FRESNO PRIORITY 2 REGIONAL TRANSMISSION MAINS

Final Supplemental Mitigated Negative Declaration
SCH #2015101105

Prepared for
City of Fresno

January 2016

ESA

FRESNO PRIORITY 2 REGIONAL TRANSMISSION MAINS

Final Supplemental Mitigated Negative Declaration
SCH #2015101105

Prepared for
City of Fresno

January 2016

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
www.esassoc.com

Los Angeles

Oakland

Orlando

Palm Springs

Petaluma

Portland

San Diego

San Francisco

Santa Cruz

Seattle

Tampa

Woodland Hills

150515

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

ERRATA FOR CITY OF FRESNO PRIORITY 2 REGIONAL TRANSMISSION MAINS SUPPLEMENTAL MITIGATED NEGATIVE DECLARATION

Introduction

The City of Fresno (City) circulated a Draft Initial Study (IS) and Notice of Intent (NOI) to Adopt a Supplemental Mitigated Negative Declaration (MND) for the Fresno Priority 2 Regional Transmission Mains (proposed Project) from October 30, 2015 to November 30, 2015 (State Clearinghouse #2015101105). Following close of the public comment period and prior to adopting the MND, the City made revisions to the IS Environmental Checklist to update and clarify information provided in that document.

California Environmental Quality Act (CEQA) Guidelines §15073.5(a) requires that a lead agency recirculate a negative declaration "when the document must be substantially revised." A "substantial revision" includes: (1) identification of a new, avoidable significant effect requiring mitigation measures or project revisions and/or; (2) determination that proposed mitigation measures or project revisions will not reduce potential effects to less than significance and new measures or revisions must be required.

State CEQA Guidelines specify situations in which recirculation of a negative declaration is not required. This includes, but is not limited to, situations in which "new information is added to the negative declaration which merely clarifies, amplifies, or makes insignificant modifications to the negative declaration." Revisions were made to the IS Environmental Checklist to update references to the City of Fresno 2025 General Plan and General Plan Master Environmental Impact Report (EIR) addressing greenhouse gas emissions (GHG). The Environmental Checklist GHG discussion incorporated information included in the Fresno Metropolitan Water Resources Management Plan Update (Metro Plan) EIR which was certified in May 2014. Subsequent to certification of the Metro Plan EIR, the City adopted the Fresno General Plan in December 2014 which includes a GHG reduction plan that was not available when the Metro Plan EIR was certified. In order to evaluate GHG emission using current regulatory conditions, and reflect the Fresno General Plan and GHG reduction plan, the City has revised the Environmental Checklist. The revisions do not change the result or conclusion in the Draft Supplemental MND and do not meet the threshold of "substantial revisions" established by CEQA. Therefore, recirculation of the Draft NOI to Adopt a Supplemental MND is not required in accordance with CEQA Guidelines §15073.5(c)(4).

This Final Supplemental MND has been prepared pursuant to CEQA Guidelines[1], which outline all aspects of the preparation of the Draft Supplemental MND and its review, as well as the

[1] Title 14, California Code of Regulations, Chapter 3, Sections 15000 – 15387 and Appendices, accessible at http://ceres.ca.gov/topic/env_law/ceqa/guidelines/

subsequent steps to preparing a Notice of Determination (NOD). This document incorporates comments from public agencies, and the general public, and contains responses by the Lead Agency, the City of Fresno, to those comments. The sole intent and purpose of the Final Supplemental MND is to provide corrections and clarity to certain facts set forth in the Draft Supplemental MND to ensure accuracy. The changes have been incorporated into the Final Supplemental MND. The changes do not substantially modify the conclusions or findings of the impact analysis included in the Draft Supplemental MND nor do they require any new or substantially modified mitigation measures. The text changes are summarized below.

Summary of Text Changes to the Environmental Checklist

New text added to the Environmental Checklist is shown in a double underline and text to be deleted is shown in ~~strike out~~.

Page iv:

2.12-4 Vibration Velocities for Construction Equipment

Page 2-37:

No Impact. According to the ~~City of~~ Fresno General Plan (City of Fresno Development and Resource Management Department, 2014), the City of Fresno is located in one of the more geologically stable areas of California, containing no Alquist-Priolo Earthquake Fault Zones. Therefore, rupture of a known fault is not anticipated within or in the immediate vicinity of the Project area. No impact would occur.

Page 2-40:

a-b) **Less-than-Significant.** Greenhouse gas (GHG) impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). ~~The~~ In 2009, a MND was prepared for the update to the 2025 Fresno General Plan Air Quality Element and addressed changes in the objectives and policies of the 2025 Fresno General Plan as a result of new legislation, specifically California AB 170 and AB 32. AB 170 required cities and counties in the Valley to incorporate strategies to improve air quality in their general planning efforts. AB 32 focuses on reducing greenhouse gases to 1990 levels by the year 2020. New and revised mitigation measures were applied to the 2025 Fresno General Plan and Master EIR in the form of policies to change the nature of the project in ways that would reduce and mitigate impacts consistent with the direction given by AB 170 and AB 32. Further, the 2025 Fresno General Plan Master EIR mitigation measure checklist was augmented to further the goals, objectives, and policies for air quality improvement, and to assure that implementing air quality improvement policies will not cause other significant adverse cumulative impacts. It was found that any potential impacts related to air quality resulting from this new legislation, was adequately mitigated in the Master EIR and Air Quality MND to less than significant levels.

Since that time, the Master EIR for the Fresno General Plan (2014) has superseded the 2025 Fresno General Plan and Master EIR. The Fresno General Plan adhered to AB 170

by incorporating strategies to improve air quality. The Fresno General Plan also incorporated the 2008 Climate Change Scoping Plan pursuant to the requirements in AB 32 to meet GHG reduction. The Fresno General Plan and incorporation of AB 170 and AB 32 do not require new analysis or implementation beyond what was completed under the 2025 Fresno General Plan and 2009 MND. The following analysis is applicable in determining the direct impact of the proposed Project with respect to climate change and GHGs.

Page 2-56:

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to land use and land use planning to be significant if the Metro Plan Update would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the Fresno General Plan and zoning ordinance) adopted for the purpose of avoiding or mitigating a significant environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan

Page 2-58:

According to the ~~2025~~ Fresno General Plan (City of Fresno Development and Resource Management Department, 2014 ~~City of Fresno Planning and Development Department, 2002~~), most of eastern Fresno County is included in the Fresno Production-Consumption (P-C) Region evaluated by California Department of Conservation (DOC) Division of Mines and Geology. A portion of the San Joaquin River Resource Area is located within the City of Fresno's SOI.

Page 2-64:

The City of Fresno Municipal Code, Chapter 10, Article 1 establishes noise standards for the Project area ~~consistent with the 2025 Fresno General Plan~~ as shown in Table 2.12-1. The Fresno General Plan (City of Fresno Development and Resource Management Department, 2014) is consistent with noise control practice in urban areas, employing 60 dB as being a desirable level, but accepting 65 dB as being in the "normally acceptable" range for noise due to the number of transportation sources located in proximity to urban residential areas. The Fresno General Plan notes that upon adoption of the new noise limits and policies proposed in the Fresno General Plan, the City will commence an update of its Noise Ordinance to provide regulatory consistency with adopted policies; however, the Noise Ordinance has not been updated at this time. Therefore, analysis was completed using the existing noise standards of the City of Fresno Municipal Code.

Page 2-65 and 2-66:

Impact Addressed in Metro Plan Update EIR. As shown in **Table 2.12-~~3~~4**, use of heavy equipment (e.g., a large bulldozer) generates vibration levels of 0.031 PPV or 81 RMS at a distance of 50 ft. Sensitive receptors would be located within 50 ft of construction of the proposed regional transmission mains. Vibration levels at these receptors would not exceed the potential building damage threshold of 0.5 PPV. However, vibration levels could exceed the annoyance threshold of 80 RMS.

TABLE 2.12-~~3~~4
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 50 ft (inches/second)[a]	RMS at 50 ft (Vdb)[b]
Large bulldozer	0.031	81
Caisson drilling	0.031	81
Loaded trucks	0.027	80

[a] Fragile buildings can be exposed to ground-borne vibration levels of 0.5 PPV without experiencing structural damage.
[b] The human annoyance response level is 80 RMS.
SOURCE: Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, May 2006.

Page 2-67:

The Metro Plan Update would not directly or indirectly induce growth or remove an obstacle to growth, since the increased population would occur based on the City's approved General Plan and development policies. In 2014, the City of Fresno adopted the Fresno General Plan which has population projections consistent with the 2025 Fresno General Plan. Additionally, the Metro Plan Update was based on projections in the 2025 Fresno General Plan. Implementation of the Metro Plan Update would result in the diversification the City's water supply portfolio, and enhancement of overall water supply reliability to meet the demands of existing and future customers through buildout of the adopted general plan and would not meet a demand greater than what has been approved as part of the Fresno ~~2025~~ General Plan.

Master Plan EIR Impacts

The Metro Plan Update EIR concluded that the Metro Plan Update would not directly or indirectly induce growth or remove an obstacle to growth, since the increased population would occur based on the City's approved General Plan and development policies. The treated surface water that would be made available as a result of the proposed Project would not meet a demand greater than what has been approved as part of the Fresno ~~2025~~ General Plan. Instead, treated surface water would be used to meet projected demand in 2025. For additional discussion, please refer to Section 5.2 of the Metro Plan Update EIR.

Page 2-68:

a) **Impact Addressed in Master Plan EIR.** The proposed Project, in and of itself, would not generate new population. However, providing a domestic water supply is one of the

primary public services needed to support population growth and development. The proposed Project would develop the infrastructure necessary to provide treated water supply to the City of Fresno through ~~build-out (~~2025~~)~~. Therefore, the proposed Project could remove an obstacle to population growth because it would provide for additional water supply and capacity. However, as discussed in detail in the review of secondary effects of growth in the Metro Plan Update EIR, the significance of potential population growth as it relates to the proposed Project is determined if the proposed Project would or would not be consistent with applicable land use plans. The proposed Project would not directly or indirectly induce growth or remove an obstacle to growth, since the increased population would occur based on the City's ~~approved~~ 2025 General Plan and development policies. The proposed Project is consistent with the Metro Plan Update EIR which was based on projections from the 2025 Fresno General Plan. These projections are within and consistent with the Fresno General Plan. Therefore, the proposed Project is consistent with the Fresno General Plan. Implementation of the proposed Project would result in the diversification the City's water supply portfolio, and enhancement of overall water supply reliability to meet the demands of existing and future customers through buildout of the adopted general plan and would not meet a demand greater than what has been approved as part of the Fresno ~~2025~~ General Plan. Therefore, the proposed Project would not result in direct or indirect growth inducement, and this impact is considered less than significant.

Appendix A:

Public Resources Code Section 21081.6, subdivision (a)(1) requires lead agencies to, "adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation". This Mitigation Monitoring and Reporting Program (MMRP) identifies mitigation measures adopted by the City of Fresno (City) from the Fresno Metropolitan Water Resources Management Plan Update (Metro Plan) Environmental Impact Report (EIR); responsibility for implementation of the mitigation measures; actions taken to monitor and report on implementation; and timing of action. Mitigation measures are numbered consistent with the numbering included in the Metro Plan EIR (State Clearinghouse No. 2013091021), as updated by responses to comments included in the Metro Plan Final EIR. Additionally, project-specific mitigation measures were also found to be necessary to reduce the project's environmental impacts to less than significant levels. Both EIR and project specific mitigation measures are discussed and listed in the Supplemental MND; they are duplicated in this Mitigation Monitoring and Reporting Program (MMRP) for compliance and monitoring purposes.

Hazards and Hazardous Materials				
Mitigation Measure HM-1: During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	Confirm that during construction, staging areas, welding areas, or areas slated for development using spark-producing equipment are cleared of dried vegetation or other materials that could serve as fire fuel and that the these areas are kept clear of combustible materials in order to maintain a firebreak. Confirm that construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order.	During project construction

TABLE OF CONTENTS

Fresno Priority 2 Regional Transmission Mains Supplemental Mitigated Negative Declaration

List of Figures

List of Tables

ENVIRONMENTAL CHECKLIST

Initial Study

1. Project Title:	City of Fresno Priority 2 Regional Transmission Mains
2. Lead Agency Name and Address:	City of Fresno, DPU, Water Division Program Management Office 2101 G Street, Fresno, CA 93706
3. Contact Person and Phone Number:	Douglas Hahn, 559 621-1607
4. Project Location:	City of Fresno, CA
5. Project Sponsor's Name and Address:	Michael Carbajal, Manager City of Fresno, DPU, Water Division Program Management Office 2101 G Street, Fresno, CA 93706
6. General Plan Designation(s):	Varies
7. Zoning Designation(s):	Varies

8. Description of Project: See Project description.

9. Surrounding Land Uses and Setting. See Project description.

10. Other public agencies whose approval is required. See Table 1-1

Environmental Factors Potentially Affected

The proposed Project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology, Soils and Seismicity
☐ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials	☐ Hydrology and Water Quality
☐ Land Use and Land Use Planning	☐ Mineral Resources	☒ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☒ Transportation and Traffic	☒ Utilities and Service Systems	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

☐ 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Michael Carbajal — Signature

10/27/15 — Date

Michael Carbajal — Printed Name

For

CHAPTER 1
Project Description

1.1 Introduction and Background

The proposed Fresno Priority 2 Regional Transmission Mains Project (proposed Project) would include installation of potable water distribution pipelines in the City of Fresno's (City) Southwest (SW) Quadrant. The proposed Project would convey treated surface water from the Southeast Surface Water Treatment Facility (SE SWTF) for urban use as proposed as part of the City's Metropolitan Water Resources Management Plan Update (Metro Plan Update). The following discussion provides a summary of background and process information relevant to the proposed Project.

1.1.1 City of Fresno Metropolitan Water Resources Management Plan Update

The City adopted the Metro Plan Update EIR in June 2014. The purpose of the Metro Plan Update was to update the 1996 Fresno Metropolitan Water Resources Management Plan (1996 Metro Plan) taking into consideration available new data and accommodating physical and institutional changes which have occurred since the 1996 Metro Plan was prepared. The completed Metro Plan Update facilitates future water resource decisions and utility planning, and assists in the pursuit of potential funding opportunities. Implementation of the City's recommended water supply plan will result in a more optimized and efficient conjunctive use of the City's available water resources, which will enhance the City's overall water supply reliability. The proposed Metro Plan Update includes near-term and future project elements including surface water treatment facilities, regional transmission facilities, groundwater facilities, potable water storage facilities, recycled water facilities, and water conservation measures.

1.1.2 CEQA Process

This document has been prepared to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before they approve or implement those projects.

The Initial Study is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. In the case of the proposed Project, the City is the lead agency and will use the Initial Study to determine whether the proposed Project has a significant effect on the environment.

If the lead agency finds substantial evidence that any aspect of the proposed Project, either alone or in combination with other projects, may have a significant effect on the environment, that agency is required to prepare an Environmental Impact Report (EIR), a supplement to a previously prepared EIR, or a subsequent EIR to analyze the proposed Project at hand. If the agency finds no substantial evidence that the proposed Project or any of its aspects may cause a significant impact on the environment, a negative declaration may be prepared. If, over the course of the analysis, the proposed Project is found to have a significant impact on the environment that, with specific mitigation measures, can be reduced to a less-than-significant level, a supplemental mitigated negative declaration may be prepared. In the case of this proposed Project, all significant or potentially significant impacts on the environment would be reduced to less-than-significant levels with incorporation of specific mitigation measures. Therefore, this document is a supplemental mitigated negative declaration.

1.1.3 CEQA Tiering

Tiering under CEQA refers to using the analyses of impacts contained in a broader EIR, such as the Metro Plan Update EIR (State Clearinghouse Number (SCH) #2013091021), to streamline the analysis of subsequent, related projects through a tiered EIR or a tiered negative declaration (CEQA Guidelines section 15152). The proposed Project was initially evaluated under the Metro Plan Update EIR at a project level (CEQA Guidelines section 15168).

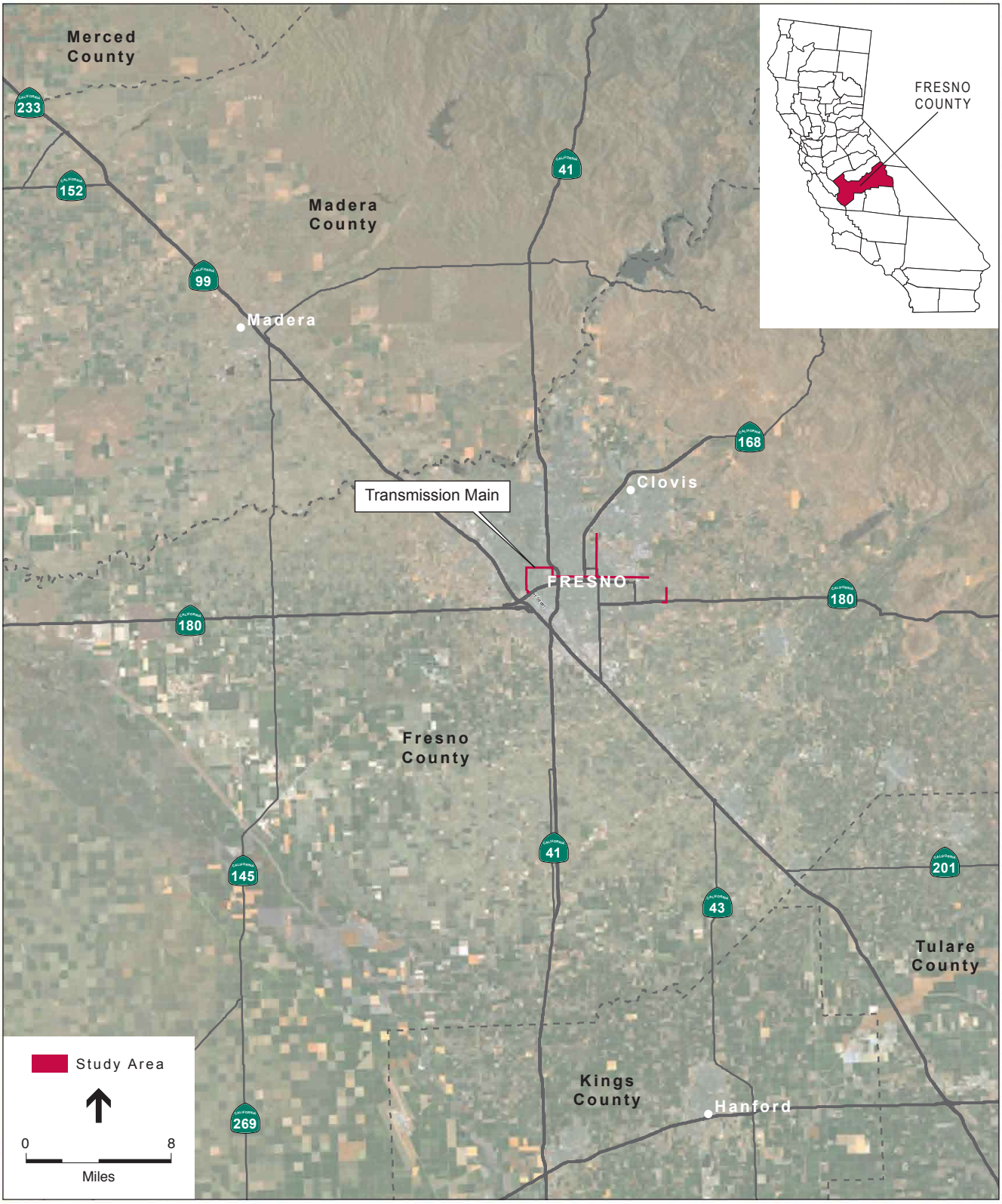
Consistent with CEQA guidelines on preparation and use of a program EIR, this EIR assesses and documents the broad environmental impacts of the proposed Metro Plan Update. Implementation of specific future project elements will be examined in the light of this EIR to determine whether additional subsequent environmental review is required (*CEQA Guidelines* section 15168). Subsequent environmental review documents may be "tiered" from this EIR, pursuant to *CEQA Guidelines* sections 15152 and 15168. "Tiering" refers to the use of analysis from a broader EIR with subsequent environmental review concentrating on environmental issues specific to the future project elements that were not fully evaluated in this EIR.

This supplemental mitigated negative declaration (SMND) builds on the general analysis contained in the Metro Plan Update EIR, and presents a project-specific CEQA analysis for the proposed Project. Consistent with CEQA Guidelines section 15150, the Metro Plan Update EIR is incorporated by reference[2] into this SMND, including applicable environmental setting, impact analysis, and mitigation measures.

1.2 Project Location

The proposed Project would be located in the southeastern and central service areas of the City and its sphere of influence (SOI) (**Figure 1-1**). Proposed Project regional transmission mains would extend from the planned SE SWTF, located at Olive Ave. and Fowler Ave. in southeast Fresno, to the north and west into the SW Quadrant of the City. **Figure 1-2** provides additional detail for the location of the proposed regional transmission mains.

[2] http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Watermanagement/importantdocuments.htm



SOURCE: Microsoft, 2010; ESRI, 2012, Blair, Church and Flynn, 2013; ESA, 2013

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 1-1
Regional Location

1.3 Project Objectives

The overall objective of the proposed Project is to support implementation of the Metro Plan Update. The objectives of the Metro Plan Update include the planning development of a distribution system that would:

- Optimize the conjunctive use of the City's available surface water, groundwater, and recycled water supplies for direct treatment and use, and intentional groundwater recharge;
- Balance the City's groundwater operations by 2025;
- Replenish groundwater basin storage;
- Continue to implement and expand demand management/water conservation measures in compliance with the City's USBR contract and to achieve specific water conservation goals; and
- Utilize recycled water to meet in-City non-potable demands in new development areas and existing parts of the City.

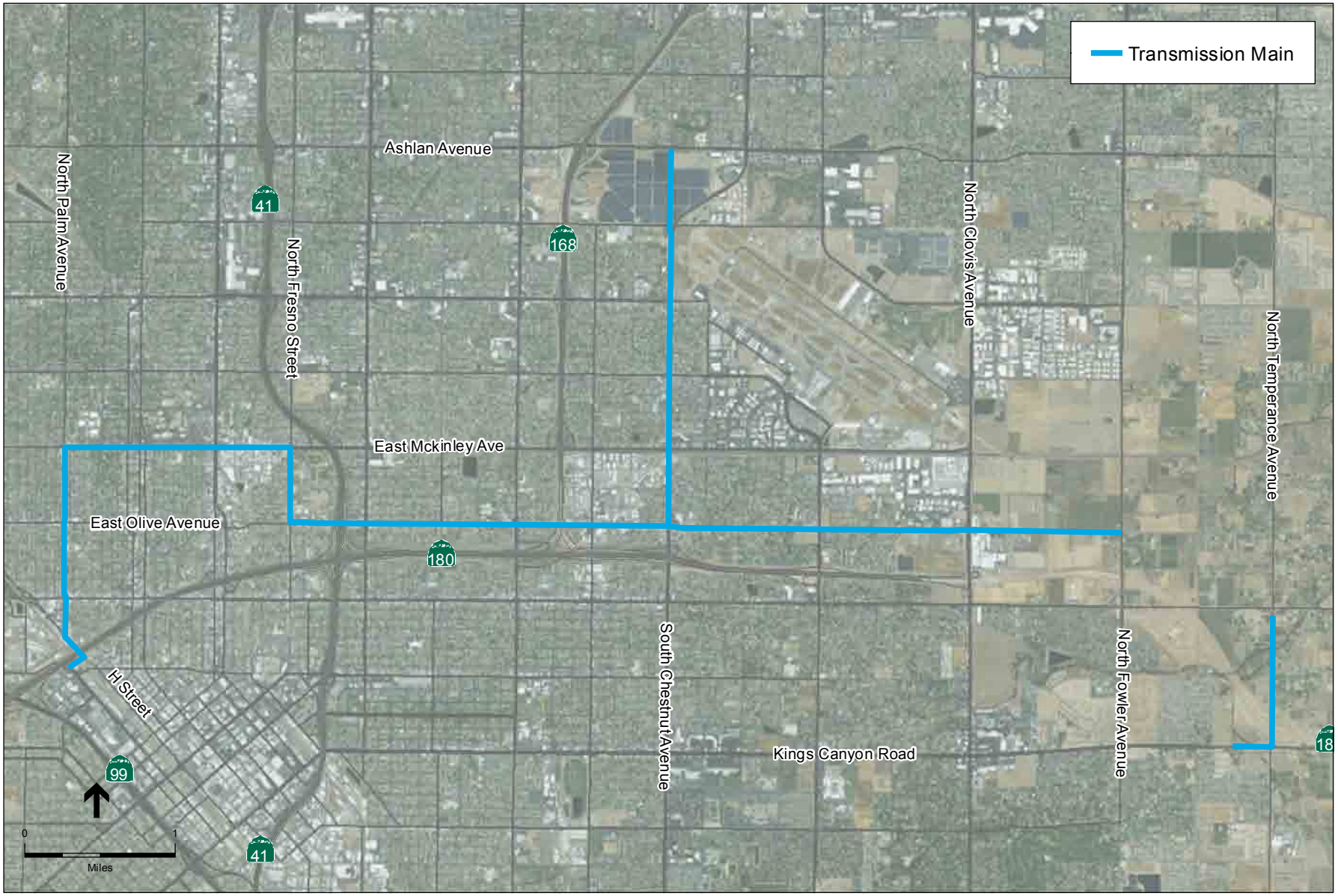
1.4 Proposed Project

The proposed Project would include installation of proposed regional transmission mains to convey treated water for use in the southeastern and central service areas of the City. Specific proposed Project features are described below.

1.4.1 Regional Transmission Mains

The proposed Project would include installation of approximately 13.1 miles of 20 to 66 inch diameter regional transmission mains convey treated surface water for urban use within the southeastern and central service areas of the City (see **Figure 1-2**). All pipelines would be constructed within existing rights-of-way (ROW) or outside of roadways within a 40-foot easement. **Table 1-1** summarizes the pipelines that are proposed under the proposed Project.

The proposed Project has been refined, and differs from the Master Plan Update EIR in that the alignment would connect the Olive Ave. and McKinley Ave. segments via Fresno St. instead of First St. This change would extend the alignment west on Olive Ave. approximately 2,000 ft before turning north on Fresno St. and then continuing on McKinley Ave. This would also reduce the length of pipeline along McKinley Ave. by the same 2,000 ft. In addition, the diameter size of the regional transmission mains would all increase, except for the Temperance Ave. segment which would decrease in diameter size.



SOURCE: Microsoft, 2011; ESRI, 2012; AECOM, 2015; ESA, 2015

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 1-2

Project Study Area

TABLE 1-1
SUMMARY OF PROPOSED PIPELINES

Element	Location	Pipeline Length	Diameter Size
Temperance Ave	Temperance Ave from 300 ft south of E Harvey Ave. to E Kings Canyon Road	5,874 ft	42”
Kings Canyon Rd	S Temperance Ave. to Apricot Ave.	1,378 ft	20”
Chestnut Ave	E Olive Ave. to E Ashlan Ave.	13,572	30”
Olive Ave	N Fowler Ave. to Willow Ave.	13,280 ft	66”
Olive Ave	Willow Ave. to Chestnut Ave.	2,630 ft	60”
Olive Ave	Chestnut Ave. to First St.	10,575 ft	54”
Olive Ave	First St. to Fresno St.	2,665 ft	48”
Fresno St	E Olive Ave. to E McKinley Ave.	2,700 ft	48”
McKinley Ave	N Fresno St. to N Palm Ave.	7,950 ft	42”
Palm Ave	E McKinley Ave to H St.	6,630 ft	36”
H St	E Olive Ave. to 670 ft NW of E Divisadero St.	950 ft	30”
H St to G St	H St. to G St.	720 ft	30”
Total		**68,924 ft**	

1.5 Responsible Agencies, Permits, and Approvals

Table 1-2 summarizes the potential permits and/or approvals that may be required prior to construction of the proposed Project. Additional local approvals, permits and related land and easement acquisitions and infrastructure work (and associated permitting) may also be required, including the relocation and installation of facilities as necessary to accommodate the regional transmission mains (*e.g.*, acquisition of property for utility ROW and installation of regional transmission mains, Fresno County encroachment permits for installation of regional transmission mains and Agreements with Fresno County for road construction work related to installation and maintenance of regional transmission mains).

TABLE 1-2
REGULATORY REQUIREMENTS, PERMITS, AND AUTHORIZATIONS FOR PROJECT FACILITIES

Agency	Type of Approval
Federal Agencies	
US Army Corps of Engineers (USACE)	Nationwide General Permit 12
State Agencies	
California Department of Fish and Wildlife (CDFW)	Notification of Lake or Streambed Alteration (1600 Permit);
Central Valley Regional Water Quality Control Board (CVRWQCB)	Section 401 Water Quality Certification; NPDES General Permit for Stormwater Discharge Associated with Construction
California Department of Transportation	Encroachment Permit
UPRR, BNSF and Genesee & Wyoming	Encroachment Permits
Cal OSHA	Construction or Excavation Permit
Local Agencies	
Fresno County	Road Encroachment Permit

1.6 Construction Process and Schedule

The following text provides an overview of construction processes and schedules relevant to the proposed Project.

1.6.2 Construction Site Preparation, Staging, and Equipment

Prior to the installation of the proposed Project, where applicable, any existing vegetation would be removed from the pipeline alignment and associated work areas, based on a 40 ft construction zone along roadways. Excavation, backfilling, and temporary storage of soil from trenching would be contained within the construction zones and staging areas as relevant.

Pipeline Staging Areas

A staging area at the SE SWTF site would be required to store pipe, construction equipment, and other construction related items. The staging area would be established in an area that is open, free of natural vegetation, and easily accessed.

Specific equipment to be used in support of construction of the Project would be based on requirements specified by the construction contractor who would complete proposed Project construction. However, the City anticipates that the following or similar types of equipment would be used on site:

- 330 Size Excavator;
- 950 Wheel Loader;
- 312 Back Hoe with Compactor Wheel
- Asphalt Pneumatic Wheel Roller
- 20-Ton Dump Truck
- 220 HP Tractor Trailer
- ½-Ton Trucks

Installation of the proposed regional transmission mains would primarily involve trenching and jack-and-bore tunneling or directional drilling. The pipelines would be installed within the existing ROW, where feasible, to minimize environmental impact and easement requirements. Tunneling and directional drilling would be required in order to pass under McKinley Ave, N Blackstone Ave, E Floradora Ave, SR 41, SR 168, Clovis Ave, and SR180, SR 1, SR 180, as well as Dry Creek Canal and waterway crossings, located along Fresno St., and H St. Road closures are not anticipated, though traffic control and temporary lane closures would be necessary.

It is anticipated that some soil would be removed from the construction sites. Pipeline crews would number approximately 8 to 10 construction workers per day. Typical construction activities for these methods are described below.

