 0.24 inches per second may be characterized as distinctly perceptible. Caltrans uses a damage threshold of 0.2 inches per second PPV for conventional buildings (Caltrans 2013).

Groundborne vibration is typically attenuated over relatively short distances. At the nearest distance from an existing residence to the construction area (approximately 600 feet), the excavator (anticipated largest vibration source) would cause groundborne vibration of approximately 0.003 inches per second PPV. This vibration would be below the threshold of “barely perceptible” level of 0.035 inches per second PPV (Caltrans 2013). The expected vibration level at the residential buildings is also expected to be below the Caltrans damage threshold for conventional buildings. Therefore, impacts related to groundborne vibration would be **less than significant**.

c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

The proposed project is located adjacent to and within the MARB. The proposed project does not include development of land uses that would introduce new residents or employees to the project site. As such, the proposed project would not expose people in the area surrounding the project site to excessive noise levels associated with MARB. **No impact** would occur.

3.14 Population and Housing

3.14.1 Environmental Setting

The area surrounding the project site has seen constant growth and urbanization for over 160 years (SCAG 2016). Table 11 shows population growth over time within the area surrounding the project site.

Table 11. Population Growth in the Area Surrounding the Project Site

Jurisdiction	Population			Percent Increase
	2008 ¹	2019 ²	2035 ¹	
City of Moreno Valley	187,400	208,297	255,200	36.2%
City of Perris	65,900	76,971	114,000	42.2%
Unincorporated Riverside County	349,100	394,200	710,600	103.6%

Notes:

¹ SCAG 2016

² DOF 2019

3.14.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The proposed project does not involve the construction of new residential or commercial units that would generate new population. The proposed force main would replace the existing LS 1269 force main that was decommissioned in 2015 due to failure. Consequently, the proposed project would not enable additional development and population growth beyond what has been previously approved or projected. Therefore, there would be **no impact**.

- b) *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The proposed project would not displace existing homes or people, necessitating the construction of replacement housing elsewhere. As such, there would be **no impact**.

3.15 Public Services

3.15.1 Environmental Setting

Fire Protection

The Cities of Moreno Valley and Perris contract with the Riverside County Fire Department for fire protection services. The Riverside County Fire Department is administered and operated by the California Department of Forestry and Fire Protection under an agreement with the County of Riverside.

The Moreno Valley Fire Department is part of the CAL FIRE/Riverside County Fire Department's regional, integrated, cooperative fire protection organization. The City of Moreno Valley is served by six fire stations (City of Moreno Valley 2016). Station No. 1 located at 210 W. San Jacinto Avenue serves the City of Perris exclusively (City of Perris 2016). Other Riverside County Fire Department stations respond to emergency service calls in the Cities of Moreno Valley and Perris on an as-needed basis.

Police Services

The Riverside County Sheriff's Department provides police protection and crime prevention services for the Cities of Moreno Valley and Perris. The Sheriff's Department provides services in the City of Moreno Valley under the name of Moreno Valley Police Department. The Moreno Valley Police Department operates out of the Public Safety Building located at 22850 Calle San Juan de Los Lagos. The Moreno Valley Police Department also uses satellite offices in strategic business locations throughout the city. The Riverside County Sheriff's Department provides services in the City of Perris under the name of Perris Police Department. The Perris Police Station is located at 403 East 4th Street. The Perris Police Station also serves a sizeable area of unincorporated Riverside County.

3.15.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XV. PUBLIC SERVICES – Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*

Fire protection?

Implementation of the proposed project would not include any new housing, businesses, or other development that would increase demand for fire protection services and facilities; therefore, **no impact** would occur.

Police protection?

Implementation of the proposed project would not include any new housing, businesses, or other development that would increase demand for police protection services and facilities, nor degrade the

quality of existing services. Access for standard-size police patrol vehicles on all public and private roadways would be maintained during construction; therefore, **no impact** would occur.

Schools?

Implementation of the proposed project would not alter existing school facilities or result in an increase in population that would generate new students in the school district. As such, **no impact** would occur.

Parks?

Implementation of the proposed project would not alter existing parks or result in an increase in population that would require new or expanded park facilities in the area surrounding the project site. As such, **no impact** would occur.

Other public facilities?

Implementation of the proposed project would not include any new housing, businesses, or other development that would require new or expanded other public facilities such as hospitals or libraries in the area surrounding the project site. As such, **no impact** would occur.

3.16 Recreation

3.16.1 Environmental Setting

No existing recreational facilities are located within or adjacent to the project site. The nearest public park to the project site is Morgan Park, located approximately 2.3 miles southeast of the southern extent of Heacock Street, in the City of Perris.

3.16.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVI. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

No existing recreational facilities are located in the vicinity of the project site. Construction of the proposed sewer force main would not impact existing recreational land uses or include construction of land uses that would increase residents or workers that would increase the use of existing facilities. As such, implementation of the proposed project would result in **no impact** on recreational facilities.

- b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?*

The proposed project includes construction of an approximately 21,800 LF sewer force main between LS 1269 and the District's WWRF. No recreational facilities are proposed as part of the project. As such, implementation of the proposed project would result in **no impact** on recreational facilities.

3.17 Transportation

3.17.1 Environmental Setting

Roadway Network

The proposed project would be installed within existing roadways within the project site. The following describes the roadways where project construction is proposed.

Heacock Street is a north-south, two-to-four lane undivided roadway within the City of Moreno Valley. Heacock Street is designated as an arterial with a 100-foot ROW by the City of Moreno Valley General Plan (City of Moreno Valley 2016). There are no dedicated bicycle lanes along Heacock Street. Sidewalks are installed on both sides of the street north of San Michele Road and only on the east side of the street south of San Michele Road. Approximately 10,600 LF of the proposed sewer force main would be installed within Heacock Street.

Harley Knox Boulevard is an east-west, four-to-six lane divided and undivided roadway within the City of Perris. Harley Knox Boulevard is designated as a Primary Arterial with a 126-foot ROW by the City of Perris General Plan (City of Perris 2005). Dedicated Class II bike lanes are present along both sides of Harley Knox Boulevard, and sidewalks are developed on both sides of the street west of Patterson Avenue. Approximately 4,700 LF of the proposed sewer force main would be installed within Harley Knox Boulevard.

Western Way is a north-south, two-lane undivided roadway in the City of Perris. Western Way is designated as a Secondary Arterial with a 94-foot ROW by the City of Perris General Plan (City of Perris 2005). There are no designated bike lanes within the roadway and sidewalks are developed intermittently along developed parcels. Approximately 1,300 LF of the proposed sewer force main would be installed within Western Way.

Nandina Street is an east-west, two-lane undivided roadway within the City of Perris east of the I-215. West of I-215, Nandina Street is a two-lane undivided street with a center turning lane within the County of Riverside. There are no designated bike lanes within the roadway and sidewalks are developed intermittently along developed parcels. Approximately 3,000 LF of the proposed sewer force main would be installed within Nandina Street.

I-215 is a six-lane divided highway that bisects the project site. The County of Riverside General Plan designated the I-215 as a Freeway, which is a controlled-access highway with separated grades at intersecting streets. Approximately 350 to 400 LF of the proposed sewer force main would be installed beneath the I-215 and adjacent SCRRA ROW via jack-and-bore method to avoid impacts within Caltrans and SCRRA jurisdictions.

3.17.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVII.TRANSPORTATION – Would the project:				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) *Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?***

Project implementation would require temporary partial lane closures within the project site. During project construction, vehicles would access the project site from existing roadways. In addition, project construction would be limited to one 500-foot trench at any time. Upon completion of construction, the project site would be restored to existing conditions. Due to the small construction footprint and continued roadway access within the project site, construction activities associated with the proposed project would not conflict within any plans or ordinances addressing the circulation system. Impacts would be **less than significant**.

- b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?***

A level of service or vehicle miles traveled analysis was not performed because the proposed project would not result in a long-term effect on traffic flow, circulation, or traffic congestion. Therefore, the proposed project would not conflict or be inconsistent with the CEQA Guidelines Section 15064.3, subdivision (b). There would be **no impact**.

c) ***Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?***

The proposed project would not result in permanent changes to or interfere with the existing vehicular, bicycle, or pedestrian transportation system or increase hazards or incompatible uses. Therefore, there would be **no impact** regarding hazards due to a design feature or incompatible use.

d) ***Would the project result in inadequate emergency access?***

The project site does not contain any emergency facilities, nor does it serve as an emergency evacuation route. During construction, the proposed project would be required to maintain adequate emergency access for emergency vehicles as required by the applicable jurisdiction. A traffic control plan, pursuant to applicable jurisdiction regulations, would be implemented during all construction activities to ensure that no full road closures are necessary and traffic safety is maintained. As such, the proposed project would not interfere with an adopted emergency response or evacuation plan, impacts would be **less than significant**.

3.18 Tribal Cultural Resources

3.18.1 Environmental Setting

The records search conducted for the proposed project (Appendix C – Confidential) resulted in the identification of 95 previously conducted projects with the 1-mile study area; of these 95 projects, 22 have either intersected or covered the project site. The proposed project site has been the subject of previous archaeological investigations and has been disturbed by the previous construction of roadways, ongoing road maintenance, and excavation associated with the previous installation of underground utilities. The records search indicates that 376 previously recorded cultural resources were located within 1 mile of the Area of Potential Effect. Based upon the records search conducted at the EIS, 5 out of the 376 previously recorded cultural resources were located within (or very near) the project site, but were recommended as “not eligible for listing” in the NRHP or the CRHR (Refer to Section 3.5, Cultural Resources).

Assembly Bill 52 Outreach

On September 30, 2019, the District mailed notification letters via certified mail to six Native American tribes that have requested notification of project pursuant to AB 52. The following tribes were notified of the proposed project:

- Torres Martinez Desert Cahuilla Indians
- Agua Caliente Band of Cahuilla Indians
- Pechanga Band of Luiseno Indians
- Morongo Band of Mission Indians
- Soboba Band of Luiseno Indians
- San Manuel Band of Mission Indians

The notification letter to the Morongo Band of Mission Indians was not delivered, so another notification was shipped via United Postal Service on October 7, 2019. To date, the District has received responses from five tribal representatives. Four tribes—the Morongo Band of Mission Indians, Pechanga Band of Luiseno Indians, Agua

Caliente Band of Mission Indians (ACBCI), and Soboba Band of Luiseno Indians—requested formal AB 52 consultation with the District.

On October 11, 2019, Travis Armstrong, the Tribal Historic Preservation Officer for the Morongo Band of Mission Indians, noted that the project site is within the ancestral territory and traditional use area of the Cahuilla and Serrano people. On October 18, 2019, Tuba Ebru Ozdil, a Cultural Analyst for the Pechanga Tribe, noted that the project site is a culturally sensitive area for the tribe. Both tribal representatives noted an increased likelihood for presence of tribal cultural resources (TCRs) within the project site. On October 25, 2019, Lacy Padilla, an archaeologist within ACBCI, noted that the project site is within the tribe's traditional use area. On October 22, 2019, Joseph Ontiveros, Tribal Historic Preservation Officer for Soboba Band of Luiseno Indians, requested formal AB 52 consultation with the District, but did not provide any additional information regarding TCRs.

The San Manuel Band of Mission Indians responded on October 7, 2019, and noted no consultation is needed because the project site is outside their Serrano ancestral territory. The District did not receive a response from the Torres Martinez Desert Cahuilla Indians; therefore, no formal AB 52 consultation with this tribe will be conducted.

On January 6, 2020, the District provided the cultural records search results and the proposed project GIS data to the four tribes that requested consultation. Currently, formal AB 52 consultation is still ongoing pending additional responses from and consultation with the tribes.

Native American Heritage Commission Outreach

On December 13, 2019, Dudek requested that the Native American Heritage Commission (NAHC) conduct a search of its Sacred Lands File to determine if cultural resources important to Native Americans have been recorded in the project footprint and buffer area. On December 23, 2019, Dudek received a response from NAHC stating that the search of its Sacred Lands File was positive for the presence of Native American cultural resources within one mile of the project site or surrounding vicinity. The NAHC requested that we contact 33 Native American tribal representatives who may have knowledge of cultural resources in the project area for more information. On January 13, 2020, Dudek sent a letter via certified mail to 23 tribal representatives that were not previously notified by the District through AB 52 consultation efforts. Two tribal representatives responded to Dudek's outreach.

Cheryl Madrigal, Tribal Historic Preservation Officer for the Rincon Band of Luiseno Indians responded on January 13, 2020, noting that the proposed project is within an Area of Historic Interest and requested further coordination directly with the District. The District followed up with Ms. Madrigal via telephone. Ms. Madrigal was pleased to confirm that the majority of the proposed work would be constructed within existing roadways and disturbed areas where underground utilities are present. No TCRs or specific sensitive areas were identified during coordination.

Andrew Salas, Chairperson for the Gabrieleno Band of Mission Indians – Kizh Nation, responded via email on January 22, 2020, noting the project site is within Ancestral Tribal Territory and requested further coordination directly with the District. The District followed up with Mr. Salas twice via telephone, but received no response. No TCRs or specific sensitive areas have been identified by the Tribe to-date.

3.18.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES – Would the project:				
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*

- i) *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*

As described in Section 3.5.2(b), five known cultural resources have been previously identified within or very near the project site. The project site has been historically used for military and agricultural purposes, but the area has been developed with a variety of industrial uses over the past decade.

As discussed in Section 3.5.2(b), no significant archaeological resources were identified within the project site or immediate vicinity as a result of the records search. The five resources lack integrity and all have been recommended not eligible for listing in the NRHP or the CRHR. Nonetheless, there is potential for inadvertent discovery of TCRs during ground-disturbing construction activities. **MM-CUL-1** would be implemented during construction in the event of an inadvertent discovery of archaeological resources to allow for assessment and evaluation of the resources. Furthermore, **MM-CUL-2** contains protocol to be implemented should construction activities uncover human remains. As such, impacts to TCRs eligible for listing in the CRHR would be **less than significant with mitigation incorporated**.

- ii) *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?*

No known TCRs have been identified in the project site through previous archeological investigations or in consultation with affiliated tribes. The Morongo Band of Mission Indians representative noted that the project site is within the ancestral territory and traditional use area of the Cahuilla and Serrano people. The Pechanga Tribal representative noted that the project site is a culturally sensitive area for the tribe. Both tribal representatives noted an increased likelihood for presence of TCRs within the project site. In addition, the ACBCI tribal representative noted that the project site is within the tribe's traditional use area. Currently, formal AB 52 consultation is ongoing with four Native American tribes, as described in Section 3.18.1. Due to the likelihood to uncover unknown or undocumented remains that could be determined to be Native American burials for TCRs, **MM-CUL-1** and **MM-CUL-2** would be implemented to ensure inadvertent discoveries are handled properly. As such, impacts to TCRs would be **less than significant with mitigation incorporated**.

3.19 Utilities and Service Systems

3.19.1 Environmental Setting

Wastewater

The Cities of Moreno Valley and Perris are supported by two different Eastern Municipal Water District wastewater treatment facilities: the Moreno Valley Regional Water Reclamation Facility or the Perris Valley Regional Water Reclamation Facility. The Moreno Valley Regional Water Reclamation Facility generally receives wastewater flows produced in areas north and east of the Perris Valley Storm Drain Channel, while the Perris Valley Regional Water Reclamation Facility generally receives wastewater flows produced in areas south of the Perris Valley Storm Drain Channel.

Water

The Eastern Municipal Water District manages the domestic water supply and delivery service within its 555-square-mile service area, including the City of Moreno Valley, all or portions of six other cities, and a portion of unincorporated Riverside County.

The District supplies water on both a wholesale and a retail basis to a region stretching 527 square miles in western Riverside County. This regional area includes the Cities of Corona, Norco, and Riverside and the water agencies serving Box Springs, Eagle Valley, Lake Elsinore, Temescal Valley, and Temecula.

Solid Waste

Solid waste collection and disposal in the City of Moreno Valley is conducted by Waste Management of the Inland Empire, a division of Waste Management Inc. Landfills that could receive solid waste from the project site include the El Sobrante Landfill, the Badlands Sanitary Landfill, and the Lamb Canyon Sanitary Landfill.

3.19.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) ***Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

The proposed project would involve the construction of a sewer force main to replace the existing force main decommissioned in 2015. The proposed project would provide adequate sewer capacity for existing and planned land uses within the area surrounding the project site. The sewer force main would be designed and constructed in accordance with applicable regulations. No relocation, modification, or

disruption other utilities would be required for the implementation of the proposed project. Therefore, impacts would be **less than significant**.

- b) ***Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?***

The proposed project would not require substantial water supply during or after construction. Water needed for the proposed project would be minimal and may include water used for dust control during construction. Existing municipal water supplies would be sufficient to accommodate the minor temporary and short-term water needs for the proposed project. Therefore, impacts would be **less than significant**.

- c) ***Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?***

The proposed project would include installation of a sewer force main to support existing and proposed land uses in the area surrounding the project site. The proposed project would not require wastewater. As such, **no impact** would occur.

- d) ***Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?***

Construction of the proposed project would generate solid waste as result of pipe installation activities. A total of approximately 1,300 cubic yards of excavated soil and vegetation would be generated during construction of the proposed project requiring off-site disposal. Approximately 200 cubic yards of construction and demolition waste would be generated from demolition of a concrete wall and the existing odor control system within the public ROW. Exported soil and construction and demolition waste would be hauled to and disposed of at Lamb Canyon Landfill in accordance with their acceptance criteria. Lamb Canyon Landfill would have adequate capacity to accept the quantities of waste generated by the proposed project. **No impact** would occur.

- e) ***Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?***

Construction and demolition debris would be disposed of in accordance with the waste disposal requirements of Lamb Canyon Landfill. These requirements include sufficient sampling of appropriate contaminants of potential concern and approval of acceptance from the landfill. No long-term solid waste generation would be expected after proposed construction. **No impact** would occur.

3.20 Wildfire

3.20.1 Environmental Setting

CAL FIRE classifies land in California based on fire hazard severity. An area that is not located within an SRA is designated as either an LRA or FRA for fire protection. The portion of the project site within city or county jurisdictions is designated as an LRA, and the portion of the project site within the MARB is designated as an FRA. The entire project site is classified as Non-VHFHSZ (CAL FIRE 2009a, 2009b, 2009c).

3.20.2 Impact Analysis

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) ***Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?***

As described in Section 3.9.2(g), the project site is not located within or near SRAs or land classified as a Fire Hazards Severity Zone (CAL FIRE 2009a, 2009b, 2009c). Therefore, **no impact** would occur.

b) ***Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?***

As described in Section 3.9.2(g), the project site is not located within or near SRAs or land classified as a Fire Hazards Severity Zone (CAL FIRE 2009a, 2009b, 2009c). Therefore, **no impact** would occur.

c) ***Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?***

As described in Section 3.9.2(g), the project site is not located within or near SRAs or land classified as a Fire Hazards Severity Zone (CAL FIRE 2009a, 2009b, 2009c). Therefore, **no impact** would occur.

- d) *Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

As described in Section 3.9.2(g), the project site is not located within or near SRAs or land classified as a Fire Hazards Severity Zone (CAL FIRE 2009a, 2009b, 2009c). Therefore, **no impact** would occur.

3.21 Mandatory Findings of Significance

3.21.1 Environmental Setting

The Environmental Setting included for Section 3.1 through 3.20 is also applicable to this section.

3.21.2 Impact Analysis

	Potentially Significant Impact	Less-Than Significant-Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) ***Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?***

As described in Section 3.4.2(a), the proposed project has potential for impacts to special-status plants and wildlife. Potential indirect impacts to fairy shrimp—associated with fugitive dust, accidental release of chemical pollutants, or introduction of invasive plant species—would be reduced through implementation of **MM-BIO-1**. Potential impacts to nesting birds within mature trees, shrubs, and bare ground near the project alignment would be avoided through implementation of **MM-BIO-2**. Potential impacts to burrowing owl nesting habitat within non-native grasslands and disturbed habitat with flat, open vegetation cover would be avoided through implementation of **MM-BIO-3**.

The proposed project's potential to degrade, threaten, or otherwise eliminate important historical or archaeological resources is analyzed in Section 3.5, Cultural Resources, and Section 3.18, Tribal Cultural Resources. The EIC records search did not identify any historic resources that could be impacted by the proposed project. The EIC records search identified 376 previously recorded archaeological resources within the 1-mile project site buffer area, 5 of which were located within (or very near) the project site. The 5 identified resources lack integrity and have been recommended not eligible for listing in the NRHP or the CRHR. Despite the low probability of encountering archaeological deposits, inadvertent discoveries are possible during ground-disturbing activities. During tribal outreach by the District, four tribes requested tribal consultation pursuant to AB 52 because the project site is within an area with an increased likelihood for presence of TCRs. Nonetheless, potential impacts to unknown subsurface archaeological resources and TCRs would be minimized through implementation of **MM-CUL-1**. In addition, to reduce impacts associated with inadvertent discovery of human remains, **MM-CUL-2** would be implemented. As such, impacts to cultural resources and TCRs would be **less than significant with mitigation incorporated**.

- b) ***Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?***

As analyzed throughout Section 3, the proposed project would result in less-than-significant impacts or no impact to aesthetics, agriculture and forestry resources, air quality, energy, GHG emissions, hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and service systems, and wildfire. Mitigation would be required to reduce potentially significant impacts related to biological resources, cultural resources, geology and soils (including paleontological resources), and TCRs. As such, cumulatively considerable impacts associated with the proposed project would be **less than significant with mitigation incorporated**.

- c) ***Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?***

Direct and indirect environmental effects on human beings were analyzed in the following sections: aesthetics, air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, and transportation and traffic. As found in

discussion of each relevant section, all potential impacts to human beings would be less than significant or result in no impact. The proposed project would comply with all applicable federal, state, and local policies and regulations. For example, the District would require its contractor to implement measures and methods that would ensure compliance with the average sound level limits established by each jurisdiction's Noise Ordinances, as applicable. As such, the proposed project would not result in environmental effects that will cause substantial adverse effects on human beings and impacts would be **less than significant**.

INTENTIONALLY LEFT BLANK

4 References and Preparers

4.1 References Cited

- 14 CCR 15000–15387 and Appendices A through L. Guidelines for Implementation of the California Environmental Quality Act, as amended.
- ALUC (Riverside County Airport Land Use Commission) 2014. *March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan*. Adopted November 13, 2014.
- CAL FIRE (California Department of Forestry and Fire Protection). 2009a. “Very High Fire Hazard Severity Zones in LRA – Moreno Valley” [map]. 1:30,000. Map ID: FHSZL_c33_MorenoValley. Fire and Resource Assessment Program. December 21, 2009. Sacramento, California: CAL FIRE.
- CAL FIRE. 2009b. “Very High Fire Hazard Severity Zones in LRA – Perris” [map]. 1:32,000. Map ID: FHSZL_c33_Perris. Fire and Resource Assessment Program. December 21, 2009. Sacramento, California: CAL FIRE.
- CAL FIRE. 2009c. “Very High Fire Hazard Severity Zones in LRA – Western Riverside County” [map]. 1:150,000. Map ID: FHSZL_MAP. Fire and Resource Assessment Program. December 24, 2009. Sacramento, California: CAL FIRE.
- California Public Resources Code, Section 21000–21177. California Environmental Quality Act, as amended.
- Cal-IPC (California Invasive Plant Council). 2019. California Invasive Plant Inventory Database. <https://www.cal-ipc.org/plants/inventory/>.
- Caltrans (California Department of Transportation). 2013. *Transportation and Construction Vibration Guidance Manual*. September 2013.
- CAPCOA (California Air Pollution Control Officers Association). 2008. CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January 2008.
- CARB (California Air Resources Board). 2014. First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006. May 2014. http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.
- CARB. 2017a. “Area Designation Maps/State and National.” Last updated October 18, 2017. <https://www.arb.ca.gov/desig/adm/adm.htm>.
- CARB. 2017b. *The 2017 Climate Change Scoping Plan Update*. Accessed January 2017. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

- CDFG (California Department of Fish and Game). 2009. "Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities." November 24, 2009. Accessed June 18, 2012. http://wrc-rca.org/species/survey_protocols/CDFW%202009%20Native%20Plant%20survey%20protocols.pdf.
- CDFG. 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012. Accessed March 8, 2012. <http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>.
- CDFW (California Department of Fish and Wildlife). 2019a. List of California Natural Diversity Database (CNDDB). Rarefind 5.0. CNDDB Quick Viewer. Accessed February 2019. http://imaps.dfg.ca.gov/viewers/cnddb_quickviewer/app.asp.
- CDFW. 2019b. Natural Communities List Arranged Alphabetically by Life Form. November 8, 2019. Accessed December 2019. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline>.
- CEC (California Energy Commission). 2018. Power Content Label. Accessed December 2019. https://ww2.energy.ca.gov/pcl/power_content_label.html.
- CEC. 2019a. "Electricity Consumption by Entity." Accessed December 2019. <http://www.ecdms.energy.ca.gov/elecbyutil.aspx>.
- CEC. 2019b. "Gas Consumption by Entity." Accessed December 2019. <https://ecdms.energy.ca.gov/gasbyutil.aspx>.
- CEC. 2019c. *2018 Weekly Fuels Watch Report*. Accessed December 2019. https://ww2.energy.ca.gov/almanac/petroleum_data/fuels_watch/reports/2018_Weekly_Fuels_Watch_RPT.xlsx
- City of Moreno Valley. 2016. In *City of Moreno Valley General Plan*. Adopted 2006. Amended July 2016.
- City of Perris 2005. "Conservation Element." In *City of Perris General Plan*. July 12, 2012.
- City of Perris. 2008. "Circulation Element." In *City of Perris General Plan*. Approved August 26, 2008.
- City of Perris. 2009. Perris Municipal Code, Title 19, Chapter 19.71: Urban Forestry Establishment and Care, Sec. 19.71.050, Tree protection. October 27, 2009. Accessed December 2019. https://library.municode.com/ca/perris/codes/code_of_ordinances?nodeId=COOR_TIT19ZO_CH19.71URFOESCA_S19.71.050TRPR.
- City of Perris. 2016. "Safety Element." In *Perris General Plan*. Approved August 30, 2016.
- CNPS (California Native Plant Society). 2019. *CNPS Inventory of Rare and Endangered Plants* (online edition, v7-12apr). Sacramento, California: California Native Plant Society. <http://www.cnps.org/inventory>.
- CNRA (California Natural Resources Agency). 2009. "Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97." Sacramento, California: CNRA. December 2009. http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf.
- County of Riverside. 1997. Ordinance No. 559, as amended. Adopted January 6, 1977, updated August 12, 1997.

- County of Riverside. 2003. Western Riverside County Multiple Species Habitat Conservation Plan. County of Riverside, Transportation and Land Management Agency, Riverside County Integrated Project. MSHCP adopted June 17, 2003. Accessed December 2019. <http://www.rctlma.org/mshcp>.
- County of Riverside. 2015. "Multipurpose Open Space Element." In *County of Riverside General Plan*. December 8, 2015.
- County of Riverside. 2019a. Riverside County Information Technology (RCIT) Paleontological Sensitivity. Accessed on October 30, 2019. https://gis.countyofriverside.us/Html5Viewer/?viewer=MMC_Public.
- County of Riverside. 2019b. "Safety Element." In *County of Riverside General Plan*. Amended August 6, 2019.
- County of Riverside. 2019c. County of Riverside Climate Action Plan Update. November 2019.
- Cypher, E.A. 2002. "General Rare Plant Survey Guidelines." Bakersfield, California: California State University, Stanislaus, Endangered Species Recovery Program. Revised July 2002. Accessed May 2012. http://www.fws.gov/sacramento/ES/Survey-Protocols-Guidelines/Documents/rare_plant_protocol.pdf.
- Dibblee, T.W. and J.A. Minch. 2003a. Geologic map of the Steele Peak quadrangle, Riverside County, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-111, scale 1:24,000.
- Dibblee, T.W. and J.A. Minch. 2003b. Geologic map of the Sunnymead/south 1/2 of Redlands quadrangles, San Bernardino and Riverside County, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-110, scale 1:24,000.
- Dibblee, T.W. and J.A. Minch. 2003c. Geologic map of the Perris quadrangle, Riverside County, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-112, scale 1:24,000.
- DMV (California Department of Motor Vehicles). 2019. *Statistics for Publication, January through December 2018*. March 2019. <https://www.dmv.ca.gov/portal/wcm/connect/5aa16cd3-39a5-402f-9453-0d353706cc9a/official.pdf?MOD=AJPERES>.
- DOC (California Department of Conservation). 2012. Fault Activity Map of California. California Geologic Survey. December 31, 2012.
- DOC. 2015. Data Viewer. Seismic Hazards Program. Unevaluated Areas. Accessed November 12, 2019. <https://maps.conservation.ca.gov/geologic/hazards/#webmaps>.
- DOC. 2017a. "Riverside County Important Farmland 2016, Sheet 1 of 3" [map]. 1:100,000. Farmland Mapping and Monitoring Program. July 2017. Sacramento, California: California Department of Conservation, Division of Land Resource Protection.
- DOF (California Department of Finance). 2019. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2019 with 2010 Census Benchmark. Released May 1, 2019.
- DOT (U.S. Department of Transportation). 2006. *FHWA Highway Construction Noise Handbook*. Final Report. FHWA-HEP-06-015. DOT-VNTSC-FHWA-06-02. Cambridge, Massachusetts: DOT, Research and Innovative Technology Administration. August 2006.