Trenching

Trenching within city streets would utilize a conventional cut and cover construction technique. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and re-surfacing to the original condition. The trench would be typically 5-ft. to 9-ft. deep and approximately 2-ft. to 5-ft. wide. The pipeline would be installed a minimum of 5-ft. below ground surface (bgs). The construction corridor would be approximately 20 to 30 ft. wide to allow for staging areas and vehicle access. On average, 50 to 100 ft. of pipeline would be installed per day.

Trenches would be temporarily closed at the end of each work day, by covering with steel trench plates and installing barricades to restrict access to staging areas. The construction equipment needed for pipeline construction typically includes the use of backhoes, excavators, dump trucks, shoring equipment and traffic control devices.

Jack and Bore Tunneling

Jack and bore tunneling could be employed in areas where open cut trenching is not feasible, such as under freeways, busy intersections, railroad lines, or waterways as discussed previously. Jack and bore tunneling is used for installing underground pipelines short distances without disturbing the ground surface. This method employs a horizontal boring machine or an auger that is advanced in a tunnel bore to remove material ahead of the pipe. Temporary bore pits and receiving pits are excavated on either side of the segment. Powerful hydraulic jacks are used to push a steel casing pipe from a launch (bore) pit to a receiving pit. As the tunneling machine is driven forward, a casing pipe is added into the pipe string. After installment of the casing pipe, a smaller carrier pipe is inserted into the casing pipe. The carrier pipe is the line that would eventually convey the treated surface water for use in the southeastern and central service areas of the City. A jacking pit typically measures as little as 10 ft. by 5 ft. up to approximately 30 ft. by 10 ft. The temporary pits typically would be excavated to a depth of 5 ft. to 20 ft., as needed. Regional transmission main installation by this method would require approximately one to two weeks per crossing; excavated soils would be retained for backfill.

Directional Drilling

Horizontal directional drilling is another trenchless construction method that could be used to install underground pipelines without disturbing the ground surface. This method could be used for traversing underneath highways or waterways. Using a horizontal drill rig, the pipeline is installed in two stages: (1) a small diameter pilot hole is directionally drilled along a designed directional path; then (2) the pilot hole is enlarged to a diameter that would accommodate the casing pipeline, and the pipeline is pulled back into the enlarged hole. After installation of the casing pipe, a smaller carrier pipe is inserted into the casing pipe. The carrier pipe would eventually convey the treated surface water for use in the southeastern and central service areas of the City. Slurry, typically bentonite (an inert clay), is used as a drilling lubricant. Regional transmission main installation by this method would require approximately one to two weeks per segment crossing. All excavated soils would be retained on-site.

1.6.3 Anticipated Construction Schedule

In total, proposed Project construction would require approximately 18 months to complete, as shown below:

- Project out to bid – March 2016
- Project award - June 2016
- Notice to proceed – July 2016
- Start of construction – July 2016
- Project completion - March 2018

The sequential major construction activities associated with the construction of the proposed regional transmission mains are as follows:

- Mobilize construction equipment and materials
- Clear and grub site as needed
- Excavate/trench
- Install pipeline
- Backfill
- Complete final site grading and restoration/repaving

This page intentionally left blank

CHAPTER 2
Environmental Checklist

The following environmental checklist is based on Appendix G of the CEQA Guidelines. Each environmental issue includes a discussion of the following: background, where in the Metro Plan Update EIR the environmental issue is discussed; summary of existing conditions as relevant; applicable Metro Plan Update EIR impacts and mitigation measures; and discussion of environmental checklist items, including findings for proposed Project effects that correspond to the following categories of environmental impacts:

- **Potentially Significant Impact:** An effect that may be considered significant under CEQA; potentially significant impacts identified would require completion of an EIR. However, no potentially significant impacts were identified.

- **Less than Significant with Mitigation Incorporated:** An effect that was not adequately addressed in the Metro Plan Update EIR, but with the implementation of Project-specific mitigation measures, is reduced from potentially significant to less than significant.

- **Less than Significant Impact:** An effect for which there are no significant impacts; only less than significant impacts result.

- **No Impact:** The proposed Project has no effect on the environment.

- **Impact Addressed in Metro Plan Update EIR:** An effect that was adequately addressed and mitigated to the extent feasible in the Metro Plan Update EIR. For these effects, an explanation is provided as to how the effect was addressed in the Metro Plan Update EIR and why the criteria for supplemental environmental review under CEQA Section 21166 (project changes, changed circumstances, and/or new information) have not been triggered. Effects correspond to this category under the following condition: The Metro Plan Update EIR found that the impact would be reduced to a less-than-significant level with the implementation of applicable Metro Plan Update EIR mitigation measures.

2.1 Aesthetics

Section 4.11 of the Metro Plan Update EIR addresses the aesthetics effects of implementing the Metro Plan, including the project. The following discussion provides Project-specific information relevant to aesthetics.

Environmental Setting

Visual or aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment.

Depending on the extent to which a Project's presence would alter the perceived visual character and quality of the environment, visual or aesthetic impacts may occur. This analysis of potential visual effects is based on review of a variety of data, including proposed Project maps and drawings, a visual survey of the Project area, aerial and ground level photographs of the Project area, and planning documents. The proposed Project is within a predominantly urban and generally level landscape within the Fresno metropolitan area (see Figure 1-2). The proposed Project would be constructed within existing ROWs through industrial, commercial and residential areas and would be located underground following construction. The Temperance Avenue alignment primarily passes through rural residential and agricultural areas. The Olive Avenue alignment is primarily located in commercial and residential areas. Construction of the proposed Project would be visible from residences, businesses and public facilities located along the alignment.

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to aesthetics to be significant if the Project would:

- Have a substantial adverse effect on a scenic vista or substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway;
- Substantially degrade the existing visual character or quality of the Metro Plan area and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan Update. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR and incorporated into this SMND are presented in **Appendix A**.

Aesthetics		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.11.1	Implementation of the proposed project could adversely impact scenic vistas or scenic resources within a state scenic highway.	LS	N/A
4.11.2	Implementation of the proposed project could degrade the existing visual character or quality of the project area.	S	LS
4.11.3	Operation of project related facilities would introduce new sources of light and increase ambient light in the project area.	S	LS
4.11.4	Implementation of the proposed project could make a cumulatively considerable contribution to adverse effects on the visual/aesthetic resources of local viewsheds in the project area.	S	LS

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
1. AESTHETICS — Would the Project:					
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐	☐

a) **No Impact.** The proposed Project is not located in or near any designated scenic vistas and therefore would not have an impact on any scenic vista.

b) **No Impact.** A review of the current Caltrans Map of Designated State Scenic Highways indicated that there are no officially designated state scenic highways in Fresno County (Caltrans, 2015). The proposed Project is not located near or along a state scenic highway, and therefore would not damage associated scenic resources including, but not limited to trees, outcroppings, and historic buildings within a scenic highway.

c) **Less-than-Significant Impact.** The proposed Project would entail the installation of a series of underground pipelines along existing public roadways. The proposed pipelines would be located in existing ROW, including existing roadways and roadway margins. The trenches and disturbed areas would be repaved, etc. to resemble previous conditions. Construction activities would require the use of heavy equipment and storage of materials at construction sites. During construction, excavated areas, stockpiled soils, and other materials within the construction and staging areas would contribute negative aesthetic elements in the visual landscape, in the immediate vicinity of the proposed Project. The pipelines would be buried following completion of construction and would therefore not be visible. In addition, the proposed Project would be constructed along alignments at approximately 50 to 100 feet per day, and would not be stationary. This is a temporary impact, and there would be no change to visual resources in the area after completion of construction, and areas disturbed during construction would be restored to pre-existing conditions.

d) **Less-than-Significant Impact.** The proposed pipelines would not result in any new sources of light or glare, because the proposed pipelines would be located underground following construction and would not require nighttime lighting

References

California Department of Transportation (Caltrans), 2015. California Scenic Highway Program, available at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm; accessed August 1, 2015.

City of Fresno, 2014. Fresno General Plan. Prepared by City of Fresno Development and Resource Management Department. December 18, 2014.

Fresno County, 2000. Fresno County 2000 General Plan. October, 2000.

2.2 Agricultural and Forest Resources

Section 4.2 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan Update, including the proposed Project, on agricultural resources. The following discussion provides Project-specific information relevant to agricultural and forest resources.

Environmental Setting

With the exception of the highway, waterway and the unpaved ROW on the Leaky Acres site, the proposed Project is located entirely within an existing paved road right-of-way or easement along roadways in the City of Fresno and Fresno County. The proposed Project is located in a primarily urban environment, however, some agricultural land is adjacent to the proposed Project alignment, primarily along the Temperance portion of the alignment.

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to agricultural resources to be significant if the Metro Plan Update would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use or a Williamson Act; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural uses.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan Update. Impacts are presented with their corresponding levels of significance. No mitigation measures for agriculture and forest resources were applied in the Metro Plan Update EIR.SMND

Land Use and Agricultural Resources		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.2-2	Implementation of the proposed project could result in the permanent conversion of land designated by the Department of Conservation FMMP as Prime Farmland, Farmland of Statewide Importance or Unique Farmland.	LS	N/A
4.2-3	Implementation of the proposed project could result in conflicts with existing zoning for agricultural use or a Williamson Act contract.	LS	N/A
4.2-4	Implementation of the proposed project, in combination of other development, could result in the permanent conversion of Prime Farmland, Farmland of Statewide Importance or Unique Farmland.	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update*
2. AGRICULTURAL AND FOREST 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?	☐	☐	☒	☐	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐	
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))?	☐	☐	☒	☐	
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐	
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?	☐	☐	☒	☐	

a, b, e) **No Impact.** The majority of the proposed Project is not located in an area with Prime, Unique, or Farmland of Statewide Importance or lands under Williamson Act contract. The majority of the alignment along Temperance Avenue is adjacent to rural residential, but a small portion of land is Farmland of Statewide Importance (City of Fresno, 2014). Although farmland is located adjacent to a portion of the alignment, the regional transmission mains would be installed within the existing roadway or along the shoulder of the roadway, and therefore would not disrupt existing farmland.

Construction of the proposed Project would result in temporary ground surface disruption during the installation of pipelines. However, these changes would take place within the margins of the existing right-of-ways, would be temporary in nature, and would not result in a conversion of land to a non-agricultural use. As such, the proposed Project would not convert agricultural lands to other uses, nor would it conflict with existing Williamson Act Contracts.

c, d) **No Impact.** The proposed Project is not located in an area zoned as forest, timberland or used for timber production As described above, the pipelines would be constructed within

existing ROW or outside of roadways within a 40-foot easement. The proposed pipeline alignment does not intersect any existing forest uses. As such, the proposed Project would not convert forest lands to other uses, nor would it conflict with existing timberland zoning.

References

City of Fresno, 2014. Fresno General Plan. Prepared by City of Fresno Development and Resource Management Department. December 18, 2014.

2.3 Air Quality

Section 4.7 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan Update, including the proposed Project, on air quality. The following discussion provides Project-specific information relevant to air quality.

Environmental Setting

The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport, transform, and dilute such emissions. Natural factors that affect pollutant transport and fate (process by which chemicals move and are transformed in the environment) include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the proposed Project area are determined by such natural factors as topography, meteorology, and climate, in addition to the types and quantities of emissions released by existing air pollutant sources.

The following is a brief discussing regarding the setting of the proposed Project. The Metro Plan Update EIR contains greater detail regarding existing conditions, criteria air pollutants, non-criteria air pollutants, and applicable regulations. The Metro Plan Update EIR is incorporated by reference.[3]

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the local agency charged with administering local, state, and federal air quality management programs for Merced, San Joaquin, Stanislaus, Madera, Fresno, Kings, and Tulare counties, and the valley portion of Kern County. The District has jurisdiction over most stationary source air quality matters in the San Joaquin Valley Air Basin (SJVAB). The SJVAPCD is responsible for developing attainment plans for the SJVAB, for inclusion in California's State Implementation Plan (SIP), as well as establishing and enforcing air pollution control rules and regulations.

As shown in **Table 2.3-1**, the SJVAB is classified as non-attainment for ozone (state and federal), PM10 (state), and PM2.5 (state and federal). Federal and state air quality laws require regions designated as nonattainment to prepare plans that either demonstrate how the region will attain the standard or reasonably improve air quality conditions. As noted, the SJVAPCD is responsible for developing attainment plans for the SJVAB, for inclusion into California's SIP.

[3] http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Watermanagement/importantdocuments.htm

TABLE 2.3-1
SAN JOAQUIN VALLEY ATTAINMENT STATUS

Pollutant	Designation/Classification	
	Federal Standards	**State Standards**
Ozone – one hour	No Federal Standard[1]	Nonattainment/Severe
Ozone – eight hour	Nonattainment/Extreme[2]	Nonattainment
PM_{10}	Attainment[3]	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation / Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Vinyl Chloride	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

1 Federal One Hour Ozone National Ambient Air Quality Standard was revoked on June 15, 2005

2 Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

3 On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM_{10} National Ambient Air Quality Standard (NNQS) and approved the PM_{10} Maintenance Plan.

SOURCE: SJVAPCD, 2009,*Ambient Air Quality Standards and Valley Attainment Status*, available at http://www.valleyair.org/aqinfo/attainment.htm

The SJVAPCD's primary means of implementing the above air quality plans is by adopting and enforcing rules and regulations. Stationary sources within the jurisdiction are regulated by the District's permit authority over such sources, such as Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review Rule), and through its review and planning activities. Additional District Rules that may apply to the proposed Project include:

- ***District Rule 2280 (Portable Equipment Registration).*** All portable emission units (including portable drilling rigs) are required to register with the District or the CARB. Should this project require the installation of an air stripping operation, and/or an auxiliary diesel or natural gas engine greater than fifty brake horsepower, application for an Authority to Construct may be required.
- ***District Rule 3135 (Dust Control Plan Fee).*** This rule requires the applicant to submit a fee in addition to a Dust Control Plan. The purpose of this fee is to recover the District's cost for reviewing these plans and conducting compliance inspections.
- ***District Rule 4102 (Nuisance).*** This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that the project or construction of the project creates a public nuisance, it could be in violation and be subject to District enforcement action.

- ***District Rule 4103 (Open Burning).*** This rule regulates the use of open burning and specifies the types of materials that may be burned. Agricultural material shall not be burned when the land use is converting from agriculture to non-agricultural purposes (e.g., commercial, industrial, institutional, or residential uses). Section 5.1 of this rule prohibits the burning of trees and other vegetative (non-agricultural) material whenever the land is being developed for non-agricultural purposes. In the event that the project applicant burned or burns agricultural material, it would be in violation of Rule 4103 and be subject to District enforcement action.

- ***District Regulation VIII (Fugitive PM10 Prohibitions).*** Regulation VIII (Rules 8011-8081) is a series of rules designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction, road construction, bulk materials storage, landfill operations, etc. The Dust Control Plan threshold has changed from 40.0 acres to 5.0 or more acres for non-residential sites. If a non-residential site is 1.0 to less than 5.0 acres, an owner/operator must provide written notification to the District at least 48 hours prior to his/her intent to begin any earthmoving activities. If a residential site is 1.0 to less than 10.0 acres, an owner/operator must provide written notification to the District at least 48 hours prior to his/her intent to begin any earthmoving activities.

  Regulation VIII specifically addresses the following activities:

  - Rule 8011: General Requirements;
  - Rule 8021: Construction, Demolition, Excavation, Extraction and other Earthmoving Activities;
  - Rule 8031: Bulk Materials;
  - Rule 8041: Carryout and Trackout;
  - Rule 8051: Open Areas;
  - Rule 8061: Paved and Unpaved Roads; and
  - Rule 8071: Unpaved Vehicle/Equipment Traffic Areas.

- ***District Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).*** Paving operations on this project will be subject to Rule 4841. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt, and emulsified asphalt for paving and maintenance operations.

Also, in addition to these above-described rules, District Rule 9510 Indirect Source Review (ISR) was adopted December 15, 2005. ISR was adopted to fulfill the District's emission reduction commitments in the PM_{10} and Ozone Attainment Plans. ISR requires submittal of an Air Impact Assessment (AIA) application no later than applying for a final discretionary approval with the public agency. The AIA will be the information necessary to calculate both construction and operational emissions of a development project. Construction of the proposed Project would qualify as development projects under Rule 9510. Section 6.0 of the Rule outlines general mitigation requirements for developments that include reduction in construction emissions of 20% of the total construction NO_x emissions, and 45% of the total construction PM_{10} exhaust emissions. Section 6.0 of the Rule also requires the proposed Project to reduce operational NO_x emissions by 33.3% and operational PM_{10} emissions by 50%. Section 7.0 of the Rule includes fee schedules for construction or operational excess emissions of NO_x or PM_{10}; those emissions above the goals identified in Section 6.0 of the Rule. Section 7.2 of the Rule identifies fees for excess emissions.

The SJVAPCD also limits emissions of, and public exposure to, toxic air contaminants through a number of programs. District Policies 1905 (Risk Management Policy for Permitting New and Modified Sources) and 1910 (Toxic Best Available Control Technology for New and Modified Diesel Internal Combustion Engines) provide guidelines on permitting sources that emit toxic air contaminants (also referred to interchangeably by the district as hazardous air pollutants).

The potential for new and modified stationary sources to emit toxic air contaminants is reviewed by the SJVAPCD's Permit Services Division, which implements the SJVAPCD's Risk Management Policy. The District's Regulation VII pertains specifically to toxic air contaminants. Toxic air contaminant emissions from stationary sources are limited by:

- SJVAPCD adoption and enforcement of rules aimed at specific types of sources known to emit toxic air contaminants;
- Implementation of the Air Toxics "Hot Spots" Program; and
- Implementation of the Federal Title III Toxics program.

Several Air districts, including the SJVAPCD have adopted published guidance on how to analyze GHG emissions. SJVAPCD published the Final Staff Report: Addressing Greenhouse Gas Emissions Impacts under CEQA in 2009 (SJVAPCD, 2009) to streamline the process of determining if project specific GHG emissions would have a significant effect. Applicable SJVAPCD thresholds of significance are shown in Table 2.3-2, below.

Federal Conformity Regulations and de Minimis Levels

The general conformity rule implements Section 176 of the federal Clean Air Act (CAA), which requires that a Federal agency ensure conformity with an approved SIP for those air emissions that would be brought about by an agency action. The Clean Air Act requires that Federal agencies determine whether their actions conform to the applicable SIP (40 CFR Section 93.150 et sq.).

For federally-funded Projects, a CAA general conformity analysis applies only to Projects in a non-attainment area or an attainment area subject to a maintenance plan and is required for each criteria pollutant for which an area has been designated non-attainment or maintenance. If a Project's emissions are below the "de minimis" level and are less than 10 percent of the area's inventory specified for each criteria pollutant in a non-attainment or maintenance area, further general conformity analysis is not required. A conformity determination must be made if emissions from Project facilities are above "de minimis" thresholds established for the area.

As described above, the proposed Project is located in an area of the SJVAB that is designated as non-attainment for the federal $PM_{2.5}$ standard, which correlates to a de minimis threshold of 100 tons per year of $PM_{2.5}$, and the federal Ozone – eight hour *de minimis* threshold of 10 tons of NO_x per year for extreme nonattainment (40 CFR Section 93.150 et sq.).

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to air quality to be significant if the Metro Plan Update would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any nonattainment pollutant (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR are presented in **Appendix A**.

Air Quality		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.7-1	Construction activities associated with development of the project would generate short-term emissions of criteria pollutants	S	SU
4.7-2	Operation of the project could generate criteria air pollutant emissions that could contribute to existing nonattainment conditions and degrade air quality.	LS	N/A
4.7-3	Construction and/or operation of the project could expose sensitive receptors to substantial pollutant concentrations.	LS	N/A
4.7-4	The project could create objectionable odors affecting a substantial number of people.	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
3. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management 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?	☐	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or Projected air quality violation?	☐	☐	☐	☐	☒
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒	☐

a) **Impact Addressed in Metro Plan Update EIR.** The Project area is located in the SJVAB, within Fresno County. Attainment status for the Project area is shown in Table 2.3-1. The SJVAPCD developed the San Joaquin Valley 1991 California Clean Air Act Air Quality Attainment Plan (AQAP), which projected nonattainment ozone/oxidants and particulate matter in the future. The proposed Project would be subject to applicable Air District rules, regulations, and strategies. In addition, the proposed Project may be subject to the SJVAPCD Regulation VIII, Fugitive Dust Rules, related to the control of dust and fine particulate matter. This rule mandates the implementation of dust control measures to reduce the potential for dust to the lowest possible level. The plan includes a number of strategies to improve air quality including a transportation control strategy and a vehicle inspection program. In order to maintain consistency with the plan, implementation of Metro Plan Update EIR **Mitigation Measures 4.7-1a to 4.7-1c** would be required. These mitigation measures would minimize potential construction related air emissions, and ensure that the proposed Project would be consistent with the AQAP. As a result, the proposed Project would not conflict with or obstruct with implementation of the Plan, and this impact would be reduced to less than significant. For a discussion of potential effects of proposed Project construction on air quality, as relevant to the plan, please refer to inventory item 3.b.

b) **Impact Addressed in Metro Plan Update EIR.** The proposed Project consists of construction of approximately 13.1 miles of pipeline that would be used to convey and distribute treated surface water within the City. Construction associated with proposed

Project development would involve use of equipment and materials that would emit ozone precursor emissions (i.e., ROG, and NO_x). Construction activities would also result in the emission of other criteria pollutants from equipment exhaust, construction-related vehicular activity, and construction worker automobile trips. Emission levels for these activities would vary depending on the number and type of equipment, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_x from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during proposed Project development. Emissions were estimated using the CalEEMod model and are depicted below in **Table 2.3-2**. Additional assumptions and information are included in **Appendix B**.

TABLE 2.3-2
UNMITIGATED EMISSIONS FROM CONSTRUCTION (TONS PER YEAR)[A]

Project Component	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	CO_2
Unmitigated Construction Emissions	0.5	4.0	2.8	0.5	0.4	185.6
Federal de Minimis Threshold	N/A	10	N/A	N/A	100	NA
SJVAPCD Thresholds of Significance	10	10	NA	15	NA	NA
Significant (Yes or No)?	**No**	**No**	**No**	**No**	**No**	**No**

NOTE: Values in **bold** are in excess of the applicable SJVAPCD significance threshold. NA = Not Available. Emissions shown are for the worst year of an 18 month construction period.

[a] Project construction emissions estimates were made using CalEEMod, version 2013.2.2.

SOURCE: ESA, 2015.

Although the proposed Project would not generate emissions during construction that would exceed the Federal Conformity or SJVAPCD thresholds, due to the non-attainment status of the air basin with respect to ozone, PM_{10}, and $PM_{2.5}$, it is recommended that the proposed Project implement a set of Standard Mitigation Measures as best management practices regardless of the significance determination. Implementation of Metro Plan Update EIR **Mitigation Measures 4.7-1a to 4.7-1c** would reduce construction related air emissions, and ensure that potential emissions impacts contributed by the proposed Project would be mitigated to less-than-significant levels.

The proposed Project would not result in an increase in long-term operational traffic, because the proposed Project would not add new operation period workers. Thus, the proposed Project is not expected to generate an increase in maintenance vehicle trips over existing conditions, and therefore would not generate net new emissions during operations, and any operation period emissions associated with maintenance would be minimal.

c) **Impact Addressed in Metro Plan Update EIR.** As discussed in Checklist Item 3b, the proposed Project is located within the SJVAPCD, which is designated as a non-attainment area for the state and federal standards of O_3 and $PM_{2.5}$, and for the state PM_{10} standard. Air emissions would be generated during construction of the proposed Project

which could increase criteria air pollutants, including NO_x, O_3, PM_{10}, and $PM_{2.5}$. However, construction activities would be temporary and limited to the duration of construction, and implementation of Metro Plan Update EIR **Mitigation Measures 4.7-1a to 4.7-1c** would reduce emissions of ozone precursors and particulate matter during construction, thereby reducing construction emissions to less-than-significant levels.

Also as referenced above, upon completion of construction activities, emission sources resulting from proposed Project operations would not result in net new emissions. As such, the proposed Project would not result in a cumulatively considerable net increase of any criteria air pollutants.

d) **Less-than-Significant.** Diesel emissions would be generated from diesel-powered construction equipment and diesel trucks associated with proposed Project construction. Diesel particulate matter (DPM) has been classified by the ARB as a toxic air contaminant for the cancer risk associated with long-term (i.e., 70 years) exposure to DPM. Given that construction would occur for a limited amount of time and spread out over a large geographic area, localized exposure to DPM would be minimal. As a result, the cancer risks from the proposed Project associated with diesel emissions over a 70-year lifetime are very small. Therefore, the impacts related to DPM would be less-than-significant. Furthermore, as noted above, the proposed Project would result in emissions that are anticipated to be below relevant thresholds for criteria air pollutants during construction or operation of the proposed Project.

e) **No Impact.** The proposed Project consists of construction of pipelines to convey and distribute treated surface water within the City. During construction of the proposed Project, the various diesel-powered vehicles and equipment in use on-site could create minor odors. These odors are not likely to be noticeable beyond the immediate Project area and, in addition, would be temporary and short-lived in nature. Furthermore, the proposed Project would not include development of any uses that are associated with long term objectionable odors. Therefore, odor impacts would be less-than-significant.

References

SJVAPCD, *Final Staff Report: Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act*, December 2009.

SJVAPCD, 2009, *Ambient Air Quality Standards and Valley Attainment Status*, available at http://www.valleyair.org/aqinfo/attainment.htm. Last accessed 8/16/2015.

2.4 Biological Resources

Section 4.5 of the Metro Plan Update EIR addressed the effects of implementing the Metro Plan Update, including the proposed Project, on biological resources. The following discussion provides Project specific information relevant to biological resources.

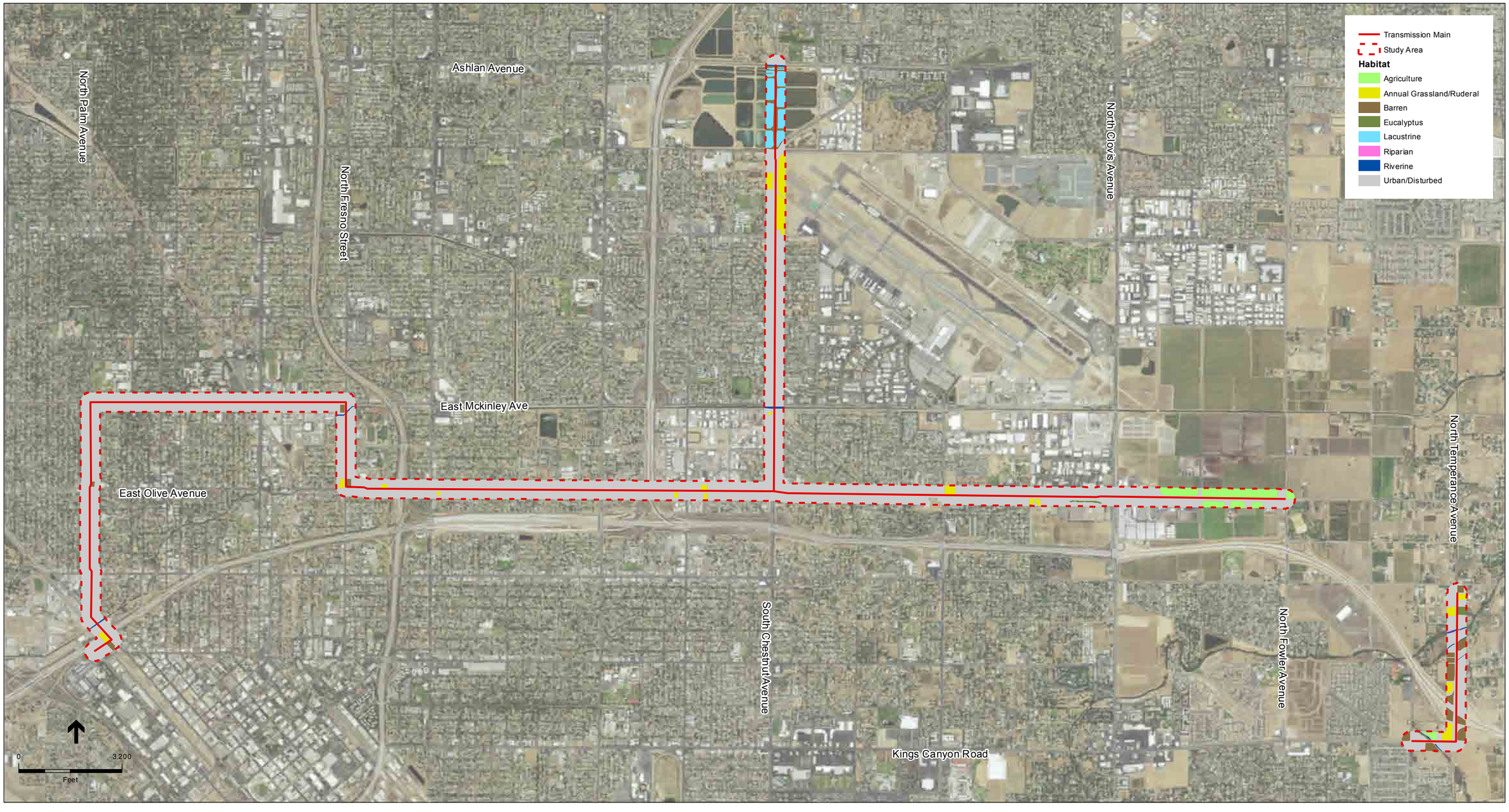
This section characterizes and discusses the potential effects of the proposed Project on biological resources and identifies mitigation measures to avoid or reduce those impacts, where appropriate. Additionally, the following discussion summarizes the current regulatory status relevant to biological resources. The analysis was based upon a review of potentially occurring special-status species, wildlife habitats, vegetation communities, and jurisdictional waters of the U.S. The results of the assessment are based on field surveys, literature searches, and database queries of the California Department of Fish and Wildlife's (CDFW) Natural Diversity Database (CNDDB), the U.S. Fish and Wildlife Service (USFWS) list of federal endangered species, and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants. Site reconnaissance was conducted in August 2015. Sources of reference data reviewed for this evaluation included the following:

- United States Geological Survey (USGS) Clovis, Fresno North, Fresno South, and Malaga 7.5 minute topographic quadrangles (USGS) ;
- Color aerial photography of the study area and vicinity;
- California Natural Diversity Database (CNDDB) reported occurrences of special-status species within the Clovis and Fresno North quadrangle and ten surrounding quadrangles;
- United States Fish and Wildlife Service (USFWS) list of threatened and endangered species with the potential to occur in or be affected by projects in the Project area; and
- California Native Plant Society (CNPS) list of rare and endangered plants known to occur on the Clovis and Fresno North quadrangle and ten surrounding quadrangles.

During the focused biological survey, ESA biologists conducted a pedestrian and vehicle survey of the Project area. The study area consisted of a 300-foot buffer around approximately 13 miles of the proposed Project (**Figure 2.4-1**). During the focused survey, habitats present were compared to the habitat requirements of the regionally occurring special-status species and used to determine which of these species had the potential to occur within the study area.