- DTSC (California Department of Toxic Substances Control). 2019. Envirostor Database. Accessed November 18, 2019. <https://www.envirostor.dtsc.ca.gov/public/>.
- Dudek. 2019. LS 1269 Sewer Force Main Replacement Project Alternative Alignments Analysis Technical Memorandum. June 2019.
- EPA (United States Environmental Protection Agency). 2016. "Health and Environmental Effects of Particulate Matter (PM)" Last updated July 1, 2016. <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.
- EPA. 2017. "EPA Green Book." Last updated September, 2017. <https://www.epa.gov/green-book>.
- FEMA (Federal Emergency Management Agency). 2008a. Flood Insurance Rate map. Panel 06065C0745G. Effective August 28, 2008.
- FEMA. 2008b. Flood Insurance Rate map. Panel 06065C1410G. Effective August 28, 2008.
- FEMA. 2017. Letter of Map Revision 16092170P. Effective March 6, 2017.
- Google Earth. 2019. Aerial photograph. 1:200 scale.
- Gray, J. and D. Bramlet. 1992. Habitat Classification System, Natural Resources, Geographic Information System (GIS) Project. Santa Ana, California: County of Orange Environmental Management Agency.
- Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game. October 1986.
- IPCC (Intergovernmental Panel on Climate Change). 2007. *IPCC Fourth Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the U.N. Framework Convention on Climate Change*.
- Klein, A., and J. Evens. 2006. *Vegetation Alliances of Western Riverside County, California*. Final report prepared for the California Department of Fish and Game Habitat Conservation Division. Sacramento, California: California Native Plant Society. Published August 2005; revised April 2006.
- NRCS (Natural Resources Conservation Service). 2019. Custom Soil Resource Report for Western Riverside Area, California. Accessed December 6, 2019.
- Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. March 2008. Accessed September 12, 2012. http://www.sdcanyonlands.org/pdfs/veg_comm_sdcounty_2008_doc.pdf.
- OEHHA (Office of Environmental Health Hazard Assessment). 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments*. Accessed February 2015. <https://oehha.ca.gov/air/crn/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0>.
- RWQCB (Regional Water Quality Control Board Santa Ana Region). 2019. *Santa Ana Region Basin Plan*. Updated June 2019.

Sawyer, John O., Todd Keeler-Wolf, and Julie Evens. 2009. *A Manual of California Vegetation*. 2nd edition. Sacramento, California: California Native Plant Society.

SCAG (Southern California Association of Governments). 2016. 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy. Adopted April 7, 2016. Accessed March 2017. <http://scagrtpscscs.net/Pages/FINAL2016RTPSCS.aspx>.

SCAQMD (South Coast Air Quality Management District). 1993. CEQA Air Quality Handbook.

SCAQMD. 2003. White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. August 2003. <http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper.pdf>

SCAQMD. 2005. Rule 403: Fugitive Dust. Adopted May 7, 1976. Amended June 3, 2005.

SCAQMD. 2008. Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold. October 2008.

SCAQMD. 2009. Final Localized Significance Threshold Methodology. June 2003; revised July 2008; Appendix C “Mass Rate LST Look-up Tables” revised October 2009. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2>.

SCAQMD. 2010. Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #15. September 28, 2010. [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2).

SCAQMD. 2015. “SCAQMD Air Quality Significance Thresholds.” Originally published in CEQA Air Quality Handbook, Table A9-11-A. Revised March 2015. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>.

SCAQMD. 2017. Final 2016 Air Quality Management Plan. March 16, 2017. Accessed October 2017. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf>.

SoCalGas (Southern California Gas). 2019. Company Profile. Accessed December 2019. <https://www.socalgas.com/about-us/company-profile>.

SVP (Society of Vertebrate Paleontology). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. 11 p. Available; <http://vertpaleo.org/PDFS/68/68c554bb-86f1-442f-a0dc-25299762d36c.pdf>.

SWRCB (State Water Resources Control Board). 2019. Geotracker Database. Accessed November 18, 2019. <https://www.envirostor.dtsc.ca.gov/public/>.

USDA (U.S. Department of Agriculture). 2019. Web Soil Survey. Accessed February 2019. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

4.2 List of Preparers

Western Municipal Water District

Sonia Huff

Dudek

Wendy Worthey, Senior Project Manager

Audrey Nickerson, CEQA/NEPA Planner

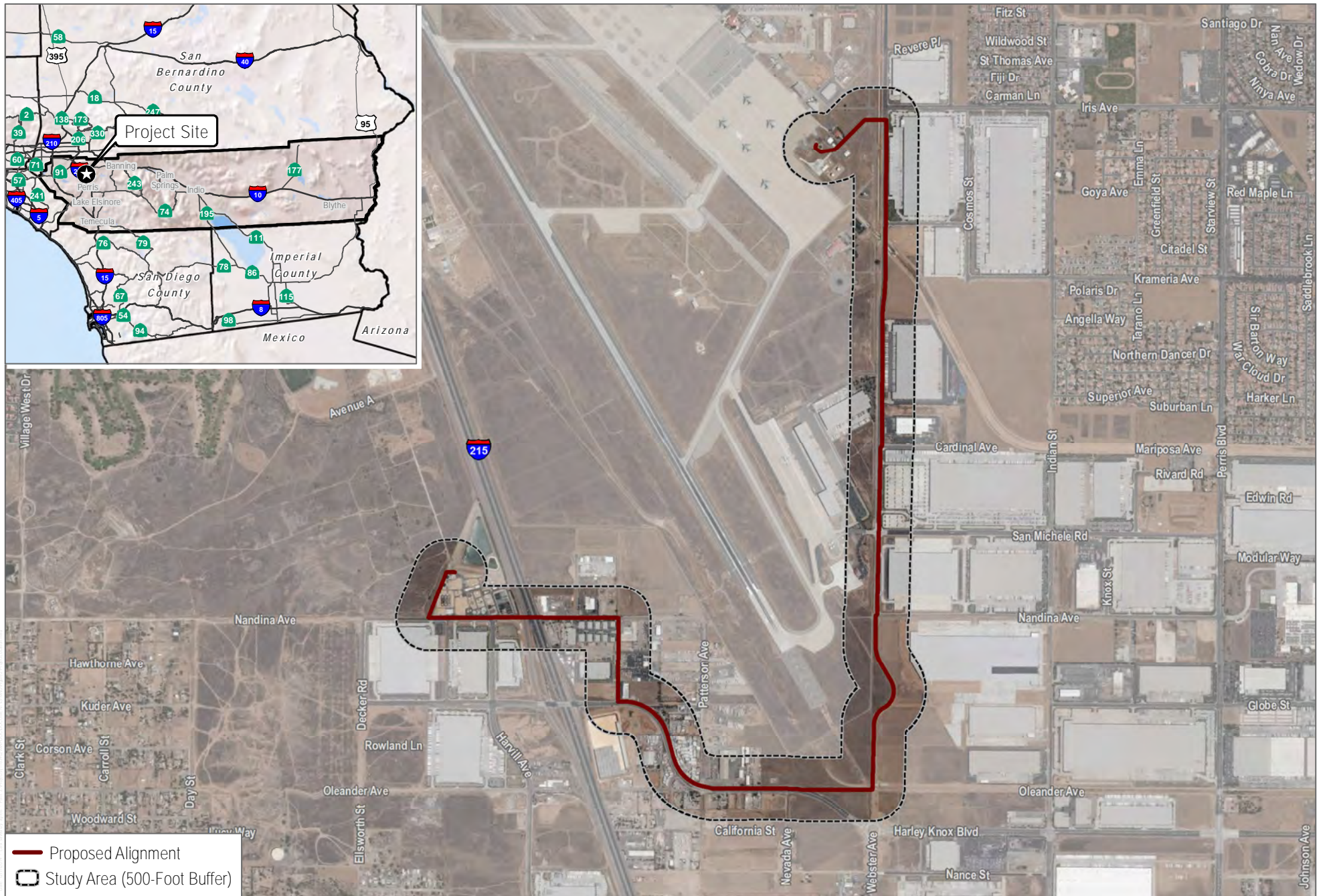
Anna Cassady, Biologist

Ted Roberts, Senior Archaeologist

Sarah Siren, Senior Paleontologist

Kathryn Palmer, P.E., Project Manager

Brian Tran, P.E., Senior Engineer



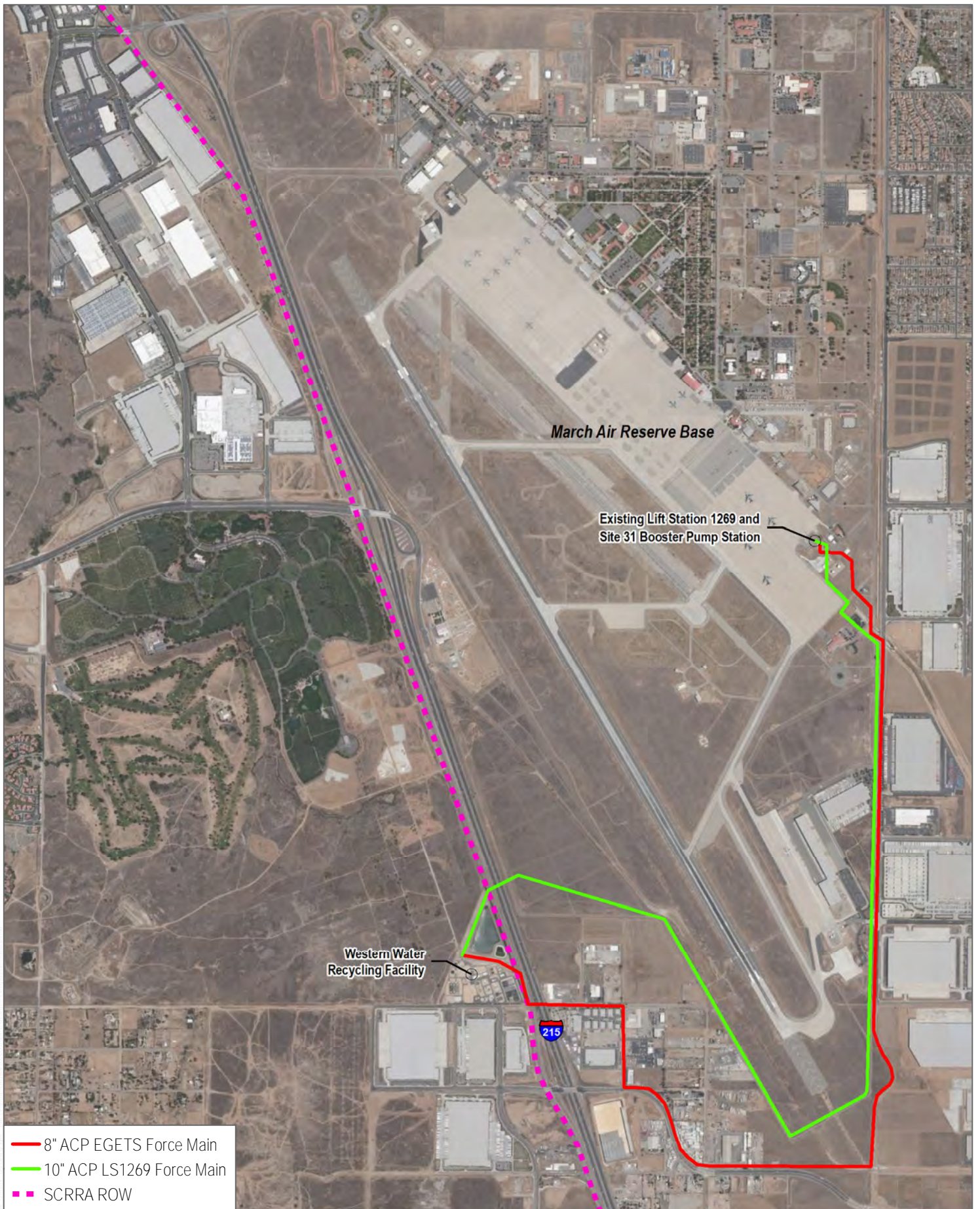
SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

FIGURE 1

Project Location

LS 1269 Sewer Force Main Replacement Project

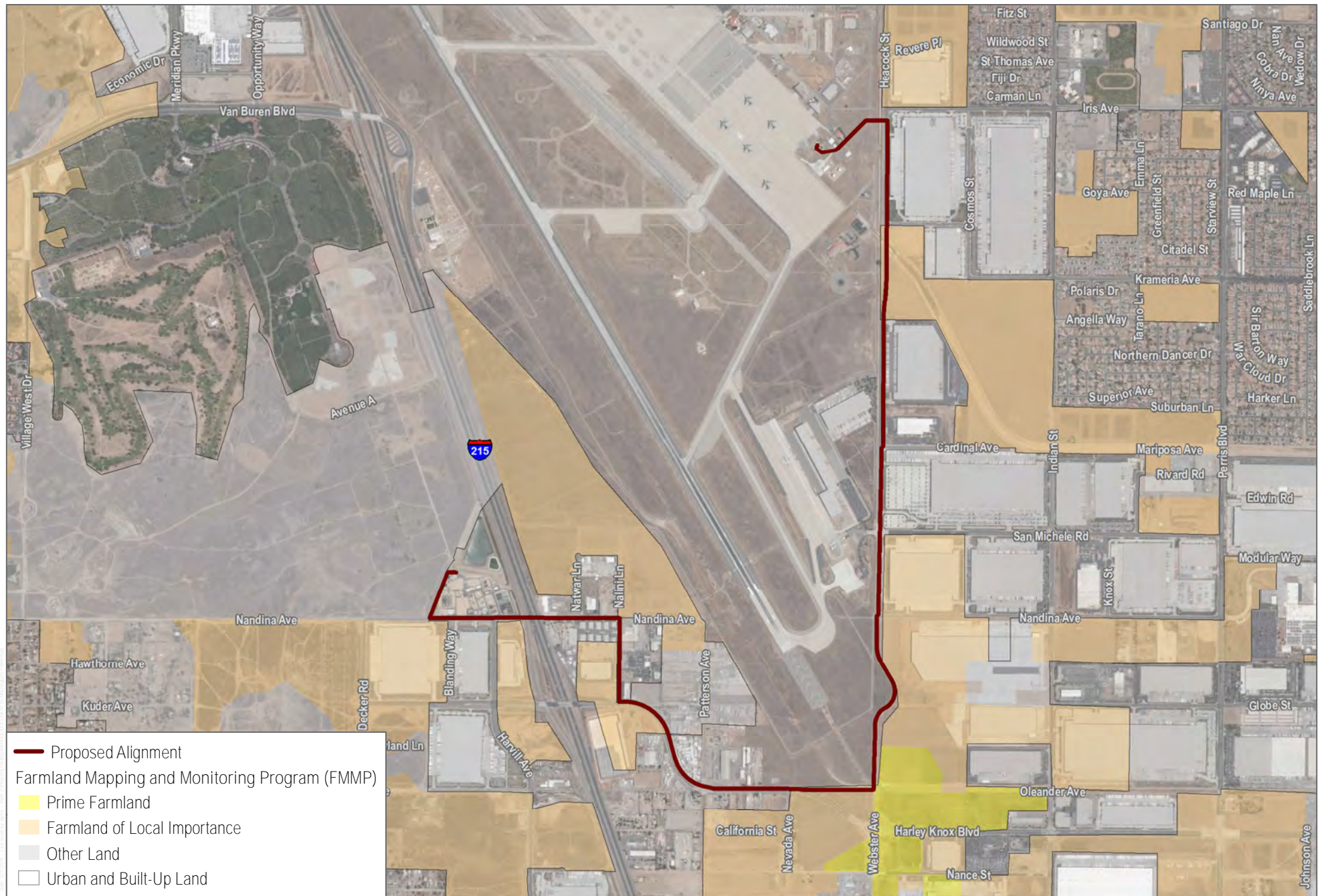
INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

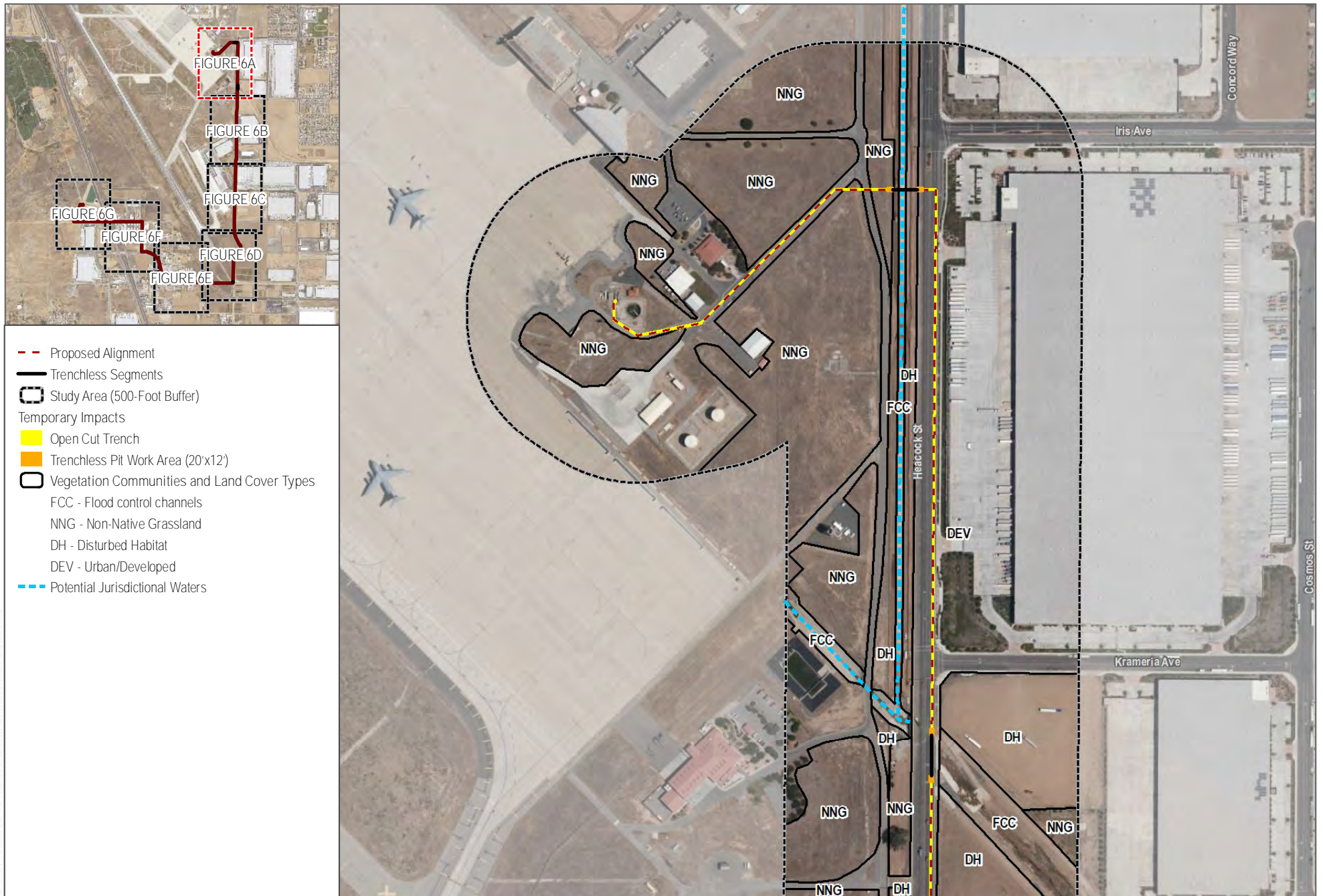
FIGURE 2

INTENTIONALLY LEFT BLANK



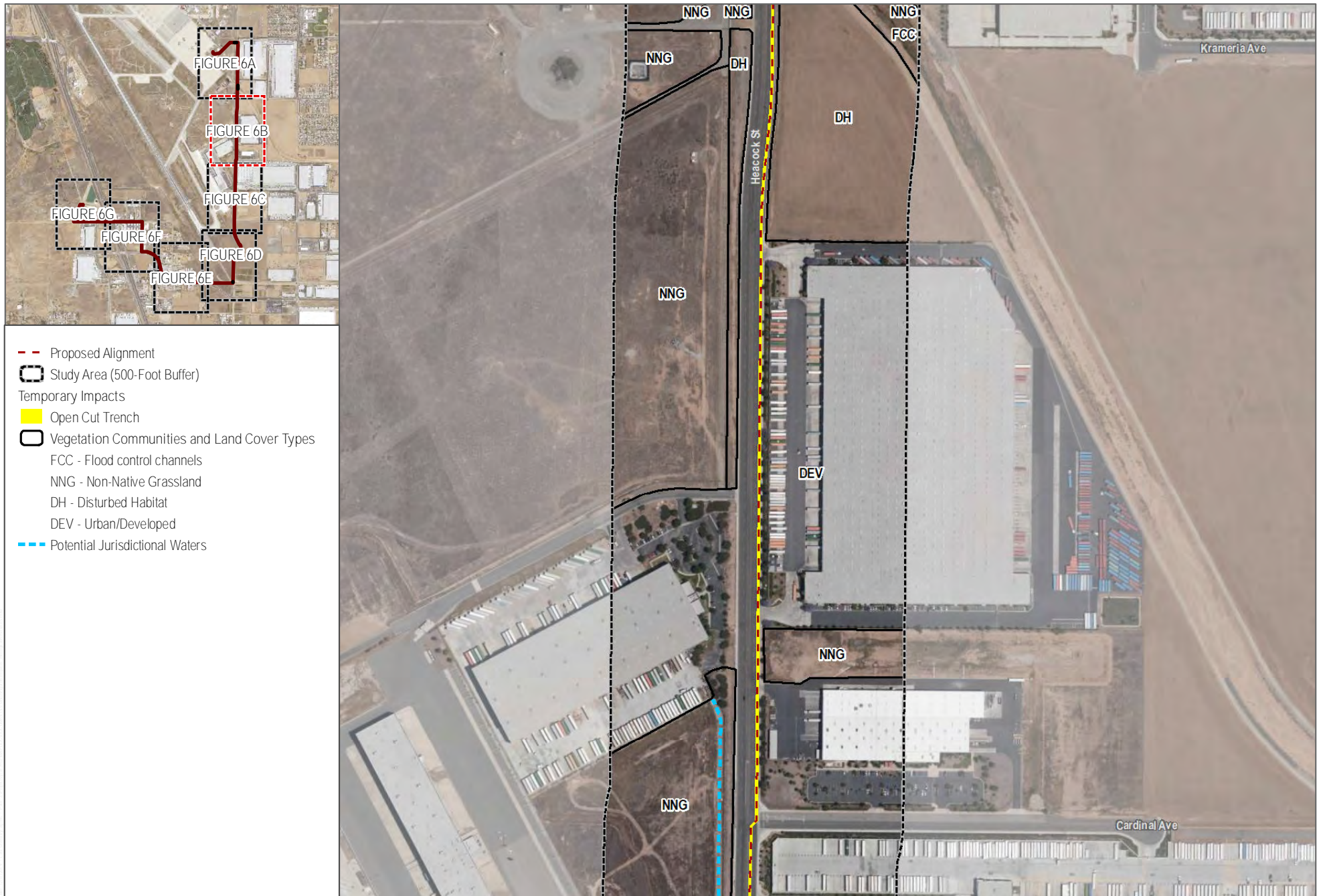
SOURCE: Western Municipal Water District 2019; CA Department of Conservation 2016; Riverside County 2019; Bing Maps

INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

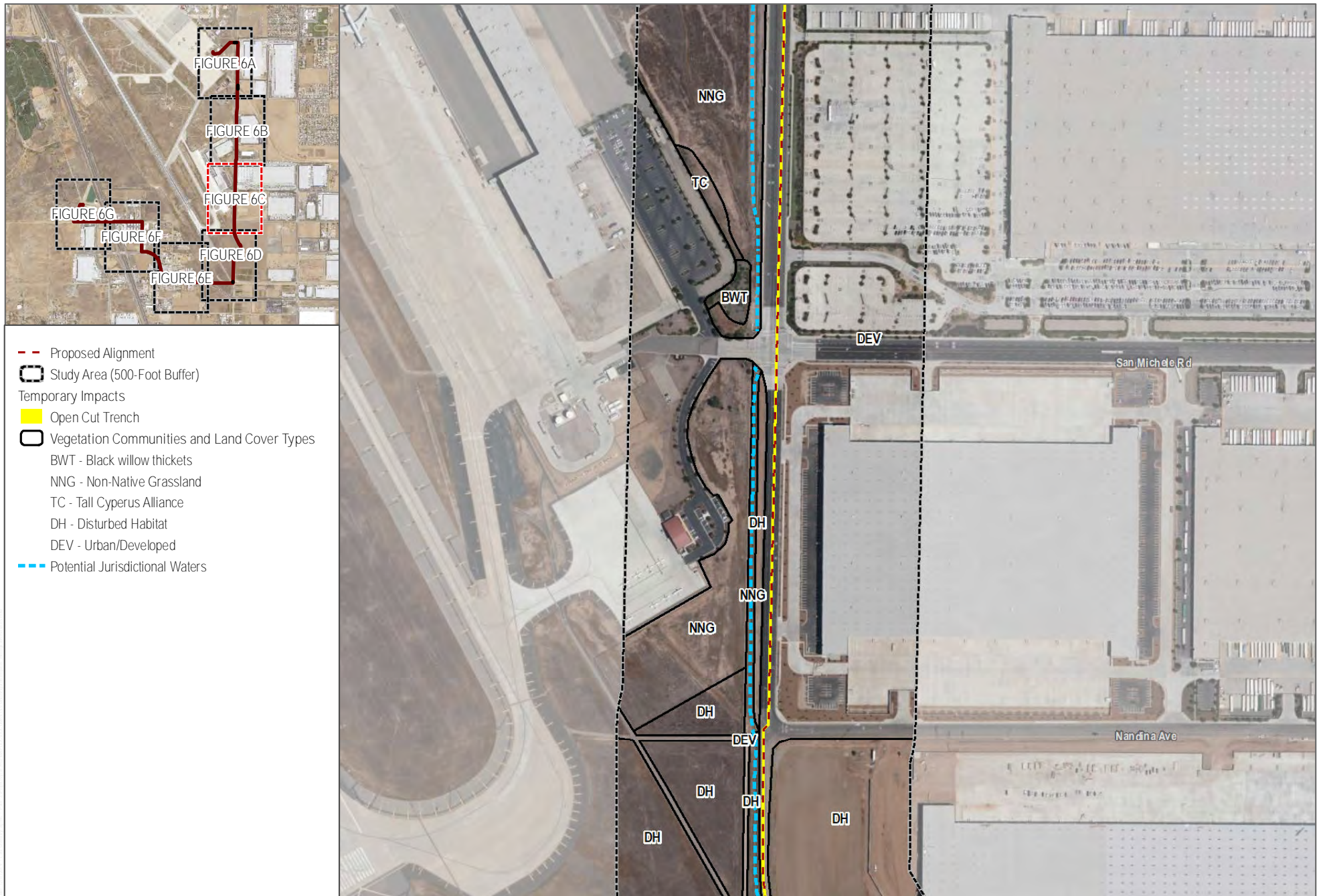
INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