Environmental Setting

The Project area lies in the south central region of the San Joaquin Valley, which is the larger southern subregion of the Great Valley ecological region (Miles and Goudy, 1997). The Great Valley or Central Valley is a vast, low-lying plain almost entirely surrounded by mountains. The valley parallels the general north-south trend of the Sierra Nevada on the east and the California Coast Ranges on the west. The northern and southern portions of the Central Valley are referred to as the Sacramento Valley and San Joaquin Valley, respectively; with the Sacramento River draining areas to the north and the San Joaquin River draining areas to the south.



SOURCE: USDA, 2014; ESRI, 2012; AECOM, 2015; ESA, 2015

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 2.4-1
Habitats

This page intentionally left blank

Historically, this region supported extensive annual grasslands intermixed with a variety of vegetative communities including oak woodland, wetland, and riparian woodland. Intensive agricultural and urban development has resulted in large losses and conversion of these habitats. The remaining native vegetative communities exist as isolated remnant patches with urban, suburban and agricultural landscapes, or in areas where varied topography has made urban and/or agricultural development difficult.

Elevations within the study area range from approximately 250 to 350 feet above mean sea level (msl). Site topography is primarily flat level areas on developed land, and generally drains in an east to west direction. Current land uses within the Project area boundaries include agricultural, rural residential. Types of wildlife habitat present in the study area can be found in **Table 2.4-1** and **Figure 2.4-1**.

TABLE 2.4-1
STUDY AREA VEGETATION TYPES/WILDLIFE HABITAT

Habitat Type	Acres / Percent of Project Area[1]
Agriculture	31.8 / 3.40%
Annual Grassland / Ruderal	31.9 / 3.41%
Barren	29.7 / 3.18%
Eucalyptus	3.1 / 0.33%
Riparian	0.2 / 0.02%
Riverine	3.4 / 0.36%
Lacustrine	25.4 / 2.72
Urban / Disturbed	807.6 / 86.4%
Total	**934.7**

[1] Acreages based on a 300 foot buffer on either side of the pipeline alignment.

SOURCE: Data collected and compiled by ESA in 2015.

Vegetation Types and Wildlife Habitats

Wildlife habitats are classified using the CDFW's California Wildlife Habitat Relationships (CHWR) classification system, which stems from A Guide to Wildlife Habitats of California (Mayer and Laudenslayer, 1988). Wildlife habitats generally correspond to vegetation type. Vegetation types are assemblages of plant species that occur together in a given area and are defined by species composition and relative abundance. Plant communities within the Project area were identified using field reconnaissance and aerial photography. The CWHR habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly occurring birds, mammals, reptiles and amphibians.

The Metro Plan Update EIR contains greater detail regarding vegetation types which generally correlate with wildlife habitat types and are those found within the study area. The Metro Plan Update EIR is incorporated by reference[4].

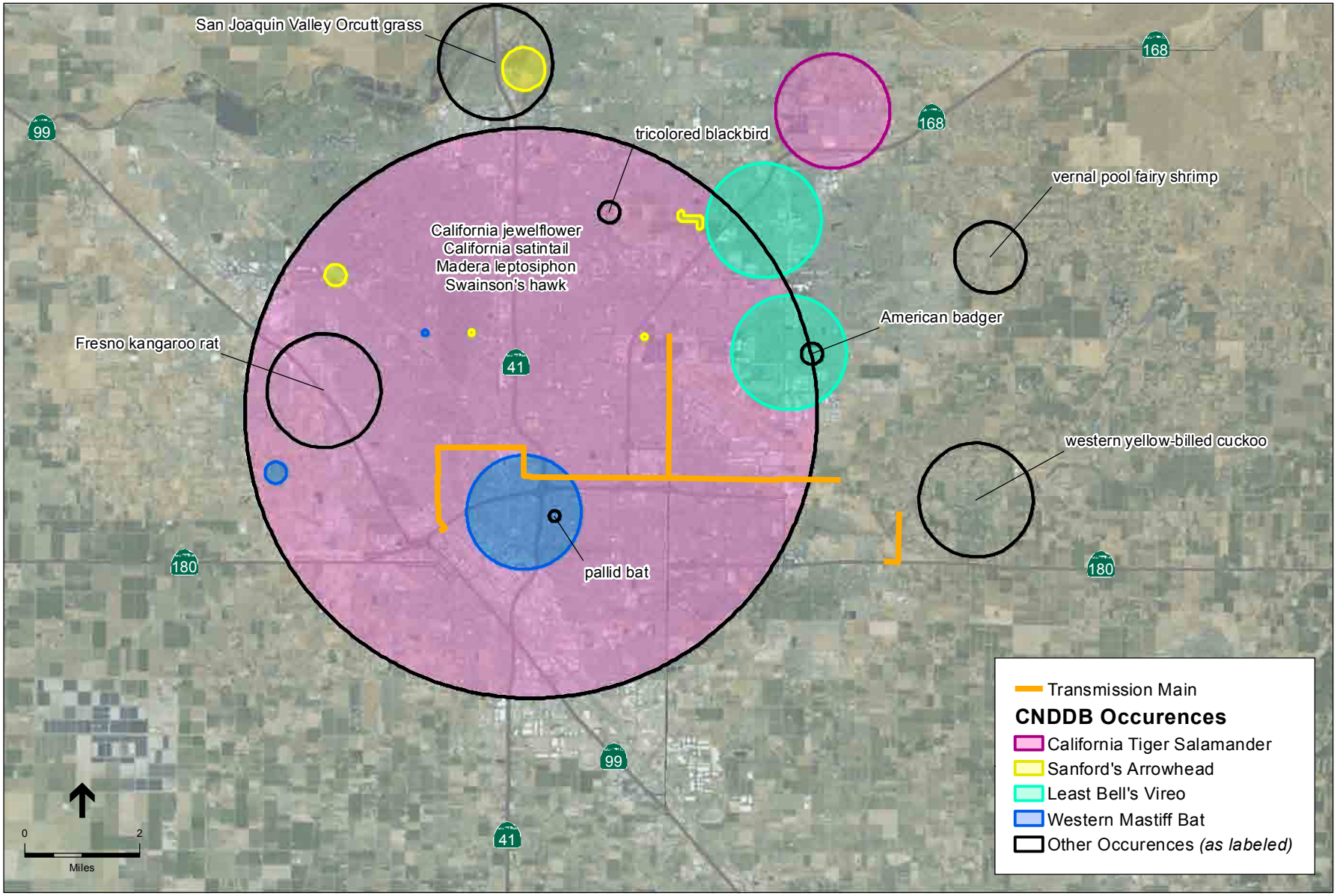
Special-Status Species

Special-status species are legally protected under the California Endangered Species Act (CESA) and the Federal Endangered Species Acts (FESA) or other regulations or are species that are considered sufficiently rare by the scientific community to qualify for such listing. These species are in the following categories:

1. Species listed or proposed for listing as threatened or endangered under FESA (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]);
2. Species that are candidates for possible future listing as threatened or endangered under FESA (61 FR 40, February 28, 1996);
3. Species listed or proposed for listing by the State of California as threatened or endangered under CESA (15 California Code of Regulations [CCR] 670.5);
4. Plants listed as rare or endangered under the California Native Plant Protection Act (CNNP) (California Fish and Game Code, Section 1900 et seq.);
5. Animal species of special concern to CDFW;
6. Animals fully protected under FGC (FGC Sections 351 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);
7. Species that meet the definitions of rare and endangered under CEQA. CEQA Section 15280 provides that plant or animal species may be treated as "rare or endangered" even if not on one of the official lists (State CEQA Guidelines, Section 15380); and
8. Plants considered under CNPS to be "rare, threatened or endangered in California" (Rank 1A, 1B, and 2 in CNPS, 2013) as well as CNPS Rank 3 and 4 plant species.

A list of special-status species that have the potential to occur within the vicinity of the study area was compiled based on data in the CNDDB, the USFWS list of Federal Endangered and Threatened Species that Occur in or may be Affected by the proposed Project, and the CNPS Inventory of Rare and Endangered Plants. A list of special-status species, their general habitat requirements, and an assessment of their potential to occur with the Project area is provided in **Appendix C**. Recorded observations of special-status species within five miles of the Project area are shown in **Figure 3.2-2**.

[4] http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Watermanagement/importantdocuments.htm



SOURCE: Microsoft, 2011; CNDDB, 2015; ESRI, 2012; AECOM, 2015; ESA, 2015

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 2.4-2

CNDDB Occurrences within 5 Miles of the Project Area

Wetlands and Other Waters of the U.S.

Site Hydrology Overview

The Project area is situated on nearly flat terrain within the City of Fresno and surrounding areas. Fancher Creek Canal flows through the Project area in a westerly direction and crosses under Temperance Avenue. Briggs Canal crosses through the Project area along Kings Canyon Road near the intersection of Temperance Avenue. It is a channelized canal with earthen banks and a sandy bottom. Various canals, major ones including Dry Creek and Victoria Canal, crosses Olive Avenue in the Project area near the intersections of Blackstone Avenue and Marks Avenue, respectively. Gould Canal crosses through the Project area north of the percolation ponds for groundwater recharge parallel to Ashlan Avenue. All features onsite, except for Fancher Creek Canal and Gould Canal are man-made, concrete lined channels conveying irrigation water to the outlying agricultural fields.

Jurisdictional Waters of the U.S.

A formal wetland delineation has not been conducted for the Project area; however, based on the reconnaissance survey in August 2015, wetlands and other waters of the U.S. are limited to canals throughout the Project area, and percolation ponds for groundwater recharge on at the northern boundary of the Project area along Chestnut Avenue. Locations of canals are shown on Figure 2.3-2

In addition, numerous federal and state regulations are designed to protect fish, wildlife, and plant resources. Federal and state regulations also protect waters of the U.S. and waters within the state from degradation. The Metro Plan Update EIR is incorporated by reference[5].

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers impacts related to biological resources to be significant if the Metro Plan Update would:

- 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 Wildlife or U.S. Fish and Wildlife Service;
- 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 Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

[5] http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Watermanagement/importantdocuments.htm

- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Metro Plan Update Impacts

The Metro Plan Update EIR identifies impacts shown below, that would result from implementation of the Metro Plan Update. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR are presented in **Appendix A**.

Biological Resources		Level of Significance Before Mitigation	Level of Significance After Mitigation
4.5.1	Implementation of the proposed project could result in potential disturbance or loss of special-status or migratory bird species and their habitats.	S	LS
4.5.2	Implementation of the proposed project could result in potential disturbance or loss of valley elderberry longhorn beetle and its host plant, the elderberry shrub.	S	LS
4.5.3	Implementation of the proposed project could result in potential disturbance or loss of western pond turtle and its habitat.	S	LS
4.5.4	Implementation of the proposed project could result in potential disturbance or loss of San Joaquin kit fox and its habitat.	S	LS
4.5.5	Implementation of the proposed project could result in potential disturbance or loss of American badger and its habitat.	S	LS
4.5.6	Proposed project activities could result in potential disturbance or loss of Western mastiff bat and hoary bat and their habitat.	S	LS
4.5.7	Implementation of the proposed project could result in significant effects to rare or special-status plants and their habitat.	S	LS
4.5.8	Implementation of the proposed project could result in the removal, filling, interruption or degradation of protected wetlands and other waters of the United States.	S	LS
4.5.9	Proposed project activities could result in the removal of street trees protected by the City of Fresno or oak woodland habitat located within Fresno County.	S	LS
4.5.10	Proposed project activities could potentially result in disturbance or loss of riparian habitat and/or lake or streambed alteration through direct and indirect impacts.	S	LS
4.5.11	Proposed project activities could potentially interfere with wildlife movement corridors through direct and indirect impacts.	LS	N/A
4.5.12	Implementation of the proposed project, when combined with development of other future projects, could contribute to the cumulative loss or degradation of habitat or species protected under federal, State and local regulations.	S	LS

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update*
4. 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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☐	☒
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☐	☒
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?	☐	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☐	☒
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?	☐	☐	☐	☒	☐

a) **Impact Addressed in Metro Plan Update EIR.** The following subsections provide a discussion of potential effects to special-status plant and animal species.

Special Status Plants

No special-status plant species or species proposed for listing were identified as having the potential to occur within the Project area. Therefore, the proposed Project would have no impact on special-status plant species. This issue will not be further evaluated.

Special-Status Wildlife: San Joaquin Kit Fox (SJKF)

While it is unlikely that SJKF would reside and den within the Project area, particularly due to very limited to no access to suitable habitat and many barriers inhibiting SJKF movement from known populations (e.g., residential roads and highways; commercial infrastructure); it is possible that this species could use the agricultural fields as a

movement corridor to more suitable habitat outside of the Project area. Suitable foraging habitat is present within the agricultural habitats while suitable denning habitat is unavailable. If the species is present during construction, disturbance associated with construction activities could temporarily result in elimination of areas essential for seasonal movement as well as harm to individuals if they were present during construction activities. Implementation of Metro Plan Update EIR **Mitigation Measures 4.5.4a and 4.5.4b** would be required. These measures would reduce impacts to SJKF by avoiding burrows, and dens if present and reducing entrapment risk, and therefore would reduce impacts to SJKF during construction activities to less-than-significant levels.

Special-Status Wildlife: Nesting Songbirds and Raptors

Portions of the Project area may support nesting birds, including, but not limited to, Swainson's hawk, and burrowing owl, primarily within the eastern portion of the Project area along Olive Avenue and Temperance Road. If Swainson's hawk and/or burrowing owl, as well as other passerine birds and raptors protected by MBTA, are present onsite, construction activities could cause nest abandonment, or loss of reproductive potential at active nest sites located near the Project area. Other potential impacts to these species during proposed Project construction include the potential for harm to individual birds, if present, and the loss of suitable nesting and foraging habitat. Therefore, the proposed Project could have a potentially significant impact on nesting birds. Implementation of Metro Plan Update EIR **Mitigation Measures 4.5.1a, 4.5.1b, and 4.5.1c** would be required. These measures would reduce impacts to less-than-significant levels by completing preconstruction surveys and implementing construction avoidance and no-disturbance buffer areas, as needed.

Special-Status Wildlife: Western Pond Turtle

Portions of the proposed Project, specifically along canals, may support western pond turtle. If western pond turtle are present onsite construction activities could cause site abandonment, potential harm for individuals, and the loss of suitable nesting habitat. Any direct mortality of individuals or impacts to nesting activities would be a significant impact. Implementation of Metro Plan Update EIR **Mitigation Measure 4.5.3** would be required. This measure would reduce impacts to less-than-significant levels by completing preconstruction surveys, and ensuring work did not occur in the vicinity of turtles.

b) **Impact Addressed in Metro Plan Update EIR.** A portion of the project site, specifically along Fancher Creek Canal, is surrounded by riparian vegetation. Because the project does not intend to modify or perform work within this habitat (pipelines would be bored under these areas. Indirect impacts, such as noise disturbance to wildlife species from construction related activities could occur as a result of Project construction. Implementation of Metro Plan Update **Mitigation Measures 4.5.4a, 4.5.4b, 4.5.1a, 4.5.1b, 4.5.1c, and 4.5.3** would ensure work would not be completed in the vicinity of any special status wildlife species.

c) **Impact Addressed in Metro Plan Update EIR.** During the reconnaissance survey, numerous canals were identified as waters of the U.S. and would therefore fall under the jurisdiction of the Corps per section 404 of the CWA. No potentially jurisdictional wetlands were identified within the Project area. The proposed Project intends to trench and backfill with concrete the pipeline crossing at Gould Canal, which is a potential waters of the U.S. Placement of concrete into a waters of the U.S. would be considered a potentially significant impact. The pipeline would be bored under all other canals and water features. In addition to the placement of fill into Gould Canal, indirect impacts, such as sedimentation or accidental spills to waters of the U.S. throughout the Project area could occur as a result of proposed Project construction. Implementation of Metro Plan Update EIR **Mitigation Measure 4.5.8** would provide for completion of a formal wetland delineation and applicable permitting. Potential sedimentation impacts and accidental spills would be minimized through adherence to the conditions of the NPDES General Construction Permit, which would be required for the proposed Project. For additional information regarding the General Construction Permit, please refer to Checklist Section 2.9, Hydrology and Water Quality.

d) **Impact Addressed in Metro Plan Update EIR.** The proposed Project would not substantially interfere 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 area is not located within an established native resident or migratory wildlife corridor or wildlife nursery site. However, as mentioned under Checklist Section Item 2.9.a, some of the transmission main crosses through, or is adjacent to, culverts, and canals, and agricultural and grassland areas, which may be used by SJKF, or other resident wildlife species such as raccoon or coyote. Construction activities could result in a temporary loss or disturbance to essential habitat for movement for SJKF. Construction noise could also temporarily alter foraging patterns of resident wildlife species. Implementation of Metro Plan Update EIR **Mitigation Measures 4.5.8, 4.5.9, and 4.5.10** would reduce this impact to a less-than-significant level by protecting riparian habitats within the Project area during implementation.

e) **Impact Addressed in Metro Plan Update EIR.** The Project area supports numerous oak trees and landmark trees that are considered protected by the City of Fresno and Fresno County. Oak trees and landmark trees are those trees. The Fresno County General Plan Open Space and Conservation Easement. Fresno County also maintains riparian vegetation protection under this Element, which requires development setbacks of 50-100 feet from streams depending on size and slope of stream banks.

These protection requirements would pertain to the large mature trees planted at the rural residences as well as along the roadways and near canals. The number of trees to be removed is not known at this time. Those trees that have nine-inch or greater diameters at standard breast height, and that are located within the limits of the proposed pipeline construction

Impacts to protected oak or landmark trees are considered a potentially significant impact. Metro Plan Update EIR **Mitigation Measures 4.5.9a and 4.5.9b** would reduce impacts by requiring tree protection zones to protect trees present within the Project area, and compliance with Fresno Municipal Code (F.M.C. 11-305) if protected trees are proposed for removal.

f) **No Impact.** There are no planned or adopted Habitat Conservation Plans or Natural Community Conservation Plans for the areas encompassing the Project area. *The Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS, 1998) does not identify the area within and adjacent to the Project area as having regional biological significant for the species covered in the plan. Therefore, the proposed Project would not conflict with any adopted conservation or recovery plans and this issue will not be further evaluated.

References

California Department of Fish and Game, 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency Department of Fish and Game. March 7, 2012. Sacramento, California.

California Department of Fish and Wildlife, 2015. California Natural Diversity Database (CNDDB) search for species occurring in the U.S. Geological Survey 7.5-minute Academy, Clovis, Fresno North, Fresno South, Friant, Gregg, Herndon, Kearney Park, Lanes Bridge, Malaga, Round Mountain, or Sanger Topographic Quadrangles. Information accessed August 5, 2015.

California Native Plant Society, 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org. Accessed August 5, 2015.

CDFG *see* California Department of Fish and Game.

City of Fresno, 2014. Draft Fresno Metropolitab Water Resources Management Plan Update. Prepared by Environmental Science Associates.

City of Fresno, 2014 Final Fresno Metropolitan Water Resources Management Plan Update. Prepared by Environmental Science Associates.

CNPS *see* California Native Plant Society.

Mayer, K. E., and W.F. Laudenslayer, Jr., 1988. A Guide to Wildlife Habitats of California. State of California Resources Agency, California Department of Fish and Game. Sacramento, CA. Availabe online at: http://www.dfg.ca.gov/whdab/html/wildlife_habitats.html. Accessed August 4, 2015.

Swainson's Hawk Technical Advisory Committee, 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley.

U.S. Fish and Wildlife Service, 1998. Recovery Plan for Upland Species of the San Joaquin Valley, California. Portland, Oregon.

—, 2015. UPaC Trust Resource Report Generated for the Fresno Priority 2 RTM Project. Database available online at http://ecos.fws.gov/ipac/. Accessed August 5, 2015.

United States Geological Survey, 1963. Fresno South, California, Fresno County, 7.5-minute Topographic Quadrangle.

—, 1964. Clovis, California, Fresno County, 7.5-minute Topographic Quadrangle.

—, 1964. Malaga, California, Fresno County, 7.5-minute Topographic Quadrangle.

—, 1965. Fresno North, California, Fresno County, 7.5-minute Topographic Quadrangle.

USFWS *see* U.S. Fish and Wildlife Service.

USGS *see* U.S. Geological Survey

2.5 Cultural Resources

Section 4.12 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan Update, including the Project, on cultural resources. Additionally, a Phase II Cultural Resources Study was completed for the proposed alignment (**Appendix D**). For additional background information on cultural resources, please refer to Section 4.12 of the Metro Plan Update, or **Appendix D**.

Environmental Setting

The proposed Project is located within an existing paved road right-of-way or easement along roadways in the City of Fresno and Fresno County. The proposed Project is located in a primarily urban development, with some rural agricultural development adjacent to the proposed Project alignment, primarily along the Temperance Ave. portion of the alignment.

The San Joaquin Valley has been shaped by human occupation since the arrival of the earliest peoples over 11,000 years ago. At the time of Euro-American contact, the proposed project area consisted of the southernmost territory occupied by the Northern Valley Yokuts. The Northern Valley Yokuts historically lived in California along the San Joaquin River as far north as where it bends north between the Calaveras and the Mokelumne rivers, as far south as Fresno, to the west to the Diablo Range, and as far east as the foothills of the Sierra Nevada. The Yokuts may have been fairly recent arrivals in the San Joaquin Valley, perhaps being pushed out of the foothills about 500 years ago.

State legislation in 1856 organized Fresno County from portions of Mariposa, Merced and Tulare counties. The development of the Central Pacific Railroad (predecessor of the Southern Pacific Railroad) in 1872 resulted in the creation of the town of Fresno, originally called “Fresno Station.” Prior to the 1870s, “dry farming” dominated Fresno County between the San Joaquin and Kings Rivers. Dry farming relied on spring rains, however the 1860s experienced extensive drought years, causing residents to explore alternative means or providing water for crops. Settlers dug ditches along major drainages, such as the Kings River, with the earliest supplying water to the community of Centerville via the Centerville Ditch. The modern canal system operated by the Fresno, Consolidated, and Alta irrigation districts was begun during the 1870s and 1880s, with a variety of private parties taking the lead.

The 1910 census for Fresno showed a total population of 24,892. City boosters, hoping to double the population within a few short years, promoted Fresno as an attractive and modern Californian city, with handsome public buildings, established city parks, numerous banks and commercial opportunities, and large tracts of developable land outside the city proper. Throughout the prosperous 1920s, new residents flocked to Fresno, attracted by the City’s agricultural wealth and prosperity. The Great Depression that began in 1929 had a significant impact on the San Joaquin Valley, with a great influx of people seeking employment in an already strained market. Midwestern farmers who could not find employment in the agricultural industry came to cities like Fresno looking for other forms of employment, but few urban jobs were available. Mobilization of industry in support of World War II ultimately ended the Great Depression. In the years following

World War II, California experienced a period of prosperity with unprecedented urban growth and economic expansion. In Fresno, the 1940 census reported 60,685 people, while the 1950 census reported a population of 91,669, not including Japanese citizens or military personnel. The population boom resulted in extensive building efforts with new civic and public buildings, highways, residential and commercial developments. Architecture moved away from historic styles and focused on more modernist elements and innovations. Suburban expansion drove much of the residential and commercial development outside of city centers. Agricultural parcels were subdivided to establish tract homes and regional shopping centers and facilities that would provide services for the new population. Additionally, community and regional planning during the mid-twentieth century was highly influenced by the automobile and freeways. Automobiles enabled people to move farther away from the downtown, resulting in businesses as well as municipal services expanding or moving to accommodate their customers' needs. The Metro Plan Update EIR is incorporated by reference[6].

Metro Plan Update EIR Standards of Significance

The Master Plan EIR considers an impact to cultural resources to be significant if the Master Plan would:

- Cause a substantial adverse change in the significance of a historical resource that is either listed or eligible for listing in the National Register, the California Register, or a local register of historic resources;
- Cause a substantial adverse change in the significance of a unique archaeological resource;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan Update. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR and incorporated into this SMND are presented in **Appendix A**.

6 http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Watermanagement/importantdocuments.htm

Cultural Resources		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.12-1	Implementation of the proposed project could adversely impact historic architectural resources directly through demolition or substantial alteration, or indirectly through changes to historical setting.	S	SU
4.12-2	Implementation of the proposed project could result in damage or destruction of known or previously unidentified archeological resources.	S	LS
4.12-3	Ground-disturbing activities associated with construction of the proposed project could result in damage to previously unidentified human remains.	S	LS
4.12-4	Ground-disturbing construction associated with implementation of the proposed project could result in disturbance or destruction of a paleontological resource.	S	LS
4.12-5	Implementation of the proposed project, combined with other projects could result in the loss or destruction of historical architectural resources.	S	SU
4.12-6	Implementation of the proposed project, combined with other projects could result in the loss of destruction of archaeological and/or paleontological resources.	S	LS

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5.	**CULTURAL RESOURCES — Would the project:**				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c)	Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	☐	☒	☐	☐
d)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
e)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion

a) **Less-than-Significant.** CEQA Guidelines Section 15064.5 requires the lead agency (AOC) to consider the effects of a Project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR), or determined by the

lead agency (City) to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. As determined by the archival review conducted at the San Joaquin Valley Information Center (File No. RS# 15-316), two cultural resources have been previously recorded adjacent to the Project area: I.D. Schnable Home, P-10-6099; and 1333-1353 Palm Bungalow Court, P-10-5452. Previous evaluations recommended P-10-6099 ineligible for listing in the California and National Registers, and recommended P-10-5452 eligible under Criteria A/1 and C/3 for its association with early court style housing development and architectural association with the early Fresno Tower District. Review of the Fresno County List of Historic Places identified the presence of the Fresno County Landmark #108, the Forthcamp Home (6158 E Floradora Avenue), to the south of the staging area at the SE SWTF. Field survey (September, 2015) documented segments of four historic period canals intersecting the project area (Dry Creek Canal, Mill Ditch, Fancher Creek Canal, and Briggs Canal), all of which were recommended ineligible for listing in the California and National Registers due to lack of integrity.

The construction of the proposed water pipeline would occur within the road right-of-ways and would not directly impact these resources, or indirectly impact them through the introduction of alterations to their historic setting. Due to the location and nature of the proposed pipeline alignment construction in the adjacent road right-of-way, no direct affects to the Palm Bungalow Court are anticipated, and only temporary indirect impacts resulting from changes to the setting of the property. No significant impacts to the structure as a result of construction vibration are anticipated to occur, with mitigation detail in Section 2.12, Noise. Following the end of construction, N. Palm Avenue will return to its current appearance, with no adverse effect on P-10-5452. Additionally, the Fresno County Landmark Forthcamp home is located just outside of the project footprint, north of the potential proposed staging area. No direct or indirect impacts would occur to the building as a result of staging, therefore the proposed Project would not result in a significant impact to historical resources. Therefore, the proposed Project would have a less-than-significant impact on historical resources under CEQA.

b-c) **Impact Addressed in Metro Plan Update EIR.** CEQA requires the lead agency to consider the effects of a project on archaeological resources and to determine whether any identified archaeological resource is a historical resource. CEQA Guidelines Section 15064.5 also requires consideration of potential project impacts on "unique" archaeological resources that do not qualify as historical resources. Public Resources Code (PRC) Section 21083.2 defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria. The resource:

1. contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information;

2. has a special and particular quality, such as being the oldest of its type or the best available example of its type; and/or

3. is directly associated with a scientifically recognized important prehistoric or historic event or person.

PRC Section 15064.5(c) (4) provides that, if an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of a project on the resource are not considered significant.

In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the Public Resources Code regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze project impacts on "tribal cultural resources," separately from archaeological resources (PRC § 21074; 21083.09). The Bill defines "tribal cultural resources" in a new section of the PRC Section 21074. AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC § 21080.3.1, 21080.3.2, 21082.3). Finally, AB 52 requires the Office of Planning and Research to update Appendix G of the CEQA Guidelines by July 1, 2016 to provide sample questions regarding impacts to tribal cultural resources (PRC § 21083.09).

ESA staff requested a search of the Native American Heritage Commission's (NAHC) Sacred Lands File (SLF) database on August 4, 2015, per the requirements of AB52. When no response was received, a follow up email was submitted on August 20, 2015. The NAHC responded via email, stating that they were experiencing delays due to staffing shortages, and would be processing the request as soon as possible. Further follow up emails were submitted to the NAHC on September 22, 2015, October 7, 2015, and October 26, 2015. On October 26, 2015, the NAHC responded stating that they had emailed the response to ESA October 9, 2015, although no email had been received by ESA. On October 29, 2019, ESA received a response from the NAHC, providing a list of knowledgeable persons to contact, and stating that the results of the SLF search failed to indicate the presence of any known sacred Native American sites in the immediate project area. ESA contacted the individuals and organizations affiliated with the area as identified by the NAHC by letter on October 29, 2015 to solicit their comments and concerns regarding the project. No responses have been received by the writing of this report.

Results of the cultural resources records search conducted at the SSJVIC indicate that 19 surveys have been previously conducted within or intersect the project alignment, and an additional 40 surveys conducted within the ½ mile buffer of the pipeline alignment. No historic or prehistoric archaeological sites have been recorded within the alignment or within the ½ mile buffer. Canals within the Project area include constructed canals and natural waterways that have been historically modified for modern uses. These historically natural waterways would have been attractive for use by Native peoples who

may have left physical cultural manifestations such as habitation or tool-making sites or features. As such, earth-moving activities associated with the maintenance and repair of the canals have the potential to result in the damage or destruction of these resources, which would be considered a potentially significant impact to cultural resources. The accidental discovery of archaeological materials during ground-disturbing activities cannot be entirely discounted. In the unlikely event that archaeological materials are unearthed, implementation Metro Plan Update EIR **Mitigation Measures 4.12-2b and 4.12-2c**, which would include implementation of a construction worker training program and measures to protect the unexpected discovery of subsurface resources during construction, Project impacts to archaeological resources would be less-than-significant.

d) **Impact Addressed in Metro Plan Update EIR.** Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. In general, older sedimentary rocks (more than 10,000 years old) are considered most likely to yield vertebrate fossils of scientific interest.

The Project site is located in Great Valley Sequence alluvial fans (Qf) and Pleistocene nonmarine sediments (Qc). Great Valley Sequence sediments date to the Holocene-age (10,000 years Before Present [BP] to Present Day), and are typically considered too young to contain significant paleontological resources. Pleistocene nonmarine sediment is designated as having a moderate paleontological sensitivity (Matthews, 1965). While no known paleontological resources or unique geologic features exist within the Project area, the potential for discovery of paleontological resources during construction cannot be discounted. Implementation of Metro Plan Update EIR **Mitigation Measures 4.12-4a and 4.12-4b** would reduce proposed Project impacts to less-than-significant by providing for review of discovered paleontological resources by a qualified paleontologist, and implementation of a resource monitoring and mitigation program, as relevant.

e) **Impact Addressed in Metro Plan Update EIR.** Results of the archival review discussed above indicate that the Project area has a low potential to contain buried cultural materials including human remains. However, the possibility of uncovering human remains cannot be entirely discounted. In the unlikely event that human remains are uncovered during ground-disturbing activity, with implementation of Metro Plan Update EIR **Mitigation Measure 4.12-3**, which would contact the County coroner and the Native American Heritage Commission as warranted, would reduce proposed Project impacts on undiscovered human remains to less-than-significant.