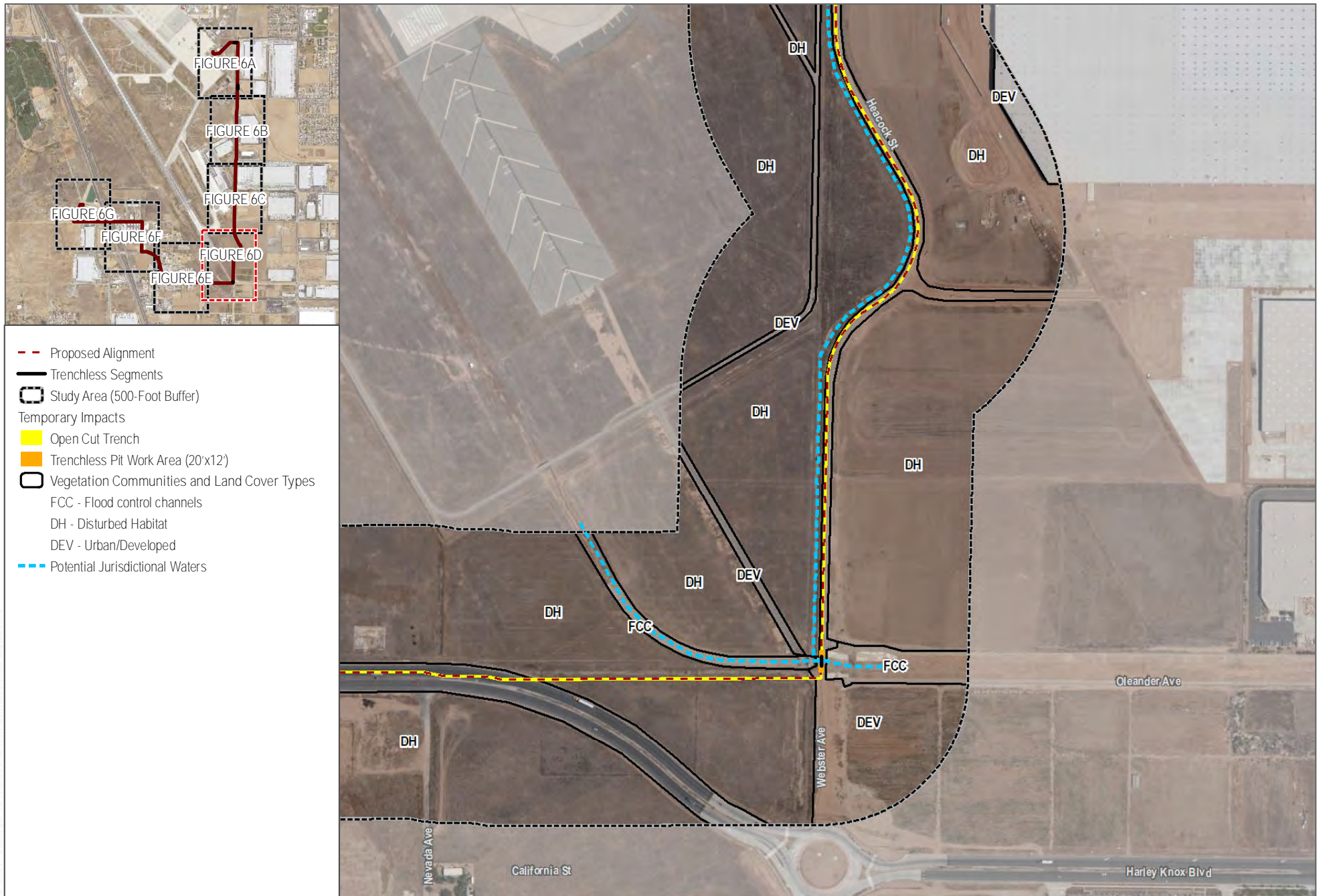
FIGURE 4B

INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

INTENTIONALLY LEFT BLANK



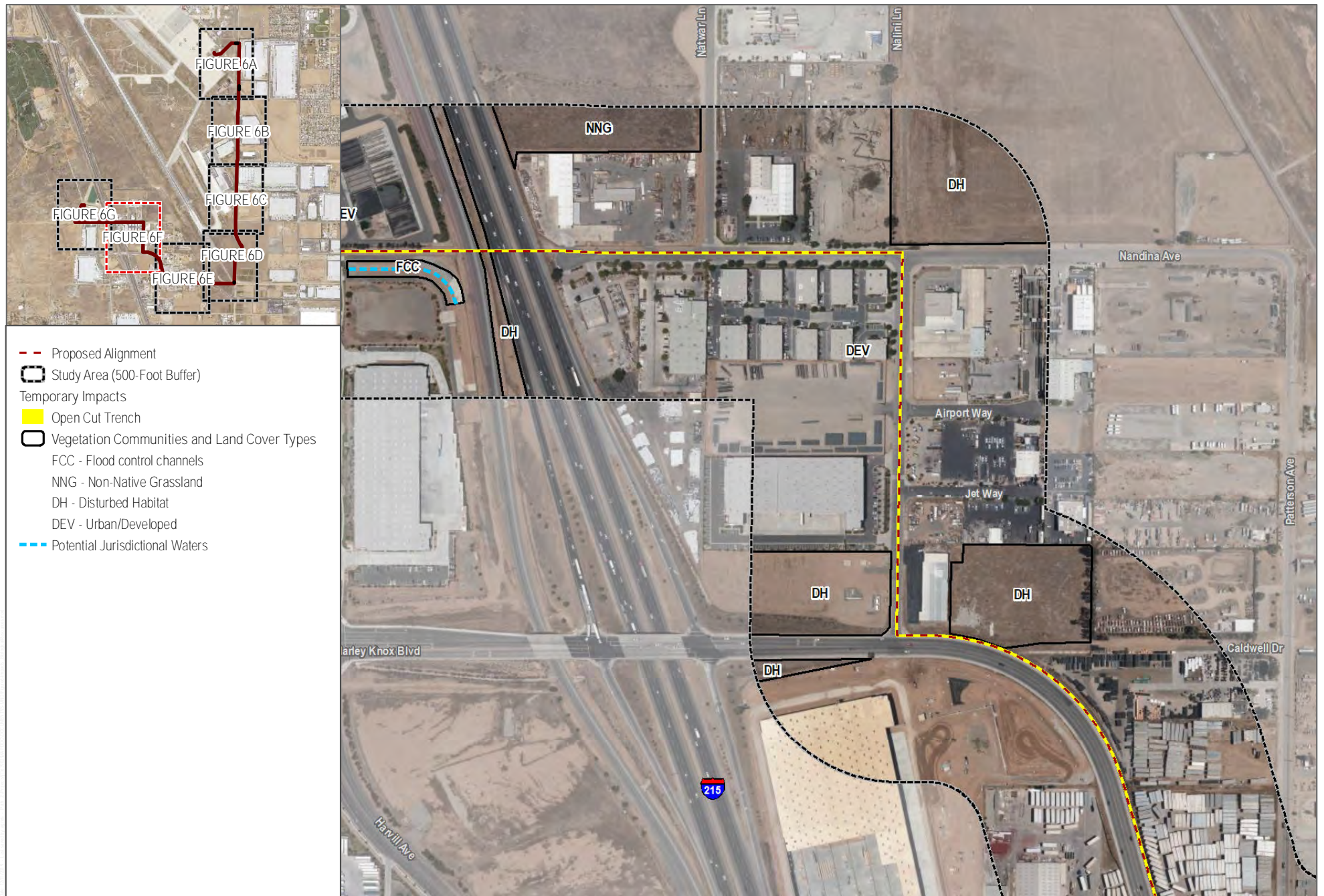
SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

INTENTIONALLY LEFT BLANK



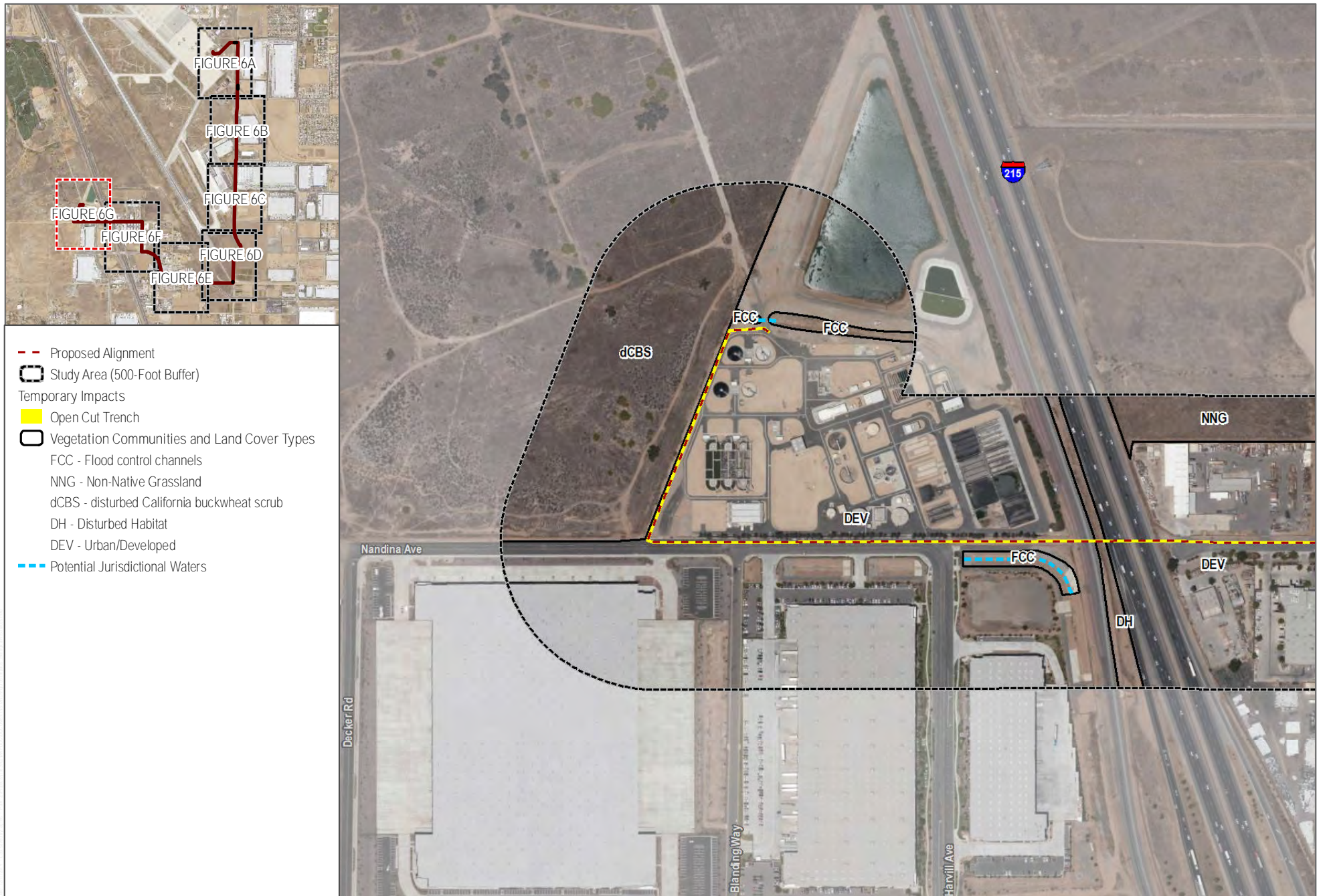
SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

INTENTIONALLY LEFT BLANK



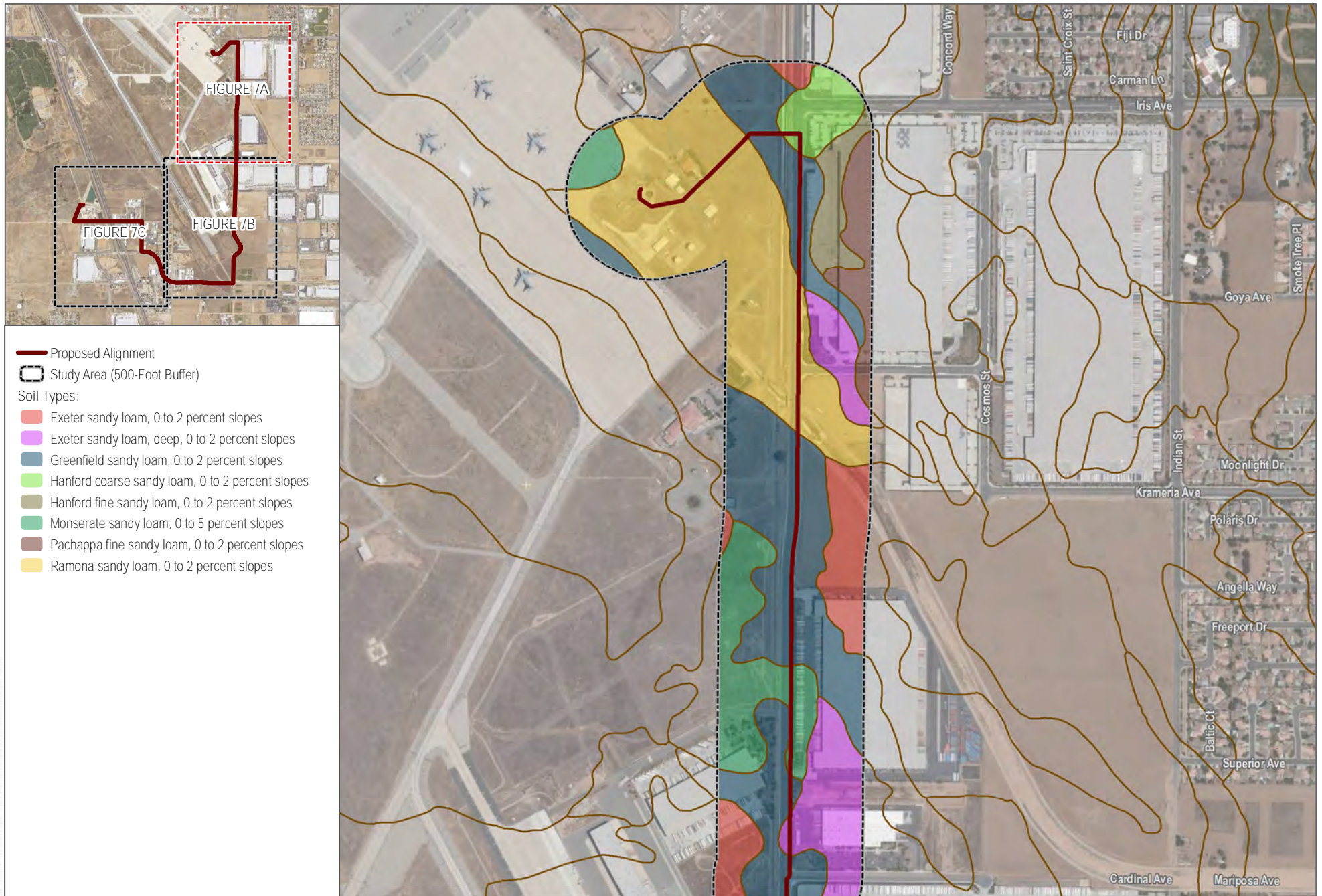
SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

INTENTIONALLY LEFT BLANK



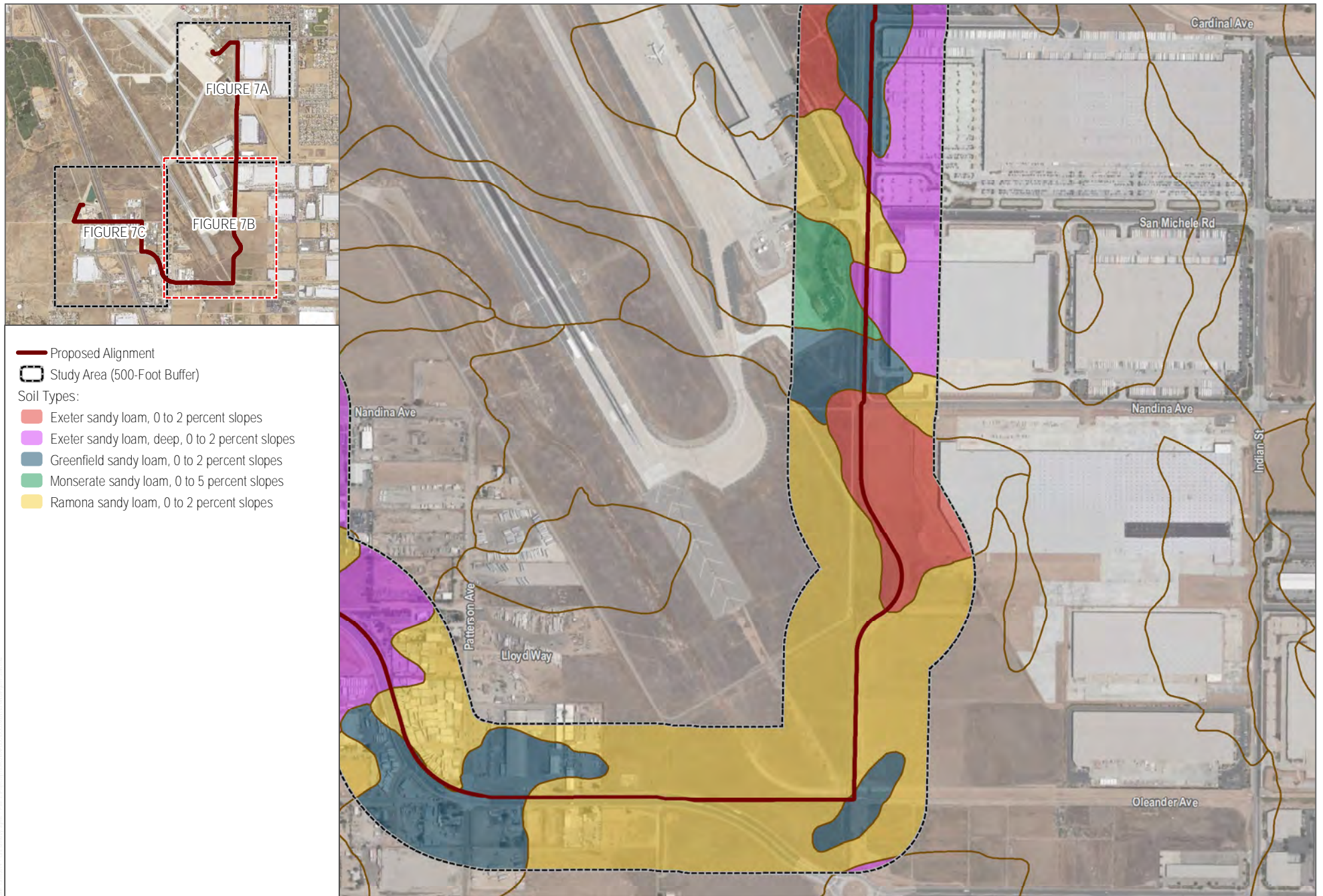
SOURCE: Western Municipal Water District 2019; Riverside County 2019; Bing Maps

INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

INTENTIONALLY LEFT BLANK



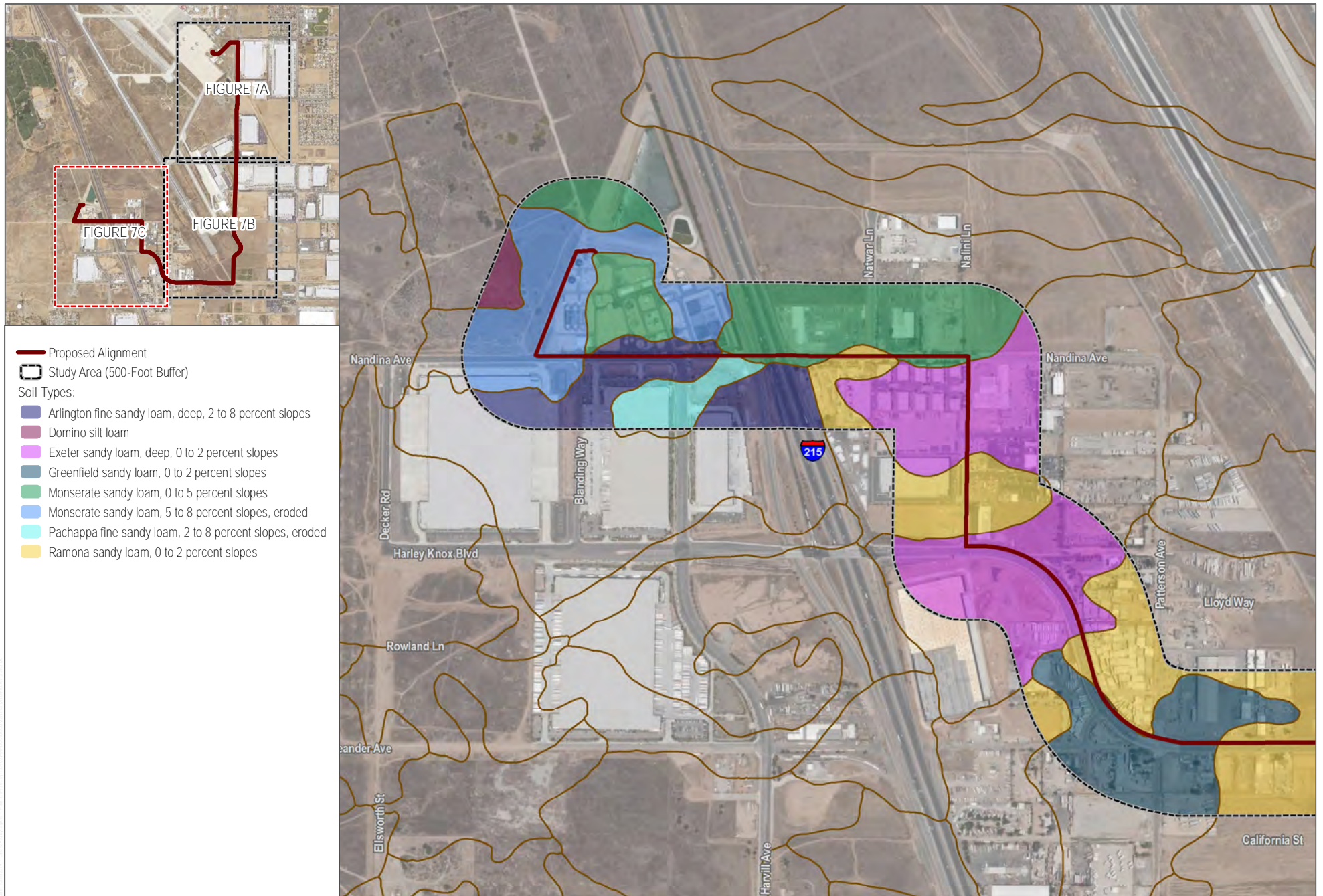
SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