References

ESA, 2015. *City of Fresno Priority 2 Regional Transmission Mains Project.* Prepared for the City of Fresno. September 2015.

2.6 Geology, Soils, and Seismicity

Section 4.3 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan Update, including the proposed Project, related to geology, soils, and seismicity. The following discussion provides proposed Project-specific information relevant to geology, soils, and seismicity.

Environmental Setting

The City of Fresno is located in the southern portion of the Great Central Valley geomorphic province of California (Central Valley) which is an approximately 50-mile-wide and 400-mile-long northwestward-trending trough in the center of California between the Coast Range to the west and the Sierra Nevada to the east. The northern and southern portions of the Central Valley are referred to as the Sacramento Valley and San Joaquin Valley, respectively; with the Sacramento River draining areas to the north and the San Joaquin River draining areas to the south. The topography of the Central Valley is relatively level, with elevations ranging from a few ft to a few hundred ft above mean sea level (msl). Topography in the Fresno area is generally flat or gently sloping with an elevation of approximately 300 feet (ft) above msl.

The City of Fresno in not in an Alquist-Priolo Special Studies Zone and there are no underlying active earthquake faults (City of Fresno Planning and Development Department, 2002). Therefore, the Fresno area experiences minimal risk associated with seismic activity. Proposed Project area soils are well drained and have a low to moderate shrink-swell potential and low erosion hazard. The Metro Plan Update EIR is incorporated by reference[7].

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers any impacts related to geology and soils significant if the Metro Plan Update would:

- Expose people or structures to potential substantial adverse effects, including the risk of, injury, or death involving strong seismic ground shaking, seismic-related ground failure (including liquefaction), or landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located in a geological 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; or
- Be located on expansive soil, as defined in Table 18-1-B of the 1994 Uniform Building Code, creating substantial risks to life or property.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identified the impacts shown below that would result from implementation of the Metro Plan. Impacts are presented with their corresponding levels of

[7] http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Watermanagement/importantdocuments.htm

significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR and incorporated into this SMND are presented in **Appendix A.**

Geology and Soils		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.3-1	Proposed project facilities could be at risk of potential damage resulting from strong seismic ground shaking, seismically-related ground failure, or landslides.	S	LS
4.3-2	Activities associated with the construction of proposed project facilities could result in substantial soil erosion or loss of topsoil.	LS	N/A
4.3-3	Proposed project facilities could be at risk of damage due to unstable soil conditions.	S	LS
4.3-4	Implementation of the proposed project, in combination with other development projects, could increase the risk of damage to structures due to seismically induced groundshaking and unstable soil conditions.	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update*
6. GEOLOGY, SOILS, AND SEISMICITY — Would the Project:					
a) Expose people or structures to 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.)	☐	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☐	☒
iv) Landslides?	☐	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐	☐
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?	☐	☐	☒	☐	☐

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update*
6. GEOLOGY, SOILS, AND SEISMICITY — Would the Project:					
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒	☐

a.i) **No Impact.** According to the Fresno General Plan (City of Fresno Development and Resource Management Department, 2014), the City of Fresno is located in one of the more geologically stable areas of California, containing no Alquist-Priolo Earthquake Fault Zones. Therefore, rupture of a known fault is not anticipated within or in the immediate vicinity of the Project area. No impact would occur.

a.ii-iii) **Impact Addressed in Metro Plan Update EIR.** The closest known fault is the Ortigalita fault which is located approximately 60 miles to the west of the proposed Project. The US Geological Survey identifies the greater Fresno area as having relatively low potential for seismic activity, with US seismic hazards (2% in 50 years) peak ground acceleration ranging from 0.1 to 0.25 times the acceleration of gravity (g; USGS, 2014).[8] Soils underlying the City are characterized as having low liquefaction potential. In addition, the topography is relatively flat and landslides would be unlikely to occur. The proposed Project would involve trenching and excavating on primarily level terrain and would incorporate the use of trench shoring measures consistent with the Uniform Building Code (UBC) and Occupational Safety and Health Administration (CAL/OSHA) requirements for trenching and excavation activities. In order to ensure that potential impacts are minimized, implementation of Metro Plan Update EIR **Mitigation Measures 4.3.1a and 4.3.1c** would be required. These measures would provide for the preparation of a soil and geotechnical engineering study for the project that would also adhere to pipeline design guidelines provided by the American Water Works Association, and would, therefore, reduce potential impacts to less-than-significant levels.

a.iv) **Less-than-Significant.** The City is located in an area that has a predominately flat topography. Landslides primarily occur in coastal and mountainous regions with steep topography. However, they can also occur where trenching and excavations are done for infrastructure installation and preparation of building foundations. Even though the proposed Project would involve trenching for the installation of pipelines, because the topography in the Fresno area is relatively flat and the proposed Project does not include installation of any infrastructure within one-half mile of the bluffs along the San Joaquin River, the risks

8 San Francisco, by contrast, is rated at 1.8+ g.

associated with landslides would be minimal. In addition, all construction techniques would be required to comply with UBC requirements to minimize risks associated with unstable soil conditions. Therefore, this impact would be less than significant.

b) **Less-than-Significant.** Construction activities would occur within existing ROW and easements along roadways and would result in only limited removal of vegetation. The soils within the Project area have a low to moderate potential for wind and water erosion (NRCS, 2015). As a result, strong potential for soil erosion during construction and operation of the proposed Project is not anticipated, and this impact would be less than significant.

c) **Less-than-Significant.** The proposed Project alignment would involve the underground placement of transmission mains within soils that are relatively stable and have a low potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, this impact would be less than significant.

d) **Impact Addressed in Metro Plan Update EIR.** Expansive clay soils are present in some parts of the City however the proposed Project would be constructed in areas with soils having low to moderate shrink-swell potential. In addition, some soils along the proposed Project alignment contain a high potential for corrosion of untreated steel. If left unprotected, these soils could damage underground utilities including pipelines. Implementation of Metro Plan Update EIR **Mitigation Measures 4.3.1a-c** would ensure that corrosive soils within the Project area would be identified on a location-by-location basis, and that appropriate construction measures would be implemented in order to offset potential impacts associated with corrosive soils. These measures would reduce the impact to less than significant.

e) **No Impact.** The proposed Project would not installation septic systems or alternative wastewater disposal systems, and no impact would occur.

References

California Department of Conservation (CDC), 2008. Earthquake Shaking Potential for California. Available at: http://www.consrv.ca.gov/cgs/information/publications/ms/Documents/MS48_revised.pdf Accessed on July 5, 2015.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS).Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed August 5, 2015.

United States Geological Survey (USGS), 2014. Seismic Hazard Maps and Data. Available at: http://earthquake.usgs.gov/hazards/, accessed April 17, 2014.

2.7 Greenhouse Gas Emissions

Section 4.7 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan, including the proposed Project, on greenhouse gas emissions and climate change. The following discussion provides Project-specific information relevant to greenhouse gas emissions.

Environmental Setting

CEQA requires lead agencies to consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to adversely affect the environment because they contribute to global climate change. In turn, global climate change has the potential to: raise sea levels, affect rainfall and snowfall, and affect habitat.

As revised pursuant to Senate Bill 97 adopted in 2007 (Cal PRC Section 21083.05), the State CEQA Guidelines, effective in mid-2010, require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of the project and propose mitigation as necessary. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds, but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (section 15064.4). State CEQA Guidelines section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among others, measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision; implementation of project features, project design, or other measures which are incorporated into the project to substantially reduce energy consumption or GHG emissions; offsite measures, including offsets that are not otherwise required, to mitigate a project's emissions; and, measures that sequester carbon or carbon-equivalent emissions. The Metro Plan Update EIR is incorporated by reference[9] and discusses relevant Senate Bills and Executive Orders, the California Climate Change Scoping Plan including their targets for GHGs and relationship to the proposed Project.

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact related to greenhouse gases to be significant if the Metro Plan Update would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHG (including AB 32, the California Global Warming Solutions Act of 2006, and the AB 32 Scoping Plan).

[9] http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/Watermanagement/importantdocuments.htm

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan. Impacts are presented with their corresponding levels of significance. No mitigation measures for greenhouse gas emissions were applied in the Metro Plan Update EIR

Greenhouse Gas Emissions		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.7-5	Construction and operation of the project could result in a cumulatively considerable increase in greenhouse gas emissions	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
7.	**GREENHOUSE GAS EMISSIONS — Would the Project:**					
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐	☐
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐	☐

a-b) **Less-than-Significant.** Greenhouse gas (GHG) impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). In 2009, a MND was prepared for the update to the 2025 Fresno General Plan Air Quality Element and addressed changes in the objectives and policies of the 2025 Fresno General Plan as a result of new legislation, specifically California AB 170 and AB 32. AB 170 required cities and counties in the Valley to incorporate strategies to improve air quality in their general planning efforts. AB 32 focuses on reducing greenhouse gases to 1990 levels by the year 2020. New and revised mitigation measures were applied to the 2025 Fresno General Plan and Master EIR in the form of policies to change the nature of the project in ways that would reduce and mitigate impacts consistent with the direction given by AB 170 and AB 32. Further, the 2025 Fresno General Plan Master EIR mitigation measure checklist was augmented to further the goals, objectives, and policies for air quality improvement, and to assure that implementing air quality improvement policies will not cause other significant adverse cumulative impacts. It was found that any potential impacts related to air quality resulting

from this new legislation, was adequately mitigated in the Master EIR and Air Quality MND to less than significant levels.

Since that time, the Master EIR for the Fresno General Plan (2014) has superseded the 2025 Fresno General Plan and Master EIR. The Fresno General Plan adhered to AB 170 by incorporating strategies to improve air quality. The Fresno General Plan also incorporated the 2008 Climate Change Scoping Plan pursuant to the requirements in AB 32 to meet GHG reduction. The Fresno General Plan and incorporation of AB 170 and AB 32 do not require new analysis or implementation beyond what was completed under the 2025 Fresno General Plan and 2009 MND. The following analysis is applicable in determining the direct impact of the proposed Project with respect to climate change and GHGs.

To determine the direct impact of the proposed Project with respect to climate change and GHGs, specifically construction activities, four types of analyses are used to determine whether the proposed Project could conflict with the State goals for reducing GHG emissions. The analyses are as follows:

a. Any potential conflicts with the CARB's thirty-nine (39) recommended actions in California's AB 32 Climate Change Scoping Plan.

b. The relative size of the project. The project's greenhouse gas emissions will be compared to the size of major facilities that are required to report greenhouse gas emissions (25,000 metric tons/year of CO_2e)[10] to the State; and the project size will also be compared to the California GHG emissions limit of 427 million metric tons per year of CO_2e emissions by 2020. The 25,000 metric ton annual limit identifies the large stationary point sources in California that make up approximately 94 percent of the stationary emissions. If the project's total emissions are below this limit, its total emissions are equivalent in size to the smaller projects in California that as a group only make up 6 percent of all stationary emissions. It is assumed that the activities of these smaller projects generally would not conflict with State's ability to reach AB 32 overall goals. In reaching its goals the CARB will focus upon the largest emitters of GHG emissions.

c. The basic energy efficiency parameters of a project to determine whether its design is inherently energy efficient.

d. Any potential conflicts with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

With regard to Item a, the proposed Project does not pose any apparent conflict with the CARB recommended actions.

With regard to Item b, project construction GHG emissions were estimated to be no more than 351 metric tons/year of CO_2e (see also Appendix B). No permanent employees or daily worker trips would be required to operate the pipeline however, periodic inspection

10 The State of California has not provided guidance as to quantitative significance thresholds for assessing the impact of greenhouse gas emissions on climate change and global warming concerns. Nothing in the CEQA Guidelines directly addresses this issue.

and maintenance would be conducted as needed. These trips would be negligible from a GHG emissions perspective. Therefore the proposed Project would not be classified as a major source of GHG emissions (the lower reporting limit, is 25,000 metric tons/year of CO_2e). The 2020 GHG emissions limit for California, as adopted by CARB in December of 2007 is approximately 427 million metric tons of CO_2e (CARB, 2007). The proposed Project's annual contribution would be insignificant, and therefore the proposed Project would not generate sufficient emissions of GHGs to contribute considerably to the cumulative effects of GHG emissions such that it would impair the state's ability to implement AB 32.

With regard to Item c, the question of energy efficiency, the proposed Project would include pipelines that are sized to minimize friction loss to minimize energy use.

With regard to Item d, the SJVAPCD released the *Final Staff Report: Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act* (SJVAPCD, 2009) to streamline the process of determining if project specific GHG emissions would have a significant effect. The methodology being proposed relies on the use of performance based standards that would be applicable to projects that result in increased GHG emissions. Projects implementing best performance standards (BPS) or achieving at least a 29% GHG emission reduction compared to business as usual (BAU) would be determined to have a less-than-significant individual and cumulative impact for GHG. No BPS for water pipeline projects have been created thus far, and BPS standards as a whole have yet to be adopted by SJVAPCD. In summary, the review of Items a, b, c, and d indicate that the proposed Project would not conflict with the State goals in AB 32 and therefore this potential impact would be less than significant.

References

California Air Pollution Control Officers Association (CAPCOA), 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.

California Air Resources Board (ARB). Climate Change Scoping Plan. Adopted December 11, 2008. Re- approved by the ARB on May 22, 2014.

California Climate Action Registry (CCAR), 2009. California Climate Action Registry General Reporting Protocol, January 2009.

2.8 Hazards and Hazardous Materials

Section 4.9 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan, including the proposed Project, relevant to hazards and hazardous materials. The following discussion provides Project-specific information relevant to hazards and hazardous materials.

Environmental Setting

Materials and waste may be considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode or generate vapors when mixed with water (reactivity). The term "hazardous material" is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.[11] In some cases, past industrial or commercial uses can result in spills or leaks of hazardous materials and petroleum to the ground, resulting in soil and groundwater contamination. Federal and state laws require that soils having concentrations of contaminants such as lead, gasoline, or industrial solvents that are higher than certain acceptable levels must be handled and disposed as hazardous waste during excavation, transportation, and disposal. The California Code of Regulations, Title 22, Section 66261.20-24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste. The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government.

Information about hazardous materials sites in the Project area was collected by conducting a review of the California Environmental Protection Agency's (Cal EPA) Cortese List Data Resources (Cortese List). The Cortese list includes the following data resources that provide information regarding the facilities or sites identified as meeting the Cortese list requirements: the list of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database; the list of Leaking Underground Storage Tank (LUST) sites from GeoTracker database; the list of solid waste disposal sites identified by Water Board; the list of active Cease and Desist Orders and Cleanup and Abatement Orders from Water Board; and the list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code identified by DTSC. The Cortese List is a reporting document used by the state, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. The Cortese List is updated at least annually, in compliance with California regulations (California Code Section 65964.6(a)(4)). The Cortese List includes federal superfund sites, state response sites, non-operating hazardous waste sites, voluntary cleanup sites, and school cleanup sites.

Based on a review of the Cortese List conducted in August 2015, 8 listed sites are located within 0.5 miles of the proposed Project (DTSC, 2015); however, none are located directly within the Project area. There are two school investigation sites located in the vicinity of the proposed Project with chlordane, lead, toxaphene, and tph-diesel listed as potential contaminants of concern. There are four cleanup program sites with potential contaminants of concern including

11 State of California, Health and Safety Code, Chapter 6.95, Section 25501(o).

gasoline, kerosene, metals/heavy metals, petroleum/fuels/oils, volatile organic compounds, and asphalt. There is one evaluation site with potential contaminants of concern including polychlorinated biphenyls (PCBS), tetrachloroethylene (PCE), and trichloroethylene (TCE). There is one state response site with arsenic and lead as potential contaminants of concern. There is one leaking underground storage tank (LUST) cleanup site located in the vicinity of the Project area, with waste oil / motor / hydraulic / lubricating as the listed potential contaminants of concern.

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers impacts related to hazards and hazardous materials to be significant if the Metro Plan Update would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which 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.
- 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 for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR and incorporated into this SMND are presented in **Appendix A**.

Hazards and Hazardous Materials		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.9-1	Construction of proposed project facilities could result in the potential exposure of construction workers, the public and the environment to existing soil and/or groundwater contamination.	S	LS
4.9-2	Construction of the proposed project could involve the use, storage or transport of hazardous materials which if released could result in a potential risk to the public and the environment.	LS	N/A
4.9-3	Operation of the proposed project could involve the use, storage or transport of hazardous materials which if released could result in a potential risk to the public and the environment.	LS	N/A
4.9-4	Proposed project facilities could be located within one quarter mile of a school resulting in potential hazards associated with accidental release of hazardous materials.	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
8. 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?	☐	☐	☐	☐	☒
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?	☐	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☐	☒
d) Be located on a site which 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?	☐	☐	☐	☒	☐
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 for people residing or working in the Project area?	☐	☐	☒	☐	☐
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☒	☐	☐

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
8. HAZARDS AND HAZARDOUS MATERIALS — Would the Project:					
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐	☐

a) **Less-than-Significant.** Construction activities would likely require use of limited quantities of hazardous materials such as fuels for construction equipment, oils, and lubricants. The improper use, storage, handling, transport or disposal of hazardous materials could result in accidental release of hazardous materials, thereby exposing construction workers, the public and the environment, including soil and/or ground or surface water, to hazardous materials contamination. Transportation of hazardous materials on area roadways is regulated by CHP and Caltrans, and use of these materials is regulated by DTSC, as outlined in Title 22 of the CCR. Any proposed Project facilities that would use or store hazardous materials would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Additional applicable regulations are discussed in detail in the Metro Plan Update EIR. Compliance with these laws and requirements would ensure that potential impacts would be minimized.

b) **Less-than-Significant.** The proposed Project would involve trenching within existing ROW and no known hazardous materials sites are known to exist within the Project area. Therefore, the proposed Project would not create a significant hazard to the public or the environment through the release of hazardous materials.

c) **Less-than-Significant.** Proposed Project construction activities and operations would likely require use of limited quantities of hazardous materials. The improper use, storage, handling, transport or disposal of hazardous materials could result in accidental release of hazardous materials, which could occur in proximity to a school. However, because numerous laws and regulations govern the transport, use, storage, handling and disposal of hazardous materials impacts of the construction and use of hazardous materials associated with proposed Project facilities within one quarter mile of a school would be less-than-significant.

d) **No Impact.** The proposed Project is not located on a site which is known to be included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, the proposed Project would not create a significant hazard to the public or the environment

e,f) **Less-than-Significant.** The Fresno Yosemite International Airport is located adjacent to the Project area and the Fresno Chandler Executive Airport is located within one mile of the Project area. However, the proposed Project does not include any structures of significant height or include any activities that would impair operations of the Fresno Yosemite International Airport or any other airport use. The proposed Project would not affect airport safety. No specific mitigation is required.

g) **Impact Addressed in Metro Plan Update EIR.** Construction of transmission mains would occur within existing ROW and could temporarily interfere with traffic flow and roadway use. This could physically interfere with emergency vehicle access and evacuation routes, as discussed under Transportation and Traffic, below. This impact is potentially significant and Metro Plan Update EIR **Mitigation Measures 4.6-1a** and **4.6-1b** would be required. These measures would require coordination with appropriate local governments and emergency providers, and would implement various measures to ensure that impacts on traffic, including emergency response traffic, would be minimized.

h) **Less-than-Significant with Mitigation.** Construction of the proposed pipelines and would be located in a developed urban area where the risk of wildland fire is considered to be minimal. However, construction within Fresno County would include the use of heavy equipment and other activities within areas that could be subject to wildfires. This impact is considered potentially significant, and implementation of **Mitigation Measure HM-1** would be required in order to ensure that potential impacts would be minimized.

Mitigation Measures

Mitigation Measure HM-1: During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.

References

DTSC, 2015. California Department of Toxic Substances Control. DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List). Available online at http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm

2.9 Hydrology and Water Quality

Section 4.4 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan, including the proposed Project, on hydrology and water quality. The following discussion provides Project-specific information relevant to hydrology and water quality.

Environmental Setting

Water Resources

Surface Water

The City of Fresno extends northward from its historical center over ten miles to the south bank of the San Joaquin River. A network of small, channelized streams and canals extend throughout the City, and include Dry Creek which crosses Chestnut Ave and Fancher Creek in the areas of the proposed Project. As described below, these waterways provide drainage and water conveyance within the City and, through a network of natural and engineered drainages, eventually flow into the San Joaquin River and the Sacramento-San Joaquin Delta.

Groundwater

The proposed Project alignment is located in the Kings Subbasin of the San Joaquin Valley Groundwater Basin. The Subbasin is bounded to the north by the San Joaquin River, to the west by the Delta- Mendota and Westside Subbasins, to the south by the northern boundary of the Empire West Side Irrigation District, the southern fork of the Kings River, the southern boundary of Laguna Irrigation District, and the boundaries of several other water districts. The eastern boundary of the subbasin is the interface between valley sediments and the granitic rock of the Sierra Nevada foothills. The San Joaquin and Kings Rivers are the principal surface waters that are in or along the edge of the subbasin, although many smaller drainages and canals are also present.

Water System Description

During periods of high summer demand, surface water comprises about 15 percent of the City's total water supply, while during lower demand periods (winter), surface water provides over 30 percent of the City's total water supply. The remaining portion of the City's water supply is derived from groundwater, which is supplemented by various recharge efforts described previously. Water is supplied to the City through a network of water supply wells and distribution mains, such as those water mains to be constructed by the proposed Project.

Flooding and Drainage

The FMFCD is the agency responsible for constructing and maintaining the flood and drainage control facilities within the proposed Project alignment. The FMFCD adopted a Stormwater Management Metro Plan that identifies the flood and drainage control needs within its service boundaries. The FMFCD locates and acquires sites for drainage basins based on topography in advance of development.

As defined by the Federal Emergency Management Agency (FEMA), areas located within a 100-year flood zone are those areas that would be subject to flooding during a storm event having a 1 percent annual chance of occurrence. As shown on **Figure 2.9-1,** the proposed Project would intersect a delineated 100-year floodplain at waterway crossings, located along Chestnut Ave., Fresno St., and H St. The proposed Project would include trenchless construction under these waterways. In addition, the portion of the alignment along Chestnut Ave. that passes through the Leaky Acres site is also within a 100-year floodplain.

Regulatory Setting

Federal

Executive Order 11988

Under Executive Order 11988, FEMA is responsible for managing floodplain areas, which are defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a 1 percent or greater chance of flooding in any given year (the 100-year floodplain). FEMA requires that local governments covered by federal flood insurance (including Contra Costa County) pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain.

National Pollutant Discharge Elimination System Permit Program

The NPDES permit program was established by the Federal Clean Water Act to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify the following:

- Effluent and receiving-water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge;
- Prohibitions on discharges not specifically allowed under the permit; and
- Provisions that describe required actions by the discharger, including industrial pre-treatment, pollution prevention, self-monitoring, and other activities.

In November 1990, the USEPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase 1 of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase 1 also applied to stormwater discharges from a large variety of industrial activities, including general construction activity, if the Project would disturb more than 5 acres. Phase 2 of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for Projects that disturb between 1 and 5 acres. The USEPA has delegated its NPDES permitting function relevant to the Project area to the SWRCB, and the RWQCBs. Within this framework, the SWRCB provides coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity, as described below.

NPDES General Permit for Discharges of Stormwater Associated with Construction Activities

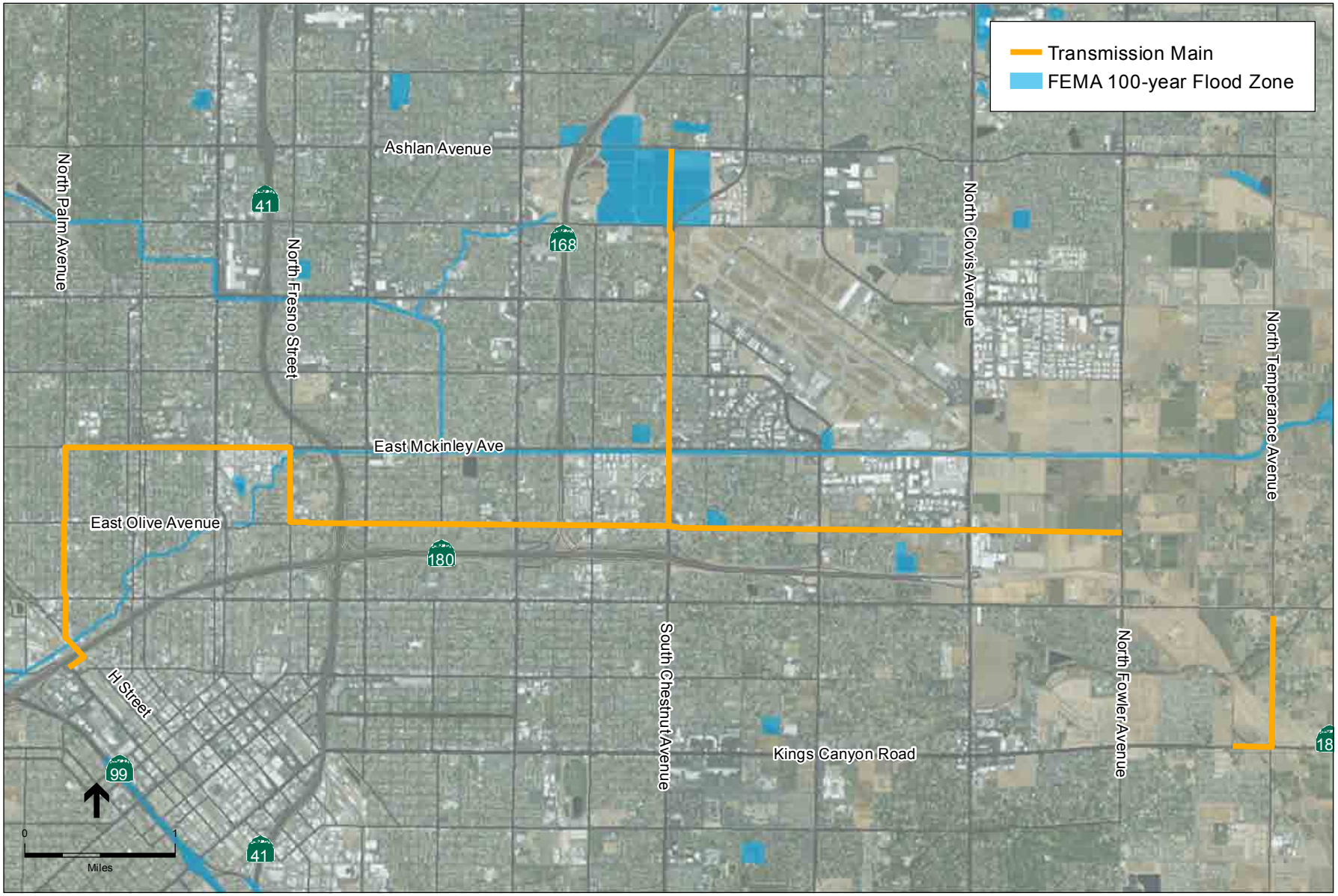
Construction activities disturbing 1-acre or more of land are subject to the permitting requirements of the NPDES General Construction Activity Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction NPDES Permit). A Project applicant must submit a Notice of Intent to the CVRWQCB to be covered by the General Construction Permit prior to the beginning of construction.

The SWRCB's General Construction Permit for Discharges of Storm Water Associated with Construction Activities requires a risk-based permitting approach, dependent upon the likely level of risk imparted by a Project. The new permit also contains several additional compliance items, including (1) additional mandatory Best Management Practices (BMPs) to reduce erosion and sedimentation, which may include incorporation of vegetated swales, setbacks and buffers, rooftop and impervious surface disconnection, bioretention cells, rain gardens, rain cisterns, implementation of pollution/sediment/spill control plans, training, and other structural and non-structural actions; (2) sampling and monitoring for non-visible pollutants; (3) effluent monitoring and annual compliance reports; (4) development and adherence to a Rain Event Action Plan; (5) requirements for permanent BMPs to match predevelopment hydrology in the post-construction period (for Projects in areas with no approved Hydrograph Modification Management Plan); (6) numeric action levels and effluent limits for pH and turbidity; (7) monitoring of soil characteristics on site; and (8) mandatory training under a specific curriculum. Under the revised permit, BMPs are incorporated into the action and monitoring requirements for each Project area, including implementation of a Stormwater Pollution Prevention Plan (SWPPP). Under the permit, stringent monitoring, reporting, and training requirements for management of stormwater pollutants are implemented.

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to hydrology and water quality to be significant if the Metro Plan Update would:

- Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or project area in a manner that would cause substantial erosion and sedimentation and/or flooding onsite or offsite;
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;



SOURCE: Microsoft, 2011; FEMA, 2009; ESRI, 2012; AECOM, 2015; ESA, 2015

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 2.9-1

FEMA 100-year Flood Zones

- Place structures within a 100-year flood hazard area which could impede or redirect flood flows; or
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR and incorporated into this SMND are presented in **Appendix A**.

Hydrology and Water Quality		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.4-1	Construction of the proposed project would involve activities that could result in increased amount of sediment and construction equipment-related pollutants in storm water runoff that could adversely affect receiving water quality.	LS	N/A
4.4-2	Implementation of the proposed project would result in increased use of recycled water which could result in the degradation of surface and groundwater quality.	S	LS
4.4-3	Implementation of the proposed project could reduce groundwater recharge potential and lower groundwater levels.	LS	N/A
4.4-4	The proposed project would include the construction of new and upgraded facilities that could increase the rate and amount of runoff, including stormwater runoff that could exceed drainage system capacity.	LS	N/A
4.4-5	Placement of proposed project facilities in a designated flood hazard zone could impede or redirect flood flows resulting in off-site flooding and could expose facilities to damage resulting from flooding.	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

The Metro Plan did not include the construction of any new housing, and the Metro Plan did not propose the placement of housing within a 100-year flood hazard zone. Therefore, the Metro Plan Update EIR concluded that no impact would occur, and the issue was not evaluated further in the EIR.

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
9. HYDROLOGY AND WATER QUALITY — Would the Project:					
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐	☐
e) 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?	☐	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒	☐
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒	☐
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒	☐

a,f) **Impact Addressed in Metro Plan Update EIR**. Construction of the proposed Project would include activities such as grading and trenching that would result in the disturbance of soils and sediments that could be carried into the City's drainage system during storm events. Additionally, accidental discharges of construction fuels, oils,

hydraulic fluid, grease, and other hazardous substances could contaminate stormwater flows, resulting in a reduction in stormwater quality onsite or downstream of the Project area. Prior to construction, the City would be required to obtain an NPDES General Construction Permit for Discharges of Stormwater Associated with Construction Activities (NPDES General Stormwater Permit), from the CVRWQCB. Conditions of this permit would include preparation of hazardous material spill control and countermeasure programs; stormwater quality sampling, monitoring, and compliance reporting; development and adherence to a Rain Event Action Plan; monitoring of soil characteristics on site; and preparation of a stormwater pollution prevention plan (SWPPP) that would require implementation of BMPs. BMPs may include, but would not be limited to:

- Physical barriers to prevent erosion and sedimentation including setbacks and buffers, rooftop and impervious surface disconnection, rain gardens and cisterns, and other installations;
- Construction and maintenance of sedimentation basins;
- Limitations on construction work during storm events;
- Use of swales, mechanical, or chemical means of stormwater treatment during construction, including vegetated swales, bioretention cells, chemical treatments, and mechanical stormwater filters; and
- Implementation of spill control, sediment control, and pollution control plans and training.

The specific BMPs to be implemented would be determined prior to issuance of the NPDES General Permit, in coordination with the CVRWQCB. Adherence to these BMPs would be required as a condition of the permit, and would substantially reduce or prevent waterborne pollutants from entering natural waters, per CVRWQCB standards. Therefore, this impact would be less-than-significant.

b) **Less-than-Significant.** Conversion of natural and other non-paved surfaces to pavement, roadways, and other impervious surfaces can result in a decrease in the amount of rainwater that can, in some cases, cause a significant reduction in groundwater recharge, resulting in significant impacts to groundwater quantity or quality. The proposed Project alignment would involve construction of approximately 13.1 miles of regional transmission mains up to 54 inches in diameter, with the mains buried and the surface restored to its previous state. The proposed Project alignment would not convert natural and other non-paved surfaces to pavement, roadways, or other impervious surfaces. The installation of the pipeline crossing at Gould Canal would include backfilling with concrete and would result in a minor increase in impervious surfaces over that which currently exists. In addition, adjacent land surfaces would continue to provide infiltration capacity and groundwater recharge. Therefore, no significant change in groundwater infiltration or level is anticipated.. Further, the proposed Project would not result in the pumping of groundwater. As a result, this impact would be less than significant.

c,d,e) **Less-than-Significant.** During construction of the proposed Project, the natural drainage pattern of the area would be temporarily disrupted, and soils could be subject to accelerated erosion during storm events. However, the Project area is relatively flat and construction activities would not be anticipated to substantially alter the existing drainage pattern in a manner that would result in significant erosion or siltation.

Construction and operation of the proposed Project would not alter the course of any surface water body and would not contribute substantially to an increase in runoff water quantity or quality. Proposed Project pipelines would be constructed underground, primarily within existing road rights-of-way and only a small area would be disturbed per day along the alignment; thus, drainage patterns would not be altered by construction. Construction-related erosion and sedimentation impacts would be temporary in nature, and new impervious surfaces would be limited to where the pipeline crosses Gould Canal which would include backfilling with concrete. The proposed Project would only result in a minor increase in impervious surfaces over that which currently exist. Therefore, construction and operation of the proposed Project would have less-than-significant impacts related to capacity of existing or planned storm water drainages systems.

g,i,j) **No Impact.** The proposed Project alignment would not result in the placement of housing within a 100-year flood hazard area or result in any structures that would impede or redirect flood flows. The Project area is not subject to seiche, tsunami, or mudflow. Therefore, there would be no impact.

h) **No Impact.** The proposed Project alignment would not result in the placement of aboveground facilities within areas subject to 100-year flood hazards. The proposed pipelines would be buried underground, beneath flood hazard areas associated with waterway crossings along Chestnut Ave., Fresno St., and H St. The proposed Project would include trenchless construction under these waterways. In addition, the portion of the alignment along Chestnut Ave. that passes through the Leaky Acres site is also within a 100-year floodplain. Underground pipelines would not impede or redirect flood flows or otherwise increase the potential for flooding. As a result, no impact would occur.

2.10 Land Use and Land Use Planning

Section 4.2 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan Update, including the proposed Project, as relevant to land use and land use planning. The following discussion provides Project-specific information relevant to land use and land use planning.

Environmental Setting

The proposed Project alignment is located within the City of Fresno and Fresno County. Land uses adjacent to the alignments consist of residential and commercial areas with some open space, industrial areas, and public schools. All of the alignments would be installed largely within existing paved ROW and would not alter adjacent land uses once proposed Project construction is completed.

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to land use and land use planning to be significant if the Metro Plan Update would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the Fresno General Plan and zoning ordinance) adopted for the purpose of avoiding or mitigating a significant environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan

Metro Plan Update EIR Impacts

The Metro Plan EIR concluded that further analysis of the other significance criteria shown above was not warranted because no aspect of the Metro Plan Update EIR would result in the physical dividing of an established community, would not conflict with any applicable land use plan, policy, or regulation, and because there is no adopted habitat conservation plan or natural community conservation plan that is applicable within the City SOI there would be no impact. For additional discussion, please refer to Section 4.2 of the Metro Plan Update EIR.

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
10.	**LAND USE AND LAND USE PLANNING — Would the Project:**					
a)	Physically divide an established community?	☐	☐	☐	☒	☐
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒	☐
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒	☐

a) **No Impact.** The proposed Project would install underground pipelines. These facilities would be located underground. Therefore, the proposed Project would not result in a disruption, physical division, or isolation of existing residential or open space areas. As a result, no impact would occur.

b) **No Impact.** Construction-related activities, including proposed staging areas, would be temporary and not permanently affect existing adjacent land uses. The proposed Project alignments would not result in a change to existing or planned land uses; therefore, there would be no conflicts with land use plans. No impact would occur.

c) **No Impact.** At this time, there are no applicable habitat conservation plans or natural community conservation plans adopted within the City of Fresno or its SOI. Therefore, the proposed Project would not conflict with the provisions of any adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.

2.11 Mineral Resources

Environmental Setting

According to the Fresno General Plan, The principal area for mineral resources is located in and immediately adjacent to the General Plan planning area along the San Joaquin River Corridor. These materials are removed via surface mining operations. These areas have been and are proposed to continue to be designated as Open Space, and the activities have been and will continue to require conditional use permits. The City anticipates that these uses will continue until the resources are substantially removed, and it is no longer economically feasible to mine the areas. The proposed Project alignments would be located within the Fresno city limits and a small portion of Fresno County not located near known mineral resource areas that would be of value to the region.

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to mineral resources to be significant if the Metro Plan Update would:

- 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; or
- 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.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR concluded that further analysis of the significance criteria shown above was not warranted because no aspect of the Metro Plan Update would result in the removal of important mineral resources, nor would it construct facilities over this resource area, preventing future resource excavation. According to the Fresno General Plan (City of Fresno Development and Resource Management Department, 2014), most of eastern Fresno County is included in the Fresno Production-Consumption (P-C) Region evaluated by California Department of Conservation (DOC) Division of Mines and Geology. A portion of the San Joaquin River Resource Area is located within the City of Fresno's SOI. Although the Metro Plan Update covers water planning within the City's entire SOI, no proposed Project elements would be located within the San Joaquin River Resource Area and there would be no impact. For additional discussion, please refer to Section 4.3 of the Metro Plan Update EIR.

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
11. 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?	☐	☐	☐	☒	☐
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?	☐	☐	☐	☒	☐

Discussion

a -b) **No Impact.** The proposed Project would not affect any known sand, gravel, natural gas, gold, or silver areas or result in the loss of availability of any known resource. The proposed Project would not remove or conceal important mineral resources from that area, nor would it construct facilities over any mineral resource area, preventing future resource excavation. Therefore, there would be no impact to mineral resources.

2.12 Noise

Section 4.8 of the Metro Plan Update EIR addresses the noise related effects of implementing the Metro Plan, including the proposed Project. The following discussion provides Project-specific information relevant to noise.

Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air, while noise is defined as unwanted sound. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hertz[12] (Hz) and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).[13]

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- In carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and

[12] Hertz is a unit of frequency equivalent to one cycle per second
[13] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is non-linear, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary "point" sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 dBA to 7.5 dBA per doubling of distance from the source, depending upon environmental conditions (i.e., atmospheric conditions and noise barriers, either vegetative or manufactured, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles (a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling distance from the source (also dependent upon environmental conditions) (Caltrans, 2013). Noise from large construction sites would have characteristics of both "point" and "line" sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the affect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration (FTA, 2006). Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

Existing Ambient Noise Environment

The primary contributors to the Project area's noise environment include vehicle traffic on adjacent roadways; sounds emanating from residences, including voices, noises from household appliances, and radio and television broadcasts; and naturally occurring sounds such as wind and wind-generated rustling. Generally, intermittent short-term noises do not significantly contribute to longer-term noise averages. Existing noise levels within the Project area range from 60 to 70 dB, influenced heavily by existing traffic.

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools,

hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. Sensitive receptor land uses in the proposed Project vicinity include residences and schools located adjacent to the proposed Project alignment. The majority of the residences and schools located adjacent to the proposed Project would be located within 50 ft of the proposed Project.

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers a noise related impact to be significant if the Metro Plan Update would:

- Exposure of persons to or generation of noise levels in excess of standards in the City of Fresno Municipal Code, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels existing without the project;
- Exposure of people residing or working in the project area to excessive noise levels, 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; or
- Expose people residing or working in the project area to excessive noise levels if the project is located in the vicinity of a private airstrip.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan Update. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR are presented in **Appendix A**.

Noise		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.8-1	Project construction could temporarily increase noise levels at nearby sensitive receptor locations.	S	LS
4.8-2	Project construction could expose persons and structures to ground-borne vibration or ground-borne noise levels.	S	LS
4.8-3	Activities associated with operation of proposed project facilities including treatment facilities and pump stations could increase ambient noise levels.	LS	N/A
4.8-4	Operation of project facilities adjacent to an airport could expose employees to excessive noise levels.	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
12. NOISE — Would the Project:					
a) Result in Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☐	☒
b) Result in Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☐	☒
c) Result in A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☒	☐	☐
d) Result in A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☐	☐	☒
e) For a Project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the Project expose people residing or working in the area to excessive noise levels?	☐	☐	☒	☐	☐
f) For a Project located in the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☒	☐	☐

a, d) **Impact Addressed in Metro Plan Update EIR.** Equipment noise during construction of the proposed regional transmission mains are the primary concern in evaluating short-term noise impacts. Maintenance associated with the proposed Project would be similar to existing levels and are not considered significant.

Temporary impacts during construction would be considered significant if they would substantially interfere with affected land uses or sensitive receptors. Substantial interference could result from a combination of factors including: the generation of noise levels substantially greater than existing ambient noise levels; construction efforts lasting over long periods of time; or construction activities that would affect noise-sensitive uses during the nighttime. For assessment of temporary construction noise impacts, "substantially greater" means more than 3 dBA (hourly Leq, DNL, or CNEL[14]) resulting in noise levels above 60 dB, which are considered "normally acceptable" for unshielded residential development. Noise levels from 60 to 70 dB fall within the "conditionally unacceptable" range, and those in the 70 to 75 dB range are considered "normally unacceptable."

14 Leq is the equivalent or energy-averaged sound level. Ldn is the Day/Night Average Sound Level. It is similar to CNEL but with no evening weighting. CNEL is the Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging

The City of Fresno Municipal Code, Chapter 10, Article 1 establishes noise standards for the Project area as shown in **Table 2.12-1**. The Fresno General Plan (City of Fresno Development and Resource Management Department, 2014) is consistent with noise control practice in urban areas, employing 60 dB as being a desirable level, but accepting 65 dB as being in the "normally acceptable" range for noise due to the number of transportation sources located in proximity to urban residential areas. The Fresno General Plan notes that upon adoption of the new noise limits and policies proposed in the Fresno General Plan, the City will commence an update of its Noise Ordinance to provide regulatory consistency with adopted policies; however, the Noise Ordinance has not been updated at this time. Therefore, analysis was completed using the existing noise standards of the City of Fresno Municipal Code. A construction noise exemption is included in the Municipal Code Noise Regulations (Chapter 10, Article 1, Section 10-109(a)). The noise regulations state that construction, repair or remodeling work accomplished pursuant to a building, electrical, plumbing, mechanical, or other construction permit issued by the city or other governmental agency, or to site preparation and grading, are exempt provided such work takes place between the hours of 7:00 a.m. and 10:00 p.m. on any day except Sunday.

TABLE 2.12-1
CITY OF FRESNO NOISE STANDARDS

Noise zone	Noise Level (dBA)	Time Period
Residential	50	10 pm to 7 am
Residential	55	7 pm to 10 pm
Residential	60	7 am to 7 pm
Commercial	60	10 pm to 7 am
Commercial	65	7 am to 10 pm
Industrial	70	Any time

SOURCE: City of Fresno Municipal Code, Chapter 10, Article 1 Noise Regulations

Construction would be located within 50 ft of sensitive receptors, including single-family and multi-family residences and schools. Noise from construction activity generally attenuates (decreases) at a rate of 6 to 7.5 dBA per doubling of distance. Conservatively assuming an attenuation of 6 dBA per doubling of distance, construction noise would be 89 dBA at 50 ft, 83 dBA at 100 ft, 77 dBA at 200 ft, and so on. As shown in **Table 2.12-2** and **Table 2.12-3**, construction noise levels at these sensitive receptors would intermittently reach levels in excess of 89 dBA. These predicted noise levels would exceed the noise standards in the City of Fresno Municipal Code, resulting in a potentially significant impact during construction. Implementation of Metro Plan Update EIR **Mitigation Measure 4.8.1** would require specific noise control measures for construction within City limits or within 1,500 ft of sensitive receptors to reduce impacts to less-than-significant levels.

TABLE 2.12-2
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level (dBA, L_{eq})[a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

[a] Average noise levels correspond to a distance of 50 ft from the noisiest piece of equipment associated with a given phase of construction and 200 ft from the rest of the equipment associated with that phase.

SOURCE: Bolt, Baranek, and Newman, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971.

TABLE 2.12-3
TYPICAL NOISE LEVELS GENERATED BY CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 ft)
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	78
Front Loader	79
Scraper	88
Grader	85
Backhoe	85

SOURCE: Cunniff (1977); U.S. Environmental Protection Agency (1971)

b) **Impact Addressed in Metro Plan Update EIR.** As shown in **Table 2.12-4**, use of heavy equipment (e.g., a large bulldozer) generates vibration levels of 0.031 PPV or 81 RMS at a distance of 50 ft. Sensitive receptors would be located within 50 ft of construction of the proposed regional transmission mains. Vibration levels at these receptors would not exceed the potential building damage threshold of 0.5 PPV. However, vibration levels could exceed the annoyance threshold of 80 RMS.

TABLE 2.12-4
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 50 ft (inches/second)[a]	RMS at 50 ft (Vdb)[b]
Large bulldozer	0.031	81
Caisson drilling	0.031	81
Loaded trucks	0.027	80

[a] Fragile buildings can be exposed to ground-borne vibration levels of 0.5 PPV without experiencing structural damage.
[b] The human annoyance response level is 80 RMS.
SOURCE: Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, May 2006.

Ground-borne vibration attenuates quickly with distance and the RMS level from heavy equipment would be approximately 79 RMS at 60 ft. Therefore, implementation of Metro Plan Update EIR **Mitigation Measure 4.8.2** would be required. This measure provides for the identification of sensitive receptors in the vicinity of the Project area, and places limitations and survey requirements on construction activities in sensitive areas, thereby minimizing the potential impact to less-than-significant levels.

c) **Less-than-Significant.** As discussed in Checklist Items 12a and 12d, the noise associated with the operation of the proposed Project would not result in a substantial increase to ambient noise levels over that which currently exist, and impacts would be less than significant.

e – f) **Impact Addressed in Metro Plan Update EIR.** The proposed Project does not involve the development of noise-sensitive land uses. The City of Fresno Municipal Code does not specify a noise threshold for public facilities but 65 dBA is at or below the noise threshold for other nonresidential uses such as commercial and industrial uses. Based on the threshold for other nonresidential uses, future employees on the project site would not be subjected to excessive noise levels and exposure to airport noise would be a less-than-significant impact. Thus, implementation of the proposed Project would not expose people to excessive aircraft noise.

References

Caltrans, 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013.

Federal Transit Administration (FTA). *Transit Noise and Vibration Impact Assessment*. May 2006.

2.13 Population and Housing

Section 5.2 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan Update, including the proposed Project, on population growth. For additional information, please refer to that section.

Master Plan EIR Standards of Significance

Standard of significance for growth inducement are discussed in detail in Section 5.2 of the Metro Plan Update EIR. Briefly, the analysis considers direct growth inducement, which can be caused by projects that install housing or other facilities that, in and of themselves, cause growth; and indirect growth inducement, which can be caused by the removal of a barrier to growth, such as the removal of water supply or wastewater treatment capacity constraints.

To determine direct growth inducement potential, the Metro Plan Update was evaluated to verify whether an increase in population or employment, or the construction of new housing would occur as a direct result of the Metro Plan Update. To determine indirect growth inducement potential, the proposed project was reviewed to ascertain whether it would remove an obstacle to growth, such as removing a constraint on a required public service. In order to assess this, the Metro Plan Update was reviewed in relation to population projections developed by the City of Fresno Economic Development Division and buildout under the approved Fresno 2025 General Plan. The Metro Plan Update would not directly or indirectly induce growth or remove an obstacle to growth, since the increased population would occur based on the City's approved General Plan and development policies. In 2014, the City of Fresno adopted the Fresno General Plan which has population projections consistent with the 2025 Fresno General Plan. Additionally, the Metro Plan Update was based on projections in the 2025 Fresno General Plan. Implementation of the Metro Plan Update would result in the diversification the City's water supply portfolio, and enhancement of overall water supply reliability to meet the demands of existing and future customers through buildout of the adopted general plan and would not meet a demand greater than what has been approved as part of the Fresno General Plan.

Master Plan EIR Impacts

The Metro Plan Update EIR concluded that the Metro Plan Update would not directly or indirectly induce growth or remove an obstacle to growth, since the increased population would occur based on the City's approved General Plan and development policies. The treated surface water that would be made available as a result of the proposed Project would not meet a demand greater than what has been approved as part of the Fresno General Plan. Instead, treated surface water would be used to meet projected demand in 2025. For additional discussion, please refer to Section 5.2 of the Metro Plan Update EIR.

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
13. POPULATION AND HOUSING — Would the project:					
a) Induce substantial 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)?	☐	☐	☐	☒	☐
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐	☐

a) **Impact Addressed in Master Plan EIR.** The proposed Project, in and of itself, would not generate new population. However, providing a domestic water supply is one of the primary public services needed to support population growth and development. The proposed Project would develop the infrastructure necessary to provide treated water supply to the City of Fresno through 2025. Therefore, the proposed Project could remove an obstacle to population growth because it would provide for additional water supply and capacity. However, as discussed in detail in the review of secondary effects of growth in the Metro Plan Update EIR, the significance of potential population growth as it relates to the proposed Project is determined if the proposed Project would or would not be consistent with applicable land use plans. The proposed Project would not directly or indirectly induce growth or remove an obstacle to growth, since the increased population would occur based on the City's 2025 General Plan and development policies. The proposed Project is consistent with the Metro Plan Update EIR which was based on projections from the 2025 Fresno General Plan. These projections are within and consistent with the Fresno General Plan. Therefore, the proposed Project is consistent with the Fresno General Plan. Implementation of the proposed Project would result in the diversification the City's water supply portfolio, and enhancement of overall water supply reliability to meet the demands of existing and future customers through buildout of the adopted general plan and would not meet a demand greater than what has been approved as part of the Fresno General Plan. Therefore, the proposed Project would not result in direct or indirect growth inducement, and this impact is considered less than significant.

b,c) **No Impact.** The proposed Project would involve installation of new regional transmission mains in public rights of way. It would not displace existing housing or substantial numbers of people since construction would occur within existing public rights-of-way. No impact would occur.

2.14 Public Services

Section 4.10 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan Update, including the proposed Project, on public services. The following discussion provides Project-specific information relevant to public services.

Environmental Setting

Law Enforcement

The Fresno City Police Department is responsible for providing police protection within the Project area. Services offered to the proposed Project alignment include uniformed patrol response to calls for service, crime prevention, tactical crime enforcement, and traffic enforcement/accident prevention. The nearest police facilities are shown in **Table 2.14-1**, below. The Fresno County Sheriff's Department provides similar law enforcement services for Fresno County. The California Highway Patrol (CHP) service area is along the State and Interstate highway system that dissects the Project area. The proposed Project's alignments cross under Highway 168, Highway 41, and Highway 180. The CHP collaborates with both county and city police departments when the need arises.

TABLE 2.14-1
POLICE OFFICE LOCATIONS NEAR PROJECT ALIGNMENT

City Police Office	Location	Distance from Project Alignment
Police Headquarters	2323 Mariposa Mall, Fresno, CA 93721	Less than one mile
Southwest Police Office	1211 Fresno St., Fresno, CA 93706	Less than one mile
Fresno Sheriff's Office	1755 N. Gateway Blvd., Fresno, CA 93727	Less than one mile

Fire Protection and Emergency Medical Services

The Fresno Fire Department offers fire prevention, fire suppression, hazardous material mitigation, rescue, and emergency medical care services within city limits. There are 16 fire stations within the Fresno city limits, with three stations (City fire station numbers 1, 6 and 9) along or near the proposed Project alignment, as shown in **Table 2-14-2**.

TABLE 2.14-2
FIRE PROTECTION STATIONS AND EMS LOCATIONS NEAR PROJECT ALIGNMENT

City Police Office	Location	Distance from Project Alignment
Fire Headquarters	911 H Street, Fresno, CA 93721	Less than one mile
Station No. 1	1264 N. Jackson Ave., Fresno, CA 93703	Less than one mile
Station No. 4	3065 E Iowa Ave., Fresno, CA 93701	Less than one mile
Station No. 5	3131 N Fresno St., Fresno, CA 93726	Less than one mile
Station No. 6	4343 E Gettysburg Ave., Fresno, CA 93726	Less than one mile

Schools

The Fresno County Office of Education School District provides public school education services in the area of the proposed Project. There are 8 public schools and 1 private schools located adjacent to the proposed Project, as indicated in **Table 2.14-3** below.

TABLE 2.14-3
SCHOOLS NEAR PROJECT ALIGNMENT

City Police Office	Location	Distance from Project Alignment
Irwin O. Addicott Elementary	4784 East Dayton Ave., Fresno, CA 93726	Adjacent
Scandinavian Middle School	3216 N Sierra Vista Ave., Fresno, CA 93726	Less than one mile
Ericson Elementary School	4777 E Yale Ave., Fresno, CA 93703	Adjacent
Norseman Elementary School	4636 E Weldon Ave., Fresno, CA 93703	Less than one mile
Ewing Elementary School	4873 E Olive Ave., Fresno, CA 93727	Adjacent
Turner Elementary School	5218 E Clay Ave., Fresno, CA 93727	Less than one mile
Fresno Adventist Academy	5397 E Olive Ave., Fresno, CA 93727	Adjacent
Temperance-Kutner Elementary	1448 N Armstrong Ave., Fresno, CA 93727	Less than one mile
Bakman Elementary School	588 N Helm Ave., Fresno, CA 93727	Less than one mile
Ewing Elementary School	4873 E Olive Ave., Fresno, CA 93727	Adjacent
St Helen's School	4888 E Belmont Ave., Fresno, CA 93727	Less than one mile
Ann M. Leavenworth Elementary School	4420 E Thomas Ave., Fresno, CA 93702	Less than one mile
Yosemite Middle School	1292 N 9th St., Fresno, CA 93703	Less than one mile
Hidalgo Elementary School	3550 E Thomas Ave., Fresno, CA 93702	Less than one mile
Webster Elementary School	2600 E Tyler Ave., Fresno, CA 93701	Less than one mile
Susan B. Anthony Elementary School	1542 E Webster Ave., Fresno, CA 93728	Less than one mile
Heaton Elementary School	1533 North San Pablo, Fresno, CA 93728	Less than one mile
San Joaquin Memorial High School	1406 N Fresno St., Fresno, CA 93703	Adjacent
Patino High School	2004 E Cambridge Ave., Fresno, CA 93703	Less than one mile
Fresno City College	1101 E University Ave., Fresno, CA 93741	Adjacent
Fresno High School	1839 N Echo Ave., Fresno, CA 93704	Adjacent
Hamilton Elementary School	102 E Clinton Ave., Fresno, CA 93704	Less than one mile
Fremont Elementary School	1005 W Weldon Ave. Fresno CA 93705	Less than one mile
Muir Elementary School	410 E Dennett Ave., Fresno, CA 93728	Adjacent
Belmont Middle School	8 E Belmont Ave., Fresno, CA 93728	Less than one mile
Columbia Elementary School	1025 S Trinity St., Fresno, CA 93706	Less than one mile
Lowell Elementary School	171 N Poplar Ave., Fresno, CA 93701	Less than one mile

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to public services to be significant if the Metro Plan Update would:

- Generate need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for any public services (i.e., fire protection, police protection, schools, parks, other public facilities, the construction of which could cause significant environmental impacts).

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan Update. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR are presented in **Appendix A**.

Public Services		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.10-1	Implementation of the proposed project could increase demands for public services.	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*Impact Addressed in Metro Plan Update EIR*
14. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the 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 following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

a) **Impact Addressed in Metro Plan Update EIR.** As described above and in the Metro Plan Update EIR, the proposed Project would not generate new population growth above existing assumed levels. In addition, the operation and maintenance of the proposed Project will not be labor intensive, therefore, it will not substantially increase the need for the City to hire additional staff to operate and maintain facilities associated with the

proposed Project. Thus, the proposed Project would not increase the demand for the kinds of public services that would be needed to support a substantial increase in new residents, such as schools, parks, fire, police, or other public facilities.

2.15 Recreation

Section 4.10 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan Update, including the proposed Project, on recreation (as well as public services generally). The following discussion provides proposed Project-specific information relevant to recreation.

Environmental Setting

The City of Fresno Parks and Recreation Department has one park along the proposed Project alignment. Carozza Park is located at 4921 E. Olive Avenue, Fresno. The park is 6 acres within a ponding basin and includes baseball/softball fields, a children's play area, and restrooms. The park offers programmed recreational services during the summer months. The playfields are used by youth baseball and softball leagues. In addition, Hank's Swank Golf Course, a privately owned par-3 golf course, is located at 6101 E. Olive Avenue, Fresno.

Master Plan EIR Standards of Significance and Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan Update. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR and incorporated into this SMND are presented in **Appendix A**.

Public Services and Utilities/ Service Systems		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.10-1	Implementation of the proposed project could increase demands for public services	LS	N/A

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
15. RECREATION — Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☒	☐	☐	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐	☐

a) **Less-than-Significant.** Implementation of the proposed Project would involve installation of new regional transmission mains. This activity would not cause or result in changes in population within the affected communities, nor would they cause or result in increased demand for recreation, or increased use of existing recreational facilities. Therefore no deterioration of such facilities would occur as a result of proposed Project implementation.

Construction could interfere with access to portions of Carozza Park. However, interference with access would be temporary and limited to the construction period. Access would be restored following completion of construction activities, and therefore impacts would be less-than-significant.

b) **No Impact.** The proposed Project does not include construction of any new recreational facility, and would not otherwise result in the construction of any such facility. Furthermore, the proposed Project would not cause a change local or regional populations or recreation usage patterns. Therefore no expansion of existing facilities, or demand for expanded or new facilities, would occur. No impact would occur.

2.16 Transportation and Traffic

Section 4.6 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan, including the proposed Project, on transportation and traffic. The following discussion provides Project-specific information relevant to transportation and traffic.

Environmental Setting

Roadway Network

Regional access to the Project area is provided primarily SR 41, SR 99, SR 168, and SR 180. SR 41 is a north-south freeway that connects the City of Fresno northward to Rolling Hills and beyond (to Yosemite National Park), and southward to Easton and beyond (to Morro Bay). In the City of Fresno, SR 41 has six to eight lanes, and access is limited to on- and off-ramps (at SR 99, SR 180, and local roads). SR-99 is a freeway aligned northwest-southeast that connects the City of Fresno northward to Madera and beyond (to Red Bluff) and southward to Kingsburg and beyond (to Bakersfield). In the City of Fresno, SR 99 has six lanes, and access is limited to on- and off-ramps (at SR 41, SR 180, and local roads). SR-168 is a freeway generally aligned northeast-southwest that connects the City of Fresno to Clovis to the northeast. In the City of Fresno, SR 168 has four to six lanes, and access is limited to on- and off-ramps (at SR 180, and local roads). is an east-west roadway of varying character (freeway and non-freeway sections) that connects the City of Fresno eastward to Squaw Valley and beyond (to Kings Canyon National Park) and westward to Kerman and beyond (to Mendota). In the City of Fresno, SR 180 has six to eight lanes, and access is limited to on- and off-ramps (at SR 41, SR 99, SR 168, and local roads). Local access within the Project area is maintained by the City of Fresno and Fresno County. **Table 2-16-1** lists the roadways that would be affected by the proposed Project:

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to transportation and traffic to be significant if the Metro Plan Update would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit
- Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

TABLE 2-16-1
AFFECTED ROADWAY SEGMENTS

Segment	Anticipated Level of Disruption
Olive Ave: Fowler Ave to Fresno St	Partially blocked, temporary lane closure requiring alternate one-way traffic flow with flaggers. Travel through the construction zone by emergency vehicles would be maintained at all time
Fresno St: Olive Ave to McKinley Ave	Partially blocked, temporary lane closure requiring alternate one-way traffic flow with flaggers. Travel through the construction zone by emergency vehicles would be maintained at all time
McKinley Ave: Fresno St to Palm Ave	Partially blocked, temporary lane closure requiring alternate one-way traffic flow with flaggers. Travel through the construction zone by emergency vehicles would be maintained at all time
Palm Ave: McKinley Ave to H St	Partially blocked, temporary lane closure requiring alternate one-way traffic flow with flaggers. Travel through the construction zone by emergency vehicles would be maintained at all time
H St: Palm Ave to Southern side of Highway 180	Partially blocked, temporary lane closure requiring alternate one-way traffic flow with flaggers. Travel through the construction zone by emergency vehicles would be maintained at all time
Chestnut Ave: Olive Ave to Ashlan Ave	Partially blocked, temporary lane closure requiring alternate one-way traffic flow with flaggers. Travel through the construction zone by emergency vehicles would be maintained at all time
Temperance Ave: Belmont Ave to E Kings Canyon Rd	Partially blocked, temporary lane closure requiring alternate one-way traffic flow with flaggers. Travel through the construction zone by emergency vehicles would be maintained at all time
E Kings Canyon Rd: Temperance Ave to S Apricot Ave	Partially blocked, temporary lane closure requiring alternate one-way traffic flow with flaggers. Travel through the construction zone by emergency vehicles would be maintained at all time

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan Update. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR are presented in **Appendix A**.