FIGURE 5B

Soils

LS 1269 Sewer Force Main Replacement Project

INTENTIONALLY LEFT BLANK

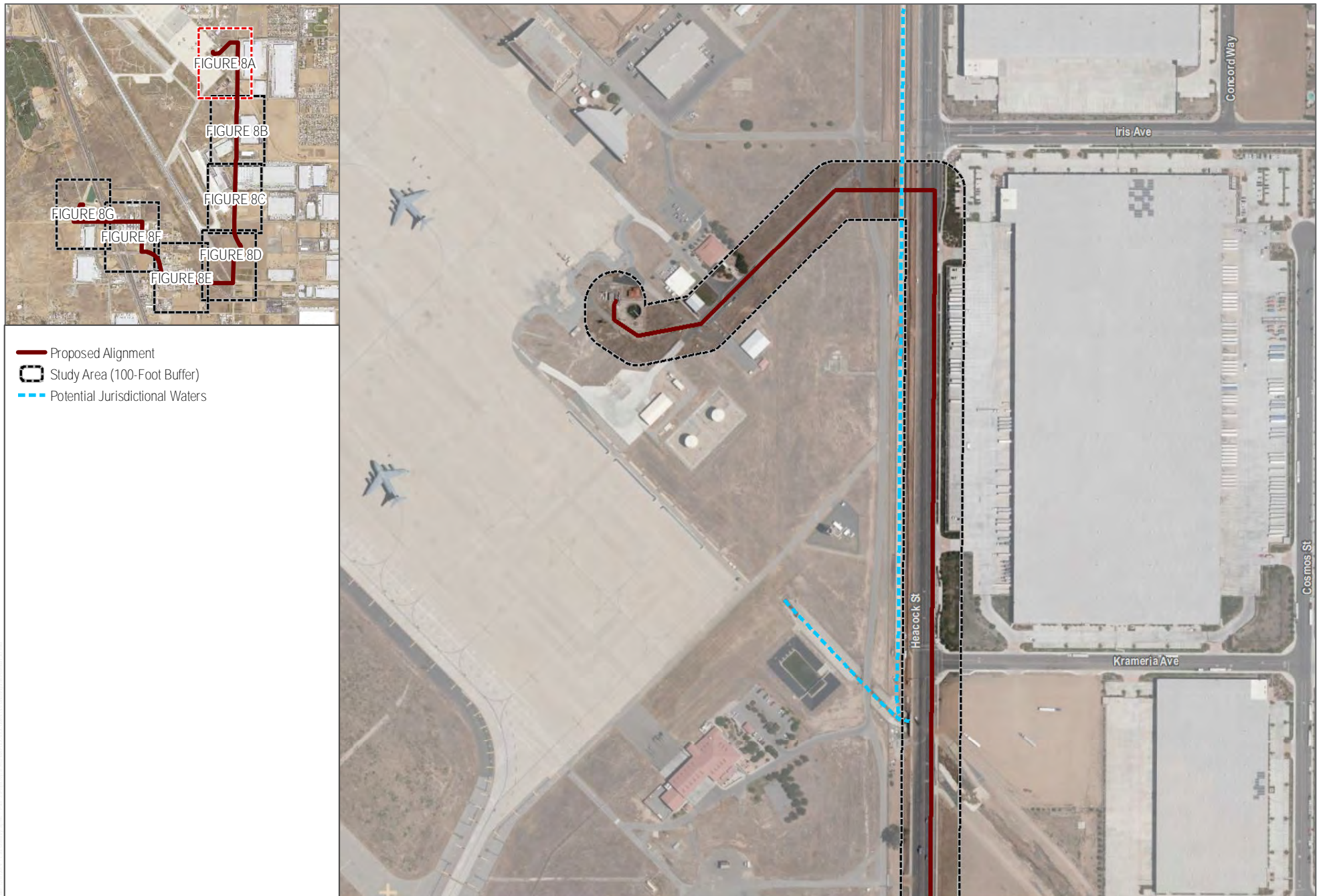


SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

FIGURE 5C

Soils

INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

INTENTIONALLY LEFT BLANK

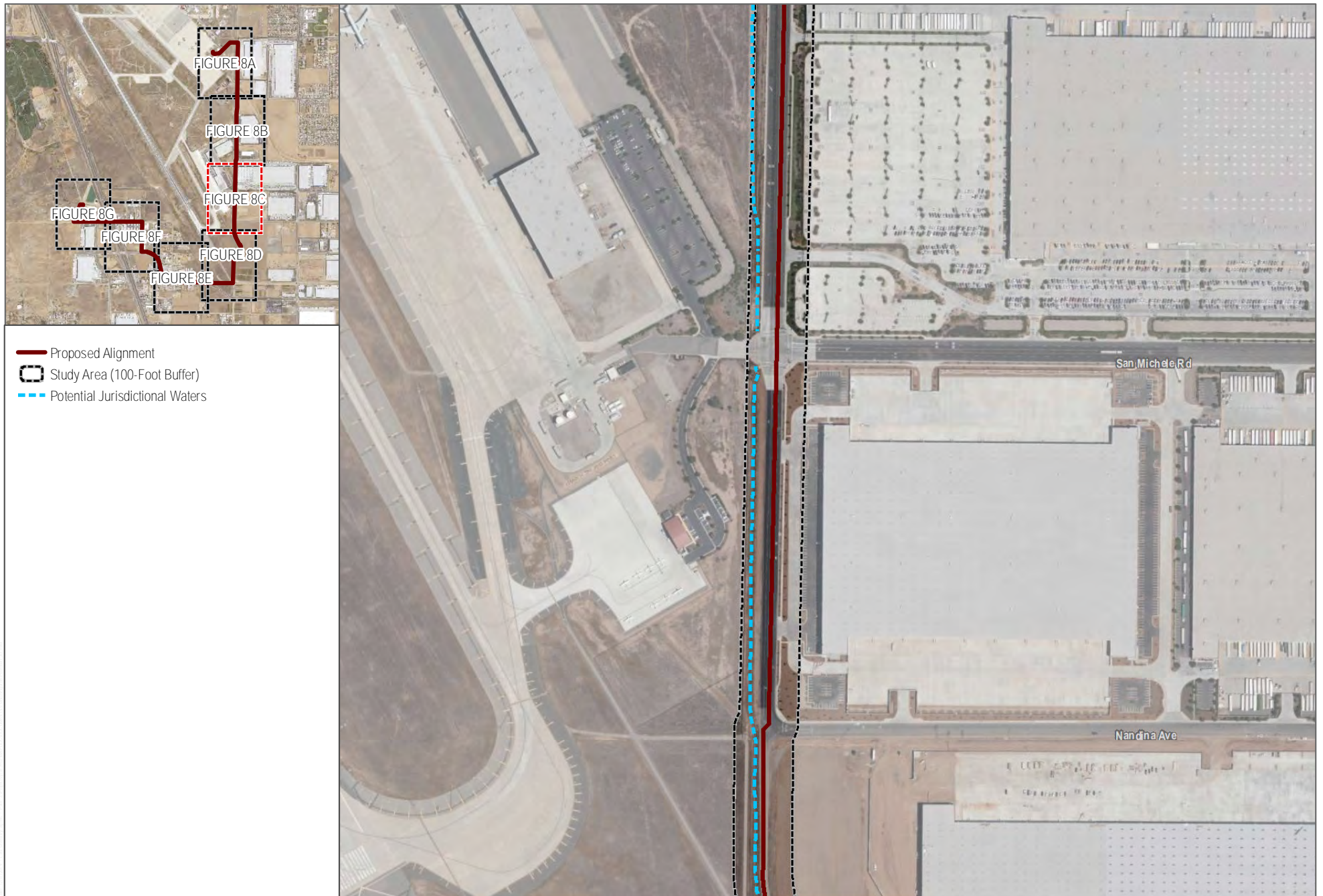


SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

FIGURE 6B

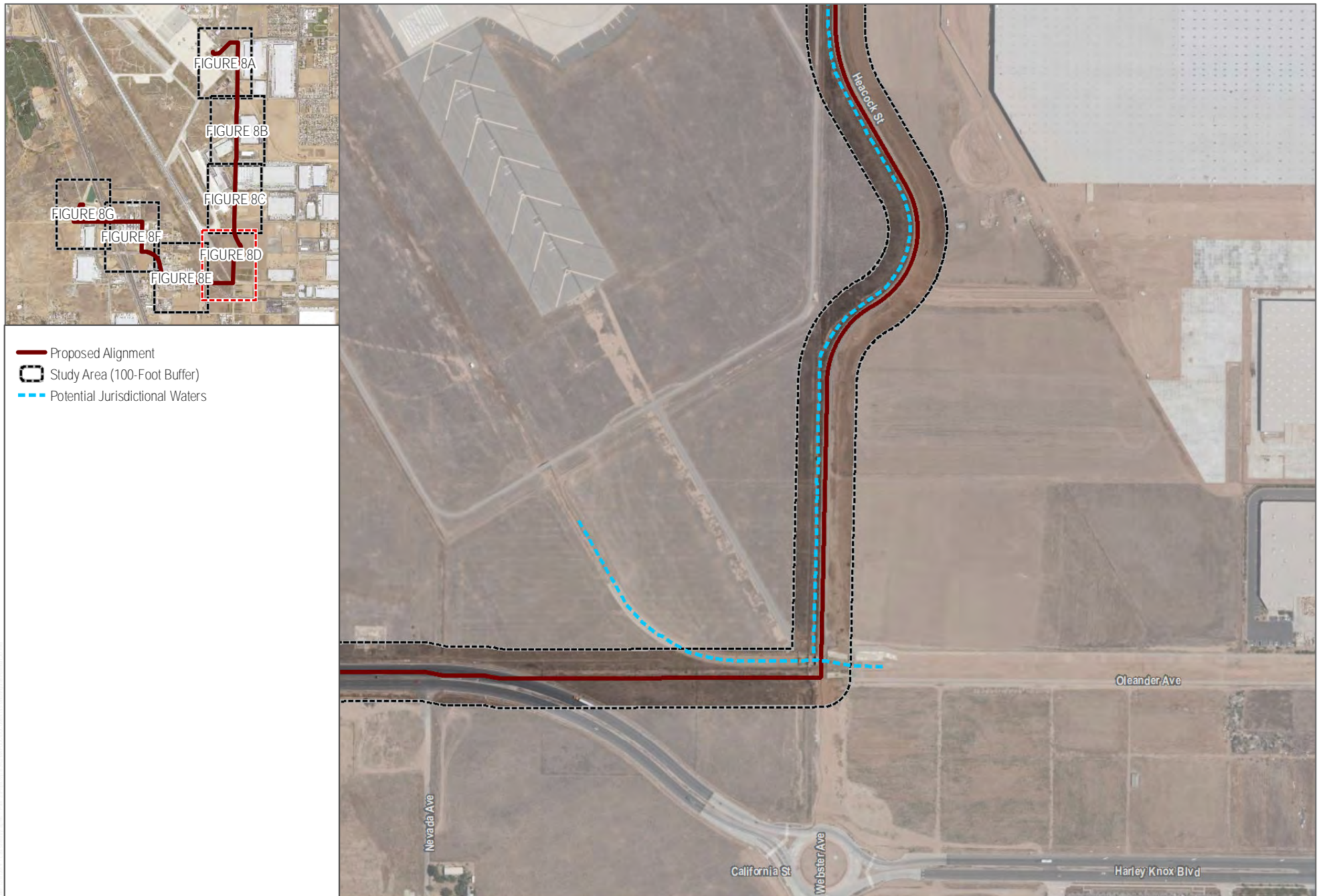
Potential Jurisdictional Waters
LS 1269 Sewer Force Main Replacement Project

INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

INTENTIONALLY LEFT BLANK

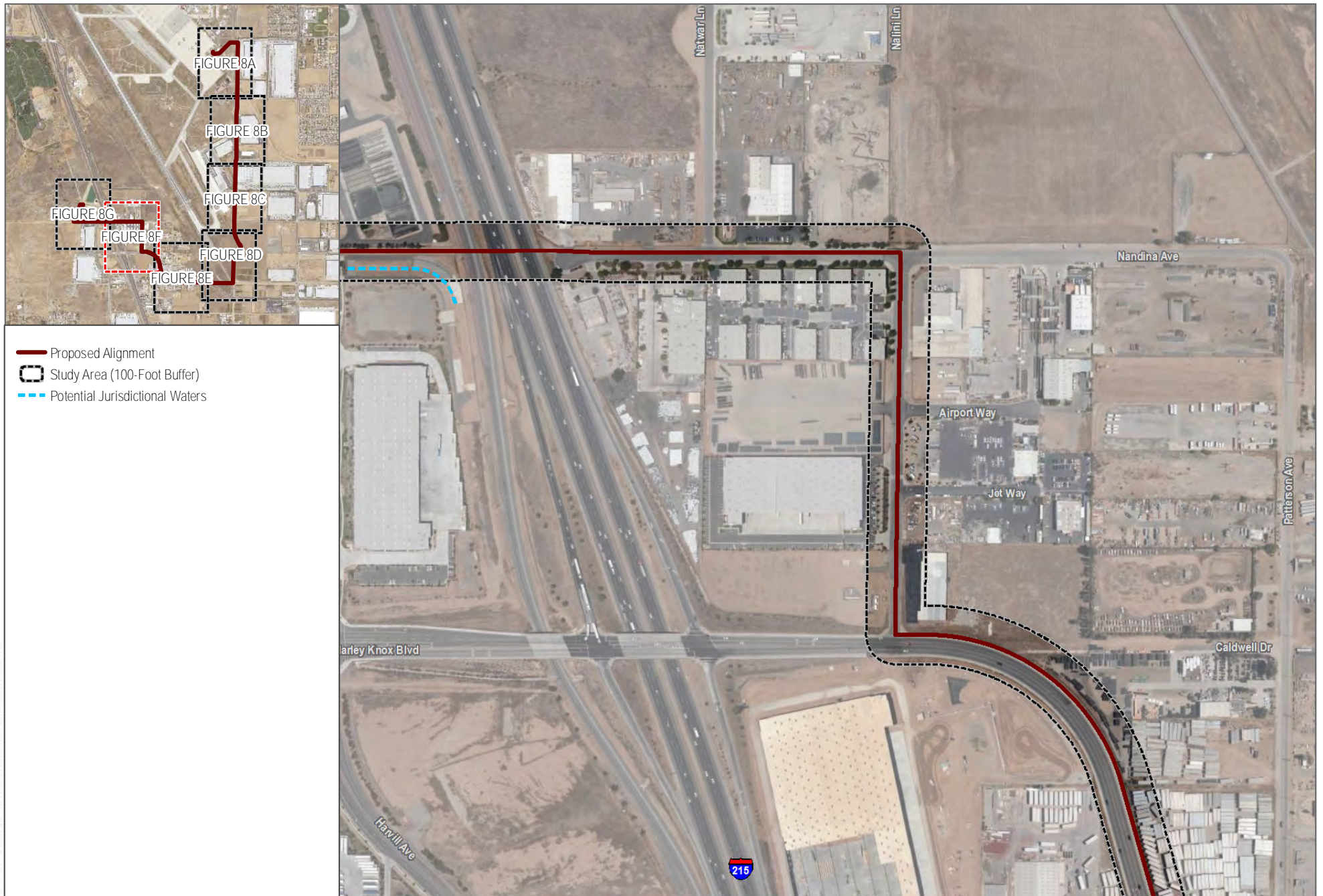


SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

FIGURE 6E

Potential Jurisdictional Waters
LS 1269 Sewer Force Main Replacement Project

INTENTIONALLY LEFT BLANK

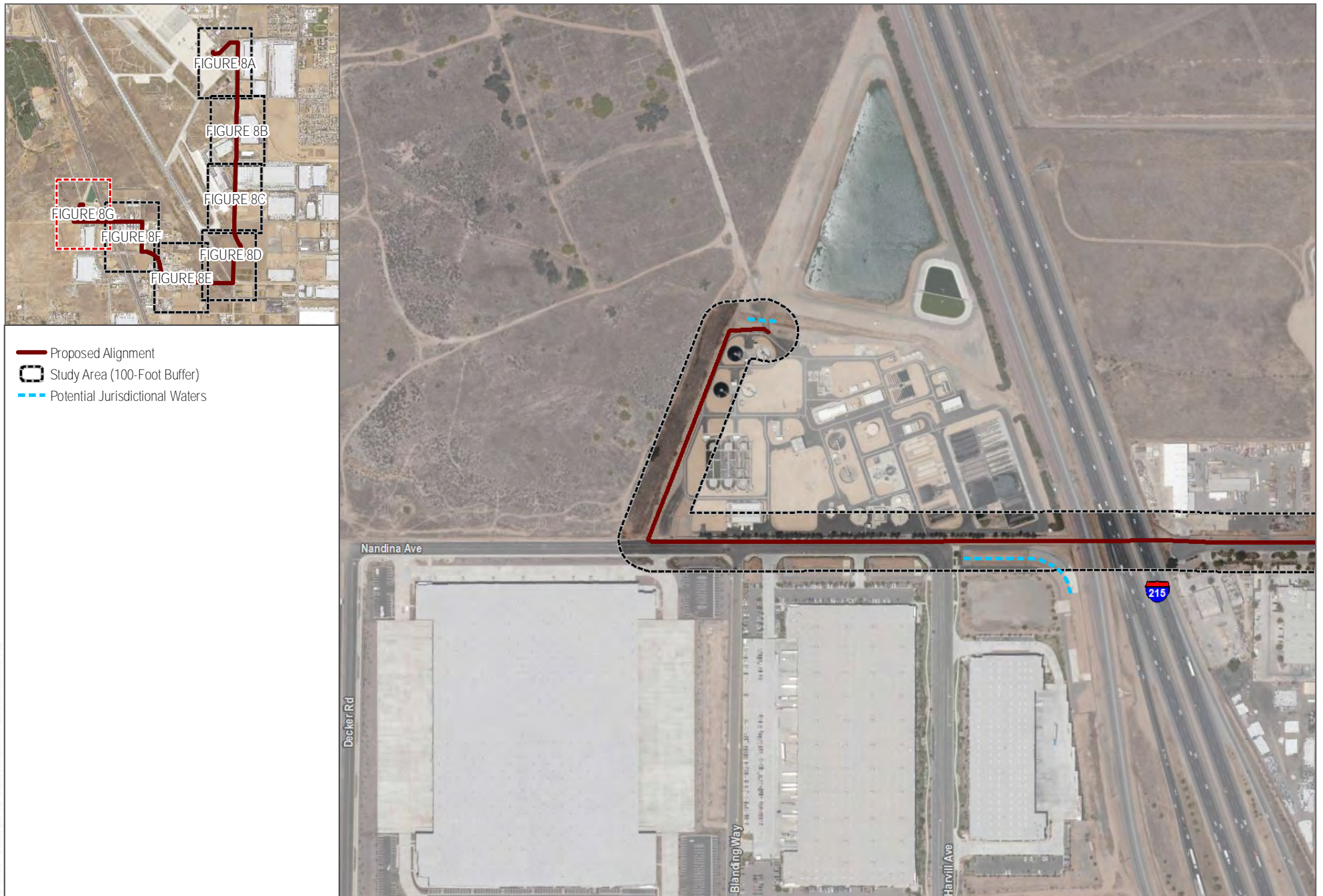


SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

FIGURE 6F

Potential Jurisdictional Waters
LS 1269 Sewer Force Main Replacement Project

INTENTIONALLY LEFT BLANK



SOURCE: Western Municipal Water District 2019; Riverside County 2019; USDA; Bing Maps

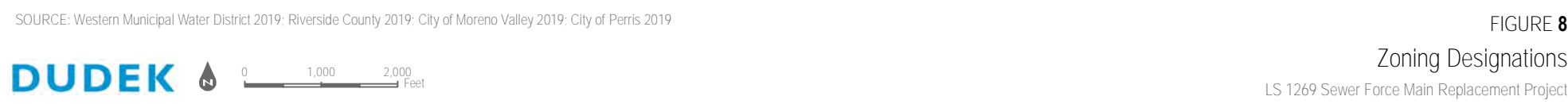
FIGURE 6G

Potential Jurisdictional Waters
LS 1269 Sewer Force Main Replacement Project

INTENTIONALLY LEFT BLANK



INTENTIONALLY LEFT BLANK



Zoning Designations

LS 1269 Sewer Force Main Replacement Project

INTENTIONALLY LEFT BLANK

Appendix A

Air Quality and Greenhouse Gases Modeling Output

WMWD Sewer Pipeline Replacement Project - Riverside-Mojave Desert SCAQMD County, Annual

WMWD Sewer Pipeline Replacement Project
Riverside-Mojave Desert SCAQMD County, Annual**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	65.00	1000sqft	1.49	65,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Schedule provided project Engineers.

Off-road Equipment - mod

Off-road Equipment - a

Grading -

Trips and VMT - a

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
------------	-------------	---------------	-----------

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	4.00	217.00
tblConstructionPhase	NumDays	2.00	219.00
tblConstructionPhase	PhaseEndDate	4/6/2020	12/14/2020
tblConstructionPhase	PhaseEndDate	3/9/2020	12/29/2020
tblConstructionPhase	PhaseEndDate	3/23/2020	11/27/2020
tblConstructionPhase	PhaseEndDate	3/3/2020	12/31/2020
tblConstructionPhase	PhaseStartDate	3/24/2020	12/1/2020
tblConstructionPhase	PhaseStartDate	3/4/2020	3/2/2020
tblConstructionPhase	PhaseStartDate	3/10/2020	11/16/2020
tblOffRoadEquipment	HorsePower	187.00	0.00
tblOffRoadEquipment	HorsePower	187.00	0.00
tblOffRoadEquipment	HorsePower	247.00	0.00
tblOffRoadEquipment	HorsePower	247.00	0.00
tblOffRoadEquipment	LoadFactor	0.41	0.00
tblOffRoadEquipment	LoadFactor	0.41	0.00
tblOffRoadEquipment	LoadFactor	0.40	0.00
tblOffRoadEquipment	LoadFactor	0.40	0.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,200.00
tblTripsAndVMT	HaulingTripNumber	0.00	800.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	25.00	26.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4739	4.1461	4.5725	8.6500e-003	0.0714	0.1989	0.2703	0.0192	0.1853	0.2045	0.0000	756.5641	756.5641	0.1992	0.0000	761.5436

Maximum	0.4739	4.1461	4.5725	8.6500e-003	0.0714	0.1989	0.2703	0.0192	0.1853	0.2045	0.0000	756.5641	756.5641	0.1992	0.0000	761.5436
---------	--------	--------	--------	-------------	--------	--------	--------	--------	--------	--------	--------	----------	----------	--------	--------	----------

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4739	4.1461	4.5725	8.6500e-003	0.0714	0.1989	0.2703	0.0192	0.1853	0.2045	0.0000	756.5634	756.5634	0.1992	0.0000	761.5428
Maximum	0.4739	4.1461	4.5725	8.6500e-003	0.0714	0.1989	0.2703	0.0192	0.1853	0.2045	0.0000	756.5634	756.5634	0.1992	0.0000	761.5428

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-2-2020	6-1-2020	1.3720	1.3720
2	6-2-2020	9-1-2020	1.3718	1.3718
3	9-2-2020	9-30-2020	0.4324	0.4324
		Highest	1.3720	1.3720

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
--	-----	-----	----	-----	---------------	--------------	------------	----------------	---------------	-------------	----------	-----------	-----------	-----	-----	------

Category	tons/yr										MT/yr					
Area	5.1800e-003	1.0000e-005	8.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.1800e-003	1.0000e-005	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1800e-003	1.0000e-005	8.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.1800e-003	1.0000e-005	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation - Open trench Excavation	Site Preparation	3/2/2020	12/31/2020	5	219	
2	Grading - Jack and Bore Construction	Grading	3/2/2020	12/29/2020	5	217	
3	Paving	Paving	11/16/2020	11/27/2020	5	10	
4	Architectural Coating	Architectural Coating	12/1/2020	12/14/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,900

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading - Jack and Bore Construction	Graders	0	0.00	0	0.00
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation - Open trench Excavation	Rubber Tired Dozers	0	0.00	0	0.00
Site Preparation - Open trench Excavation	Graders	0	0.00	0	0.00
Site Preparation - Open trench Excavation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation - Open trench Excavation	Excavators	2	8.00	158	0.38
Grading - Jack and Bore Construction	Rubber Tired Dozers	0	0.00	0	0.00
Grading - Jack and Bore Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation - Open trench Excavation	Paving Equipment	2	8.00	132	0.36
Grading - Jack and Bore Construction	Excavators	2	8.00	158	0.38
Grading - Jack and Bore Construction	Paving Equipment	2	8.00	132	0.36
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading - Jack and Bore Construction	Bore/Drill Rigs	1	8.00	221	0.50
Grading - Jack and Bore Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation - Open trench	6	16.00	2.00	1,200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Jack and Bore Construction	10	26.00	2.00	800.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - Open trench Excavation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1446	1.4546	1.7660	2.7000e-003		0.0780	0.0780		0.0718	0.0718	0.0000	236.9272	236.9272	0.0766	0.0000	238.8429
Total	0.1446	1.4546	1.7660	2.7000e-003	0.0000	0.0780	0.0780	0.0000	0.0718	0.0718	0.0000	236.9272	236.9272	0.0766	0.0000	238.8429

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1500e-003	0.1455	0.0188	4.5000e-004	0.0103	4.6000e-004	0.0108	2.8400e-003	4.4000e-004	3.2800e-003	0.0000	43.5056	43.5056	2.7300e-003	0.0000	43.5738
Vendor	6.2000e-004	0.0228	4.4600e-003	6.0000e-005	1.3800e-003	1.3000e-004	1.5100e-003	4.0000e-004	1.2000e-004	5.2000e-004	0.0000	5.3849	5.3849	4.3000e-004	0.0000	5.3957
Worker	8.0500e-003	5.6400e-003	0.0602	1.8000e-004	0.0193	1.2000e-004	0.0194	5.1100e-003	1.1000e-004	5.2200e-003	0.0000	16.1113	16.1113	4.0000e-004	0.0000	16.1214
Total	0.0118	0.1739	0.0835	6.9000e-004	0.0310	7.1000e-004	0.0317	8.3500e-003	6.7000e-004	9.0200e-003	0.0000	65.0018	65.0018	3.5600e-003	0.0000	65.0909

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1446	1.4546	1.7660	2.7000e-003		0.0780	0.0780		0.0718	0.0718	0.0000	236.9269	236.9269	0.0766	0.0000	238.8426
Total	0.1446	1.4546	1.7660	2.7000e-003	0.0000	0.0780	0.0780	0.0000	0.0718	0.0718	0.0000	236.9269	236.9269	0.0766	0.0000	238.8426

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	3.1500e-003	0.1455	0.0188	4.5000e-004	0.0103	4.6000e-004	0.0108	2.8400e-003	4.4000e-004	3.2800e-003	0.0000	43.5056	43.5056	2.7300e-003	0.0000	43.5738
Vendor	6.2000e-004	0.0228	4.4600e-003	6.0000e-005	1.3800e-003	1.3000e-004	1.5100e-003	4.0000e-004	1.2000e-004	5.2000e-004	0.0000	5.3849	5.3849	4.3000e-004	0.0000	5.3957
Worker	8.0500e-003	5.6400e-003	0.0602	1.8000e-004	0.0193	1.2000e-004	0.0194	5.1100e-003	1.1000e-004	5.2200e-003	0.0000	16.1113	16.1113	4.0000e-004	0.0000	16.1214
Total	0.0118	0.1739	0.0835	6.9000e-004	0.0310	7.1000e-004	0.0317	8.3500e-003	6.7000e-004	9.0200e-003	0.0000	65.0018	65.0018	3.5600e-003	0.0000	65.0909

3.3 Grading - Jack and Bore Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2849	2.3369	2.5519	4.5300e-003		0.1167	0.1167		0.1096	0.1096	0.0000	386.0289	386.0289	0.1141	0.0000	388.8812
Total	0.2849	2.3369	2.5519	4.5300e-003	0.0000	0.1167	0.1167	0.0000	0.1096	0.1096	0.0000	386.0289	386.0289	0.1141	0.0000	388.8812

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-003	0.0970	0.0126	3.0000e-004	6.9000e-003	3.0000e-004	7.2000e-003	1.8900e-003	2.9000e-004	2.1800e-003	0.0000	29.0038	29.0038	1.8200e-003	0.0000	29.0492
Vendor	6.2000e-004	0.0226	4.4200e-003	6.0000e-005	1.3700e-003	1.3000e-004	1.5000e-003	4.0000e-004	1.2000e-004	5.2000e-004	0.0000	5.3358	5.3358	4.3000e-004	0.0000	5.3464
Worker	0.0130	9.0800e-003	0.0970	2.9000e-004	0.0310	1.9000e-004	0.0312	8.2300e-003	1.8000e-004	8.4100e-003	0.0000	25.9417	25.9417	6.5000e-004	0.0000	25.9579
Total	0.0157	0.1286	0.1140	6.5000e-004	0.0393	6.2000e-004	0.0399	0.0105	5.9000e-004	0.0111	0.0000	60.2812	60.2812	2.9000e-003	0.0000	60.3536

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2849	2.3369	2.5519	4.5300e-003		0.1167	0.1167		0.1096	0.1096	0.0000	386.0285	386.0285	0.1141	0.0000	388.8807
Total	0.2849	2.3369	2.5519	4.5300e-003	0.0000	0.1167	0.1167	0.0000	0.1096	0.1096	0.0000	386.0285	386.0285	0.1141	0.0000	388.8807

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-003	0.0970	0.0126	3.0000e-004	6.9000e-003	3.0000e-004	7.2000e-003	1.8900e-003	2.9000e-004	2.1800e-003	0.0000	29.0038	29.0038	1.8200e-003	0.0000	29.0492
Vendor	6.2000e-004	0.0226	4.4200e-003	6.0000e-005	1.3700e-003	1.3000e-004	1.5000e-003	4.0000e-004	1.2000e-004	5.2000e-004	0.0000	5.3358	5.3358	4.3000e-004	0.0000	5.3464
Worker	0.0130	9.0800e-003	0.0970	2.9000e-004	0.0310	1.9000e-004	0.0312	8.2300e-003	1.8000e-004	8.4100e-003	0.0000	25.9417	25.9417	6.5000e-004	0.0000	25.9579
Total	0.0157	0.1286	0.1140	6.5000e-004	0.0393	6.2000e-004	0.0399	0.0105	5.9000e-004	0.0111	0.0000	60.2812	60.2812	2.9000e-003	0.0000	60.3536

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8829	5.8829	1.8600e-003	0.0000	5.9295
Paving	1.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.1500e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8829	5.8829	1.8600e-003	0.0000	5.9295

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0400e-003	2.0000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2459	0.2459	2.0000e-005	0.0000	0.2464
Worker	3.2000e-004	2.3000e-004	2.4100e-003	1.0000e-005	7.7000e-004	0.0000	7.7000e-004	2.0000e-004	0.0000	2.1000e-004	0.0000	0.6437	0.6437	2.0000e-005	0.0000	0.6441
Total	3.5000e-004	1.2700e-003	2.6100e-003	1.0000e-005	8.3000e-004	1.0000e-005	8.4000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.8896	0.8896	4.0000e-005	0.0000	0.8905

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8828	5.8828	1.8600e-003	0.0000	5.9295

Paving	1.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.1500e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8828	5.8828	1.8600e-003	0.0000	5.9295

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0400e-003	2.0000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2459	0.2459	2.0000e-005	0.0000	0.2464
Worker	3.2000e-004	2.3000e-004	2.4100e-003	1.0000e-005	7.7000e-004	0.0000	7.7000e-004	2.0000e-004	0.0000	2.1000e-004	0.0000	0.6437	0.6437	2.0000e-005	0.0000	0.6441
Total	3.5000e-004	1.2700e-003	2.6100e-003	1.0000e-005	8.3000e-004	1.0000e-005	8.4000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.8896	0.8896	4.0000e-005	0.0000	0.8905

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	9.0400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	0.0103	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791

Unmitigated Construction Off-Site

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2759	0.2759	1.0000e-005	0.0000	0.2761
Total	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2759	0.2759	1.0000e-005	0.0000	0.2761

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
------------------------	-------	------	------	------	------	------	---	---	---

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.1800e-003	1.0000e-005	8.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003
Unmitigated	5.1800e-003	1.0000e-005	8.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.2000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003
Total	5.1800e-003	1.0000e-005	8.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.2000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003
Total	5.1800e-003	1.0000e-005	8.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6100e-003	1.6100e-003	0.0000	0.0000	1.7200e-003

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

WMWD Sewer Pipeline Replacement Project - Riverside-Mojave Desert SCAQMD County, Summer

WMWD Sewer Pipeline Replacement Project
Riverside-Mojave Desert SCAQMD County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	65.00	1000sqft	1.49	65,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use -
- Construction Phase - Schedule provided project Engineers.
- Off-road Equipment - mod
- Off-road Equipment - a
- Grading -
- Trips and VMT - a
- Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
------------	-------------	---------------	-----------