Transportation and Traffic		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.6-1	Project construction activities would intermittently and temporarily increase traffic congestion due to vehicle trips generated by construction workers and construction vehicles on area roadways.	S	LS
4.6-2	Reduction in the number of, or the available width of, travel lanes on roads where pipeline construction would occur, would result in short-term traffic delays for vehicles traveling past the construction zones.	S	LS
4.6-3	Project construction would potentially cause traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways.	S	LS
4.6-4	Project construction activities would intermittently and temporarily impede access to local streets or adjacent uses (including access for emergency vehicles), as well as disruption to bicycle/pedestrian access and circulation.	S	LS

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
16. TRANSPORTATION AND TRAFFIC — Would the Project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒	☐

a - b) **Impact Addressed in Metro Plan Update EIR.** Construction activities would intermittently and temporarily generate increases in vehicle trips by construction workers and construction vehicles on area roadways. Construction activities would also result in a temporary reduction in the number of, or the available width of, travel lanes on roads or detours around roads where construction of the pipeline would occur, resulting in short-term traffic delays for vehicles traveling past the construction zones, and in some cases, temporary closure of road segment, with resulting disruption to access for adjacent land uses and streets for both general traffic and emergency vehicles.

Specifically, construction activities related to installation of the proposed pipelines would generate short-term increases in vehicle trips by construction workers and construction vehicles on area roadways. Construction-generated traffic would be temporary and therefore would not result in any long-term degradation in operating conditions or level of service (LOS) on any local roadways. The primary off-site impacts from the

movement of construction trucks would include short-term and intermittent lessening of roadway capacities due to slower movements and larger turning radii of the trucks compared to passenger vehicles.

The construction scenario characteristics described herein have been developed to allow general assessment of the nature and magnitude of potential construction impacts. The final construction scheduling of specific Project components would be determined when design plans are finalized and the contractor has been selected. The actual construction scheduling may vary from that presented here. Similarly, the exact construction characteristics, such as excavation quantities or estimated truck trips, may vary somewhat from those presented here.

Pipeline Installation - Increased Traffic

Traffic-generating construction activities would consist of the daily arrival and departure of construction workers to each day's work site, and trucks hauling equipment and materials to and from the construction corridor.

The proposed pipeline would be constructed by multiple crews of 8 to 10 people (1 Foreman, 3 Equipment Operators, 1 truck driver, 3 laborers and 2 flaggers as needed for traffic control). As a result, construction worker trips traveling to and from each work site are not anticipated to exceed about 17 round trips (34 one-way trips) per crew per day. SR 99, SR 180, Olive Ave, Chestnut Ave, and H St., would be the primary access points for work along the pipeline alignment.

The installation of the pipelines would involve a combination of open trench installation and boring techniques. The trench width for the pipelines installation is estimated to be approximately 4 ft wide, with a maximum depth of 20 ft. The pace of work is estimated to average about 50 to 100 ft per day. A combination of imported bedding and backfill and processed native backfill will be used. It is assumed for this analysis that excavated material in the amount of about 84 cubic yards (CY) per day would be hauled offsite, and that engineered fill would be imported and delivered to stockpiles near the open trench or in the contractor's staging yard to replace the material hauled offsite. A combination of processed native material (approximately 26 CY per day) and this new import material (approximately 73 CY per day) would then be used for the pipeline bedding and backfill. Use of trucks with a capacity of 9 CY equates to approximately 10 round trip trucks (20 one-way truck trips) per day over the construction period.

The primary impacts from construction truck traffic generated by the proposed Project would include a temporary and intermittent reduction of roadway capacities on the two-lane roadways serving the construction sites, due to the slower movements and larger turning radii of the trucks compared to passenger vehicles. Construction-related truck traffic occurring on weekdays during the hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. would coincide with peak-period traffic volumes on area roadways, and therefore, would have the greatest potential to impede traffic flow.

The percent increase in traffic volumes caused by Project-generated construction traffic on the roadways in the Project area would not be substantial (falling within the daily fluctuations of traffic volumes). The number of Project-generated truck trips would not be high, would take different routes depending on the location of each day's work site, would be dispersed throughout the work day lessening the effect on traffic conditions in any one hour, and would only occur during the course of proposed Project construction. Therefore, the short-term increase in vehicle trips would not significantly affect LOS and traffic flow on area roadways.

LOS standards for roadways indicated in local planning documents are intended to regulate long-term traffic increases from operation of new development, and do not apply to temporary construction Projects. As such, the proposed Project would not exceed LOS standards established by the City of Fresno for specific roadways.

Pipeline Installation - Reduced Pavement Width

As described above, installation of the proposed pipelines would use open trench techniques in paved roadways. These actions could temporarily disrupt existing transportation and circulation patterns in the vicinity, with direct disruption of traffic flows and street operations. Lane blockages or street closures during construction would result in a reduction in travel lanes. The trench width is estimated to be 3 ft, but the active work area along the open trench would be wider than the trench width to facilitate access by trucks and loaders. Removed pavement and excavated soil would be loaded directly into dump trucks and hauled offsite for disposal. Imported backfill would be delivered to stockpiles near the open trench. Once the new pipeline is in place, backfill would be placed in the trench, and the streets would be compacted and paved; aggregate base would be used to bring the trench to existing road grade until final trench paving occurs.

The pace of open-trench work for proposed pipeline improvements in paved areas is estimated to average 50 to 100 ft per day. **Table 2.16-1** above presents the roadway segments which would be affected by construction activities. Some roadway segments would have sufficient pavement width outside of the construction zone to accommodate two-way traffic flow, but other roadway segments would not have sufficient remaining pavement width to maintain two-way traffic flow. In the latter case, alternate one-way traffic flow would be maintained on pavement as narrow as 10 ft or a temporary detour would be established. Traffic would be delayed as it travels past the construction zone, but implementation of Metro Plan Update EIR **Mitigation Measures 4.6-1a** and **4.6-1b** would ensure that effects on traffic flow conditions would be mitigated to less-than-significant levels.

The impacts during peak traffic periods would be significant under alternate one-way traffic flow conditions because LOS would be reduced to an unacceptable level. The decrease in traffic volumes outside of the peak periods would typically, but not universally, be sufficient to allow the reduced number of travel lanes to accommodate the traffic flow without significant delays. Delays also would be experienced by drivers during off-peak hours, but because of the lower volume, fewer people would be affected by the delays during those periods.

To ensure that the proposed Project effects are less-than-significant, the contractor would be required to limit lane closures during peak hours to the extent possible; restore roads and streets to normal operation when work is not in progress; and, where possible, limit the construction work zone to a width that, at a minimum, maintains alternate one-way traffic flow past the construction zone, in accordance with Metro Plan Update EIR **Mitigation Measure 4.6-1b**.

c) **No Impact.** The proposed Project would not involve aircraft, nor would the proposed Project structures intrude into aircraft flight paths or air traffic spaces. The proposed Project would have no impact on air traffic patterns.

d) **Impact Addressed in Metro Plan Update EIR.** The proposed Project would not permanently change the existing or planned transportation network in the vicinity of the Project area and would not include the implementation of any new design features that could increase the potential for traffic safety hazards. Because construction trucks carrying construction equipment and materials, excavated soil and fill material would share the area roadways with other vehicles, the potential exists for an increase in traffic safety hazards during construction of the proposed Project. Implementation of Metro Plan Update EIR **Mitigation Measure 4.6-1b** would reduce traffic-related safety hazards to a less-than-significant-level.

e) **Impact Addressed in Metro Plan Update EIR.** Construction activities would affect access for emergency vehicles traveling past the construction zones. Construction within or across streets, and temporary reduction in travel lanes, could result in delays for emergency vehicle access in the vicinity of the worksites. In addition, access to driveways and to cross streets along the construction route could be temporarily blocked due to trenching and paving. This could be an inconvenience to some and a significant problem for others, particularly emergency service providers (e.g., police and fire). Travel through the construction zone by emergency vehicles would be maintained at all times. With the incorporation of Metro Plan Update EIR **Mitigation Measures 4.6-1a** and **4.6-1b**, these impacts would be reduced to less-than-significant levels.

f) **No Impact**. The proposed Project does not include the development of alternative forms of transportation, or result in an increase in population that would create conditions that conflict with adopted policies supporting alternative transportation. No impact would occur.

2.17 Utilities and Service Systems

Section 4.10 of the Metro Plan Update EIR addresses the effects of implementing the Metro Plan, including the proposed Project, on utilities. The following discussion provides Project-specific information relevant to utilities.

Environmental Setting

Groundwater and Water Facilities

The City of Fresno primarily relies on groundwater to provide most of its water. In mid-2004, the City's Northeast Surface Water Treatment Facility (NE SWTF) began operation, which now serves to support delivery of surface water for municipal and industrial uses. During periods of high summer demand, the NE SWTF provides about 15 percent of the City's total water supply, while during lower demand periods (winter), the facility provides over 30 percent of the City's total water supply. Water supplied to the NE SWTF is derived from the Kings River and San Joaquin River watersheds via a contract with the Central Valley Project. The remaining portion of the City's water supply is derived from groundwater, which is supplemented by various recharge efforts described previously. Water is supplied to the City through a network of water supply wells and distribution mains, such as the transmission mains that would be constructed under the proposed Project.

Surface Water

The City of Fresno extends northward from its historical center over ten miles to the south bank of the San Joaquin River. A network of small, channelized streams and canals extend throughout the City. These include Dry Creek, Dog Creek, Mill Creek, Herndon Canal, Gould Canal, and Fancher Creek Canal. As described below, these waterways provide drainage and water conveyance within the City and, through a network of natural and engineered drainages, eventually flow into the San Joaquin River and the Sacramento-San Joaquin Delta.

On the southern border of Fresno County, about 25 miles south of Fresno, lays the Kings River; it flows in a south-southwest direction and does not cross through Fresno or its SOI.

Wastewater Collection

Wastewater treatment, collection and disposal in the proposed Project alignment is provided by the City of Fresno. The City owns and operates the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) near Jensen and Cornelia Aves in southwestern Fresno. The City of Clovis has purchased capacity in the trunk sewers and treatment capacity at the wastewater reclamation facility through a joint powers agreement. The regional collection system primarily uses gravity, but some pumping facilities and lift stations are used in the area based on local topography. Rural residential and agricultural properties in unincorporated areas of the proposed Project alignment rely on septic tanks and leach fields. Following secondary treatment, wastewater is distributed to a series of infiltration ponds where it is allowed to percolate.

Stormwater

As described in hydrology and water quality discussion above, the FMFCD is the agency responsible for constructing and maintaining the flood and drainage control facilities within the proposed Project alignment. Please refer to that discussion for more detail.

Solid Waste Disposal

The City of Fresno provides for solid waste pickup from residences and commercial and industrial uses within City limits. The Fresno metropolitan area is served by several landfills including the American Avenue Landfill and the City of Clovis Landfill. The American Avenue Landfill is owned and operated by Fresno County. The City of Clovis Landfill owned and operated by the City of Clovis. Governmental agencies such as school districts, State and local governments, contract with private haulers for the collection of agency, residential, commercial and other solid waste. Private haulers serve the incorporated parcels within the Fresno metropolitan area, as Fresno County does not provide solid waste collection for incorporated areas. The American Avenue Disposal Site had a remaining capacity of 29,358,535 cubic yards in July 2005 and has a ceased operation date of August 2031. The City of Clovis Landfill had a remaining capacity of 7,740,000 cubic yards in August 2012 and has a ceased operations date of April 2047 (CalRecycle, 2015).

Metro Plan Update EIR Standards of Significance

The Metro Plan Update EIR considers an impact to utilities to be significant if the Metro Plan Update would:

- Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Violate federal, state, and local statutes and regulations related to solid waste; or
- Result in conflict with other existing utilities, causing interference with their operation or function.

Metro Plan Update EIR Impacts

The Metro Plan Update EIR identifies the impacts shown below, that would result from implementation of the Metro Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Metro Plan Update EIR. Mitigation measures adopted under the Metro Plan Update EIR are presented in **Appendix A**.

Transportation and Traffic		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.10-2	The proposed project could generate solid waste that would be disposed of at a landfill without sufficient permitted capacity.	LS	N/A
4.10-3	Implementation of the proposed project could increase water supply and wastewater treatment demand.	LS	N/A
4.10-4	Implementation of the proposed project could increase energy demand.	LS	N/A
4.10-5	Construction of the proposed project could result in temporary interference or disruption of utility service.	S	LS

LS = Less than Significant
S = Significant
SU = Significant Unavoidable
N/A = Not Applicable

Environmental Checklist and Discussion

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Metro Plan Update EIR*
17. UTILITIES AND SERVICE SYSTEMS — Would the Project:					
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider that would serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	☐	☐	☒	☐	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐	☐

a, e) **No Impact.** The proposed Project entails the construction of new regional transmission mains. These regional transmission mains would not conflict with wastewater treatment requirements of the applicable CVRWQCB, and the proposed Project would not require any connection to the local sewer system. Therefore, no impacts related to wastewater would occur.

b) **No Impact.** The proposed Project entails the construction of new potable regional transmission mains which would expand the existing water transmission system. This Initial Study evaluates and addresses potential impacts associated with the proposed Project. The proposed Project alignment would maximize the use of available groundwater and surface water supplies by extending the City's water transmission capability to meet demand in the City's southeastern and central service areas. The proposed Project alignment would not require new or expanded water supply resources or entitlements. As a result, no impacts are anticipated and no mitigation is required.

c) **No Impact.** The proposed Project would not require construction of a new storm drainage system or expansion of an existing stormwater drainage facility. However, implementation of the proposed Project could temporarily affect existing stormwater facilities during construction, requiring drainage facilities in the ROW to temporarily be relocated, and then returned to use. Therefore, impacts would be less than significant and no mitigation is required. As a result, no impacts to stormwater drainage facilities would occur.

d) **No Impact.** The proposed Project would not involve development of new residential, commercial or industrial land uses; therefore, the proposed Project would not directly or indirectly result in population growth or development that would require additional water supply or wastewater treatment demand. The location and sizing of the pipelines to existing water pipelines was modeled to maximize treated surface water extension into the existing system and minimize use of the City's existing surface and groundwater supplies. The proposed Project would not require new or expanded water supply resources or entitlements.

f - g) **Less-than-Significant.** Proposed Project construction activities would generate solid waste related to excess construction materials and material removed during site clearing. Excess dirt not used to backfill pipeline trenches would be hauled to City properties, and not diverted to landfills. The quantity of solid waste is expected to be minimal and is not anticipated to affect the capacity of the local landfills. The Fresno metropolitan area is served by several landfills including the American Avenue Disposal Site and the City of Clovis Landfill. Both of these facilities have permitted capacity. Solid waste generated by the construction of the proposed Project would be disposed of at one of the regional facilities with permitted capacity located in or around Fresno County. In addition, solid waste would be managed consistent with the requirements of AB 939 and the City's recycling ordinance; therefore, the proposed Project would not exceed landfill capacity or

violate any applicable solid waste statutes or regulations and this is considered a less-than- significant impact.

References

CalRecycle, 2015. Facility/Site Summary Details. http://www.calrecycle.ca.gov/SWFacilities/Directory/10-AA-0004/Detail/. Accessed on August 18, 2015.

2.18 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. MANDATORY FINDINGS OF SIGNIFICANCE — Would the project:				
a) Have the potential to 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, 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?	☐	☒	☐	☐
b) 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)?	☐	☒	☐	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a) **Less-than-Significant with Mitigation.** As discussed the Air Quality; Biological Resources; Cultural Resources; Geology, Soils, and Seismicity; Hazards and Hazardous Materials; and the Transportation and Traffic sections of this SMND, the proposed Project would result in potentially significant temporary impacts. However, adoption and implementation of mitigation measures described in this SMND would reduce these individual impacts to less-than-significant levels.

b) **Less-than-Significant with Mitigation.** Potential cumulative scenario impacts of the proposed Project are evaluated in Chapter 5 of the Metro Plan Update EIR, and throughout the impact analysis presented in Chapter 4 of the Metro Plan Update EIR. Briefly, and as relevant to this specific proposed Project, the geographic scope of the area potentially affected by cumulative biological resources impacts includes the City of Fresno and the southern Central Valley. Construction of current and future projects in the City of Fresno and southern Central Valley would include earth disturbing activities that could contribute to the progressive loss or degradation of habitat or species protected under federal, state and local regulations. This could result in significant cumulative impacts to protected wildlife and plant species. The proposed Project would involve earth-disturbing activities during construction of facilities which would cumulatively contribute to this significant cumulative impact. Implementation of mitigation measures identified in the environmental assessment sections above would reduce potential cumulative effects to less than significant. No mitigation beyond the measures provided

in the discussion of each environmental topic are needed to reduce proposed Project impacts to less-than-significant.

c) **Less-than-Significant with Mitigation.** The proposed construction and operation of the regional transmission mains have the potential to result in adverse effects to human beings, including impacts related to air emissions, noise, and exposure to hazardous materials. Potential direct and indirect Project impacts were examined in the analysis provided above, and mitigation provided to reduce impacts to less than significant levels. No mitigation beyond the measures provided in the discussion of each environmental topic are needed to reduce proposed Project impacts to less than significant.

This page intentionally left blank

CHAPTER 3.0
Responses to Comments

3.1 Introduction

This chapter includes copies of the comment letters received during the public review period of the Fresno Priority 2 Regional Transmission Mains Supplemental MND and responses to all of the substantive comments during the public review period from October 30, 2015 through November 30, 2015.

3.2 List of Comment Letters Received

The comment letters received on the Draft IS/MND are listed below in Table 3-1. Each comment letter has been assigned a corresponding alphabet letter designation.

TABLE 3-1
LIST of COMMENTERS

Letter	Commenter	Received Date
A	Governor's Office of Planning and Research, State Clearing House and Planning Unit	December 7, 2015

The Governor's Office of Planning and Research sent a letter stating that the comment period closed with no state agencies submitting comments and acknowledging compliance with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

RECEIVED
DEC 07 2015

December 1, 2015

Doulgas Hahn
City of Fresno
2101 G Street
Fresno, CA 93706

Subject: Fresno Priority 2 Regional Transmission Mains
SCH#: 2015101105

Dear Doulgas Hahn:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on November 30, 2015, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Document Details Report
State Clearinghouse Data Base

SCH# 2015101105
Project Title Fresno Priority 2 Regional Transmission Mains
Lead Agency Fresno, City of

Type MND Mitigated Negative Declaration

Description The Project would include installation of approximately 13.1 miles of 20 to 66 inch diameter regional transmission mains to convey treated surface water for urban use within the southeastern and central service areas of the City. All pipelines would be constructed within existing right-of-way or within a 40-foot easement. The Project has been refined, and differs from the Metro Plan Update EIR in that the alignment would connect the Olive Ave. and McKinley Ave. segments via Fresno St. instead of First St. This change would extend the alignment west of Olive Ave. approximately 2,000 ft. in addition, the diameter size of the regional transmission mains would all increase, except for the Temperance Ave segment which would decrease in diameter size. This environmental documentation is tiered from the City of Fresno Metro Plan Update EIR.

Lead Agency Contact

Name Doulgas Hahn
Agency City of Fresno
Phone 559 621 1607 **Fax**
email
Address 2101 G Street
City Fresno **State** CA **Zip** 93706

Project Location

County Fresno
City Fresno
Region
Cross Streets Southeast to Southwest Fresno
Lat / Long
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways Hwy 180, 168, 99, 41
Airports Fresno Yosemite Int'l
Railways Various
Waterways Dry Creek, Fancher Creek
Schools Various
Land Use Varies

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects; Other Issues

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 6; Air Resources Board; State Water Resources Control Board, Division of Drinking Water; State Water Resources Control Board, Divison of Financial Assistance; Native American Heritage Commission

Date Received 10/30/2015 **Start of Review** 10/30/2015 **End of Review** 11/30/2015

Note: Blanks in data fields result from insufficient information provided by lead agency.

This page intentionally left blank

APPENDIX A

Mitigation Monitoring and Reporting Program For the Fresno Priority 2 Regional Transmission Mains

The Metro Plan Update EIR identified impacts, that would result from implementation of the Metro Plan Update. Mitigation measures adopted under the Metro Plan Update EIR and incorporated into this SMND are presented in **Appendix A**.

Public Resources Code Section 21081.6, subdivision (a)(1) requires lead agencies to, "adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation". This Mitigation Monitoring and Reporting Program (MMRP) identifies mitigation measures adopted by the City of Fresno (City) from the Fresno Metropolitan Water Resources Management Plan Update (Metro Plan) Environmental Impact Report (EIR); responsibility for implementation of the mitigation measures; actions taken to monitor and report on implementation; and timing of action. Mitigation measures are numbered consistent with the numbering included in the Metro Plan EIR (State Clearinghouse No. 2013091021), as updated by responses to comments included in the Metro Plan Final EIR. Additionally, project-specific mitigation measures were also found to be necessary to reduce the project's environmental impacts to less than significant levels. Both EIR and project specific mitigation measures are discussed and listed in the Supplemental MND; they are duplicated in this Mitigation Monitoring and Reporting Program (MMRP) for compliance and monitoring purposes.

The MMRP table includes the following:

Mitigation Measures – adopted mitigation measures from the Draft EIR.

Implementation and Reporting Responsibility – this column identifies who is responsible for implementing, enforcing and monitoring the actions described in the mitigation measures.

Monitoring and Reporting Actions – describes the actions taken to monitor and report implementation of the mitigation requirements.

Implementation Schedule – identifies the timing of implementation of the mitigation requirements.

Verification of Compliance – a column for the identification of the party responsible for monitoring implementation of the mitigation measures to note completion.

Abbreviations used in the MMRP include:

- Building and Safety Services – City of Fresno Development and Resources Management Building and Safety Services Division
- CDFW – California Department of Fish and Wildlife
- DARM – City of Fresno Development and Resources Management
- DPU – City of Fresno Department of Public Utilities
- Historic Preservation – DARM Historic Preservation Division
- DPW – City of Fresno Department of Public Works
- SJVAPCD – San Joaquin Valley Air Pollution Control District
- Traffic Engineering – DPW Traffic Engineering Division
- USACE – US Army Corps of Engineers
- USFWS – United States Fish and Wildlife Service

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
Geology and Soils				
Measure 4.3.1a (NT/F): The City shall prepare a site-specific soil and geotechnical engineering study prior to final design of individual projects under the Metro Plan Update. Each study shall be performed by a licensed professional including, but not limited to, a geologist, engineering geologist, certified soil scientist, certified agronomist, registered agricultural engineer, registered civil or structural engineer, and/or certified professional erosion and sediment control specialist with expertise in geotechnical engineering issues who is registered and/or certified in the State of California, to determine site specific impacts and to recommend site specific mitigations. The site-specific soil and geotechnical engineering studies shall be submitted to all appropriate State and local regulatory agencies including, but not limited to, City of Fresno's Building and Safety Services Division for review and approval. All feasible recommendations addressing potential seismic hazards and soil constraints shall be implemented.	Water Division	Building and Safety Services	Confirm that a site-specific soils and geotechnical engineering study is performed for individual projects by a licensed professional prior to final design approval. Confirm that the site specific soil and geotechnical are submitted to all appropriate State and local regulatory agencies. Confirm that all feasible recommendations addressing potential seismic hazards and soil constraints are implemented.	Prior to final design approval
Measure 4.3.1b (NT/F): All buildings shall conform to CBC standards for seismicity, engineered slope stability, and erosion control, as relevant.	Water Division	Building and Safety Services	Confirm that all buildings conform to the California Building Code standards for seismicity, engineered slope stability, and erosion control as relevant.	Prior to final design approval
Measure 4.3.1c (NT/F): All pipelines shall be designed and installed consistent with the guidelines published by the American Water Works Association.	Water Division	Building and Safety Services	Confirm that all pipelines are designed and installed consistent with American Water Works Association guidelines.	Prior to final design approval On-going: construction
Biological Resources				
Measure 4.5.1a (NT/F): Pre-construction surveys for burrowing owls shall be conducted at any proposed project site containing suitable habitat by a qualified biologist [as approved by CDFW] within 30-days prior to the start of work activities where land construction is planned in known or suitable habitat for burrowing owls. If construction activities are delayed for more than 30 days after the initial preconstruction surveys, then a new preconstruction survey shall be required. All surveys shall be conducted in accordance with survey protocols from Appendix C and D of the *Staff Report on Burrowing Owl Mitigation* (CDFG, 2012).	Water Division	DARM Water Division CDFW	Confirm completion of pre-construction surveys for burrowing owls shall by a qualified biologist within 30-days prior to the start of work activities where land construction is planned in known or suitable habitat for burrowing owls. Confirm a new preconstruction survey is completed if construction activities are delayed for more than 30 days after the initial preconstruction surveys.	Prior to construction
Measure 4.5.1b (NT/F): If burrowing owls are discovered in the proposed project site vicinity during construction, the onsite biologist shall be notified immediately. Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFW verifies through	Water Division	DARM Water Division CDFW	Confirm that the onsite biologist is notified immediately if burrowing owls are discovered in the proposed project site vicinity during construction. Confirm that occupied burrows are not disturbed during the nesting season (February 1 through	On-going: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If this criteria is not met, occupied burrows during the nesting season will be avoided by establishment of a no-work buffer of 250-foot around the occupied/active burrow. Where maintenance of a 250-foot no-work buffer zone is not practical, the project applicant shall consult with the CDFW to determine appropriate avoidance measures. Burrows occupied during the breeding season (February 1 to August 31) will be closely monitored by the biologist until the young fledge/leave the nest. The onsite biologist shall have the authority to stop work if it is determined that construction related activities are disturbing the owls. If criterion 1 or 2 above are met and as approved by CDFW, the biologist shall undertake passive relocation techniques by installing one-way doors in active and suitable burrows allowing owls to escape but not re-enter. Owls should be excluded from the immediate impact zone and within a 160-foot buffer zone by having one-way doors placed over the entrance to prevent owls from inhabiting those burrows. Outside of the nesting season (August 31 through January 31st), passive relocation techniques shall take place. Construction activities may occur once a qualified biologist has deemed the burrows are unoccupied.			August 31) unless a qualified biologist approved by the CDFW verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.	
Measure 4.5.1c (NT/F): Prior to initiating construction activities at any proposed project site containing suitable habitat, a qualified biologist shall conduct a pre-construction survey for horned lark, Swainson's hawk, raptors, and other protected and migratory bird species. The survey shall be conducted to identify any active nests located within the construction area or up to 0.5 mile from the construction area. In addition, all trees slated for removal shall be surveyed by a qualified biologist no more than 48-hours before removal to ensure that no nesting birds are occupying the tree. If possible, trees slated for removal shall be removed starting September 1st through the end of February, outside of the nesting season. If active nests are found during the survey, the applicant shall implement appropriate mitigation measures to ensure that the species will not be adversely affected, which will include establishing a no-work buffer zone as, approved by California Department of Fish and Wildlife (CDFW), around the active nest. The no-work buffer may vary depending on species and site specific conditions as approved by CDFW. Appropriate mitigation measures include	Water Division	DARM Water Division CDFW	Confirm completion of pre-construction surveys by a qualified biologist. Confirm that if active nests are found during the survey that the appropriate mitigation measures are implemented, including a no-work buffer approved by CDFG. Confirm that the results of the survey are documented in a letter report that is distributed to CDFG and the City of Fresno.	Prior to construction On-going: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
delaying construction activities until a qualified biologist determines that juveniles have fledged the nest(s), or establishing a "no construction" zone buffer around the nest. The results of the survey shall be documented in a letter report that is distributed to the CDFW and the City of Fresno. These measures shall ensure compliance with the Migratory Bird Treaty Act and Fish and Game Code 3503.5.				
Measure 4.5.3 (NT/F): No more than two weeks prior to the commencement of ground-disturbing activities a qualified biologist shall perform surveys for western pond turtle within suitable aquatic and upland habitat on the project site. Surveys shall include western pond turtle nests as well as individuals. The biologist (with the appropriate agency permits or approvals) shall temporarily move any identified western pond turtles upstream of the construction site, and temporary barriers shall be placed around the construction site to prevent ingress. Construction shall not proceed until the work area is determined to be free of turtles and their nests. The biologist will be responsible for moving adult turtles that enter the construction zone after construction has begun. If a nest is located within a work area, the biologist [with the appropriate permits or approvals from the California Department of Fish and Wildlife (CDFW)] may move the eggs to a suitable facility for incubation, and release hatchlings into the original habitat in late fall. The biologist shall be present on the project site during initial ground clearing and grading and during all other construction activities adjacent to drainages with the potential to support western pond turtle. The results of these surveys shall be documented in a technical memorandum that shall be submitted to the CDFW (if turtles are documented) and/or the City.	Water Division	DARM Water Division USFWS	Confirm that a qualified biologist conducts western pond turtle surveys within creeks and in other ponded areas affected by the project. Confirm that upland areas are also examined for evidence of nests as well as individual turtles. Confirm that construction shall not proceed until a reasonable effort has been made to capture and relocate as many western pond turtles as possible to minimize take. Confirm that if a nest is observed, a biologist with the appropriate permits and prior approval from CDFG shall move eggs to a suitable location or facility for incubation, and release hatchlings into the creek system the following autumn.	Prior to construction
Measure 4.5.4a (NT/F): To ensure that impacts to the San Joaquin kit fox and its habitat are avoided or reduced, the following measures shall be implemented: Preconstruction surveys for the San Joaquin kit fox shall be conducted no less than two calendar weeks and no more than thirty calendar days prior to commencement of ground disturbance. Surveys shall be conducted by qualified biologists. When surveys identify potential dens (defined as burrows at least four inches in diameter which open up within two feet), potential den entrances shall be dusted for three calendar days to register and track activity of any San Joaquin kit fox present. If no San Joaquin kit fox activity is identified, the den may be destroyed.	Water Division	DARM Water Division USFWS	Confirm that preconstruction surveys for the San Joaquin kit fox are conducted by a qualified biologist no less than two calendar weeks and no more than thirty calendar days prior to commencement of ground disturbance. Confirm that when surveys identify potential dens, potential den entrances are dusted for three calendar days to register and track activity of any San Joaquin kit fox present. Confirm that if San Joaquin kit fox activity is identified that dens are monitored for at least five consecutive days from the time of observation to determine if occupation is by an adult fox only or is a natal den. Confirm that If the den is a natal den, a	Prior to construction On-going: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
If San Joaquin kit fox activity is identified, then dens shall be monitored for at least five consecutive days from the time of observation to determine if occupation is by an adult fox only or is a natal den (natal dens usually have multiple openings). If the den is occupied by an adult only, it may be destroyed when the adult fox has moved or is temporarily absent. If the den is a natal den, a buffer zone of 250 feet shall be maintained around the den and as approved by the USFWS. This buffer zone will be maintained until the biologist determines that the den has been vacated. Where San Joaquin kit fox are identified, the provisions of the U.S. Fish and Wildlife Service's published *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS, 199b) shall apply (except that preconstruction survey protocols shall remain as established in this paragraph). These standards include provisions for educating construction workers regarding the kit fox, keeping heavy equipment operating at safe speeds, checking construction pipes for kit fox occupation during construction and similar low or no-cost activities.			buffer zone of 250 feet is maintained around the den as approved by the USFWS. Confirm that the buffer zone is maintained until the biologist determines that the den has been vacated. Confirm that is and where San Joaquin kit fox are identified, the provisions of the USFWS's published	
Measure 4.5.4b (NT/F): All excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth-full or wooden planks.	Contractor	Building and Safety Services	Confirm that all excavated, steep-walled holes or trenches more than two feet deep are covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth-full or wooden planks.	On-going: construction
Measure 4.5.8 (NT/F): In order to protect and preserve wetland habitats within the proposed project area, the following measures shall be implemented: • Prior to construction, a jurisdictional wetland delineation shall be prepared for verification by the Corps to determine the location and extent of waters of the U.S. and wetlands on and near Project Elements. Following the verification, if jurisdictional wetlands will be impacted, a Section 404 permit application shall be prepared and submitted to the Corps. • The no net loss of wetland habitat and no significant impacts to potential jurisdictional features policy shall be complied with through compensation for the unavoidable loss of wetlands at a ratio no less than 1:1. Compensation shall take the form of wetland preservation or creation in accordance with Corps and CDFW mitigation requirements, as required under project permits. Preservation and creation may occur onsite through a conservation agreement or offsite through purchasing credits at a Corps approved mitigation bank.	Water Division	Water Division DARM USACE	Confirm that prior to construction a jurisdictional wetland delineation be prepared for verification by the Corps. Confirm that the no net loss of wetland habitat and no significant impacts to potential jurisdictional features policy is complied. Confirm that compensation shall take the form of wetland preservation or creation in accordance with Corps and CDFW mitigation requirements, as required under project permits. Confirm the application for a Section 401 Water Quality Certification from the RWQCB prior to discharging fill in these features.	Prior to construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
• In addition, the RWQCB regulates these features under Section 401 of the CWA; the City shall also apply for a Section 401 Water Quality Certification from the RWQCB prior to discharging fill in these features. Irrigation canals and potential wetlands within the proposed project area may be considered waters of the U.S. and fall under the jurisdictional purview of the Corps and/or RWQCB per Sections 401 and 404 of the CWA.				
Measure 4.5.9a (NT/F): Sensitive tree resources adjacent to construction activities may require additional protection. The following measures shall protect trees to be retained onsite during construction of the proposed project: • A Tree Protection Zone (TPZ) shall be established around any tree or group of trees to be retained. The formula typically used is defined as 1.5 times the radius of the dripline or 5 feet from the edge of any grading, whichever is greater. The TPZ may be adjusted on a case-by-case basis after consultation with a certified arborist. • The TPZ of any protected trees shall be marked with permanent fencing (e.g., post and wire or equivalent), which shall remain in place for the duration of construction activities in the area. Post "keep out" signs on all sides of fencing. • Construction-related activities, including grading, trenching, construction, demolition, or other work shall be prohibited within the TPZ. No heavy equipment or machinery shall be operated within the TPZ. No construction materials, equipment, machinery, or other supplies shall be stored within a TPZ. No wires or signs shall be attached to any tree. Any modifications must be approved and monitored by a certified arborist. • Prune selected trees to provide necessary clearance during construction and to remove any defective limbs or other parts that may pose a failure risk. All pruning shall be completed by a certified arborist or tree worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture. • The TPZs of protected trees shall be monitored on a weekly basis. • A certified arborist shall monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and appropriate actions. This shall include the monitoring of trees adjacent to project facilities in order to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future. • Provide supplemental irrigation and other care, such as mulch and	Water Division Contractor	DARM Water Division	Confirm that prior to and during construction, sensitive tree resources adjacent to construction areas are identified and appropriate mitigation measures are implemented during construction for their protection consistent with TPZ requirements.	Prior to construction On-going: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
fertilizer, as deemed necessary by a certified arborist. Any injuries shall be treated by a certified arborist.				
Measure 4.5.9b (NT/F): The City shall comply with the Fresno Municipal Code (F.M.C. 11-305) if protected street trees are proposed for removal.	Water Division	DARM Water Division	Confirm compliance with the Fresno Municipal Code11-305.	Prior to construction On-going: construction
Measure 4.5.10 (NT/F): In order to protect and preserve riparian habitats and/or lake or streambeds within the proposed project area, the following measures shall be implemented: The City of Fresno shall obtain a Section 1602 Streambed Alteration Agreement prior to implementing any action that may alter a stream or lake within the jurisdictional limits of CDFW (typically the top of bank or edge of riparian habitat, whichever is greater).	Water Division	DARM Water Division	Confirm the City obtains a Section 1602 Streambed Alteration Agreement prior to implementing any action that may alter a stream or lake within the jurisdictional limits of CDFW.	Prior to construction
Transportation and Traffic				
Measure 4.6.1a (NT/F): Prior to construction, the City of Fresno and its contractor(s) shall coordinate with the appropriate local government departments, and with utility districts and agencies regarding the timing of construction projects that would occur near project sites. Specific measures to mitigate potential significant impacts would be determined as part of the interagency coordination, and could include measures such as employing flaggers during key construction periods, designating alternate haul routes, and providing more outreach and community noticing.	Water Division Contractor	DARM Traffic Engineering	Confirm that prior to construction the City of Fresno and its contractor(s) coordinate with the appropriate local government departments, utility districts, and agencies. Confirm the determination of specific mitigation measures through interagency coordination as necessary to mitigate potential significant impacts.	Prior to construction
Measure 4.6.1b (NT/F): The following requirements shall be incorporated into contract specifications prepared by the City for the project: • The contractor(s) will obtain any necessary road encroachment permits prior to construction and will comply with conditions of approval attached to project implementation. As part of the road encroachment permit process, the contractor(s) will submit a traffic safety / traffic management plan (for work in the public right-of-way) to the agencies having jurisdiction over the affected roads. Elements of the plan will likely include, but are not necessarily limited to, the following: • Develop circulation and detour plans to minimize impacts to local street circulation. Use haul routes minimizing truck traffic on local roadways to the extent possible. Use flaggers and/or signage to guide vehicles through and/or around the construction zone. • Control and monitor construction vehicle movements through the enforcement of standard construction specifications by periodic	Water Division Contractors	DARM Traffic Engineering	Confirm the obtainment of any necessary road encroachment permits. Confirm the development and implementation of a traffic safety/traffic management plan for.	Prior to construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
onsite inspections. • To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours. • Limit lane closures during peak hours to the extent possible. Delays would also be experienced by drivers during off-peak hours, but because of the lower volume, fewer people would be affected by the delays during those periods. Restore roads and streets to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress. Limit, where possible, the pipeline construction work zone to a width that, at a minimum, maintains alternate one-way traffic flow past the construction zone. Parking may be prohibited if necessary to facilitate construction activities or traffic movement. If the work zone width will not allow a 10-foot-wide paved travel lane, then the road will be closed to through-traffic (except emergency vehicles) and detour signing on alternative access streets will be used. • Include signage to direct pedestrians and bicyclists around project construction work zones that displace sidewalks and/or bike lanes. • Store all equipment and materials in designated contractor staging areas on or adjacent to the worksite, in such a manner to minimize obstruction to traffic. • Comply with roadside safety protocols. Provide “Road Work Ahead” warning signs and speed control (including signs informing drivers of state-legislated double fines for speed infractions in a construction zone) to achieve required speed reductions for safe traffic flow through the work zone. • Coordinate with facility owners or administrators of sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Provide advance notification to the facility owner or operator of the timing, location, and duration of construction activities and the locations of detours and lane closures. • Coordinate construction activities, to extent possible, to minimize traffic disturbances adjacent to schools (e.g., do work during summer months when there is less activity at schools). For construction activities that occur during the school year, then at the start and end of the school day at schools adjacent to a pipeline project, the contractor(s) will provide flaggers in the school areas to ensure traffic and pedestrian safety.				

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
• Coordinate with the Fresno Area Express so the transit provider can temporarily relocate bus routes or bus stops in work zones as it deems necessary. • To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule construction of project elements to avoid overlapping maximum trip-generation construction phases.				
Air Quality and Climate Change				
Measure 4.7.1a (NT/F): The City of Fresno shall comply with Regulation VIII Rule 8011 and implement the following dust control measures during all future project construction: • The City of Fresno shall submit a Dust Control Plan subject to review and approval of the San Joaquin Valley Air Pollution Control District (SJVAPCD) at least 30 days prior to the start of any construction activity on a site that includes 40 acres or more of disturbed surface area. Specific control measures for construction, excavation, extraction, and other earthmoving activities required by the SJVAPCD include: All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover in order to comply with Regulation VIII's 20 percent opacity limitation. • All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water (at least two times per day) or by presoaking. • When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. However, the use of blower devices is expressly forbidden, and the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to	Water Division Contractor	Building and Safety Services Water Division SJVAPCD	Confirm compliance with Regulation VIII Rule 8011 and submit a Dust Control Plan subject to review and approval of the SJVAPCD at least 30 days prior to the start of any construction activity on a site that includes 40 acres or more of disturbed surface area. Confirm the implementation of specific control measures for construction, excavation, extraction, and other earthmoving activities as required by the SJVAPCD. Confirm the implementation of enhanced and additional control measures for construction emissions of PM_{10} where feasible.	Prior to construction Ongoing: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
limit the visible dust emissions. • Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. • Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. Enhanced and additional control measures for construction emissions of PM10 shall be implemented where feasible. These measures include: • Limit traffic speeds on unpaved roads to 15 miles per hour (mph). • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. • Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. • Install wind breaks at windward side(s) of construction areas. • Suspend excavation and grading activity when winds exceed 20 mph. • Limit area subject to excavation, grading, and other construction activity at any one time.				
Measure 4.7.1b: Implementation Plans prepared by the City of Fresno for this project shall comply with Rule 9510 Indirect Source Review. Compliance with Rule 9510 would require reductions of 20% of the nitrogen oxide (NO_x) construction emissions and 45% of the PM_{10} construction exhaust emissions. If these emission reductions are not met, then the City of Fresno shall pay the required mitigation fees by the SJVAPCD.	Water Division Contractor	Building and Safety Services Water Division	Confirm that Implementation Plans prepared by the City comply with Rule 9510 Indirect Source Review. Confirm reductions of 20% of the nitrogen oxide (NO_x) construction emissions and 45% of the PM_{10} construction exhaust emissions or payment of the required mitigation fees if the emissions reductions are not met.	Prior to construction
Measure 4.7.1c: Off-road construction equipment used on site shall achieve fleet average emissions equal to or less than the Tier II emissions standard of 4.8 NO_x grams per horsepower per hour (g/hp-hr).	Water Division Contractor	Building and Safety Services Water Division	Confirm that off-road construction equipment used on site achieves fleet average emissions equal to or less than the Tier II emissions standard.	Ongoing: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
Noise				
Measure 4.8.1 (NT/F): The City and its contractors shall implement the following mitigation measures when project-related construction in the City is planned to occur within 1,500 feet of sensitive receptors: • Sensitive receptors (residences, residential areas, schools, and hospitals) within 1,500 feet of project construction activities shall be identified and mapped, and this information shall be used to minimize noise impacts to sensitive receptors. • Construction activities shall meet municipal code requirements related to noise. Construction activities shall be limited to between 7 a.m. and 6 p.m. Monday through Saturday to avoid noise-sensitive hours of the day. Construction activities shall be prohibited on Sundays and holidays. • Construction equipment noise shall be minimized by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. • Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used where feasible. Quieter procedures, such as use of drills rather than impact tools, shall be used whenever feasible. • Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby sensitive receptors including residences, schools, and hospitals. • If construction were to occur near a school, the construction contractor shall coordinate with the most noise producing construction activities with school administration in order to limit disturbance to the campus. • Signs shall be posted at constructions sites that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number in the event of problems. • An onsite complaint and enforcement manager shall respond to and track complaints and questions related to noise.	Water Division Contractor	Building and Safety Services Water Division	Confirm that sensitive receptors within 1,500 feet of project construction activities shall be identified and mapped, and this information shall be used to minimize noise impacts to sensitive receptors. Confirm that construction activities meet municipal code requirements related to noise. Confirm construction equipment noise is minimized. Confirm that construction contractors locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby sensitive receptors. Confirm that if construction were to occur near a school, the construction contractor coordinates with the most noise producing construction activities with school administration in order to limit disturbance to the campus.	Prior to construction On-going: construction
Measure 4.8.2 (NT/F): The City and its contractors shall implement	Water Division	Building and Safety	Confirm that sensitive receptors (residences,	Prior to construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
the following measures when project-related construction is planned to occur within the City limits and/or within 1,500 feet of sensitive receptors: • Sensitive receptors (residences, residential areas, schools, and hospitals) within 1,500 feet of project construction activities shall be identified and mapped, and this information shall be used to minimize ground-borne vibration and ground-borne noise impacts to sensitive receptors. • Limit jack and bore drilling to 45 feet from sensitive receptors and 15 feet from any structures. • If jack and bore drilling must occur within 15 feet of any structure, the construction contractor shall conduct crack surveys before drilling to prevent potential architectural damage to nearby structures. The surveys shall be done by photographs, video tape, or visual inventory, and shall include inside as well as outside locations. All existing cracks in walls, floors, and driveways shall be documented with sufficient detail for comparison after construction to determine whether actual vibration damage occurred. A post-construction survey shall be conducted to document the condition of the surrounding buildings after the construction is complete.	Contractor	Services Water Division	residential areas, schools, and hospitals) within 1,500 feet of project construction activities are identified and mapped, and this information is used to minimize ground-borne vibration and ground-borne noise impacts to sensitive receptors. Confirm that jack and bore drilling is limited to 45 feet from sensitive receptors and 15 feet from any structures. Confirm that if jack and bore drilling must occur within 15 feet of any structure, the construction contractor shall conduct crack surveys before and after drilling to prevent potential architectural damage to nearby structures. Confirm that the surveys are done by photographs, video tape, or visual inventory, and shall include inside as well as outside locations.	On-going: construction
Cultural Resources				
Measure 4.12.2b (NT/F): Prior to construction a worker training program shall be implemented to inform all personnel involved with earthmoving activities the potential for prehistoric and historic-period subsurface archaeological resources to be uncovered and/or disturbed by proposed project-related earth moving; where such remains are most likely to be encountered during earth moving; and procedures to be employed if archaeological resources are discovered during excavations.	Water Division	Historic Preservation	Confirm that a worker training program is implemented prior to construction to inform all personnel involved with earthmoving activities the potential for prehistoric and historic-period subsurface archaeological resources to be uncovered.	Prior to construction On-going: construction
Measure 4.12.2c (NT/F): During construction, should prehistoric or historic-period subsurface cultural resources be discovered, all activity in the vicinity of the find shall stop and a Secretary of the Interior qualified archaeologist will be contacted to assess the significance of the find according to *CEQA Guidelines* Section 15064.5. If any find is determined to be significant, the proposed project proponent and the archaeologist will determine, in consultation with local Native American groups, appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered may be, as necessary and at the discretion of the consulting archaeologist and in consultation with	Water Division	Historic Preservation	Confirm that during construction, if prehistoric or historic-period subsurface cultural resources are discovered, that all activity in the vicinity of the find is stopped and a qualified archaeologist is contacted to assess the significance of the find according to *CEQA Guidelines* Section 15064.5. Confirm that if any find is determined to be significant, the proposed project proponent and the archaeologist determine, in consultation with local Native American groups, appropriate avoidance measures or other appropriate mitigation. Confirm	On-going: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
local Native American groups, subject to scientific analysis, professional museum duration, and documentation according to current professional standards.			that all significant cultural materials recovered are, as necessary and at the discretion of the consulting archaeologist and in consultation with local Native American groups, subject to scientific analysis, professional museum duration, and documentation according to current professional standards.	
Measure 4.12.3a: If human skeletal remains are uncovered during proposed project construction, work in the vicinity of the find shall cease and the Fresno County coroner will be contacted to evaluate the remains, following the procedures and protocols set forth in Section 15064.5 (e)(1) of the *CEQA Guidelines*. If the County coroner determines that the remains are Native American, the City of Fresno will contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641) and the Most Likely Descendant will be identified. The Most Likely Descendant will make recommendations for the treatment of any human remains.	Water Division	Historic Preservation	Confirm that if human skeletal remains are uncovered during proposed project construction, work in the vicinity of the find is stopped and the Fresno County coroner is contacted to evaluate the remains, following the procedures and protocols set forth in Section 15064.5 (e)(1) of the *CEQA Guidelines*. Confirm that if the County coroner determines that the remains are Native American, Native American Heritage Commission is contacted, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641) and the Most Likely Descendant is identified. Confirm that the Most Likely Descendant has made recommendations for the treatment of any human remains.	On-going: construction
Measure 4.12.4a (NT/F): If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, all ground disturbing activities within 50 feet of the find shall be halted until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate salvage measures in consultation with the City of Fresno and in conformance with Society of Vertebrate Paleontology Guidelines (SVP, 1995; SVP, 1996).	Water Division	Historic Preservation	Confirm that If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, all ground disturbing activities within 50 feet of the find are halted until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate salvage measures in consultation with the City of Fresno and in conformance with Society of Vertebrate Paleontology Guidelines (SVP, 1995; SVP, 1996).	On-going: construction
Measure 4.12.4b (NT/F): Prior to all Metro Plan facilities involving excavations greater than 6 feet in depth (including pipeline crossings and groundwater recharge basins), the City of Fresno shall retain a qualified paleontologist to design a monitoring and mitigation program. The paleontological resource monitoring and mitigation program should include: • A worker training program to inform all personnel involved with earthmoving activities the potential for fossil remains being uncovered and/or disturbed by proposed project-related earth	Water Division	Historic Preservation	Confirm that prior to all Metro Plan facilities involving excavations greater than 6 feet in depth (including pipeline crossings and groundwater reuse basins), that a qualified paleontologist is retained to design a monitoring and mitigation program.	Prior to construction On-going: construction

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsibility for Implementation	Responsibility for Monitoring	Action by Monitor	Timing
moving; where such remains are most likely to be encountered during earth moving; and procedures to be employed if fossil remains are discovered during excavations. • Preconstruction coordination with appropriate agencies, and identification of an institution willing and able to accept fossil specimens collected during the mitigation program. The institution shall serve as an information repository over the course of the proposed project. • A schedule and plan for monitoring earth-moving activities, and a provision that monitoring personnel have the authority to halt construction activities should a potential fossil-find be unearthed. • Emergency discovery procedures, including survey and record keeping of fossil-finds, bulk sediment sample collection and processing, specimen identification, disposition, or museum curation of any specimens and data recovered. • Monitoring and data recovery activities shall be documented in daily monitoring reports, as well as a final mitigation monitoring report at the completion of construction activities, which shall be submitted to the City of Fresno. • Implementation of the mitigation program and data recovery shall occur in accordance with SVP standards (SVP, 1995; SVP, 1996).				
Hazards and Hazardous Materials				
Mitigation Measure HM-1: During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	Confirm that during construction, staging areas, welding areas, or areas slated for development using spark-producing equipment are cleared of dried vegetation or other materials that could serve as fire fuel and that the these areas are kept clear of combustible materials in order to maintain a firebreak. Confirm that construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order.	During project construction

APPENDIX B

Results of Air Quality Modeling

Fresno Priority 2 Regional Transmission Mains

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	138.34	1000sqft	3.18	138,336.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Area = 13.1 miles of pipeline * 5,280 feet per mile * 2 feet wide = 138,336 sf

Construction Phase - Assumed construction would begin in early 2016 and last 18 months.

Grading -

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	8.00	33.00
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	PhaseEndDate	3/4/2016	3/5/2016
tblProjectCharacteristics	OperationalYear	2014	2017

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					
2016	0.4676	4.0401	2.7988	3.8700e-003	0.2391	0.2656	0.5047	0.1212	0.2485	0.3696	0.0000	348.3691	348.3691	0.0863	0.0000	350.1805
2017	0.1922	1.6034	1.1540	1.7500e-003	0.0111	0.1078	0.1190	2.9600e-003	0.1013	0.1042	0.0000	154.1573	154.1573	0.0361	0.0000	154.9160
Total	**0.6598**	**5.6435**	**3.9528**	**5.6200e-003**	**0.2502**	**0.3734**	**0.6237**	**0.1241**	**0.3497**	**0.4739**	**0.0000**	**502.5264**	**502.5264**	**0.1224**	**0.0000**	**505.0966**

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					
2016	0.4676	4.0401	2.7988	3.8700e-003	0.2391	0.2656	0.5047	0.1212	0.2485	0.3696	0.0000	348.3687	348.3687	0.0863	0.0000	350.1801
2017	0.1922	1.6034	1.1540	1.7500e-003	0.0111	0.1078	0.1190	2.9600e-003	0.1013	0.1042	0.0000	154.1572	154.1572	0.0361	0.0000	154.9159
Total	**0.6598**	**5.6435**	**3.9528**	**5.6200e-003**	**0.2502**	**0.3734**	**0.6237**	**0.1241**	**0.3497**	**0.4739**	**0.0000**	**502.5258**	**502.5258**	**0.1224**	**0.0000**	**505.0960**

	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	N20	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	tons/yr										MT/yr					
Area	0.6366	1.0000e-005	1.3000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6200e-003
Energy	0.0162	0.1476	0.1240	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	549.3878	549.3878	0.0207	6.5800e-003	551.8619
Mobile	0.6010	2.0271	6.7887	0.0133	0.8054	0.0276	0.8330	0.2161	0.0254	0.2415	0.0000	1,047.9768	1,047.9768	0.0354	0.0000	1,048.7194
Waste						0.0000	0.0000		0.0000	0.0000	34.8211	0.0000	34.8211	2.0579	0.0000	78.0363
Water						0.0000	0.0000		0.0000	0.0000	10.1493	50.3579	60.5072	1.0447	0.0251	90.2225
Total	**1.2538**	**2.1747**	**6.9139**	**0.0142**	**0.8054**	**0.0388**	**0.8442**	**0.2161**	**0.0366**	**0.2527**	**44.9704**	**1,647.7250**	**1,692.6954**	**3.1586**	**0.0317**	**1,768.8428**

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	0.6366	1.0000e-005	1.3000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6200e-003
Energy	0.0162	0.1476	0.1240	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	549.3878	549.3878	0.0207	6.5800e-003	551.8619
Mobile	0.6010	2.0271	6.7887	0.0133	0.8054	0.0276	0.8330	0.2161	0.0254	0.2415	0.0000	1,047.9768	1,047.9768	0.0354	0.0000	1,048.7194
Waste						0.0000	0.0000		0.0000	0.0000	34.8211	0.0000	34.8211	2.0579	0.0000	78.0363
Water						0.0000	0.0000		0.0000	0.0000	10.1493	50.3579	60.5072	1.0445	0.0251	90.2063
Total	**1.2538**	**2.1747**	**6.9139**	**0.0142**	**0.8054**	**0.0388**	**0.8442**	**0.2161**	**0.0366**	**0.2527**	**44.9704**	**1,647.7250**	**1,692.6954**	**3.1584**	**0.0316**	**1,768.8266**

	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	N20	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**	**0.01**	**0.13**	**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	Site Preparation	1/4/2016	1/19/2016	5	12	
2	Grading	Grading	1/20/2016	3/5/2016	5	33	
3	Trenching	Trenching	3/6/2016	6/19/2017	5	336	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 16.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Trenching	Cranes	1	7.00	226	0.29
Grading	Excavators	1	8.00	162	0.38
Trenching	Forklifts	3	8.00	89	0.20
Trenching	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Trenching	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Welders	1	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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2016

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					0.1084	0.0000	0.1084	0.0596	0.0000	0.0596	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0305	0.3278	0.2466	2.3000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	22.1263	22.1263	6.6700e-003	0.0000	22.2664
Total	**0.0305**	**0.3278**	**0.2466**	**2.3000e-004**	**0.1084**	**0.0176**	**0.1260**	**0.0596**	**0.0162**	**0.0758**	**0.0000**	**22.1263**	**22.1263**	**6.6700e-003**	**0.0000**	**22.2664**

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	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	4.0000e-004	5.1000e-004	5.0600e-003	1.0000e-005	8.6000e-004	1.0000e-005	8.7000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7492	0.7492	4.0000e-005	0.0000	0.7501
Total	**4.0000e-004**	**5.1000e-004**	**5.0600e-003**	**1.0000e-005**	**8.6000e-004**	**1.0000e-005**	**8.7000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7492**	**0.7492**	**4.0000e-005**	**0.0000**	**0.7501**

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					0.1084	0.0000	0.1084	0.0596	0.0000	0.0596	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0305	0.3278	0.2466	2.3000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	22.1262	22.1262	6.6700e-003	0.0000	22.2664
Total	**0.0305**	**0.3278**	**0.2466**	**2.3000e-004**	**0.1084**	**0.0176**	**0.1260**	**0.0596**	**0.0162**	**0.0758**	**0.0000**	**22.1262**	**22.1262**	**6.6700e-003**	**0.0000**	**22.2664**

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	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	4.0000e-004	5.1000e-004	5.0600e-003	1.0000e-005	8.6000e-004	1.0000e-005	8.7000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7492	0.7492	4.0000e-005	0.0000	0.7501
Total	**4.0000e-004**	**5.1000e-004**	**5.0600e-003**	**1.0000e-005**	**8.6000e-004**	**1.0000e-005**	**8.7000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7492**	**0.7492**	**4.0000e-005**	**0.0000**	**0.7501**

3.3 Grading - 2016

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					0.1081	0.0000	0.1081	0.0556	0.0000	0.0556	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0605	0.6344	0.4303	4.9000e-004		0.0363	0.0363		0.0334	0.0334	0.0000	46.3095	46.3095	0.0140	0.0000	46.6029
Total	**0.0605**	**0.6344**	**0.4303**	**4.9000e-004**	**0.1081**	**0.0363**	**0.1444**	**0.0556**	**0.0334**	**0.0889**	**0.0000**	**46.3095**	**46.3095**	**0.0140**	**0.0000**	**46.6029**

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	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	9.2000e-004	1.1800e-003	0.0116	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7169	1.7169	9.0000e-005	0.0000	1.7189
Total	**9.2000e-004**	**1.1800e-003**	**0.0116**	**2.0000e-005**	**1.9800e-003**	**1.0000e-005**	**1.9900e-003**	**5.3000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.7169**	**1.7169**	**9.0000e-005**	**0.0000**	**1.7189**

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					0.1081	0.0000	0.1081	0.0556	0.0000	0.0556	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0605	0.6344	0.4303	4.9000e-004		0.0363	0.0363		0.0334	0.0334	0.0000	46.3095	46.3095	0.0140	0.0000	46.6028
Total	**0.0605**	**0.6344**	**0.4303**	**4.9000e-004**	**0.1081**	**0.0363**	**0.1444**	**0.0556**	**0.0334**	**0.0889**	**0.0000**	**46.3095**	**46.3095**	**0.0140**	**0.0000**	**46.6028**

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	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	9.2000e-004	1.1800e-003	0.0116	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7169	1.7169	9.0000e-005	0.0000	1.7189
Total	**9.2000e-004**	**1.1800e-003**	**0.0116**	**2.0000e-005**	**1.9800e-003**	**1.0000e-005**	**1.9900e-003**	**5.3000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.7169**	**1.7169**	**9.0000e-005**	**0.0000**	**1.7189**

3.4 Trenching - 2016

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	0.3662	3.0644	1.9895	2.8800e-003		0.2115	0.2115		0.1987	0.1987	0.0000	260.3151	260.3151	0.0646	0.0000	261.6709
Total	**0.3662**	**3.0644**	**1.9895**	**2.8800e-003**		**0.2115**	**0.2115**		**0.1987**	**0.1987**	**0.0000**	**260.3151**	**260.3151**	**0.0646**	**0.0000**	**261.6709**

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	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	9.1500e-003	0.0118	0.1158	2.3000e-004	0.0198	1.5000e-004	0.0199	5.2500e-003	1.3000e-004	5.3900e-003	0.0000	17.1520	17.1520	9.2000e-004	0.0000	17.1714
Total	**9.1500e-003**	**0.0118**	**0.1158**	**2.3000e-004**	**0.0198**	**1.5000e-004**	**0.0199**	**5.2500e-003**	**1.3000e-004**	**5.3900e-003**	**0.0000**	**17.1520**	**17.1520**	**9.2000e-004**	**0.0000**	**17.1714**

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	0.3662	3.0644	1.9895	2.8800e-003		0.2115	0.2115		0.1987	0.1987	0.0000	260.3148	260.3148	0.0646	0.0000	261.6706
Total	**0.3662**	**3.0644**	**1.9895**	**2.8800e-003**		**0.2115**	**0.2115**		**0.1987**	**0.1987**	**0.0000**	**260.3148**	**260.3148**	**0.0646**	**0.0000**	**261.6706**

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	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	9.1500e-003	0.0118	0.1158	2.3000e-004	0.0198	1.5000e-004	0.0199	5.2500e-003	1.3000e-004	5.3900e-003	0.0000	17.1520	17.1520	9.2000e-004	0.0000	17.1714
Total	**9.1500e-003**	**0.0118**	**0.1158**	**2.3000e-004**	**0.0198**	**1.5000e-004**	**0.0199**	**5.2500e-003**	**1.3000e-004**	**5.3900e-003**	**0.0000**	**17.1520**	**17.1520**	**9.2000e-004**	**0.0000**	**17.1714**

3.4 Trenching - 2017

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	0.1877	1.5975	1.0968	1.6200e-003		0.1078	0.1078		0.1012	0.1012	0.0000	144.8849	144.8849	0.0357	0.0000	145.6337
Total	**0.1877**	**1.5975**	**1.0968**	**1.6200e-003**		**0.1078**	**0.1078**		**0.1012**	**0.1012**	**0.0000**	**144.8849**	**144.8849**	**0.0357**	**0.0000**	**145.6337**

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	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	4.5000e-003	5.8700e-003	0.0572	1.3000e-004	0.0111	8.0000e-005	0.0112	2.9600e-003	7.0000e-005	3.0300e-003	0.0000	9.2725	9.2725	4.7000e-004	0.0000	9.2823
Total	**4.5000e-003**	**5.8700e-003**	**0.0572**	**1.3000e-004**	**0.0111**	**8.0000e-005**	**0.0112**	**2.9600e-003**	**7.0000e-005**	**3.0300e-003**	**0.0000**	**9.2725**	**9.2725**	**4.7000e-004**	**0.0000**	**9.2823**

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	0.1877	1.5975	1.0968	1.6200e-003		0.1078	0.1078		0.1012	0.1012	0.0000	144.8847	144.8847	0.0357	0.0000	145.6335
Total	**0.1877**	**1.5975**	**1.0968**	**1.6200e-003**		**0.1078**	**0.1078**		**0.1012**	**0.1012**	**0.0000**	**144.8847**	**144.8847**	**0.0357**	**0.0000**	**145.6335**