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	4.00	217.00
tblConstructionPhase	NumDays	2.00	219.00
tblConstructionPhase	PhaseEndDate	4/6/2020	12/14/2020
tblConstructionPhase	PhaseEndDate	3/9/2020	12/29/2020
tblConstructionPhase	PhaseEndDate	3/23/2020	11/27/2020
tblConstructionPhase	PhaseEndDate	3/3/2020	12/31/2020
tblConstructionPhase	PhaseStartDate	3/24/2020	12/1/2020
tblConstructionPhase	PhaseStartDate	3/4/2020	3/2/2020
tblConstructionPhase	PhaseStartDate	3/10/2020	11/16/2020
tblOffRoadEquipment	HorsePower	187.00	0.00
tblOffRoadEquipment	HorsePower	187.00	0.00
tblOffRoadEquipment	HorsePower	247.00	0.00
tblOffRoadEquipment	HorsePower	247.00	0.00
tblOffRoadEquipment	LoadFactor	0.41	0.00
tblOffRoadEquipment	LoadFactor	0.41	0.00
tblOffRoadEquipment	LoadFactor	0.40	0.00
tblOffRoadEquipment	LoadFactor	0.40	0.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,200.00
tblTripsAndVMT	HaulingTripNumber	0.00	800.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	25.00	26.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.2989	46.2297	51.1617	0.0947	0.8247	2.2713	3.0960	0.2210	2.1117	2.3327	0.0000	9,126.4523	9,126.4523	2.4140	0.0000	9,186.8014

Maximum	6.2989	46.2297	51.1617	0.0947	0.8247	2.2713	3.0960	0.2210	2.1117	2.3327	0.0000	9,126.4523	9,126.4523	2.4140	0.0000	9,186.8014
---------	--------	---------	---------	--------	--------	--------	--------	--------	--------	--------	--------	------------	------------	--------	--------	------------

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.2989	46.2297	51.1617	0.0947	0.8247	2.2713	3.0960	0.2210	2.1117	2.3327	0.0000	9,126.4523	9,126.4523	2.4140	0.0000	9,186.8014
Maximum	6.2989	46.2297	51.1617	0.0947	0.8247	2.2713	3.0960	0.2210	2.1117	2.3327	0.0000	9,126.4523	9,126.4523	2.4140	0.0000	9,186.8014

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Total	0.0286	6.0000e-005	6.6600e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005	0.0000	0.0152
-------	--------	-------------	-------------	--------	--------	-------------	-------------	--------	-------------	-------------	--	--------	--------	-------------	--------	--------

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0286	6.0000e-005	6.6600e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005	0.0000	0.0152

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation - Open trench Excavation	Site Preparation	3/2/2020	12/31/2020	5	219	
2	Grading - Jack and Bore Construction	Grading	3/2/2020	12/29/2020	5	217	
3	Paving	Paving	11/16/2020	11/27/2020	5	10	
4	Architectural Coating	Architectural Coating	12/1/2020	12/14/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,900

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading - Jack and Bore Construction	Graders	0	0.00	0	0.00
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation - Open trench Excavation	Rubber Tired Dozers	0	0.00	0	0.00
Site Preparation - Open trench Excavation	Graders	0	0.00	0	0.00
Site Preparation - Open trench Excavation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation - Open trench Excavation	Excavators	2	8.00	158	0.38
Grading - Jack and Bore Construction	Rubber Tired Dozers	0	0.00	0	0.00
Grading - Jack and Bore Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation - Open trench Excavation	Paving Equipment	2	8.00	132	0.36
Grading - Jack and Bore Construction	Excavators	2	8.00	158	0.38
Grading - Jack and Bore Construction	Paving Equipment	2	8.00	132	0.36
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading - Jack and Bore Construction	Bore/Drill Rigs	1	8.00	221	0.50
Grading - Jack and Bore Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation - Open trench	6	16.00	2.00	1,200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Jack and Bore Construction	10	26.00	2.00	800.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
-----------------------	---	------	------	------	-------	------	-------	--------	---------	------

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - Open trench Excavation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3207	13.2841	16.1275	0.0246		0.7124	0.7124		0.6554	0.6554		2,385.0915	2,385.0915	0.7714		2,404.3762
Total	1.3207	13.2841	16.1275	0.0246	0.0000	0.7124	0.7124	0.0000	0.6554	0.6554		2,385.0915	2,385.0915	0.7714		2,404.3762

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0282	1.2975	0.1601	4.1700e-003	0.0959	4.1300e-003	0.1000	0.0263	3.9500e-003	0.0302		442.6122	442.6122	0.0264		443.2716
Vendor	5.5700e-003	0.2058	0.0377	5.2000e-004	0.0128	1.1700e-003	0.0140	3.6900e-003	1.1200e-003	4.8100e-003		55.0782	55.0782	4.1300e-003		55.1815
Worker	0.0814	0.0482	0.6451	1.7700e-003	0.1788	1.0800e-003	0.1799	0.0474	1.0000e-003	0.0484		176.2551	176.2551	4.5200e-003		176.3681
Total	0.1152	1.5514	0.8429	6.4600e-003	0.2875	6.3800e-003	0.2939	0.0774	6.0700e-003	0.0835		673.9455	673.9455	0.0350		674.8212

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3207	13.2841	16.1275	0.0246		0.7124	0.7124		0.6554	0.6554	0.0000	2,385.0915	2,385.0915	0.7714		2,404.3762
Total	1.3207	13.2841	16.1275	0.0246	0.0000	0.7124	0.7124	0.0000	0.6554	0.6554	0.0000	2,385.0915	2,385.0915	0.7714		2,404.3762

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0282	1.2975	0.1601	4.1700e-003	0.0959	4.1300e-003	0.1000	0.0263	3.9500e-003	0.0302		442.6122	442.6122	0.0264		443.2716
Vendor	5.5700e-003	0.2058	0.0377	5.2000e-004	0.0128	1.1700e-003	0.0140	3.6900e-003	1.1200e-003	4.8100e-003		55.0782	55.0782	4.1300e-003		55.1815
Worker	0.0814	0.0482	0.6451	1.7700e-003	0.1788	1.0800e-003	0.1799	0.0474	1.0000e-003	0.0484		176.2551	176.2551	4.5200e-003		176.3681
Total	0.1152	1.5514	0.8429	6.4600e-003	0.2875	6.3800e-003	0.2939	0.0774	6.0700e-003	0.0835		673.9455	673.9455	0.0350		674.8212

3.3 Grading - Jack and Bore Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.6259	21.5380	23.5197	0.0418		1.0751	1.0751		1.0099	1.0099		3,921.8806	3,921.8806	1.1591		3,950.8583
Total	2.6259	21.5380	23.5197	0.0418	0.0000	1.0751	1.0751	0.0000	1.0099	1.0099		3,921.8806	3,921.8806	1.1591		3,950.8583

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0190	0.8729	0.1077	2.8100e-003	0.0645	2.7800e-003	0.0673	0.0177	2.6600e-003	0.0203		297.7944	297.7944	0.0178		298.2381
Vendor	5.5700e-003	0.2058	0.0377	5.2000e-004	0.0128	1.1700e-003	0.0140	3.6900e-003	1.1200e-003	4.8100e-003		55.0782	55.0782	4.1300e-003		55.1815
Worker	0.1323	0.0783	1.0484	2.8800e-003	0.2906	1.7600e-003	0.2924	0.0771	1.6200e-003	0.0787		286.4146	286.4146	7.3400e-003		286.5981
Total	0.1568	1.1570	1.1937	6.2100e-003	0.3679	5.7100e-003	0.3736	0.0984	5.4000e-003	0.1038		639.2871	639.2871	0.0292		640.0176

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000

Off-Road	2.6259	21.5380	23.5197	0.0418		1.0751	1.0751		1.0099	1.0099	0.0000	3,921.8806	3,921.8806	1.1591		3,950.8583
Total	2.6259	21.5380	23.5197	0.0418	0.0000	1.0751	1.0751	0.0000	1.0099	1.0099	0.0000	3,921.8806	3,921.8806	1.1591		3,950.8583

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0190	0.8729	0.1077	2.8100e-003	0.0645	2.7800e-003	0.0673	0.0177	2.6600e-003	0.0203		297.7944	297.7944	0.0178		298.2381
Vendor	5.5700e-003	0.2058	0.0377	5.2000e-004	0.0128	1.1700e-003	0.0140	3.6900e-003	1.1200e-003	4.8100e-003		55.0782	55.0782	4.1300e-003		55.1815
Worker	0.1323	0.0783	1.0484	2.8800e-003	0.2906	1.7600e-003	0.2924	0.0771	1.6200e-003	0.0787		286.4146	286.4146	7.3400e-003		286.5981
Total	0.1568	1.1570	1.1937	6.2100e-003	0.3679	5.7100e-003	0.3736	0.0984	5.4000e-003	0.1038		639.2871	639.2871	0.0292		640.0176

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.3904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2305	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5700e-003	0.2058	0.0377	5.2000e-004	0.0128	1.1700e-003	0.0140	3.6900e-003	1.1200e-003	4.8100e-003		55.0782	55.0782	4.1300e-003		55.1815
Worker	0.0712	0.0421	0.5645	1.5500e-003	0.1565	9.5000e-004	0.1574	0.0415	8.7000e-004	0.0424		154.2232	154.2232	3.9500e-003		154.3221
Total	0.0768	0.2479	0.6022	2.0700e-003	0.1693	2.1200e-003	0.1714	0.0452	1.9900e-003	0.0472		209.3014	209.3014	8.0800e-003		209.5035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.3904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2305	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5700e-003	0.2058	0.0377	5.2000e-004	0.0128	1.1700e-003	0.0140	3.6900e-003	1.1200e-003	4.8100e-003		55.0782	55.0782	4.1300e-003		55.1815
Worker	0.0712	0.0421	0.5645	1.5500e-003	0.1565	9.5000e-004	0.1574	0.0415	8.7000e-004	0.0424		154.2232	154.2232	3.9500e-003		154.3221
Total	0.0768	0.2479	0.6022	2.0700e-003	0.1693	2.1200e-003	0.1714	0.0452	1.9900e-003	0.0472		209.3014	209.3014	8.0800e-003		209.5035

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	2.0498	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0305	0.0181	0.2419	6.6000e-004	0.0671	4.1000e-004	0.0675	0.0178	3.7000e-004	0.0182		66.0957	66.0957	1.6900e-003		66.1380
Total	0.0305	0.0181	0.2419	6.6000e-004	0.0671	4.1000e-004	0.0675	0.0178	3.7000e-004	0.0182		66.0957	66.0957	1.6900e-003		66.1380

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	2.0498	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0305	0.0181	0.2419	6.6000e-004	0.0671	4.1000e-004	0.0675	0.0178	3.7000e-004	0.0182		66.0957	66.0957	1.6900e-003		66.1380
Total	0.0305	0.0181	0.2419	6.6000e-004	0.0671	4.1000e-004	0.0675	0.0178	3.7000e-004	0.0182		66.0957	66.0957	1.6900e-003		66.1380

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Unmitigated	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.9500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0230					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	6.2000e-004	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Total	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.9500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0230					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2000e-004	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Total	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

WMWD Sewer Pipeline Replacement Project - Riverside-Mojave Desert SCAQMD County, Winter

WMWD Sewer Pipeline Replacement Project
Riverside-Mojave Desert SCAQMD County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	65.00	1000sqft	1.49	65,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use -
- Construction Phase - Schedule provided project Engineers.
- Off-road Equipment - mod
- Off-road Equipment - a
- Grading -
- Trips and VMT - a
- Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
------------	-------------	---------------	-----------

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	4.00	217.00
tblConstructionPhase	NumDays	2.00	219.00
tblConstructionPhase	PhaseEndDate	4/6/2020	12/14/2020
tblConstructionPhase	PhaseEndDate	3/9/2020	12/29/2020
tblConstructionPhase	PhaseEndDate	3/23/2020	11/27/2020
tblConstructionPhase	PhaseEndDate	3/3/2020	12/31/2020
tblConstructionPhase	PhaseStartDate	3/24/2020	12/1/2020
tblConstructionPhase	PhaseStartDate	3/4/2020	3/2/2020
tblConstructionPhase	PhaseStartDate	3/10/2020	11/16/2020
tblOffRoadEquipment	HorsePower	187.00	0.00
tblOffRoadEquipment	HorsePower	187.00	0.00
tblOffRoadEquipment	HorsePower	247.00	0.00
tblOffRoadEquipment	HorsePower	247.00	0.00
tblOffRoadEquipment	LoadFactor	0.41	0.00
tblOffRoadEquipment	LoadFactor	0.41	0.00
tblOffRoadEquipment	LoadFactor	0.40	0.00
tblOffRoadEquipment	LoadFactor	0.40	0.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,200.00
tblTripsAndVMT	HaulingTripNumber	0.00	800.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	25.00	26.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.2969	46.2513	50.7954	0.0938	0.8247	2.2714	3.0961	0.2210	2.1118	2.3328	0.0000	9,038.2383	9,038.2383	2.4175	0.0000	9,098.6750

Maximum	6.2969	46.2513	50.7954	0.0938	0.8247	2.2714	3.0961	0.2210	2.1118	2.3328	0.0000	9,038.2383	9,038.2383	2.4175	0.0000	9,098.6750
---------	--------	---------	---------	--------	--------	--------	--------	--------	--------	--------	--------	------------	------------	--------	--------	------------

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.2969	46.2513	50.7954	0.0938	0.8247	2.2714	3.0961	0.2210	2.1118	2.3328	0.0000	9,038.2383	9,038.2383	2.4175	0.0000	9,098.6750
Maximum	6.2969	46.2513	50.7954	0.0938	0.8247	2.2714	3.0961	0.2210	2.1118	2.3328	0.0000	9,038.2383	9,038.2383	2.4175	0.0000	9,098.6750

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Total	0.0286	6.0000e-005	6.6600e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005	0.0000	0.0152
-------	--------	-------------	-------------	--------	--------	-------------	-------------	--------	-------------	-------------	--	--------	--------	-------------	--------	--------

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0286	6.0000e-005	6.6600e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005	0.0000	0.0152

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation - Open trench Excavation	Site Preparation	3/2/2020	12/31/2020	5	219	
2	Grading - Jack and Bore Construction	Grading	3/2/2020	12/29/2020	5	217	
3	Paving	Paving	11/16/2020	11/27/2020	5	10	
4	Architectural Coating	Architectural Coating	12/1/2020	12/14/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.49

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,900

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading - Jack and Bore Construction	Graders	0	0.00	0	0.00
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation - Open trench Excavation	Rubber Tired Dozers	0	0.00	0	0.00
Site Preparation - Open trench Excavation	Graders	0	0.00	0	0.00
Site Preparation - Open trench Excavation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation - Open trench Excavation	Excavators	2	8.00	158	0.38
Grading - Jack and Bore Construction	Rubber Tired Dozers	0	0.00	0	0.00
Grading - Jack and Bore Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation - Open trench Excavation	Paving Equipment	2	8.00	132	0.36
Grading - Jack and Bore Construction	Excavators	2	8.00	158	0.38
Grading - Jack and Bore Construction	Paving Equipment	2	8.00	132	0.36
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading - Jack and Bore Construction	Bore/Drill Rigs	1	8.00	221	0.50
Grading - Jack and Bore Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation - Open trench	6	16.00	2.00	1,200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Jack and Bore Construction	10	26.00	2.00	800.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
-----------------------	---	------	------	------	-------	------	-------	--------	---------	------

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - Open trench Excavation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3207	13.2841	16.1275	0.0246		0.7124	0.7124		0.6554	0.6554		2,385.0915	2,385.0915	0.7714		2,404.3762
Total	1.3207	13.2841	16.1275	0.0246	0.0000	0.7124	0.7124	0.0000	0.6554	0.6554		2,385.0915	2,385.0915	0.7714		2,404.3762

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0296	1.3088	0.1875	4.0700e-003	0.0959	4.1900e-003	0.1001	0.0263	4.0100e-003	0.0303		431.5385	431.5385	0.0289		432.2603
Vendor	5.8800e-003	0.2047	0.0441	5.0000e-004	0.0128	1.1800e-003	0.0140	3.6900e-003	1.1300e-003	4.8200e-003		53.0086	53.0086	4.6000e-003		53.1235
Worker	0.0797	0.0498	0.5219	1.5900e-003	0.1788	1.0800e-003	0.1799	0.0474	1.0000e-003	0.0484		158.1177	158.1177	3.9300e-003		158.2159
Total	0.1153	1.5633	0.7535	6.1600e-003	0.2875	6.4500e-003	0.2940	0.0774	6.1400e-003	0.0835		642.6648	642.6648	0.0374		643.5997

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3207	13.2841	16.1275	0.0246		0.7124	0.7124		0.6554	0.6554	0.0000	2,385.0915	2,385.0915	0.7714		2,404.3762
Total	1.3207	13.2841	16.1275	0.0246	0.0000	0.7124	0.7124	0.0000	0.6554	0.6554	0.0000	2,385.0915	2,385.0915	0.7714		2,404.3762

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0296	1.3088	0.1875	4.0700e-003	0.0959	4.1900e-003	0.1001	0.0263	4.0100e-003	0.0303		431.5385	431.5385	0.0289		432.2603
Vendor	5.8800e-003	0.2047	0.0441	5.0000e-004	0.0128	1.1800e-003	0.0140	3.6900e-003	1.1300e-003	4.8200e-003		53.0086	53.0086	4.6000e-003		53.1235
Worker	0.0797	0.0498	0.5219	1.5900e-003	0.1788	1.0800e-003	0.1799	0.0474	1.0000e-003	0.0484		158.1177	158.1177	3.9300e-003		158.2159
Total	0.1153	1.5633	0.7535	6.1600e-003	0.2875	6.4500e-003	0.2940	0.0774	6.1400e-003	0.0835		642.6648	642.6648	0.0374		643.5997

3.3 Grading - Jack and Bore Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.6259	21.5380	23.5197	0.0418		1.0751	1.0751		1.0099	1.0099		3,921.8806	3,921.8806	1.1591		3,950.8583
Total	2.6259	21.5380	23.5197	0.0418	0.0000	1.0751	1.0751	0.0000	1.0099	1.0099		3,921.8806	3,921.8806	1.1591		3,950.8583

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0199	0.8806	0.1262	2.7400e-003	0.0645	2.8200e-003	0.0673	0.0177	2.7000e-003	0.0204		290.3439	290.3439	0.0194		290.8295
Vendor	5.8800e-003	0.2047	0.0441	5.0000e-004	0.0128	1.1800e-003	0.0140	3.6900e-003	1.1300e-003	4.8200e-003		53.0086	53.0086	4.6000e-003		53.1235
Worker	0.1296	0.0810	0.8481	2.5800e-003	0.2906	1.7600e-003	0.2924	0.0771	1.6200e-003	0.0787		256.9413	256.9413	6.3800e-003		257.1009
Total	0.1554	1.1662	1.0183	5.8200e-003	0.3679	5.7600e-003	0.3737	0.0984	5.4500e-003	0.1039		600.2938	600.2938	0.0304		601.0539

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000

Off-Road	2.6259	21.5380	23.5197	0.0418		1.0751	1.0751		1.0099	1.0099	0.0000	3,921.8806	3,921.8806	1.1591		3,950.8583
Total	2.6259	21.5380	23.5197	0.0418	0.0000	1.0751	1.0751	0.0000	1.0099	1.0099	0.0000	3,921.8806	3,921.8806	1.1591		3,950.8583

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0199	0.8806	0.1262	2.7400e-003	0.0645	2.8200e-003	0.0673	0.0177	2.7000e-003	0.0204		290.3439	290.3439	0.0194		290.8295
Vendor	5.8800e-003	0.2047	0.0441	5.0000e-004	0.0128	1.1800e-003	0.0140	3.6900e-003	1.1300e-003	4.8200e-003		53.0086	53.0086	4.6000e-003		53.1235
Worker	0.1296	0.0810	0.8481	2.5800e-003	0.2906	1.7600e-003	0.2924	0.0771	1.6200e-003	0.0787		256.9413	256.9413	6.3800e-003		257.1009
Total	0.1554	1.1662	1.0183	5.8200e-003	0.3679	5.7600e-003	0.3737	0.0984	5.4500e-003	0.1039		600.2938	600.2938	0.0304		601.0539

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.3904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2305	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.8800e-003	0.2047	0.0441	5.0000e-004	0.0128	1.1800e-003	0.0140	3.6900e-003	1.1300e-003	4.8200e-003		53.0086	53.0086	4.6000e-003		53.1235
Worker	0.0698	0.0436	0.4566	1.3900e-003	0.1565	9.5000e-004	0.1574	0.0415	8.7000e-004	0.0424		138.3530	138.3530	3.4400e-003		138.4389
Total	0.0757	0.2483	0.5007	1.8900e-003	0.1693	2.1300e-003	0.1714	0.0452	2.0000e-003	0.0472		191.3616	191.3616	8.0400e-003		191.5624

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.3904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2305	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.8800e-003	0.2047	0.0441	5.0000e-004	0.0128	1.1800e-003	0.0140	3.6900e-003	1.1300e-003	4.8200e-003		53.0086	53.0086	4.6000e-003		53.1235
Worker	0.0698	0.0436	0.4566	1.3900e-003	0.1565	9.5000e-004	0.1574	0.0415	8.7000e-004	0.0424		138.3530	138.3530	3.4400e-003		138.4389
Total	0.0757	0.2483	0.5007	1.8900e-003	0.1693	2.1300e-003	0.1714	0.0452	2.0000e-003	0.0472		191.3616	191.3616	8.0400e-003		191.5624

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	2.0498	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0299	0.0187	0.1957	6.0000e-004	0.0671	4.1000e-004	0.0675	0.0178	3.7000e-004	0.0182		59.2942	59.2942	1.4700e-003		59.3310
Total	0.0299	0.0187	0.1957	6.0000e-004	0.0671	4.1000e-004	0.0675	0.0178	3.7000e-004	0.0182		59.2942	59.2942	1.4700e-003		59.3310

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	2.0498	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0299	0.0187	0.1957	6.0000e-004	0.0671	4.1000e-004	0.0675	0.0178	3.7000e-004	0.0182		59.2942	59.2942	1.4700e-003		59.3310
Total	0.0299	0.0187	0.1957	6.0000e-004	0.0671	4.1000e-004	0.0675	0.0178	3.7000e-004	0.0182		59.2942	59.2942	1.4700e-003		59.3310

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Unmitigated	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.9500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0230					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	6.2000e-004	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Total	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.9500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0230					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2000e-004	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Total	0.0286	6.0000e-005	6.6600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Appendix B

Biological Resources Information



Photo 1: Study area adjacent to northern tip of alignment, facing south along MARB frontage road.



Photo 2: Study area adjacent to northern portion of alignment, facing south along MARB frontage road.



Photo 3: Artificial fill adjacent to Heacock Street in northern portion of study area, facing north.



Photo 4: Facing east across Heacock Street in northern portion of study area.



Photo 5: Tilled field in central portion of study area, adjacent to Heacock Street, outside of project impact area, facing south.



Photo 6: Artificially created riparian stand adjacent to Heacock Street, outside of project impact area; facing southeast.



Photo 7: Disturbed field at southern terminus of Heacock Street, outside of impact area; facing east.



Photo 8: Portion of alignment that crosses through non-native grasslands at southern terminus of Heacock Street before the alignment ties into Harley Knox Boulevard; facing west.



Photo 9: Portion of alignment that crosses through non-native grasslands at southern terminus of Heacock Street before the alignment ties into Harley Knox Boulevard; facing east.



Photo 10: Portion of alignment at southern terminus of Heacock Street before it cuts west; facing north.



Photo 11: Disturbed buckwheat scrub within the western edge of the study area, outside of project impact area; facing northwest.



Photo 12: Terminus of alignment within wastewater treatment plant north of Nandina Avenue; facing south.

EUDICOTS
VASCULAR SPECIES

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

- * *Schinus molle*—Peruvian peppertree

ASTERACEAE—SUNFLOWER FAMILY

- Ambrosia acanthicarpa*—flatspine bur ragweed
- * *Centaurea melitensis*—Maltese star-thistle
- Centromadia pungens* ssp. *pungens*—common tarweed
- Corethrogyne filaginifolia*—sand-aster
- Deinandra paniculata*—paniculate tarplant
- Erigeron canadensis*—Canadian horseweed
- Helianthus gracilentus*—slender sunflower
- Heterotheca grandiflora*—telegraphweed
- * *Lactuca serriola*—prickly lettuce
- * *Oncosiphon piluliferum*—stinknet

BORAGINACEAE—BORAGE FAMILY

- Amsinckia menziesii*—Menzies' fiddleneck

BRASSICACEAE—MUSTARD FAMILY

- * *Hirschfeldia incana*—shortpod mustard
- * *Sisymbrium irio*—London rocket

CHENOPODIACEAE—GOOSEFOOT FAMILY

- * *Salsola tragus*—prickly Russian thistle

EUPHORBIACEAE—SPURGE FAMILY

- Croton setiger*—dove weed
- Euphorbia albomarginata*—whitemargin sandmat

FABACEAE—LEGUME FAMILY

- Lathyrus vestitus*—Pacific pea
- * *Parkinsonia aculeata*—Jerusalem thorn

LAMIACEAE—MINT FAMILY

- Trichostema lanceolatum*—vinegarweed

POLYGONACEAE—BUCKWHEAT FAMILY

- Eriogonum fasciculatum*—California buckwheat

SALICACEAE—WILLOW FAMILY

Populus fremontii—Fremont cottonwood

Salix gooddingii—black willow

Salix laevigata—red willow

SOLANACEAE—NIGHTSHADE FAMILY

Datura wrightii—sacred thorn-apple

* *Nicotiana glauca*—tree tobacco

TAMARICACEAE—TAMARISK FAMILY

* *Tamarix ramosissima*—tamarisk

ZYGOPHYLLACEAE—CALTROP FAMILY

* *Tribulus terrestris*—puncturevine

MONOCOTS

VASCULAR SPECIES

ARECACEAE—PALM FAMILY

* *Washingtonia robusta*—Washington fan palm

CYPERACEAE—SEDGE FAMILY

Cyperus eragrostis—tall flatsedge

POACEAE—GRASS FAMILY

* *Bromus diandrus*—ripgut brome

* *Bromus madritensis* ssp. *rubens*—red brome

* *Schismus barbatus*—common Mediterranean grass

TYPHACEAE—CATTAIL FAMILY

Typha latifolia—broadleaf cattail

BIRD

FALCONS

FALCONIDAE—CARACARAS AND FALCONS

Falco sparverius—American kestrel

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Tyrannus vociferans—Cassin's kingbird

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

* *Columba livia*—rock pigeon (rock dove)*

SHOREBIRDS

CHARADRIIDAE—LAPWINGS AND PLOVERS

Charadrius vociferus—killdeer

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Hirundo rustica—barn swallow

MAMMAL

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Sylvilagus audubonii—desert cottontail

SQUIRRELS

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

REPTILE

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Abronia villosa</i> var. <i>aurita</i>	chaparral sand-verbena	None/None/1B.1	None	Chaparral, Coastal scrub, Desert dunes; sandy/annual herb/(Jan)Mar-Sep/245-5250	Moderate potential to occur. The study area is within the appropriate elevation range, contains sandy loam soils, and there is a small patch of disturbed buckwheat scrub within the project buffer that could be suitable for this species. The project site does not contain chaparral or dune vegetation that could support this species.
<i>Allium marvinii</i>	Yucaipa onion	None/None/1B.2	Narrow Endemic Plant Species	Chaparral (clay, openings)/perennial bulbiferous herb/Apr-May/2490-3495	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation or clay soils present.
<i>Allium munzii</i>	Munz's onion	FE/ST/1B.1	Narrow Endemic Plant Species	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland, Valley and foothill grassland; mesic, clay/perennial bulbiferous herb/Mar-May/970-3510	Not expected to occur. While the study area is within the appropriate elevation range and contains non-native grasslands and a small patch of disturbed buckwheat scrub, there are no clay soils within the study area. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Ambrosia pumila</i>	San Diego ambrosia	FE/None/1B.1	Narrow Endemic Plant Species	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr-Oct/65-1360	Not expected to occur. The study area is outside of the known elevation range for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Arenaria paludicola</i>	marsh sandwort	FE/SE/1B.1	None	Marshes and swamps (freshwater or brackish); sandy, openings/perennial stoloniferous herb/May-Aug/5-560	Not expected to occur. The study area is outside of the known elevation range for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk- vetch	None/None/1B.1	None	Meadows and seeps, Playas; lake margins, alkaline/annual herb/May–Oct/195–2790	Low potential to occur. The study area is within the appropriate elevation range, contains mildly alkaline soils, and has one small meadow area. There are no documented occurrences within five miles of the study area (CDFW 2019).
<i>Astragalus pachypus</i> var. <i>jaegeri</i>	Jaeger's bush milk-vetch	None/None/1B.1	Covered	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; sandy or rocky/perennial shrub/Dec– June/1195–3200	Moderate potential to occur. The study area is within the appropriate elevation range, has sandy loam soils, and contains non-native grasslands and a small patch of disturbed buckwheat scrub that could support this species.
<i>Atriplex coronata</i> var. <i>notatior</i>	San Jacinto Valley crownscale	FE/None/1B.1	Criteria Area Survey Plant Species	Playas, Valley and foothill grassland (mesic), Vernal pools; alkaline/annual herb/Apr– Aug/455–1640	Low potential to occur. The study area is within the appropriate elevation range, contains mildly alkaline soils, and contains non-native grasslands; however, the grasslands are not known to be mesic. Additionally, there is a small patch of Domino Series soils that is located within the project buffer. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Atriplex pacifica</i>	South Coast saltscale	None/None/1B.2	None	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/annual herb/Mar–Oct/0– 460	Not expected to occur. The site is outside of the species' known elevation range.
<i>Atriplex parishii</i>	Parish's brittlescale	None/None/1B.1	Criteria Area Survey Plant Species	Chenopod scrub, Playas, Vernal pools; alkaline/annual herb/June–Oct/80–6235	Low potential to occur. The study area is within the appropriate elevation range, contains mildly alkaline soils and a small patch of the Domino Series soils in the project buffer. While there are no playas, vernal pools, or chenopod scrub within the study area, this species is also known to