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	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	4.5000e-003	5.8700e-003	0.0572	1.3000e-004	0.0111	8.0000e-005	0.0112	2.9600e-003	7.0000e-005	3.0300e-003	0.0000	9.2725	9.2725	4.7000e-004	0.0000	9.2823
Total	**4.5000e-003**	**5.8700e-003**	**0.0572**	**1.3000e-004**	**0.0111**	**8.0000e-005**	**0.0112**	**2.9600e-003**	**7.0000e-005**	**3.0300e-003**	**0.0000**	**9.2725**	**9.2725**	**4.7000e-004**	**0.0000**	**9.2823**

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	0.6010	2.0271	6.7887	0.0133	0.8054	0.0276	0.8330	0.2161	0.0254	0.2415	0.0000	1,047.9768	1,047.9768	0.0354	0.0000	1,048.7194
Unmitigated	0.6010	2.0271	6.7887	0.0133	0.8054	0.0276	0.8330	0.2161	0.0254	0.2415	0.0000	1,047.9768	1,047.9768	0.0354	0.0000	1,048.7194

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	964.20	182.60	94.07	2,126,105	2,126,105
Total	964.20	182.60	94.07	2,126,105	2,126,105

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

0.439813	0.064119	0.163228	0.170252	0.043054	0.007090	0.018961	0.080539	0.002060	0.001753	0.006493	0.000782	0.001857

5.0 Energy Detail

4.4 Fleet Mix

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	388.7525	388.7525	0.0176	3.6400e-003	390.2491
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	388.7525	388.7525	0.0176	3.6400e-003	390.2491
NaturalGas Mitigated	0.0162	0.1476	0.1240	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.6353	160.6353	3.0800e-003	2.9400e-003	161.6129
NaturalGas Unmitigated	0.0162	0.1476	0.1240	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.6353	160.6353	3.0800e-003	2.9400e-003	161.6129

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					
General Light Industry	3.01019e+006	0.0162	0.1476	0.1240	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.6353	160.6353	3.0800e-003	2.9400e-003	161.6129
Total		**0.0162**	**0.1476**	**0.1240**	**8.9000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**160.6353**	**160.6353**	**3.0800e-003**	**2.9400e-003**	**161.6129**

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					
General Light Industry	3.01019e+006	0.0162	0.1476	0.1240	8.9000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	160.6353	160.6353	3.0800e-003	2.9400e-003	161.6129
Total		**0.0162**	**0.1476**	**0.1240**	**8.9000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**160.6353**	**160.6353**	**3.0800e-003**	**2.9400e-003**	**161.6129**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
General Light Industry	1.33633e+006		388.7525	0.0176	3.6400e-003	390.2491
Total			**388.7525**	**0.0176**	**3.6400e-003**	**390.2491**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
General Light Industry	1.33633e+006		388.7525	0.0176	3.6400e-003	390.2491
Total			**388.7525**	**0.0176**	**3.6400e-003**	**390.2491**

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	0.6366	1.0000e-005	1.3000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6200e-003
Unmitigated	0.6366	1.0000e-005	1.3000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6200e-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	0.0962					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2000e-004	1.0000e-005	1.3000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6200e-003
Total	**0.6366**	**1.0000e-005**	**1.3000e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4700e-003**	**2.4700e-003**	**1.0000e-005**	**0.0000**	**2.6200e-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	0.0962					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2000e-004	1.0000e-005	1.3000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6200e-003
Total	**0.6366**	**1.0000e-005**	**1.3000e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4700e-003**	**2.4700e-003**	**1.0000e-005**	**0.0000**	**2.6200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		60.5072	1.0445	0.0251	90.2063
Unmitigated		60.5072	1.0447	0.0251	90.2225

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
General Light Industry	31.9911 / 0		60.5072	1.0447	0.0251	90.2225
Total			**60.5072**	**1.0447**	**0.0251**	**90.2225**

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
General Light Industry	31.9911 / 0		60.5072	1.0445	0.0251	90.2063
Total			**60.5072**	**1.0445**	**0.0251**	**90.2063**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		34.8211	2.0579	0.0000	78.0363
Unmitigated		34.8211	2.0579	0.0000	78.0363

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
General Light Industry	171.54		34.8211	2.0579	0.0000	78.0363
Total			**34.8211**	**2.0579**	**0.0000**	**78.0363**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
General Light Industry	171.54		34.8211	2.0579	0.0000	78.0363
Total			**34.8211**	**2.0579**	**0.0000**	**78.0363**

9.0 Operational Offroad

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

10.0 Vegetation

APPENDIX C
LIST OF POTENTIALLY AFFECTED SPECIES

A list of special-status species that have the potential to occur within the vicinity of the study area was compiled based on data in the CNDDB, the USFWS list of Federal Endangered and Threatened Species that occur in or may be affected by the Project, and the CNPS Inventory of Rare and Endangered Plants. A list of special-status species, their general habitat requirements, and an assessment of their potential to occur with the Project area is provided below.

The "Potential for Occurrence" category is defined as follows:

- **Unlikely:** The Project site and/or surrounding area do not support suitable habitat for a particular species, or the Project site is outside of the species known range.
- **Low:** The Project site and/or immediate area only provide limited amounts and low quality habitat for a particular species. In addition, the known range for a particular species may be outside of the Project site.
- **Medium:** The Project site and/or immediate area provide suitable habitat for a particular species.
- **High:** The Project site and/or immediate area provide ideal habitat conditions for a particular species and/or known populations occur in immediate area and/or within the Project site.

Conclusions regarding habitat suitability and species occurrence are based on reconnaissance surveys described previously, as well as the analysis of existing literature and databases described in Section 3.2.

APPENDIX C
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for proposed Project to Effect
Plants			
Castilleja campestris var. *succulenta* Succulent owl's-clover	FT/SE/1B.2	Vernal pools. Blooms April – May. Found at 150 to 2,500 feet.	**Unlikely**. No suitable habitat present within Project area.
Caulanthus californicus California jewelflower	FE/SE/1B.1	Scrub, pinyon and juniper woodland, and valley and foothill grassland. Blooms February – May. Found at 200 to 3,300 feet.	**Low.** Habitat is limited, and of low quality within the Project area and adjacent areas.
Delphinium hansenii spp. *ewanianum* Ewan's larkspur	--/--/4.2	Woodland, and valley and foothill grassland. Blooms March – May. Found at 100 to 2,000 feet.	**Low.** Habitat is limited, and of low quality within the Project area and adjacent areas.
Downingia pusilla Dwarf dowingia	--/--/1B.1	Vernal pools, rarely in upland grasslands. Blooms March – May. Found at 0 to 1,500 feet.	**Unlikely**. No suitable habitat present within Project area.
Eryngium spinosepalum Spiny-sepaled button-celery	--/--/1B.2	Vernal pools, rarely in upland grasslands. Blooms April – June. Found at 200 to 3,200 feet.	**Unlikely**. No suitable habitat present within Project area.
Imperata brevifolia California satintail	--/--/2B.1	Chaparral, coastal scrub, desert scrub, meadows and seeps, and riparian. Blooms September – May. Found at 0 to 4,000 feet.	**Low.** Habitat is limited, and of low quality within the Project area and adjacent areas.
Lagophylla dichotoma Forked hare-leaf	--/--/1B.1	Woodland, valley and foothill grassland. Blooms April – May. Found at 100 to 1,100 feet.	**Low.** Habitat is limited, and of low quality within the Project area and adjacent areas.
Leptosiphon serrulatus Madera leptosiphon	--/--/1B.2	Woodland, lower montane coniferous forest. Blooms April – May. Found at 900 to 4,300 feet.	**Low.** Habitat is limited, and of low quality within the Project area and adjacent areas.
Navarretia nigelliformis ssp. *nigelliformis* Adobe navarretia	--/--/4.2	Valley and foothill grassland, vernal pools. Blooms April – June. Found at 300 to 3,300 feet.	**Low.** Habitat is limited, and of low quality within the Project area and adjacent areas.
Orcuttia inaequalis San Joaquin Orcutt grass	FT/SE/1B.1	Vernal pools. Blooms April – September. Found at 0 to 2,500 feet.	**Unlikely**. No suitable habitat present within Project area.
Orcuttia pilosa Hairy Orcutt grass	FE/SE/1B.1	Vernal pools. Blooms May – September. Found at 100 to 600 feet.	**Unlikely**. No suitable habitat present within Project area.
Pseudobahia bahiifolia Hartweg's golden sunburst	FE/SE/1B.1	Woodland, valley and foothill grassland. Blooms March – April. Found at 0 to 500 feet.	**Low.** Habitat is limited, and of low quality within the Project area and adjacent areas.
Pseudobahia peirsonii San Joaquin adobe sunburst	FT/SE/1B.1	Woodland, valley and foothill grassland. Blooms March – April. Found at 200 to 2,700 feet.	**Low.** Habitat is limited, and of low quality within the Project area and adjacent areas.
Sagittaria sanfordii Sanford's arrowhead	--/--/1B.1	Freshwater marshes. Blooms May – November. Found at 0 to 2,200 feet.	**Unlikely**. No suitable habitat present within Project area.

APPENDIX C (Continued)
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for proposed Project to Effect
Plants (cont.)			
Tropidocarpum capparideum Caper-fruited tropidocarpum	--/--/1B.1	Alkaline grasslands in hilly areas. Blooms March–April. Found at 0 to 1,500 feet.	**Unlikely**. No suitable habitat present within Project area, and CNPS presumes local occurrences are extirpated, if once present.
Tuctoria greenei Greene's tuctoria	--/--/1B.1	Vernal pools. Blooms May–September. Found at 0 to 3,600 feet.	**Unlikely**. No suitable habitat present within Project area.
Invertebrates			
Branchinecta lynchi Vernal pool fairy shrimp	FT/--/--	Lifecycle restricted to vernal pools.	**Unlikely**. No suitable habitat present within Project area.
Linderiella occidentalis California linderiella occidentalis	FE/SE/--	Lifecycle restricted to vernal pools.	**Unlikely**. No suitable habitat present within Project area.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT/--/--	Only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*). Prefers to lay eggs in elderberries, 2-8 inches in diameter, some preference shown for "stressed" elderberries.	**Low**. Suitable habitat for host plant, however no elderberry shrubs were observed during reconnaissance surveys.
Amphibians			
Ambystoma californiense California tiger salamander	FT/ST/--	Vernal pools, ponds, or semi-permanent calm waters for breeding and larval maturation, upland areas containing small mammal burrows for aestivation.	**Unlikely**. No suitable habitat present within Project area or adjacent areas.
Reptiles			
Emys marmorata Western pond turtle	--/SSC/--	Permanent or nearly permanent water in a wide variety of habitat types, including permanent ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams. Species requires basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks.	**Medium**. Suitable habitat present within Project area.
Gambelia silus Blunt-nosed leopard lizard	FE/SE/--	Sparsely vegetated scrub and grassland habitats in areas of low topographic relief.	**Unlikely**. No suitable habitat present within Project area.
Spea hammondii Western spadefoot	--/SSC/--	Seasonally in grasslands, prairies, chaparral, and woodlands, in and around wet sites. Breeds in shallow, temporary pools formed by winter rains. Takes refuge in burrows.	**Unlikely**. No suitable habitat present within Project area.
Thamnophis gigas Giant garter snake	FE/SE/--	Marshes, sloughs, and irrigation canals/ditches, less with slow-moving creeks, and absent from larger rivers. Species is extremely aquatic and is rarely found away from water, and forages in water for food. Young are born in secluded sites, such as loose bark of rotting logs, dense vegetation, or crevices of rocky shorelines. Species basks on emergent vegetation such as cattails or tules. Takes refuge in mammal burrows, or piles of vegetation.	**Unlikely**. No suitable habitat present within Project area.

APPENDIX C (Continued)
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for proposed Project to Effect
Fish			
Oncorhynjchus mykiss irideus Steelhead – Central Valley DPS	FT/--/--	This ESU enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	**Unlikely**. No suitable habitat present within Project area.
Hypomesus transpacificus Delta smelt	FT/ST/--	Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators. May be affected by downstream sedimentation.	**Unlikely**. No suitable habitat present within Project area.
Mylopharodon conocephalus Hardhead	FE/SE/--	Found in small to large streams in a low to mid-elevation environments. May also inhabit lakes or reservoirs. Known to the San Joaquin River and its tributaries upstream of the Friant Dam. Clear, deep pools with sand-gravel-boulder bottoms & slow water velocity.	**Unlikely**. No suitable habitat present within Project area.
Mammals			
Antrozous pallidus Pallid bat	--/SSC--	Deserts, grasslands, shrublands, woodlands, and forests, roosts in caves, crevices, mines, and occasionally in hallow trees and buildings.	**Unlikely**. Limited and low quality habitat present within, and adjacent to, the Project area. One occurrence for this species is recorded in CNDDB within 5 miles of the Project area; however, record is from 1909.
Dipodomys nitratoides exilis Fresno kangaroo rat	FE/SE/--	Chenopod scrub, alkali sink, and valley grasslands with nearly level topography, consisting of bare alkaline clay-based soils	**Unlikely**. Limited and low quality habitat present within, and adjacent to, the Project area.
Euderma maculatum Spotted bat	--/SSC/--	Deserts, grasslands, and mixed conifer forests. Roost in rock crevices, cliffs, caves, and buildings.	**Unlikely**. Limited and low quality habitat present within, and adjacent to, the Project area.
Eumops perotis californicus Western mastiff bat	--/SSC/--	Primarily a cliff dwelling species, roosts in crevices in exfoliating rock slabs, in boulder crevices, and buildings that are high above the ground, forages within open grassland, forested, or wooded habitats, including agricultural areas.	**Unlikely**. No suitable habitat present within Project area.
Taxidea taxus American badger	--/SSC/--	Most abundant in drier open stage of most shrub, forest, and herbaceous habitats, with friable soils. Use dense vegetation and rocky areas for cover and den sites. Prefer forest interspersed with meadows or alpine fell-fields.	**Low**. Suitable habitat is present within and adjacent to the Project area.

APPENDIX C (Continued)
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for proposed Project to Effect
Mammals (cont.)			
Vulpes macrotis mutica San Joaqun kit fox	FE/ST/--	San Joaquin Valley grasslands, scrublands, and agricultural and grazing areas.	**Medium.** Limited, low quality habitat is located within the Project area. The highly disturbed nature of the Project and surrounding area likely precludes presence of SJKF, however there is potential for SJKF to disperse within the Project area and surrounding areas. Suitable foraging and denning habitat is present adjacent to the Project area in annual grassland areas, canal corridors, and agricultural habitats.
Birds			
Agelaius tricolor Tricolored blackbird	--/SSC/--	Nests near freshwater, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herb; forages in grassland and cropland habitats.	**Unlikely**. No suitable nesting habitat is present within or immediately adjacent to Project area and suitable foraging habitat is limited within Project area.
Asio flammeus Short-eared owl	--/SSC/--	Roosts, nests, and forages in open areas, grasslands, prairies, dunes, and meadows, irrigated pasture, and wetlands.	**Medium**. Suitable nesting and foraging habitat is present within and adjacent to the Project area. This species was not observed during reconnaissance surveys.
Athene cunicularia Burrowing owl	--/SSC/--	Forages in open plains, grasslands, and prairies; typically nests in abandoned small mammal burrows.	**Medium.** Suitable nesting and foraging habitat present in Project area within the annual grassland and fallow agricultural habitats onsite. This species was not observed during reconnaissance surveys.
Buteo swainsoni Swainson's hawk	--/ST/--	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**High.** Suitable nesting and foraging habitat present within, and adjacent to, the Project area. This species was not observed during reconnaissance surveys.
Cocyzus americanus occidentalis Western yellow-billed cuckoo	FT/SE/--	Densely foliaged, valley foothill, desert, deciduous riparian thickets or forest habitats with dense, low-level or understory foliage which abut on slow-moving watercourses, backwaters, or seeps.	**Unlikely**. Suitable habitat is not present within or adjacent to the Project area. This species was not observed during reconnaissance surveys.
Falco peregrinus Peregrine falcon	--/FP/--	Riparian areas and wetlands; typically nests near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, and mounds.	**Unlikely**. No suitable nesting or foraging habitat present within, or adjacent to the Project area. This species was not observed during reconnaissance surveys.
Haliaeetus leucocephalus Bald eagle	--/SE; FP/--	Large bodies of water, or free flowing rivers with abundant fish, and nests in old-growth, or dominant live tree with open branch work, snags or other perches.	**Unlikely**. No suitable nesting or foraging habitat present within, or adjacent to the Project area. This species was not observed during reconnaissance surveys.
Lanius ludovicianus Loggerhead shrike	/SSC/--	Open habitats in lowlands, and foothills with scattered shrubs, trees, or other perches; nests in densely-foliaged shrubs and trees.	**Low.** Suitable nesting and foraging habitat is limited, and of low quality within the Project area and adjacent areas. This species was not observed during reconnaissance surveys.

APPENDIX C (Continued)
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for proposed Project to Effect
Birds (cont.)			
Vireo bellii pusullus Least Bell's vireo	FE/SE/--	Summer resident of California; Riparian habitat with dense thickets of willows, misquite, and scrub oak.	**Unlikely**. The Project area is outside the current range for this species. Two occurrences for this species are recorded in CNDDB within 5 miles of the Project area, however, those records are from 1906 and 1912, and CNDDB considers this species possibly extirpated from the area. This species was not observed during reconnaissance surveys.
Natural Communities			
Great Valley Mixed Riparian Forest	Natural Community		**No effect**. This natural community is not present within Project area.
Northern Claypan Vernal Pool	Natural Community		**No effect**. This natural community is not present within Project area.
Northern Hardpan Vernal Pool	Natural Community		**No effect**. This natural community is not present within Project area.
Sycamore Alluvial Woodland	Natural Community		**No effect**. This natural community is not present within Project area.

STATUS CODES:

Federal
FE = Endangered
FT = Threatened
FC = Candidate
BEPA = Bald Eagle Protection Act

State
CE = Endangered
CT = Threatened
FP = Fully Protected
SSC = (CA) Department of Fish and Wildlife Species of Special Concern

California Native Plant Society
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = Plants about which we need more information--a review list
List 4 = Plants of limited distribution--a watch list

0.1 = Seriously endangered in California
0.2 = Fairly endangered in California
0.3 = Not very endangered in California

SOURCE: CDFW, 2015; USFWS, 2015; CNPS, 2015

CITY OF FRESNO PRIORITY 2 REGIONAL TRANSMISSIONS MAINS PROJECT

Phase II Cultural Resources Study

Prepared for
City of Fresno, Department of Public Utilities, Water Division

September 2015

Prepared by:
ESA
2600 Capitol Ave, Suite 200
Sacramento, CA 95816

Author:
Katherine Anderson, M.A.

Project Site Location:
U.S.G.S. Quadrangles: Fresno North, Clovis, Kearney Park, Fresno South, and Malaga, California
T/R: 13S/20E (Sec 4, 33, 34, 35, 36) and 13S/21E (Sec 3, 19, 30, 31, 32, 33)

CITY OF FRESNO PRIORITY 2 REGIONAL TRANSMISSIONS MAINS PROJECT

Phase II Cultural Resources Study

Prepared for
City of Fresno, Department of Public Utilities, Water Division

September 2015

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
www.esassoc.com

Los Angeles

Oakland

Orlando

Palm Springs

Petaluma

Portland

San Diego

San Francisco

Santa Cruz

Seattle

Tampa

Woodland Hills

150515

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

TABLE OF CONTENTS

City of Fresno Priority 2 Regional Transmissions Mains Project – Phase II Cultural Resources Study

Appendices

List of Figures

List of Tables

EXECUTIVE SUMMARY

City of Fresno Priority 2 Regional Transmissions Mains Project, Phase II Cultural Resources Study

The proposed City of Fresno (City) Priority 2 Regional Transmissions Mains Project (proposed project) was identified as a near-term project under the Fresno Metropolitan Water Resources Management Plan Update (Metro Plan Update). The Metro Plan Update Environmental Impact Report (EIR) (State Clearinghouse No. 2013091021) was certified and the proposed project adopted by the City in June 2014. The proposed project evaluated in this Phase II Cultural Resources Study report includes installation of potable water distribution pipelines in the City of Fresno's (City) Southwest (SW) Quadrant. The proposed Project would convey treated surface water from the Surface Water Treatment Facility (SWTF) for urban use as proposed as part of the Metro Plan Update. This report documents the existing conditions of the project, with regard to the cultural resources, for use in the Section 106 documentation required for state revolving funds through Environmental Protection Agency (EPA) who act as the lead agency under NEPA.

The proposed project consists of approximately 13.1 miles of 20 to 66 inch diameter regional transmission mains convey treated surface water for urban use within the southeastern and central service areas of the City (see **Figures 1-3**). All pipelines would be constructed within roadway rights-of-way (ROWs) or outside of roadways within a 40-foot easement. The proposed Project has been refined, and differs from the Master Plan Update EIR in that the alignment would connect the Olive Ave and McKinley Ave segments via Fresno St instead of First St. This change would extend the alignment west on Olive Ave approximately 2,000 feet. before turning north on Fresno St and then continuing on McKinley Ave. This would also reduce the length of pipeline along McKinley Ave by the same 2,000 feet In addition, the diameter size of the regional transmission mains would all increase, except for the Temperance Ave. segment which would decrease in diameter size.

The archaeological and architectural Area of Potential Effects (APE) consists of the 13.1 mile pipeline alignment within the entire width of the road right of way and proposed construction staging areas. The vertical APE extends to the maximum depth of proposed construction, which is anticipated to be 20 feet deep for pits associated with jack and bore tunneling, but the majority of pipeline trenching construction will occur at a depth of 5-9 feet. A staging area at the SE SWTF site would be required to store pipe, construction equipment, and other construction related items.

Information Center staff conducted a records search of the project APE at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System at

California State University Bakersfield on August 25, 2015 (File No. RS# 15-316). The records search was conducted to identify any previously documented cultural resource surveys or sites located within ½ mile buffer of the proposed project. Results of the records search indicate that 19 surveys are within or intersect the project alignment, and an additional 40 surveys were conducted within the ½ mile buffer of the pipeline alignment. SSJVIC staff identified one site within the APE (P-10-6099, the I.D. Schnabel Home at 610 E McKinley Avenue), but this resource is actually located outside of, but adjacent to, the APE. Finally, review of the Fresno County List of Historic Places identified the presence of the Fresno County Landmark #108, the Forthcamp Home (6158 E Floradora Avenue), to the north of the staging area at the SE SWTF.

A request for review of the current project APE under the requirements of AB52 was submitted to the NAHC on August 4, 2015. When no response was received, a follow up email was submitted on August 20, 2015. The NAHC responded stating that they were experiencing delays due to staffing shortages, and would be processing the request as soon as possible. Further follow up emails were submitted to the NAHC on September 22, 2015, October 7, 2015, and October 26, 2015. On October 26, 2015, the NAHC responded stating that they had emailed the response to ESA October 9, 2015, although no email had been received by ESA. On October 29, 2019, ESA received a response from the NAHC, providing a list of knowledgeable persons to contact, and stating that the results of the SLF search failed to indicate the presence of any known sacred Native American sites in the immediate project area. ESA contacted the individuals and organizations affiliated with the area as identified by the NAHC by letter on October 29, 2015 to solicit their comments and concerns regarding the project. No responses have been received by the writing of this report.

ESA archaeologists Joshua Garr conducted a field survey of the proposed pipeline alignment on September 15, 2015. The staging area at the SE WTF was subject to a field survey and analysis as part of the 2014 Kings River Pipeline Project, and no subsequent survey of the staging area was conducted. ESA archaeologists did not identify any prehistoric or historic period archaeological resources during the course of surveys. Field survey identified two previously recorded resources located adjacent to the project APE, along with segments of four historic period canals.

ESA architectural historian Katherine Anderson documented segments of the Mill Ditch, Fancher Creek Canal, Briggs Canal, Dry Creek Canal, and completed DPR updates for the two remaining previously identified resources adjacent to the pipeline alignment (I.D. Schnable Home, P-10-6099; and 1333-1353 Palm Bungalow Court, P-10-5452). ESA's evaluation of the canal segments recommends all of the segments ineligible for listing in the California and National Registers due to lack of integrity. Previous evaluations recommended P-10-6099 ineligible for listing in the California and National Registers, and recommended P-10-5452 eligible under Criteria A/1 and C/3 for its association with early court style housing development and architectural association with the early Fresno Tower District. ESA concurs with both these determinations. Due to the location and nature of the proposed pipeline alignment construction in the adjacent road right of way, no direct affects to the Palm Bungalow Court are anticipated, and only temporary indirect impacts resulting from changes to the setting of the property. Following the end of construction, N Palm Avenue will return to its current appearance, with no adverse effect on P-10-5452.

Finally, the Fresno County Landmark Forthcamp home is located just outside of the project APE, north of the potential proposed staging area. No direct or indirect impacts would occur to the building as a result of staging, therefore the proposed project would result in no adverse effect on historic properties.

Consistent with the mitigation measures adopted for the Metro Plan Update EIR (State Clearinghouse No. 2013091021), the following measures would be conducted in the event of accidental discovery. In the event that previously unidentified archaeological or Native American resources are uncovered during project implementation, all work should cease in the vicinity of the find until a professional archaeologist can evaluate the find, defined as one meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (U.S. Department of the Interior 2012). If the find is determined to be potentially significant, the archaeologist, in consultation with the lead agency and appropriate Native American group(s) if the find is prehistoric or Native American in nature, should develop a treatment plan.

If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then identify the person(s) thought to be the Most Likely Descendent.

This page intentionally left blank

CHAPTER 1
Introduction

The proposed City of Fresno (City) Priority 2 Regional Transmissions Mains Project (proposed project) was identified as a near-term project under the Fresno Metropolitan Water Resources Management Plan Update (Metro Plan Update). The Metro Plan Update Environmental Impact Report (EIR) (State Clearinghouse No. 2013091021) was certified and the proposed project adopted by the City in June 2014. The proposed project evaluated in this Phase II Cultural Resources Study report includes installation of potable water distribution pipelines in the City of Fresno's (City) Southwest (SW) Quadrant. The proposed project would include construction of 13.1 miles of water transmission pipelines located within existing road ROW, extending from the planned Southeast Surface Water Treatment Facility (SE SWTF), located at Olive Avenue (Ave) and Fowler Ave in southeast Fresno, to the north and west into the SW Quadrant of the City. This report documents the existing conditions of the project, with regard to the cultural resources, for use in the Section 106 documentation required for state revolving funds through Environmental Protection Agency (EPA) who act as the lead agency under NEPA.

ESA personnel involved in the preparation of this report include Katherine Anderson (M.A.) and Joshua Garr. Brad Brewster, provided quality assurance and review. **Appendix A** includes the authors' resumes.

1.1 Project Background

1.1.1 Project Location

The proposed Project would be located in the southeastern and central service areas of the City and its SOI (**Figures 1 and 2**). Proposed Project regional transmission mains would extend from the planned Southeast Surface Water Treatment Facility (SE SWTF), located at Olive Avenue (Ave) and Fowler Ave in southeast Fresno, to the north and west into the SW Quadrant of the City. The proposed project study area is within Fresno County, on the Fresno North, Clovis, Kearney Park, Fresno South, and Malaga, California USGS 7.5-minute quadrangle maps, 13S/20E (Sec 4, 33, 34, 35, 36) and 13S/21E (Sec 3, 19, 30, 31, 32, 33)

1.1.2 Project Description

The proposed Project would include installation of approximately 13.1 miles of 20 to 66 inch diameter regional transmission mains convey treated surface water for urban use within the southeastern and central service areas of the City. All pipelines would be constructed within roadway ROWs or outside of roadways within a 40-foot easement.

The proposed Project has been refined, and differs from the Master Plan Update EIR in that the alignment would connect the Olive Ave and McKinley Ave segments via Fresno St instead of First St. This change would extend the alignment west on Olive Ave approximately 2,000 feet before turning north on Fresno St and then continuing on McKinley Ave. This would also reduce the length of pipeline along McKinley Ave by the same 2,000 feet In addition, the diameter size of the regional transmission mains would all increase, except for the Temperance Ave. segment which would decrease in diameter size.

Installation of the proposed regional transmission mains would primarily involve trenching and jack-and-bore tunneling or directional drilling. The pipelines would be installed within the existing ROW, where feasible, to minimize environmental impact and easement requirements. Tunneling and directional drilling would be required in order to pass under McKinley Ave, N Blackstone Ave, E Floradora Ave, SR 41, SR 168, Clovis Ave, and SR180, SR 1, SR 180, as well as Dry Creek Canal and waterway crossings, located along Fresno St., and H St. Road closures are not anticipated, though traffic control and temporary lane closures would be necessary.

Trenching

Trenching within city streets would utilize a conventional cut and cover construction technique. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and re-surfacing to the original condition. The trench would be typically 5-ft to 9-ft deep and approximately 2-ft to 5-ft wide. The pipeline would be installed a minimum of 5-ft below ground surface (bgs). The construction corridor would be approximately 20 to 30 feet wide to allow for staging areas and vehicle access. On average, 50 to 100 feet of pipeline would be installed per day.

Jack and Bore Tunneling

Jack and bore tunneling could be employed in areas where open cut trenching is not feasible, such as under freeways, busy intersections, railroad lines, or waterways as discussed previously. Jack and bore tunneling is used for installing underground pipelines short distances without disturbing the ground surface. This method employs a horizontal boring machine or an auger that is advanced in a tunnel bore to remove material ahead of the pipe. Temporary bore pits and receiving pits are excavated on either side of the segment. Powerful hydraulic jacks are used to push a steel casing pipe from a launch (bore) pit to a receiving pit. As the tunneling machine is driven forward, a jacking pipe is added into the pipe string. After installment of the casing pipe, a smaller carrier pipe is inserted into the casing pipe. The carrier pipe will convey the treated surface water. A jacking pit typically measures as little as 10 feet by 5 feet up to approximately 30 feet by 10 feet. The temporary pits typically would be excavated to a depth of 5 feet to 20 feet, as needed. Regional transmission main installation by this method would require approximately one to two weeks per crossing; excavated soils would be retained for backfill.

Directional Drilling

Horizontal directional drilling is another trenchless construction method that could be used to install underground pipelines without disturbing the ground surface. This method could be used

for traversing underneath highways or waterways. Using a horizontal drill rig, the pipeline is installed in two stages: (1) a small diameter pilot hole is directionally drilled along a designed directional path; then (2) the pilot hole is enlarged to a diameter that would accommodate the casing pipeline, and the pipeline is pulled back into the enlarged hole. After installation of the casing pipe, a smaller carrier pipe is inserted into the casing pipe. The carrier pipe would convey the treated surface water. Slurry, typically bentonite (an inert clay), is used as a drilling lubricant. Regional transmission main installation by this method would require approximately one to two weeks per segment crossing. All excavated soils would be retained on-site.

Pipeline Staging Areas