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
					occur in alkali grasslands (RCA 2003). Non-native grasslands occur within the study area and could provide marginal habitat for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	None/None/1B.2	Criteria Area Survey Plant Species	Coastal bluff scrub, Coastal scrub; alkaline/annual herb/Apr– Oct/30–655	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Berberis nevini</i>	Nevin's barberry	FE/SE/1B.1	Criteria Area Survey Plant Species	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub; sandy or gravelly/perennial evergreen shrub/(Feb)Mar– June/225–2705	Not expected to occur. The study area is within the appropriate elevation range, contains sandy loam soils, and has a small patch of disturbed buckwheat scrub vegetation within the buffer area; however, this vegetation community is not located with an alluvial terrace, steep slope, or ridgelines that are typically associated with this species (USFWS 2009). Additionally, there is no chaparral or cismontane woodland within the study area. The study area contains a small patch of riparian vegetation; however, this area appears to have been artificially created. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	FT/SE/1B.1	Criteria Area Survey Plant Species	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; often clay/perennial bulbiferous herb/Mar–June/80– 3675	Not expected to occur. While the study area is within the appropriate elevation range and contains non-native grasslands, there are no clay soils within the study area. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Calochortus weedii</i> var. <i>intermedius</i>	intermediate mariposa lily	None/None/1B.2	Covered	Chaparral, Coastal scrub, Valley and foothill grassland; rocky, calcareous/perennial bulbiferous herb/May–July/340–2805	Low potential to occur. The study area is within the appropriate elevation range and contains non-native grasslands that could support this species. Additionally, there is a small patch of disturbed buckwheat scrub within the project buffer that could also support this species. However, the study area lacks dry, rocky open slopes and rock outcrops that are also associated with this species (RCA 2003). There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Carex comosa</i>	bristly sedge	None/None/2B.1	None	Coastal prairie, Marshes and swamps (lake margins), Valley and foothill grassland/perennial rhizomatous herb/May–Sep/0–2050	Moderate potential to occur. The study area is within the appropriate elevation range and contains non-native grasslands that could support this species. There are no documented occurrences within five miles of the study area (CDFW 2019).
<i>Centromadia</i> <i>pungens</i> ssp. <i>laevis</i>	smooth tarplant	None/None/1B.1	Criteria Area Survey Plant Species	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2100	Moderate potential to occur. The study area is within the appropriate elevation range, has mildly alkaline soils, and contains non-native grasslands that could support this species. There are numerous documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Chloropyron</i> <i>maritimum</i> ssp. <i>maritimum</i>	salt marsh bird's-beak	FE/SE/1B.2	None	Coastal dunes, Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct(Nov)/0–100	Not expected to occur. The study area is outside of the known elevation range for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	None/None/1B.1	Covered	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; sandy or rocky, openings/annual herb/Apr– June/900–4005	Low potential to occur. The study area is within the appropriate elevation range, contains sandy loam soils, and has non-native grasslands that could be marginal for this species. However, the study area is not located within an alluvial terrace that is also known to support this species (RCA 2003). There are no documented occurrences within five miles of the study area (CDFW 2019).
<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	long-spined spineflower	None/None/1B.2	Covered	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; often clay/annual herb/Apr– July/95–5020	Not expected to occur. While the study area is within the appropriate elevation range and contains non-native grasslands and a small patch of disturbed buckwheat scrub within the buffer area, there are no clay soils that could support this species.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i>	white-bracted spineflower	None/None/1B.2	None	Coastal scrub (alluvial fans), Mojavean desert scrub, Pinyon and juniper woodland; sandy or gravelly/annual herb/Apr– June/980–3935	Not expected to occur. The study area is within the appropriate elevation range and contains sandy loam soils, and a small patch of disturbed buckwheat scrub with the study area; however the buckwheat scrub is not located with an alluvial terrace that typically is associated with this species. Additionally, there is no desert scrub or pinyon and juniper woodland within the study area.
<i>Clinopodium chandleri</i>	San Miguel savory	None/None/1B.2	Narrow Endemic Plant Species	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland; Rocky, gabbroic or metavolcanic/perennial shrub/Mar–July/390–3525	Not expected to occur. The study area is within the appropriate elevation range and contains non-native grasslands; however, there is no rocky, gabbroic, or metavolcanic soil that could support this species.

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	None/None/2B.2	None	Marshes and swamps (freshwater)/annual vine (parasitic)/July–Oct/45–920	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Cylindropuntia californica</i> var. <i>californica</i>	snake cholla	None/None/1B.1	None	Chaparral, Coastal scrub/perennial stem succulent/Apr–May/95–490	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Dodecahema leptoceras</i>	slender-horned spineflower	FE/SE/1B.1	Narrow Endemic Plant Species	Chaparral, Cismontane woodland, Coastal scrub (alluvial fan); sandy/annual herb/Apr–June/655–2495	Not expected to occur. The study area is within the appropriate elevation range, contains sandy loam soils, and has a small patch of disturbed buckwheat scrub within the buffer area; however, the buckwheat scrub is not located on an alluvial terrace as is typically associated with this species. Additionally, there is no chaparral or cismontane woodland within the study area. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Dudleya multicaulis</i>	many-stemmed dudleya	None/None/1B.2	Narrow Endemic Plant Species	Chaparral, Coastal scrub, Valley and foothill grassland; often clay/perennial herb/Apr–July/45–2590	Not expected to occur. While the study area is within the appropriate elevation range and contains non-native grassland and a small patch of disturbed buckwheat scrub within the buffer area, there are no clay soils that could support this species.
<i>Dudleya viscida</i>	sticky dudleya	None/None/1B.2	Covered	Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub; rocky/perennial herb/May–June/30–1805	Not expected to occur. The study area is within the appropriate elevation range and contains a small patch of disturbed buckwheat scrub within the buffer area; however, it does not contain appropriate rocky soils that could support this species. Additionally, the study area does not contain suitable chaparral or cismontane woodland vegetation.

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana River woollystar	FE/SE/1B.1	Covered	Chaparral, Coastal scrub (alluvial fan); sandy or gravelly/perennial herb/Apr-Sep/295-2000	Not expected to occur. The study area is within the appropriate elevation range, contains sandy loam soils, and has a small patch of disturbed buckwheat scrub within the study area; however, this vegetation is not located within an alluvial terrace, as is typically associated with this species. Additionally, there is no chaparral vegetation that could support this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin Meadow bedstraw	None/None/1B.2	Covered	Chaparral, Lower montane coniferous forest; granitic, sandy/perennial herb/May-July/4425-5575	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	None/None/1A	None	Marshes and swamps (coastal salt and freshwater)/perennial rhizomatous herb/Aug-Oct/30-5005	Not expected to occur. While the study area is within the appropriate elevation range, it does not contain marsh, swamp, or aquatic habitat that could support this species. There is one small riparian area within the study area; however, this area appears to have been artificially created.
<i>Hesperocyparis forbesii</i>	Tecate cypress	None/None/1B.1	None	Closed-cone coniferous forest, Chaparral; clay, gabbroic or metavolcanic/perennial evergreen tree/N.A./260-4920	Not expected to occur. While the study area is within the appropriate elevation, it does not contain suitable vegetation or clay soils that could support this species.
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	None/None/1B.1	None	Chaparral (maritime), Cismontane woodland, Coastal scrub; sandy or gravelly/perennial herb/Feb-July(Sep)/225-2655	Moderate potential to occur. The study area is within the appropriate elevation range, contains sandy loam soils, and there is a small patch of disturbed buckwheat scrub within the study area that could support this species. There is no chaparral or cismontane woodland

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
					vegetation that could support this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Imperata brevifolia</i>	California satintail	None/None/2B.1	None	Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps (often alkali), Riparian scrub; mesic/perennial rhizomatous herb/Sep–May/0–3985	Moderate potential to occur. The study area is within the appropriate elevation range and contains a small patch of disturbed buckwheat scrub that could support this species. The study area does not have chaparral or desert scrub within the study area. The study area contains a small patch of riparian vegetation; however, this area appears to have been artificially created. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Lasthenia glabrata</i> <i>ssp. coulteri</i>	Coulter's goldfields	None/None/1B.1	Criteria Area Survey Plant Species	Marshes and swamps (coastal salt), Playas, Vernal pools/annual herb/Feb–June/0–4005	Not expected to occur. While the study area is within the appropriate elevation range, it does not contain marsh, swamp, playas, or vernal pool habitat that could support this species. This species is also associated with Domino Series soils (RCA 2003), a small patch of which occurs within the project buffer. The vegetation within this soil series is disturbed California buckwheat scrub, which is not associated with this species.
<i>Lepechinia cardiophylla</i>	heart-leaved pitcher sage	None/None/1B.2	Criteria Area Survey Plant Species	Closed-cone coniferous forest, Chaparral, Cismontane woodland/perennial shrub/Apr–July/1705–4495	Not expected to occur. The study area is outside of the known elevation range for this species.

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Lycium parishii</i>	Parish's desert-thorn	None/None/2B.3	None	Coastal scrub, Sonoran desert scrub/perennial shrub/Mar–Apr/440–3280	Moderate potential to occur. The study area is within the appropriate elevation range and there is a small patch of disturbed buckwheat scrub in the project buffer that could support this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Malacothamnus parishii</i>	Parish's bush-mallow	None/None/1A	None	Chaparral, Coastal scrub/perennial deciduous shrub/June–July/1000–1495	Moderate potential to occur. The study area is within the appropriate elevation range and there is a small patch of disturbed buckwheat scrub in the project buffer that could support this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Monardella hypoleuca</i> ssp. <i>intermedia</i>	intermediate monardella	None/None/1B.3	None	Chaparral, Cismontane woodland, Lower montane coniferous forest (sometimes); Usually understory/perennial rhizomatous herb/Apr–Sep/1310–4100	Not expected to occur. While the study area is within of the known elevation range, it does not contain cismontane woodland, coniferous forest, or chaparral vegetation that could support this species.
<i>Monardella hypoleuca</i> ssp. <i>lanata</i>	felt-leaved monardella	None/None/1B.2	None	Chaparral, Cismontane woodland/perennial rhizomatous herb/June–Aug/980–5165	Not expected to occur. While the study area is within of the known elevation range, it does not contain cismontane woodland or chaparral vegetation that could support this species.
<i>Monardella macrantha</i> ssp. <i>hallii</i>	Hall's monardella	None/None/1B.3	Covered	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland/perennial rhizomatous herb/June–Oct/2395–7200	Not expected to occur. The study area is outside of the known elevation range for this species.

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Monardella pringlei</i>	Pringle's monardella	None/None/1A	None	Coastal scrub (sandy)/annual herb/May-June/980-1310	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Nama stenocarpa</i>	mud nama	None/None/2B.2	Criteria Area Survey Plant Species	Marshes and swamps (lake margins, riverbanks)/annual / perennial herb/Jan-July/15-1640	Not expected to occur. While the study area is within the appropriate elevation range, it does not contain lake margins or riverbanks that could support this species. The study area contains a small patch of riparian/marsh vegetation; however, this area appears to have been artificially created.
<i>Nasturtium gambelii</i>	Gambel's water cress	FE/ST/1B.1	None	Marshes and swamps (freshwater or brackish)/perennial rhizomatous herb/Apr-Oct/15-1085	Not expected to occur. The study area is outside of the known elevation range for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Navarretia fossalis</i>	spreading navarretia	FT/None/1B.1	Narrow Endemic Plant Species	Chenopod scrub, Marshes and swamps (assorted shallow freshwater), Playas, Vernal pools/annual herb/Apr-June/95-2150	Not expected to occur. While the study area is within the appropriate elevation range, it does not contain chenopod scrub, playas, vernal pools, or marsh/swamp habitat that could support this species. The study area contains a small patch of riparian/marsh vegetation; however, this area appears to have been artificially created. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Orcuttia californica</i>	California Orcutt grass	FE/SE/1B.1	Narrow Endemic Plant Species	Vernal pools/annual herb/Apr-Aug/45-2165	Not expected to occur. While the study area is within of the known elevation range, it does not contain vernal pools that could support this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Phacelia stellaris</i>	Brand's star phacelia	None/None/1B.1	Narrow Endemic Plant Species	Coastal dunes, Coastal scrub/annual herb/Mar–June/0–1310	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Pseudognaphalium leucocephalum</i>	white rabbit-tobacco	None/None/2B.2	None	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland; sandy, gravelly/perennial herb/(July)Aug–Nov(Dec)/0–6890	Not expected to occur. While the study area is within the appropriate elevation range and contains sandy loam soils, there is no chaparral, cismontane woodland, or coastal scrub vegetation that could support this species. The study area contains a small patch of riparian vegetation; however, this area appears to have been artificially created.
<i>Ribes divaricatum</i> var. <i>parishii</i>	Parish's gooseberry	None/None/1A	None	Riparian woodland/perennial deciduous shrub/Feb–Apr/210–985	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Senecio aphanactis</i>	chaparral ragwort	None/None/2B.2	None	Chaparral, Cismontane woodland, Coastal scrub; sometimes alkaline/annual herb/Jan–Apr(May)/45–2625	Not expected to occur. While the study area is within the appropriate elevation range and contains mildly alkaline soils, there is no chaparral, cismontane woodland, or coniferous forest within the study area that could support this species.
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	Parish's checkerbloom	None/SR/1B.2	None	Chaparral, Cismontane woodland, Lower montane coniferous forest/perennial herb/(May)June–Aug/3280–8200	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	None/None/2B.2	None	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; alkaline, mesic/perennial herb/Mar–June/45–5020	Moderate potential to occur. The study area is within the appropriate elevation range, contains mildly alkaline soils, and there is a small patch of disturbed buckwheat scrub within the project buffer. There is no chaparral, desert scrub, coniferous forest, or playas within the study area that could support this species.

APPENDIX B4

PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State/CRPR)	WR MSHCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
					There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Sphenopholis obtusata</i>	prairie wedge grass	None/None/2B.2	None	Cismontane woodland, Meadows and seeps; mesic/perennial herb/Apr–July/980–6560	Not expected to occur. While the study area is within the appropriate elevation range, there is no cismontane woodland that could support this species. The study area contains a small patch of mesic habitat; however, this area appears to have been artificially created.
<i>Streptanthus campestris</i>	southern jewelflower	None/None/1B.3	None	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland; rocky/perennial herb/(Apr)May–July/2950–7545	Not expected to occur. The study area is outside of the known elevation range for this species.
<i>Symphyotrichum defoliatum</i>	San Bernardino aster	None/None/1B.2	None	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Valley and foothill grassland (vernally mesic); near ditches, streams, springs/perennial rhizomatous herb/July–Nov(Dec)/5–6695	Low potential to occur. The study area is within the appropriate elevation range and contains non-native grasslands that could support this species; however, the grasslands are not known to be mesic. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Tortula californica</i>	California screw-moss	None/None/1B.2	None	Chenopod scrub, Valley and foothill grassland; sandy, soil/moss/N.A./30–4790	Moderate potential to occur. The study area is within the appropriate elevation range, contains sandy loam soils, and has non-native grasslands that could support this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	None/None/2B.1	Narrow Endemic Plant Species	Meadows and seeps, Marshes and swamps, Riparian forest, Vernal pools; alkaline/annual herb/May–Sep/15–1425	Not expected to occur. While the study area is within the appropriate elevation range and contains mildly alkaline soils, there is only small patch of mesic habitat that appears to have been artificially created.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Amphibians				
<i>Rana muscosa</i>	mountain yellow-legged frog	FE/SE, WL	Lakes, ponds, meadow streams, isolated pools, and open riverbanks; rocky canyons in narrow canyons and in chaparral	Not expected to occur. The study area contains flood control channels and one small patch of mesic habitat that appears to have been artificially created. The study area does not contain suitable aquatic habitat for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Spea hammondi</i>	western spadefoot	None/SSC	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley-foothill woodlands, pastures, and other agriculture	Low potential to occur. The study area contains non-native grasslands that could provide marginal habitat for this species. There are several documented occurrences of this species within five miles of the study area (CDFW 2019).
Reptiles				
<i>Actinemys marmorata</i>	western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not expected to occur. The study area contains flood control channels and one small patch of mesic habitat that appears to have been artificially created. The study area does not contain suitable aquatic habitat for this species.
<i>Anniella stebbinsi</i>	southern California legless lizard	None/SSC	Coastal dunes, stabilized dunes, beaches, dry washes, valley-foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Not expected to occur. While the study area contains sandy loam soils, there is no dune, scrub, or woodland habitat that could support this species. There is one small patch of riparian vegetation; however, this area appears to have been artificially created and could not support this species.
<i>Arizona elegans occidentalis</i>	California glossy snake	None/SSC	Commonly occurs in desert regions throughout southern California. Prefers open sandy areas with scattered brush. Also found in rocky areas.	Low potential to occur. The study area contains open, non-native grasslands with sandy loam soils that could provide marginal habitat for this species. There are several documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Aspidoscelis tigris stejnegeri</i>	San Diegan tiger whiptail	None/SSC	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Low potential to occur. The study area contains open, non-native grasslands could support this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).

APPENDIX B5

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	None/SSC	Rocky areas within coastal scrub and chaparral	Not expected to occur. The study area does not contain rock areas, coastal scrub, or chaparral vegetation that could support this species.
<i>Crotalus ruber</i>	red diamondback rattlesnake	None/SSC	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Low potential to occur. The study area contains open, non-native grasslands that could provide marginal habitat for this species. There are several documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Phrynosoma blainvillii</i>	Blainville's horned lizard	None/SSC	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley-foothill hardwood, conifer, riparian, pine-cypress, juniper, and annual grassland habitats	Low potential to occur. The study area contains open, non-native grasslands that could provide marginal habitat for this species. There are several documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Salvadora hexalepis virgulata</i>	coast patch-nosed snake	None/SSC	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	Low potential to occur. The study area contains open, non-native grasslands that could provide marginal habitat for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Thamnophis hammondi</i>	two-striped gartersnake	None/SSC	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur. The study area contains flood control channels and one small patch of mesic habitat that appears to have been artificially created. The study area does not contain suitable aquatic habitat for this species.
Birds				
<i>Agelaius tricolor</i> (nesting colony)	tricolored blackbird	BCC/SSC, PSE	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not expected to occur. The study area contains one small patch of freshwater emergent vegetation; however, this area appears to have been artificially created and is not contiguous with any other mesic habitat within the vicinity. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Aquila chrysaetos</i> (nesting & wintering)	golden eagle	BCC/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large	Not expected to nest or forage. While the study area contains open non-native grasslands that could be suitable for foraging, the proposed project is situated in a highly urbanized area that would likely deter this species. There are no large trees or open areas suitable for the nesting of

APPENDIX B5

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			trees and on cliffs in open areas and forages in open habitats	this species. There are no documented occurrences within five miles of the study area (CDFW 2019).
<i>Asio otus</i> (nesting)	long-eared owl	None/SSC	Nests in riparian habitat, live oak thickets, other dense stands of trees, edges of coniferous forest; forages in nearby open habitats	Not expected to occur. The study area contains one small patch of riparian vegetation; however, this area appears to have been artificially created and is not contiguous with any other riparian vegetation within the vicinity.
<i>Athene cunicularia</i> (burrow sites & some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Low potential to occur. The study area contains open non-native grasslands that could be suitable for this species; however California ground squirrel burrows and burrow surrogates were not observed within the project site. There are documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Buteo swainsoni</i> (nesting)	Swainson's hawk	BCC/ST	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Not expected to nest or forage. While the study area contains open non-native grasslands that could be suitable for foraging, the proposed project is situated in a highly urbanized area that would likely deter this species. There are no large trees or open areas suitable for the nesting of this species. There are no documented occurrences within five miles of the study area (CDFW 2019).
<i>Campylorhynchus brunneicapillus sandiegensis</i> (San Diego & Orange Counties only)	coastal cactus wren	BCC/SSC	Southern cactus scrub patches	Not expected to occur. The study area does not contain cactus scrub patches that could support this species.
<i>Charadrius alexandrinus nivosus</i> (nesting)	western snowy plover	FT, BCC/SSC	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. The study area contains one small patch of freshwater emergent vegetation; however, this area appears to have been artificially created and is not contiguous with any other mesic habitat within the vicinity. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Circus hudsonius</i> (nesting)	northern harrier	None/SSC	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish	Low potential to forage; not expected to nest. The study area contains non-native grasslands that could be marginal for the foraging of this species. The study area contains

APPENDIX B5

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	one small patch of freshwater emergent vegetation; however, this area appears to have been artificially created and is not contiguous with any other mesic habitat within the vicinity. As such, there is no suitable nesting for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Coccyzus americanus occidentalis</i> (nesting)	western yellow-billed cuckoo	FT, BCC/SE	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. The study area contains one small patch of riparian vegetation; however, this area appears to have been artificially created and is not contiguous with any other riparian vegetation within the vicinity. There is one documented occurrence of this species within five miles of the study area (CDFW 2019).
<i>Coturnicops noveboracensis</i>	yellow rail	BCC/SSC	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	Not expected to occur. The study area contains one small patch of freshwater emergent vegetation; however, this area appears to have been artificially created and is not contiguous with any other mesic habitat within the vicinity.
<i>Elanus leucurus</i> (nesting)	white-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Low potential to forage; not expected to nest. The study area contains non-native grasslands that could be marginal for the foraging of this species. The study area contains one small patch of freshwater emergent vegetation; however, this area appears to have been artificially created and is not contiguous with any other mesic habitat within the vicinity. There is no other woodland habitat that could support the nesting of this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Empidonax traillii extimus</i> (nesting)	southwestern willow flycatcher	FE/SE	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to occur. The study area contains one small patch of riparian vegetation; however, this area appears to have been artificially created and is not contiguous with any other riparian vegetation within the vicinity. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).

APPENDIX B5

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
<i>Haliaeetus leucocephalus</i> (nesting & wintering)	bald eagle	FDL, BCC/FP, SE	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	Not expected to nest or forage. The study area does not contain large water bodies that could support this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Icteria virens</i> (nesting)	yellow-breasted chat	None/SSC	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Not expected to occur. The study area contains one small patch of riparian vegetation; however, this area appears to have been artificially created and is not contiguous with any other riparian vegetation within the vicinity.
<i>Lanius ludovicianus</i> (nesting)	loggerhead shrike	BCC/SSC	Nests and forages in open habitats with scattered shrubs, trees, or other perches	Not expected to occur. The study area is located in a highly urbanized area without trees or shrubs that could support this species.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	BCC/FP, ST	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Not expected to occur. The study area contains one small patch of freshwater emergent vegetation; however, this area appears to have been artificially created and is not contiguous with any other mesic habitat within the vicinity. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Poliophtila californica californica</i>	coastal California gnatcatcher	FT/SSC	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Low potential to occur in the study area; not expected to occur in the project site. The study area contains one small patch of disturbed California buckwheat scrub that is contiguous with additional habitat outside of the study area; however, the project site does not contain this type of habitat and could not support this species. There are documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Setophaga petechia</i> (nesting)	yellow warbler	BCC/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Not expected to occur. The study area contains one small patch of riparian vegetation; however, this area appears to have been artificially created and is not contiguous with any other riparian vegetation within the vicinity.
<i>Vireo bellii pusillus</i> (nesting)	least Bell's vireo	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not expected to occur. The study area contains one small patch of riparian vegetation; however, this area appears to have been artificially created and is not contiguous with any other riparian vegetation within the vicinity. There are

APPENDIX B5

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				documented occurrences of this species within five miles of the study area.
<i>Xanthocephalus xanthocephalus</i> (nesting)	yellow-headed blackbird	None/SSC	Nests in marshes with tall emergent vegetation, often along borders of lakes and ponds; forages in emergent wetlands, open areas, croplands, and muddy shores of lacustrine habitat	Not expected to occur. The study area contains one small patch of freshwater emergent vegetation; however, this area appears to have been artificially created and is not contiguous with any other mesic habitat within the vicinity.
Fishes				
<i>Catostomus santaanae</i>	Santa Ana sucker	FT/None	Small, shallow, cool, clear streams less than 7 meters (23 feet) in width and a few centimeters to more than a meter (1.5 inches to more than 3 feet) in depth; substrates are generally coarse gravel, rubble, and boulder	Not expected to occur. The study area contains flood control channels and one small patch of mesic habitat that appears to have been artificially created. The study area does not contain suitable aquatic habitat for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Gila orcuttii</i>	arroyo chub	None/SSC	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud	Not expected to occur. The study area contains flood control channels and one small patch of mesic habitat that appears to have been artificially created. The study area does not contain suitable aquatic habitat for this species.
<i>Oncorhynchus mykiss irideus</i> pop. 10	southern steelhead - southern California DPS	FE/None	Clean, clear, cool, well-oxygenated streams; needs relatively deep pools in migration and gravelly substrate to spawn	Not expected to occur. The study area contains flood control channels and one small patch of mesic habitat that appears to have been artificially created. The study area does not contain suitable aquatic habitat for this species. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Rhinichthys osculus</i> ssp. 3	Santa Ana speckled dace	None/SSC	Headwaters of the Santa Ana and San Gabriel Rivers; may be extirpated from the Los Angeles River system	Not expected to occur. The study area contains flood control channels and one small patch of mesic habitat that appears to have been artificially created. The study area does not contain suitable aquatic habitat for this species.
Mammals				
<i>Antrozous pallidus</i>	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for	Low potential to roost and forage. The study area contains nonnative grasslands and structures that could be marginal for the foraging and roosting of this species. There are no

APPENDIX B5

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			roosting, but also roosts in man-made structures and trees	documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	None/SSC	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	Low potential to occur. The study area contains open disturbed land and non-native grasslands that could be marginal for this species; however, there is no chaparral, woodland, or scrub vegetation. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Chaetodipus fallax fallax</i>	northwestern San Diego pocket mouse	None/SSC	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland	Low potential to occur. The study area contains open disturbed land and non-native grasslands that could be marginal for this species; however, there is no chaparral, woodland, or scrub vegetation. There is one documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	FE/SSC	Sparse scrub habitat, alluvial scrub/coastal scrub habitats on gravelly and sandy soils near river and stream terraces	Not expected to occur. The study area is not located on an alluvial terrace with coastal sage scrub that could support this species. There is one documented occurrence of this species within five miles of the study area (CDFW 2019).
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	FE/ST	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas	Low potential to occur. The study area contains non-native grassland and disturbed habitat that could support this species. There are numerous documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Eumops perotis californicus</i>	western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Not expected to roost or forage. The study area does not contain chaparral, forest, scrub, cliff, or canyon habitat that could support this species.
<i>Lasiurus xanthinus</i>	western yellow bat	None/SSC	Valley-foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	Not expected to occur. The study area contains one small patch of riparian vegetation; however, this area appears to have been artificially created and is not contiguous with any other riparian vegetation within the vicinity.

APPENDIX B5

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None/SSC	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Low potential to occur. The study area contains non-native grasslands that could provide marginal habitat for this species. There is one documented occurrence of this species within five miles of the study area (CDFW 2019).
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None/SSC	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Not expected to occur. The study area does not contain scrub, chaparral, cactus, or rocky areas that could support this species.
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	None/SSC	Pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Not expected to roost or forage. The study area does not contain chaparral, forest, scrub, cliff, or canyon habitat that could support this species. There is one small patch of riparian vegetation; however, this area appears to have been artificially created and is not contiguous with any other riparian vegetation within the vicinity. As such, it is not suitable to support this species.
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	None/SSC	Grassland and sparse coastal scrub	Low potential to occur. The study area contains non-native grassland in an urbanized area that could be marginal for this species. There is one documented occurrence of this species within five miles of the study area (CDFW 2019).
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	None/SSC	Lower-elevation grassland, alluvial sage scrub, and coastal scrub	Low potential to occur. The study area contains non-native grasslands that could be marginal for this species. There are documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Taxidea taxus</i>	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Low potential to occur. The study area contains non-native grasslands that could be marginal for this species. There are documented occurrences of this species within five miles of the study area (CDFW 2019).
Invertebrates				
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	FT/None	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats	Not expected potential to occur. The study area does not contain clay soils typically indicative of areas that can support ponding. Additionally, careful examination of the portions of the project site with disturbed habitat that overlaps the proposed alignment did not indicate any topographic relief or evidence of ephemeral ponding (e.g., depressions, cracked soils, standing waters). There are no

APPENDIX B5

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	FE/None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include <i>Plantago erecta</i> , <i>Antirrhinum coulterianum</i> , and <i>Plantago patagonica</i> (Silverado Occurrence Complex)	Not expected to occur. The study area contains non-native grasslands, but does not support the host plants in which this species is associated. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Rhaphiomidas terminatus abdominalis</i>	Delhi Sands flower-loving fly	FE/None	Delhi fine sandy soils and dunes, scrub and ruderal vegetation in the sand verbena series with <50% cover	Not expected to occur. The study area does not contain the Delhi soil series in which this species is reliant. There are no documented occurrences of this species within five miles of the study area (CDFW 2019).
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools	Not expected potential to occur. The study area does not contain clay soils typically indicative of areas that can support ponding. Additionally, careful examination of the portions of the project site with disturbed habitat that overlaps the proposed alignment did not indicate any topographic relief or evidence of ephemeral ponding (e.g., depressions, cracked soils, standing waters). There are several documented occurrences of this species within the vicinity of the study area (CDFW 2019).

INTENTIONALLY LEFT BLANK

Appendix C

Cultural Resources Records Search – CONFIDENTIAL

Appendix D

Geotechnical Reconnaissance Report

Geologic Reconnaissance

LS 1269 Sewer Forcemain Replacement

March Air Reserve Base

Riverside County, California

Dudek

750 Second Street | Encinitas, California 92024

May 15, 2019 | Project No. 108805001



Geotechnical | Environmental | Construction Inspection & Testing | Forensic Engineering & Expert Witness

Geophysics | Engineering Geology | Laboratory Testing | Industrial Hygiene | Occupational Safety | Air Quality | GIS

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

May 15, 2019
Project No. 108805001

Ms. Kate Palmer
Dudek
750 Second Street
Encinitas, California 92024

Subject: Geologic Reconnaissance
LS 1269 Sewer Forcemain Replacement
March Air Reserve Base
Riverside County, California

Dear Ms. Palmer:

In accordance with your request, Ninyo & Moore has performed a Geologic Reconnaissance for Western Municipal Water District's LS 1269 Sewer Forcemain Replacement project at March Air Reserve Base (MARB) located in Riverside County, California. The attached report presents our preliminary findings and conclusions regarding the anticipated geologic conditions and potential geologic hazards at the project site.

We appreciate the opportunity to be of service to you on this important project.

Sincerely,
NINYO & MOORE



Nissa M. Morton, PG, CEG
Project Geologist



Gregory T. Farrand, PG, CEG
Principal Geologist

NMM/GTF/atf

Distribution: (1) Addressee (via e-mail)



CONTENTS

1	INTRODUCTION	1
2	SCOPE OF SERVICES	1
3	PROJECT DESCRIPTION	1
4	SITE DESCRIPTION	2
5	GEOLOGIC AND SUBSURFACE CONDITIONS	2
5.1	Regional Geologic Setting	3
5.2	Site Geology	3
5.3	Groundwater	4
5.4	Faulting And Seismicity	4
	5.4.1 Surface Ground Rupture	5
	5.4.2 Liquefaction and Seismically Induced Settlement	5
	5.4.3 Ground Motion	6
5.5	Tsunamis and Seiches	6
5.6	Landsliding and Slope Stability	6
5.7	Flood Hazards	7
5.8	Expansive Soils	7
5.9	Corrosive Soils	7
6	CONCLUSIONS	8
7	LIMITATIONS	8
8	REFERENCES	9

TABLE

1 – Principal Active Faults	5
-----------------------------	---

FIGURES

1 – Site Location
2 – Project Area
3 – Fault Locations
4 – Geology
5 – Liquefaction

APPENDIX

1 – Photographs

1 INTRODUCTION

In accordance with your request, Ninyo & Moore has completed a geologic reconnaissance evaluation for the proposed Western Municipal Water District's Lift Station (LS) 1269 Sewer Forcemain Replacement project at March Air Reserve Base (MARB) in Riverside County, California (Figure 1). Our evaluation is based on a geologic field reconnaissance, review of published and non-published reports, aerial photographs, in-house data, and the assessment of the potential geologic hazards in the project area. This report presents our preliminary findings and conclusions regarding the anticipated geologic conditions and potential geologic hazards at the project site. A geotechnical evaluation including subsurface exploration will be performed by our office and a separate geotechnical evaluation report will be submitted at a later date.

2 SCOPE OF SERVICES

Our scope of services included the following:

- Review of readily available regional, local, and site-specific geologic and geotechnical reports, including a report prepared for Western Municipal Water District's Graeber Pipeline project (Ninyo & Moore, 2018).
- Review of readily available background information including topographic, soils, geologic, and seismic and geologic hazard maps, and stereoscopic aerial photographs.
- Coordination with Western Municipal Water District staff to obtain access to MARB to perform a geologic reconnaissance.
- Performance of a geologic field reconnaissance of the site vicinity. Selected photographs taken during our geologic reconnaissance are included in Appendix A.
- Compilation and analysis of the data obtained from our background reviews and site reconnaissance.
- Preparation of this geologic reconnaissance report presenting our preliminary findings and conclusions regarding the project.

3 PROJECT DESCRIPTION

The LS 1269 Sewer Forcemain Replacement project will consist of the construction of a new 12-inch diameter pipeline that will extend between the existing LS 1269 on March Air Reserve Base (MARB) and connect to existing facilities on the west side of the I-215 freeway in the Perris Valley area of Riverside County. The proposed sewer pipeline will be installed at depths on the order of 4 to 5 feet using cut-and-cover methods. Trenchless construction may be utilized to install the pipeline under the I-215 freeway and adjacent railroad. Based on our review of project documents, including a project feasibility study (Webb Associates, 2018) and on our discussions

with you, we understand that alternative alignments are being considered for the proposed project. Based on a site plan provided to our office on April 24, 2019, three alternative alignments are being considered for the project at this time. The alignment alternatives are shown in Figures 1 and 2.

Alternative 1 extends northwest from LS 1269 along Graeber Street, cuts west along John F Kennedy Drive, and continues under the I-215 freeway and adjacent railroad to connect to an existing pipeline for a total length of approximately 13,800 feet. Alternative 2 extends southeast from LS 1269 to a southern extension of 8th Street, generally trends southwest along MARB access roads to the existing runway, and then turns northwest to cross under the I-215 and railroad and connect to the north side of the Western Water Recycling Facility for a total length of approximately 12,000 feet. Alternatives 3A and 3B extend southeast from LS 1269 to Heacock Street and then south to Harley Knox Boulevard and west and northwest to Western Way. At Western Way, Alternative 3A continues along Harley Knox Boulevard and crosses the bridge overpass of the I-215 and then turns north at Harvill Avenue to connect to the south side of the Western Water Recycling Facility. Alternative 3B diverges north at Western Way and turns west on Nandina Avenue, continuing to cross under the I-215 and railroad and also connect to the south side of the Western Water Recycling Facility. Alternatives 3A and 3B both include approximately 19,500 feet of pipeline.

4 SITE DESCRIPTION

Perris Valley is generally comprised of relatively gentle topographic gradients. In the project area, moderately sloping terrain occurs along storm drain culverts including the Perris Valley Storm Drain on the east portion of the site near Heacock Street. Ground elevations range along the project Alternatives from a low of approximately 1470 feet above mean sea level (MSL) in the southeastern portion of the site where Alternatives 3A and 3B turn onto Harley Knox Boulevard to approximately 1550 feet MSL in the northwestern corner at the western termination of Alternative 1. Drainage courses, including lined channels, generally trend east-west and northwest-southeast across the project area. In general, much of the project is located on paved and unpaved roadways on MARB and adjacent areas.

5 GEOLOGIC AND SUBSURFACE CONDITIONS

The following sections present our findings relative to regional and site geology, geologic hazards (e.g., landslides or expansive soils), groundwater, faulting, and seismicity.

5.1 Regional Geologic Setting

The project area is situated in the northern portion of the Peninsular Ranges Geomorphic Province. This geomorphic province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin south to the southern tip of Baja California (Norris and Webb, 1990; Harden, 1998). The province varies in width from approximately 30 to 100 miles and generally consists of rugged mountains underlain by Jurassic metavolcanic and metasedimentary rocks, and Cretaceous igneous rocks of the southern California batholith. The portion of the province in western Riverside County that includes the project area consists generally of Cretaceous-age granitic rocks overlain by Quaternary-age young alluvial deposits.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest. Several of these faults are considered to be active. The San Jacinto and San Andreas faults are active fault systems located east of the project area, and the Rose Canyon, Coronado Bank, San Diego Trough, San Clemente, and Elsinore faults are active fault systems located west of the project area. Major tectonic activity associated with these and other faults within this regional tectonic framework consists primarily of right-lateral, strike-slip movement. The San Jacinto Fault Zone, the nearest active fault system, has been mapped approximately 7 miles northeast of the project site. Specifics of faulting are discussed in following sections of this report.

5.2 Site Geology

Based on our review of published geologic maps (Figure 4) and our site reconnaissance, the project site is generally underlain by fill, Quaternary-age alluvium, and bedrock consisting of granitic rock. Fill soils were observed at the site along the unpaved roads as well as in graded slopes. We anticipate these fills are relatively shallow and generally composed of locally derived, reworked alluvium and decomposed granitic rock. The alluvium includes alluvial sand and clay of valley areas and older alluvial deposits mapped in the southwest portion of the project area west of I-215. The alluvium is anticipated to consist of loose to very dense silt, sand, and clay with scattered gravel, cobbles, and possible boulders. Underneath the alluvium in the project area is Cretaceous-age granitic rock consisting of quartz diorite (Dibblee and Minch, 2003a through 2003d). Outcrops of resistant granitic corestone have been mapped in the project area and may be present in the alluvium.

5.3 Groundwater

We researched information available through the California Department of Water Resources and the California State Water Resource Control Board for groundwater monitoring well data in the vicinity of the project site (CDWR, 2019 and CSWRCB, 2019). Based on our review of the available well data, groundwater has been measured at depths ranging from approximately 28 to 54 feet below the ground surface (bgs) at a site north of MARB and approximately 0.5 miles north of Alternative 1 (Wayne Perry, 2013). In addition, groundwater was not encountered in borings drilled to depths of up to approximately 16½ feet by Ninyo & Moore along Graeber Street (Ninyo & Moore, 2018). Data from monitoring wells located south of Nandina Avenue near where the Alternative 3B alignment crosses I-215 indicate a groundwater depth of approximately 20 feet bgs (Reynolds, 2017). Groundwater measurements in monitoring wells in the vicinity of the Western Water Recycling Facility range from approximately 19 to 35 bgs (Eco & Associates, 2015). Fluctuations in the level of groundwater may occur due to variations in ground surface topography, subsurface stratification, rainfall, irrigation practices, groundwater pumping, and other factors which may not have been evident at the time of our field evaluation.

5.4 Faulting And Seismicity

The subject site is not located within a State of California Earthquake Fault Zone (formerly known as Alquist-Priolo Special Studies Zone) (Hart and Bryant, 1997). However, the site is located in a seismically active area, as is the majority of southern California, and the potential for strong ground motion in the project area is considered significant during the design life of the proposed improvements. The approximate locations of major faults in the region and their geographic relationship to the site are shown on Figure 3.

Based on our document review, the active San Jacinto Valley segment of the San Jacinto Fault Zone is located approximately 7 miles northeast of the site. Table 1 lists selected principal known active faults that may affect the subject site and the maximum moment magnitude (M_{max}) as published by the United States Geological Survey (USGS, 2019). The approximate fault-to-site distances were calculated using the USGS fault parameters web-based design tool (USGS, 2019).

Table 1 – Principal Active Faults

Fault	Approximate Fault-to-Site Distance miles (kilometers)	Maximum Moment Magnitude (M_{max})
San Jacinto (San Jacinto Valley Segment)	7 (11)	7.0
San Jacinto (Anza Segment)	8 (13)	7.3
San Jacinto (San Bernardino Valley Segment)	9 (14)	7.1
Elsinore (Glen Ivy Segment)	15 (25)	6.9
San Andreas (South San Bernardino Segment)	17 (28)	7.0
Elsinore (Temecula Segment)	17 (28)	6.9
San Andreas (North San Bernardino Segment)	18 (29)	6.9
Chino	19 (31)	6.7
Whittier	20 (32)	7.0
Cucamonga	23 (37)	6.7
San Andreas (Banning/Garnet Hill Segment)	26 (42)	7.1
Cleghorn	27 (43)	6.8
North Frontal (West)	30 (48)	7.2
San Jose	30 (48)	6.7
San Joaquin Hills	32 (51)	7.1
Pinto Mountain	32 (52)	7.3
Sierra Madre	33 (53)	7.2

The principal seismic hazards at the subject site are surface fault rupture, liquefaction, and strong ground motion. A brief description of these hazards and the potential for their occurrences on site are discussed below.

5.4.1 Surface Ground Rupture

Based on our review of the referenced literature and our site reconnaissance, no active faults are known to cross the project site. The active San Jacinto Valley segment of the San Jacinto Fault Zone is located approximately 7 miles northeast of the site. Therefore, the probability of damage from surface ground rupture is considered to be low. However, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

5.4.2 Liquefaction and Seismically Induced Settlement

Liquefaction is the phenomenon in which loosely deposited granular soils (with silt and clay contents of less than approximately 35 percent) and non-plastic silts located below the water table undergo rapid loss of shear strength when subjected to strong earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact due to a rapid rise in pore water pressure, and causes the soil to behave as a fluid for a short period of time. Liquefaction is known generally to occur in saturated or near-

saturated cohesionless soils at depths shallower than about 50 feet below the ground surface. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and both intensity and duration of ground shaking.

Based on our review of available data, portions of the site are mapped in areas of having low, moderate, and high susceptibility for liquefaction (Figure 5; County of Riverside, 2016). Potential for liquefaction in near-surface soils will be evaluated in our forthcoming geotechnical evaluation report.

5.4.3 Ground Motion

The 2016 California Building Code (CBC) specifies that the potential for liquefaction and soil strength loss be evaluated, where applicable, for the Maximum Considered Earthquake Geometric Mean (MCE_G) peak ground acceleration with adjustment for site class effects in accordance with the American Society of Civil Engineers (ASCE) 7-10 Standard. The MCE_G peak ground acceleration is based on the geometric mean peak ground acceleration with a 2 percent probability of exceedance in 50 years. The MCE_G peak ground acceleration with adjustment for site class effects (PGA_M) was calculated as 0.51g using the California Office of Statewide Health Planning and Development and Structural Engineers Association of California (SEAOC and OSHPD, 2019) seismic design tool that yielded a mapped MCE_G peak ground acceleration of 0.51g for the site and a site coefficient (F_{PGA}) of 1.0 for Site Class D.

5.5 Tsunamis and Seiches

Tsunamis are long wavelength seismic sea waves (long compared to the ocean depth) generated by sudden movements of the ocean bottom during submarine earthquakes, landslides, or volcanic activity. Based on the inland location and elevation of the project, the potential for a tsunami to impact the site is not a design consideration.

Seiches are oscillations of enclosed or partially enclosed bodies of water often generated by seismic activity. Based on the elevation of the site and the absence of nearby bodies of water, the potential for seiches to impact the site is considered low.

5.6 Landsliding and Slope Stability

Landslides can be induced by strong vibratory motion produced by earthquakes. Research and historical data indicate that seismically induced landslides tend to occur in weak soil and rock

situated on sloping terrain. The process for zoning earthquake-induced landslides incorporates expected future earthquake shaking, existing landslide features, slope gradient, and strength of earth materials on the slope. Based on review of published geologic maps and the relatively gentle grade across the project site, the potential for seismically induced landslides at the site is not considered likely. In addition, based on our review of published geologic literature, aerial photographs, and our site reconnaissance, no landslides or related features are known to underlie or be adjacent to the project site. Therefore, the potential for landslides at the project site is considered low.

5.7 Flood Hazards

Based on our review of data available on the Federal Emergency Management Agency (FEMA) Mapping Information Platform website (2019), much of the project area is located within Flood Zone D, which includes “Other Areas: areas in which flood hazards are undetermined, but possible”. In addition, a 100-year flood zone is mapped along the northern portion of Alternatives 3A and 3B where Heacock Street parallels the Perris Valley Storm Drain channel. Flash flooding could occur at the site during times of heavy rainfall.

5.8 Expansive Soils

Expansive soils generally result from specific clay minerals that have the capacity to shrink or swell in response to changes in moisture content. Shrinking or swelling of foundation soils can lead to damage to slabs, foundations, and other engineered structures, including tilting and cracking. Based on our review of background materials and our geologic reconnaissance, soils in the project area are anticipated to have a low potential for expansion. Expansive potential in site soils will be evaluated in our forthcoming geotechnical evaluation report.

5.9 Corrosive Soils

Caltrans corrosion criteria (2018) consider soils with chloride concentration of 500 ppm or greater, soluble sulfate concentration of 1,500 ppm or greater, an electrical resistivity of 1,100 ohm-centimeters or less, and/or a pH 5.5 or less to be corrosive. Limited testing of soil corrosivity performed during our evaluation of Western Municipal Water District's (WMMD) Graeber Pipeline project indicated that site soils were not classified based on Caltrans criteria (2018). However, soils may be corrosive in other portions of the site. Corrosivity of site soils will be evaluated in our forthcoming geotechnical evaluation report.

6 CONCLUSIONS

Based on our geologic reconnaissance, geotechnical considerations for the project include the following:

- The project site is generally underlain by fill, alluvium, and bedrock consisting of granitic rock. Gravel, cobbles, and possible boulders are also anticipated in these materials.
- On-site excavations will encounter variations in excavation characteristics including caving in loose soils and wet soils. Difficult excavation should be anticipated in areas of cobbles, bedrock, and/or corestones and may require heavy rock breaking and disposal of oversized materials.
- Static groundwater has been measured at depths as shallow as 19 feet in monitoring wells located in the project vicinity.
- Groundwater levels are influenced by seasonal variations, variations in ground surface topography, precipitation, irrigation practices, soil/rock types, groundwater pumping, and other factors, and are subject to fluctuations. Seepage and fluctuations in the groundwater levels at the site should be anticipated.
- The subject site is not located within a State of California Earthquake Fault Zone. Based on our review of published geologic maps and aerial photographs, no known active faults underlie the site. The probability of surface fault rupture at the site is considered to be low.
- Based on our review of well data (CDWR, 2019 and CSWRCB, 2019) and liquefaction hazard maps (California Geological Survey, 2018; County of Riverside, 2015), there is potential for liquefaction of soils near several existing drainages along the project alignment. Further evaluation of liquefaction hazard along the project alignment should be performed in conjunction with a subsurface exploration
- The design PGA was calculated to be 0.51g based on the OSHPD seismic design tool (SEAOC and OSHPD, 2019).

7 LIMITATIONS

The field evaluation and geotechnical analyses presented in this report have been conducted in accordance with current engineering practice and the standard of care exercised by reputable geotechnical consultants performing similar tasks in this area. No warranty, implied or expressed, is made regarding the conclusions, recommendations, and professional opinions expressed in this report. Variations may exist and conditions not observed or described in this report may be encountered. Our preliminary conclusions and recommendations are based on an analysis of the observed conditions and the referenced background information.

The purpose of this study was to evaluate geologic and geotechnical conditions within the project site and to provide a preliminary geotechnical evaluation report to assist in the preparation of environmental impact documents for the project. A comprehensive geotechnical evaluation, including subsurface exploration and laboratory testing, should be performed prior to design and construction of structural improvements.

8 REFERENCES

- California Building Standards Commission, 2016, California Building Code, Title 24, Part 2, Volumes 1 and 2.
- California Department of Transportation (Caltrans), 2018, Corrosion Guidelines (Version 3.0), Division of Engineering and Testing Services, Corrosion Technology Branch: dated March.
- California Department of Water Resources (CDWR), 2019, Water Data Library Website: wdl.water.ca.gov/waterdatalibrary/index.cfm: accessed in May.
- California Geological Survey, 1974, Special Studies Zones, Sunnymead 7.5-Minute Quadrangle, Riverside County, California: effective July 1.
- California Geological Survey, 1998, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada: dated February.
- California Geological Survey, 1999, Seismic Shaking Hazard Maps of California: Map Sheet 48.
- California State Water Resources Control Board (CSWRCB), 2019, GeoTracker Website: www.geotracker.waterboards.ca.gov: accessed in May.
- County of Riverside, 2016, County of Riverside General Plan, Safety Element, dated December.
- Dibblee, T.W. and Minch, J.A., 2003a, Geologic map of the Perris Quadrangle, San Riverside County, California: Dibblee Foundation Map DF-112, Scale 1:24,000.
- Dibblee, T.W. and Minch, J.A., 2003b, Geologic map of the Riverside East/south ½ of San Bernardino South Quadrangles, San Bernardino and Riverside County, California: Dibblee Foundation Map DF-109, Scale 1:24,000.
- Dibblee, T.W. and Minch, J.A., 2003c, Geologic map of the Steele Peak Quadrangle, San Riverside County, California: Dibblee Foundation Map DF-111, Scale 1:24,000.
- Dibblee, T.W. and Minch, J.A., 2003d, Geologic map of the Sunnymead/south ½ of Redlands Quadrangles, San Bernardino and Riverside County, California: Dibblee Foundation Map DF-110, Scale 1:24,000.
- Eco & Associates, 2015, Submittal of Final 2014 Annual Groundwater Sampling and Analysis Report for Site “Y” at Camp Haan, Riverside County, California: dated June 4.
- Harden, D.R., 2004, California Geology 2nd Edition: Prentice Hall, Inc.
- Jennings, C.W. and Bryant, W.A., 2010, Fault Activity Map of California and Adjacent Areas: California Division of Mines and Geology, California Geologic Data Map Series, Map No. 6, Scale 1:750,000.
- Morton, D.M. and Miller, F.K, 2006, Geologic Map of the San Bernardino and Santa Ana 30’ x 60’ Quadrangles, California, U.S. Geological Survey, Open-File Report 2006-1217, Scale 1:100,000.
- Ninyo & Moore, 2018, Geotechnical Evaluation, Western Municipal Water District Graeber Pipeline, March Air Reserve Base, Riverside County, California: dated March 16.
- Ninyo & Moore, 2019, Revised Proposal for Geotechnical Services, LS 1269 Sewer Forcemain Replacement Project, Western Municipal Water District, March Air Reserve Base, Riverside County, California, Proposal No. P02-01463: dated March 22.

- Norris, R.M. and Webb, R.W., 1990, *Geology of California*: John Wiley & Sons
- Reynolds Group, 2017, *Groundwater Monitoring Report, 3rd Quarter 2017, Former Nandina Liquor, 1569 Nandina Avenue, Perris, CA 92571*: dated October 2.
- Structural Engineering Association of California (SEAOC), Office of Statewide Health Planning and Development (OSHDP), 2019, U.S. Seismic Design Maps website, <https://seismicmaps.org/>: Accessed in May.
- United States Geological Survey, 1967, Perris Quadrangle, California Quadrangle Map, 7.5 Minute Series: Scale 1:24,000.
- United States Geological Survey, 1967, Riverside East Quadrangle, California Quadrangle Map, 7.5 Minute Series: Scale 1:24,000.
- United States Geological Survey, 1967, Steele Peak Quadrangle, California Quadrangle Map, 7.5 Minute Series: Scale 1:24,000.
- United States Geological Survey, 1967, Sunnymead Quadrangle, California Quadrangle Map, 7.5 Minute Series: Scale 1:24,000.
- United States Geological Survey, 2018, Perris Quadrangle, California Quadrangle Map, 7.5 Minute Series: Scale 1:24,000.
- United States Geological Survey, 2018, Riverside East Quadrangle, California Quadrangle Map, 7.5 Minute Series: Scale 1:24,000.
- United States Geological Survey, 2018, Steele Peak Quadrangle, California Quadrangle Map, 7.5 Minute Series: Scale 1:24,000.
- United States Geological Survey, 2018, Sunnymead Quadrangle, California Quadrangle Map, 7.5 Minute Series: Scale 1:24,000.
- United States Geological Survey, 2019, 2008 National Seismic Hazard Maps – Fault Parameters; http://geohazards.usgs.gov/efusion/hazardfaults_search/hf_search_main.efm.
- Wayne Perry, Inc., 2013, *Annual Cleanup Evaluation Report, First Quarter 2013, Former Shell/Texaco Service Station, 22470 Cactus Avenue, Moreno Valley, California 92553*: dated April 8.
- Webb Associates, 2018, *Feasibility Study (P.O. 53784-0-SER), MARB 1269 Forcemain Options*: dated April.



FIGURES

1_108805001_SL.mxd 5/13/2019 JDL

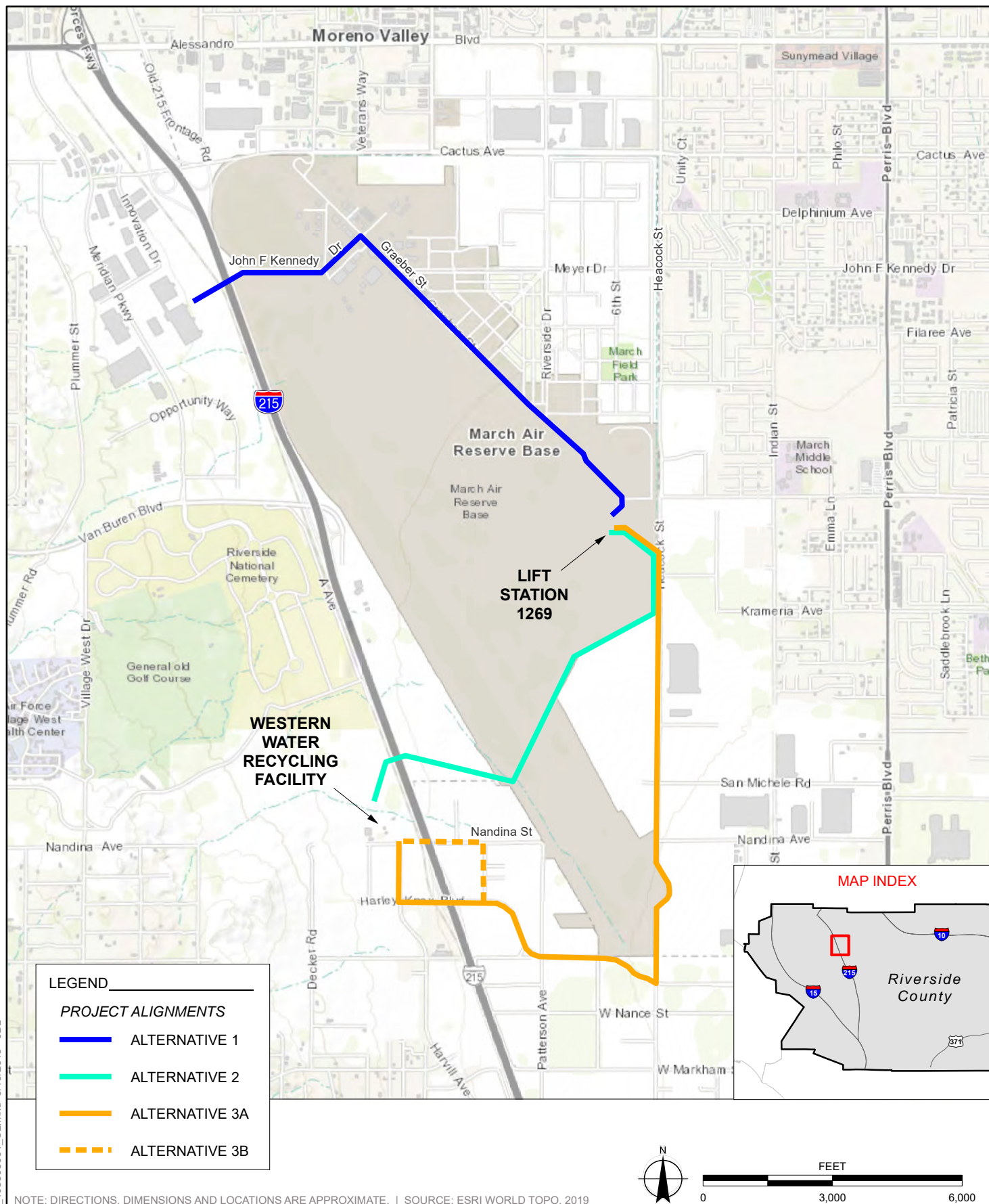
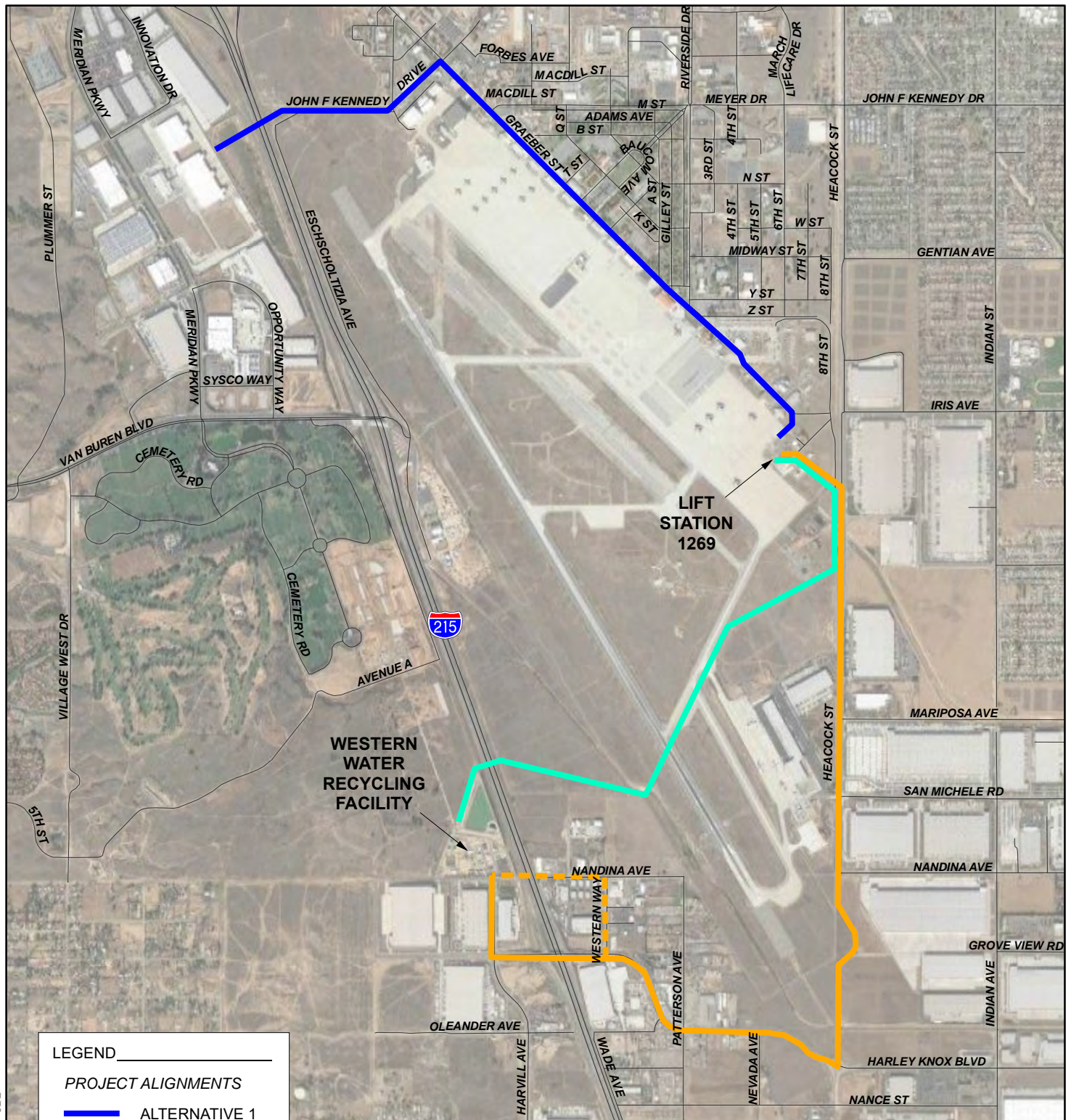


FIGURE 1

ALIGNMENT LOCATIONS

LS 1269 SEWER FORCEMAIN REPLACEMENT
MARCH AIR RESERVE BASE, RIVERSIDE COUNTY, CALIFORNIA

108805001 | 5/19



LEGEND

PROJECT ALIGNMENTS

- ALTERNATIVE 1
- ALTERNATIVE 2
- ALTERNATIVE 3A
- - - ALTERNATIVE 3B

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: GOOGLE EARTH, 2019

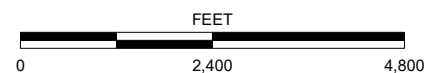
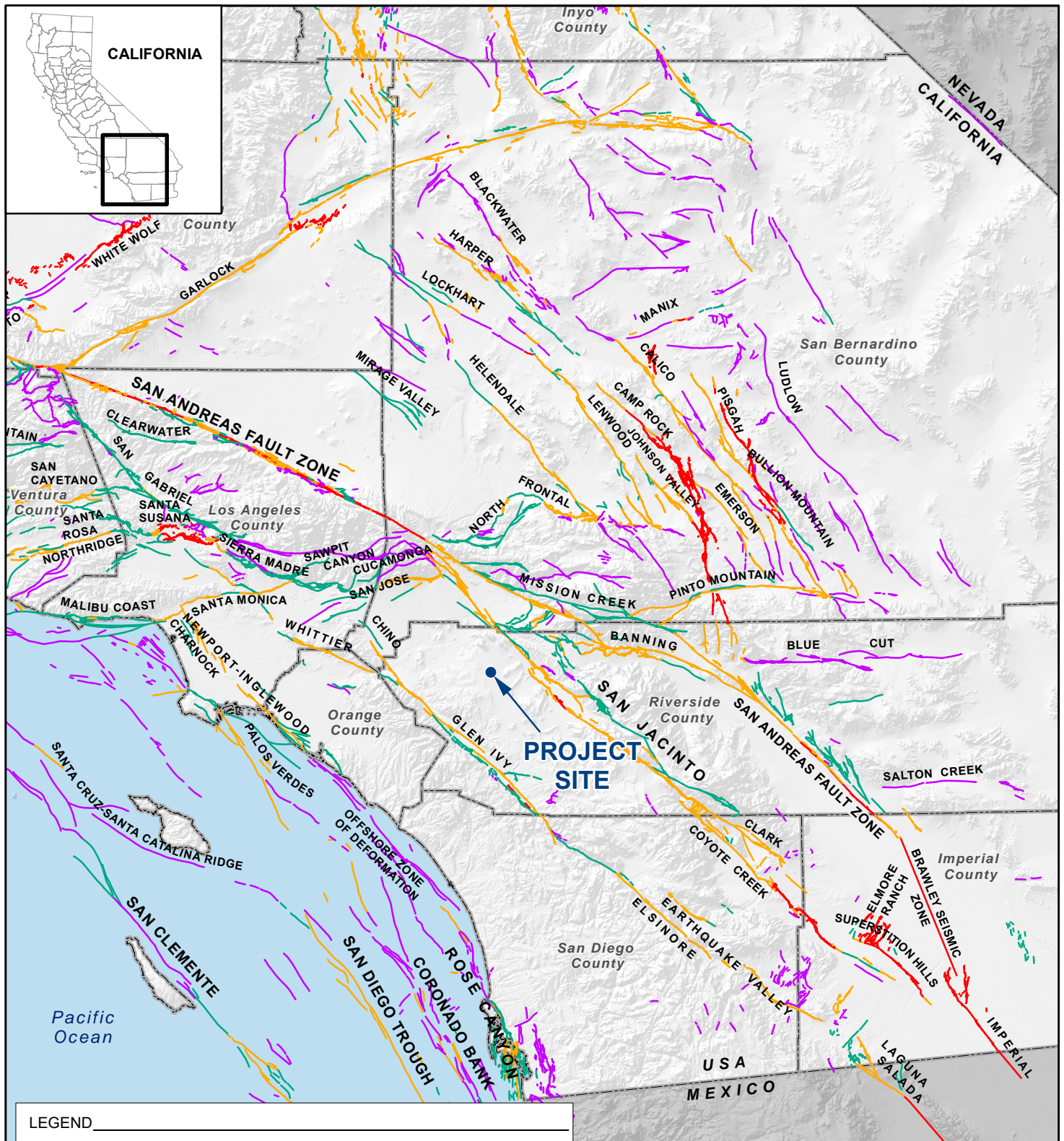


FIGURE 2

PROJECT AREA

LS 1269 SEWER FORCEMAIN REPLACEMENT
MARCH AIR RESERVE BASE, RIVERSIDE COUNTY, CALIFORNIA

108805001 | 5/19



LEGEND

CALIFORNIA FAULT ACTIVITY

- HISTORICALLY ACTIVE
- HOLOCENE ACTIVE
- LATE QUATERNARY (POTENTIALLY ACTIVE)
- QUATERNARY (POTENTIALLY ACTIVE)
- STATE/COUNTY BOUNDARY

SOURCE: U.S. GEOLOGICAL SURVEY AND CALIFORNIA GEOLOGICAL SURVEY, 2006, QUATERNARY FAULT AND FOLD DATABASE FOR THE UNITED STATES.

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.



FIGURE 3

FAULT LOCATIONS

LS 1269 SEWER FORCEMAIN REPLACEMENT
MARCH AIR RESERVE BASE, RIVERSIDE COUNTY, CALIFORNIA

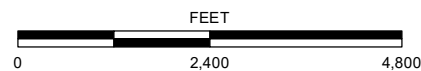
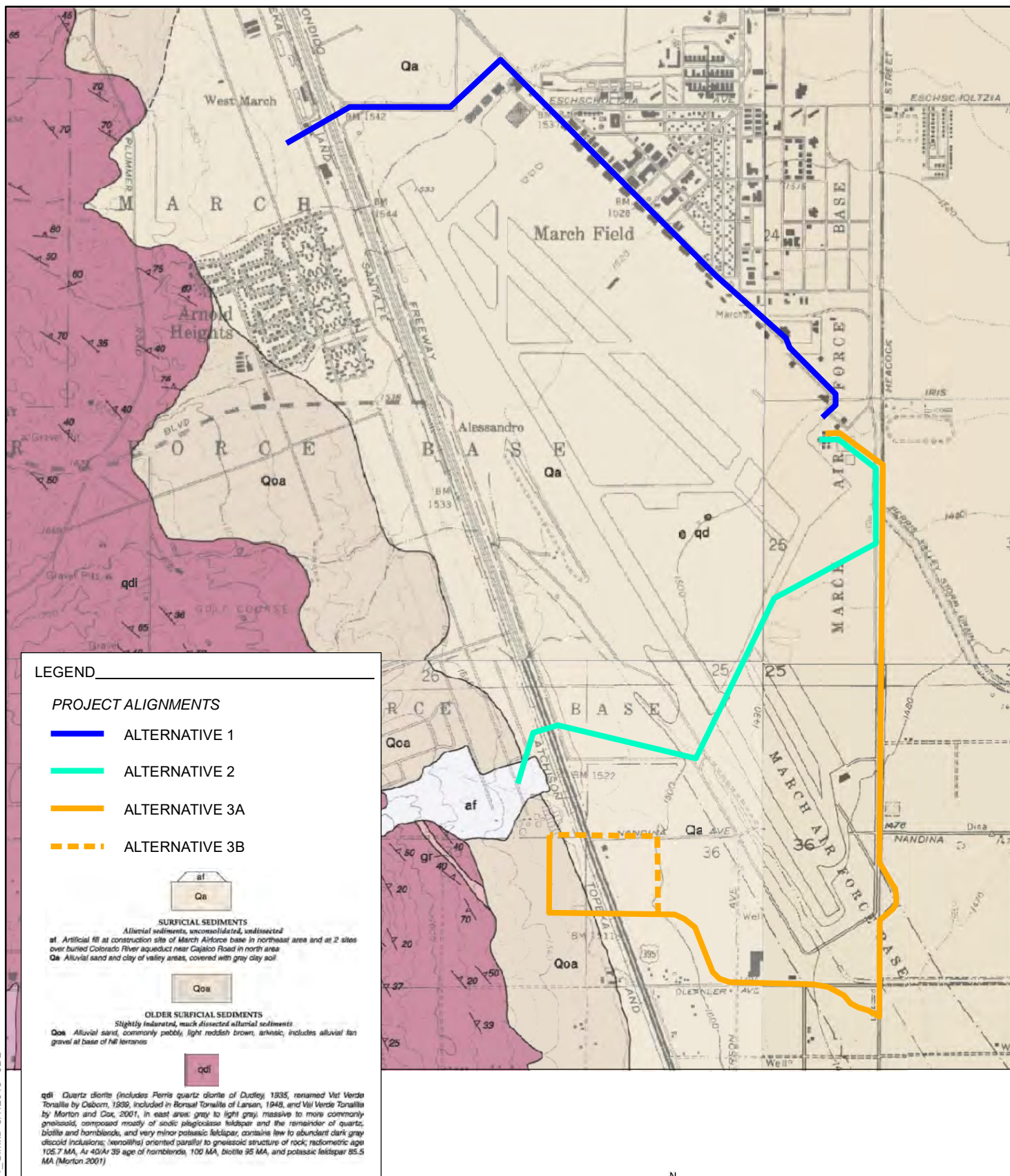


FIGURE 4

GEOLOGY

LS 1269 SEWER FORCEMAIN REPLACEMENT
MARCH AIR RESERVE BASE, RIVERSIDE COUNTY, CALIFORNIA

5_108805001_LQ.mxd 5/14/2019 JDL

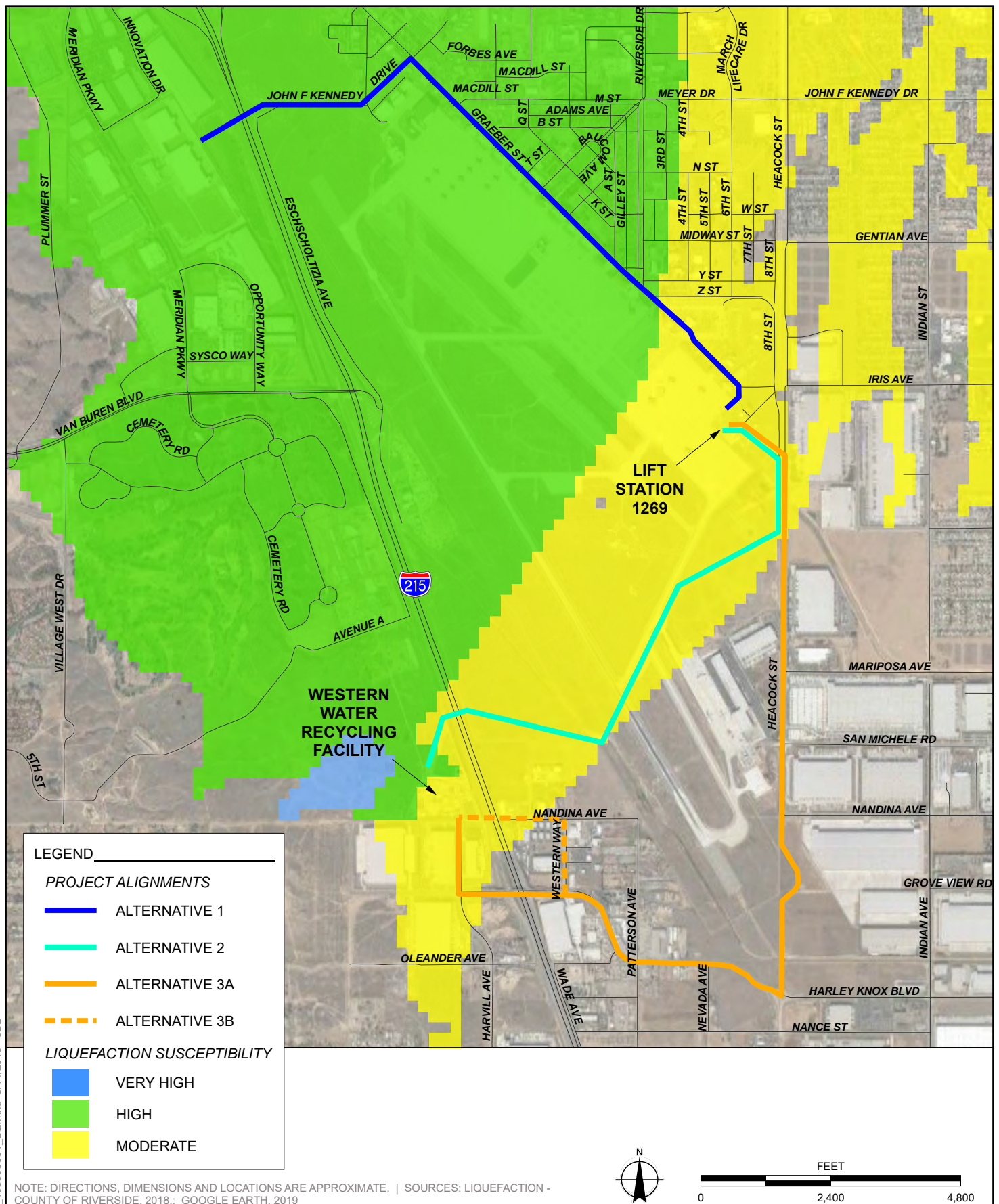


FIGURE 5

LIQUEFACTION

LS 1269 SEWER FORCEMAIN REPLACEMENT
MARCH AIR RESERVE BASE, RIVERSIDE COUNTY, CALIFORNIA

108805001 | 5/19



APPENDIX A

Photographs



Photograph 1: Dry well at LS 1269. View to north.



Photograph 2: John F Kennedy Drive on MARB along proposed Alternative 1. View to west.

FIGURE A-1



Photograph 3: Area west of I-215 near western limit of Alternative 1. View to northwest.



Photograph 4: Paved road on MARB along proposed Alternative 2. View to northeast.

FIGURE A-2



Photograph 5: **Drainage Culvert near south end of Heacock Street along proposed Alternatives 3A and 3B. View to southeast.**



Photograph 6: **Unpaved road at south end of Heacock Street along proposed Alternatives 3A and 3B. View to south.**

FIGURE A-3



5710 Ruffin Road | San Diego, California 92123 | p. 858.576.1000

ARIZONA | CALIFORNIA | COLORADO | NEVADA | TEXAS | UTAH

www.ninyoandmoore.com

Appendix E

Paleontological Resources Records Search

October 24, 2019

11639

Samuel A. McLeod, Ph.D.
Natural History Museum of Los Angeles County

Subject: Paleontological Record Search Request, Western Municipal Water District (WMWD) Lift Station (LS) 1269 Sewer Force Main Replacement Project, near March Air Reserve Base (MARB), Riverside County, California

Dear Sam,

Dudek has been retained to determine whether planned excavation for the above referenced project will encroach on previously investigated fossil localities. The lead agency for the project is requesting a review of the paleontological localities maintained by your office.

To facilitate the review, I have enclosed a map with the project location (Base map: Sunnymead, Riverside East, Perris, Steele Peak, CA 7.5' Topographic Quadrangles). The project site traverses the Interstate 215, continues east along Nandina Avenue, south along Western Way and Harley Knox Boulevard, east along Oleander Avenue, north along Heacock Street to Iris Avenue, near March Air Reserve Base in the cities of Moreno Valley and Perris and Riverside County, California.

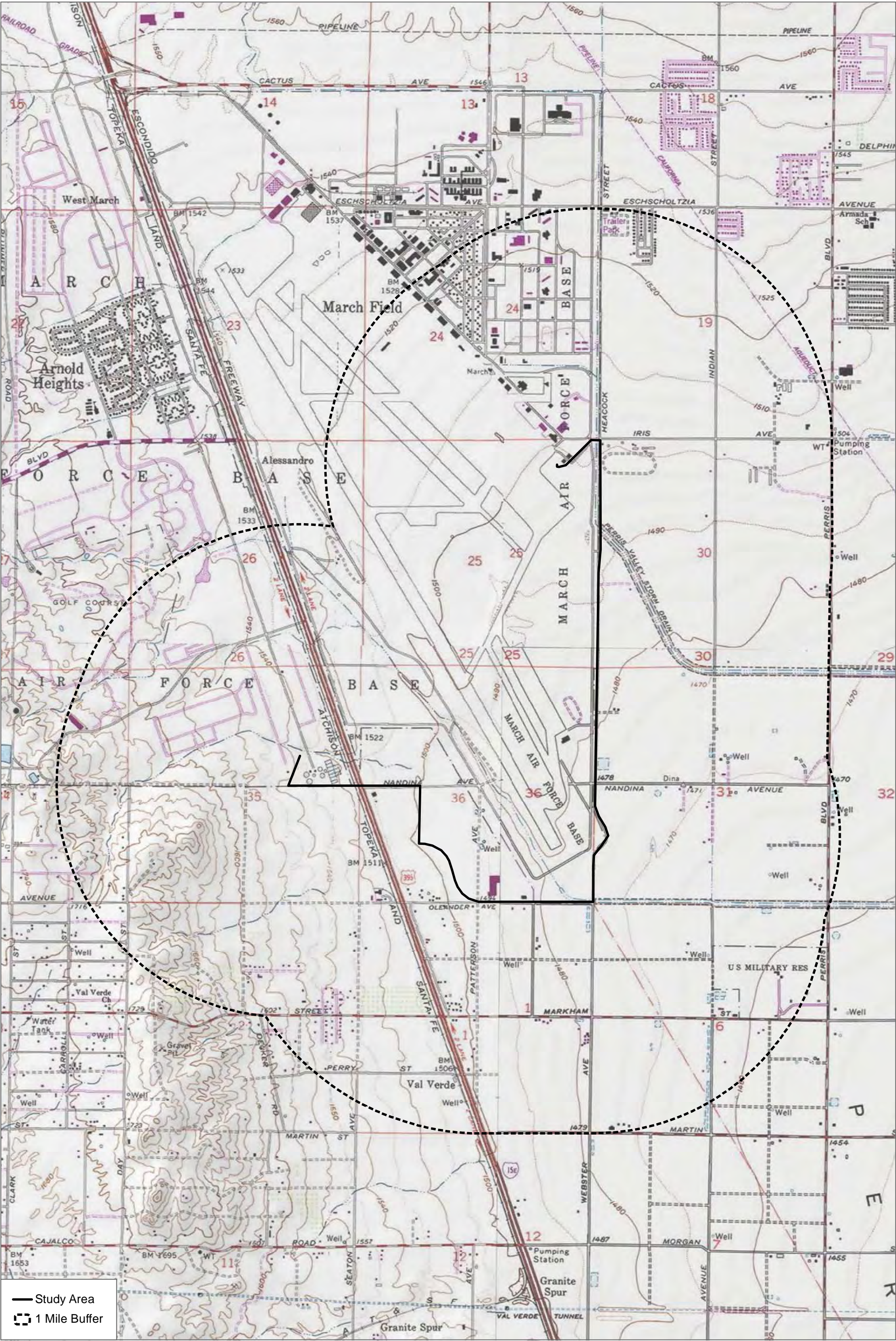
Please conduct a review of the project area and provide me with a list of fossil localities within or nearby (at least within a one mile buffer) the project boundaries. An invoice may be sent to my attention (ssiren@dudek.com), at your earliest convenience.

Thank you, and if I can be of any further assistance, please call me.

Sincerely,



Sarah Siren, M.S., GISP
Paleontologist
Dudek



Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007
tel 213.763.DINO
www.nhm.org



Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

7 November 2019

Dudek
605 Third Street
Encinitas, CA 92024

Attn: Sarah Siren, Senior Paleontologist

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed
Western Municipal Water District Lift Station 1269 Sewer Force Main
Replacement Project, Dudek Project # 11639, near March Air Reserve Base,
Riverside County, project area

Dear Sarah:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Western Municipal Water District Lift Station 1269 Sewer Force Main Replacement Project, Dudek Project # 11639, near March Air Reserve Base, Riverside County, project area as outlined on the portions of the Sunnymead, Steele Peak, and Perris USGS topographic quadrangle maps that you sent to me via e-mail on 18 October 2019. We do not have any vertebrate fossil localities that lie within the proposed project area boundaries, but we do have localities nearby from sedimentary deposits similar to those that occur in the proposed project area, either at the surface or at depth.

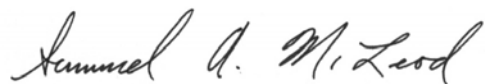
According to geologic mapping, in the western-most extension of the proposed project area there are sediments of artificial fill at the surface. These artificial fill materials are less likely to contain significant fossil vertebrate remains than if they were *in situ* deposits. Adjacent to the artificial fill, west of the Escondido Freeway (I-15), the proposed project area has surface deposits composed of older Quaternary Alluvium, derived broadly as alluvial fan deposits from the hills immediately to the west. Being so close to the igneous source rock, these relatively coarse alluvial fan deposits typically do not contain significant fossil vertebrates, at least in the

uppermost layers. Deeper and finer-grained older Quaternary deposits may underlie the surficial Quaternary Alluvium, however. Surface deposits most of the proposed project area though consist of younger Quaternary Alluvium, derived as alluvial fan deposits from the more elevated terrain to the north, primarily the Box Springs Mountains. These sedimentary deposits usually do not contain significant vertebrate fossils in the uppermost layers, but they maybe underlain by finer-grained older Quaternary deposits that do contain significant vertebrate fossils. Our closest vertebrate fossil locality from somewhat similar deposits is LACM 4540, from the gravel pits just west of Jack Rabbit Trail almost due east of the northern-most portion of the proposed project area on the eastern side of the San Jacinto Valley, that produced a specimen of fossil horse, *Equus*. Our next closest vertebrate fossil locality from somewhat similar older Quaternary deposits is LACM 5168, due south of the proposed project area around Railroad Canyon Reservoir, that produced a fossil specimen of horse, *Equus*. Slightly further south-southwest of the proposed project area, just northeast and east of the current Lake Elsinore, our older Quaternary localities LACM (CIT) 572 and LACM 6059 produced fossil specimens of horse, *Equus*, and camel, *Camelops hesternus*.

Excavations in the artificial fill exposed in the proposed project area, as well as shallow excavations in the uppermost layers of soil and Quaternary Alluvium found at the surface in most of the proposed project area, are unlikely to contain significant fossil vertebrates. Excavations that extend down into older and perhaps finer-grained Quaternary deposits, however, may well encounter significant fossil vertebrate remains in finer-grained deposits. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally collect any vertebrate fossil remains without impeding development. Also, sediment samples from the proposed project area should be collected and processed to determine the small fossil potential of the site. Any fossils collected during mitigation activities should be placed in an accredited scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

A handwritten signature in cursive script, reading "Samuel A. McLeod". The ink is dark and the signature is fluid, with a large 'S' and a distinct 'M'.

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice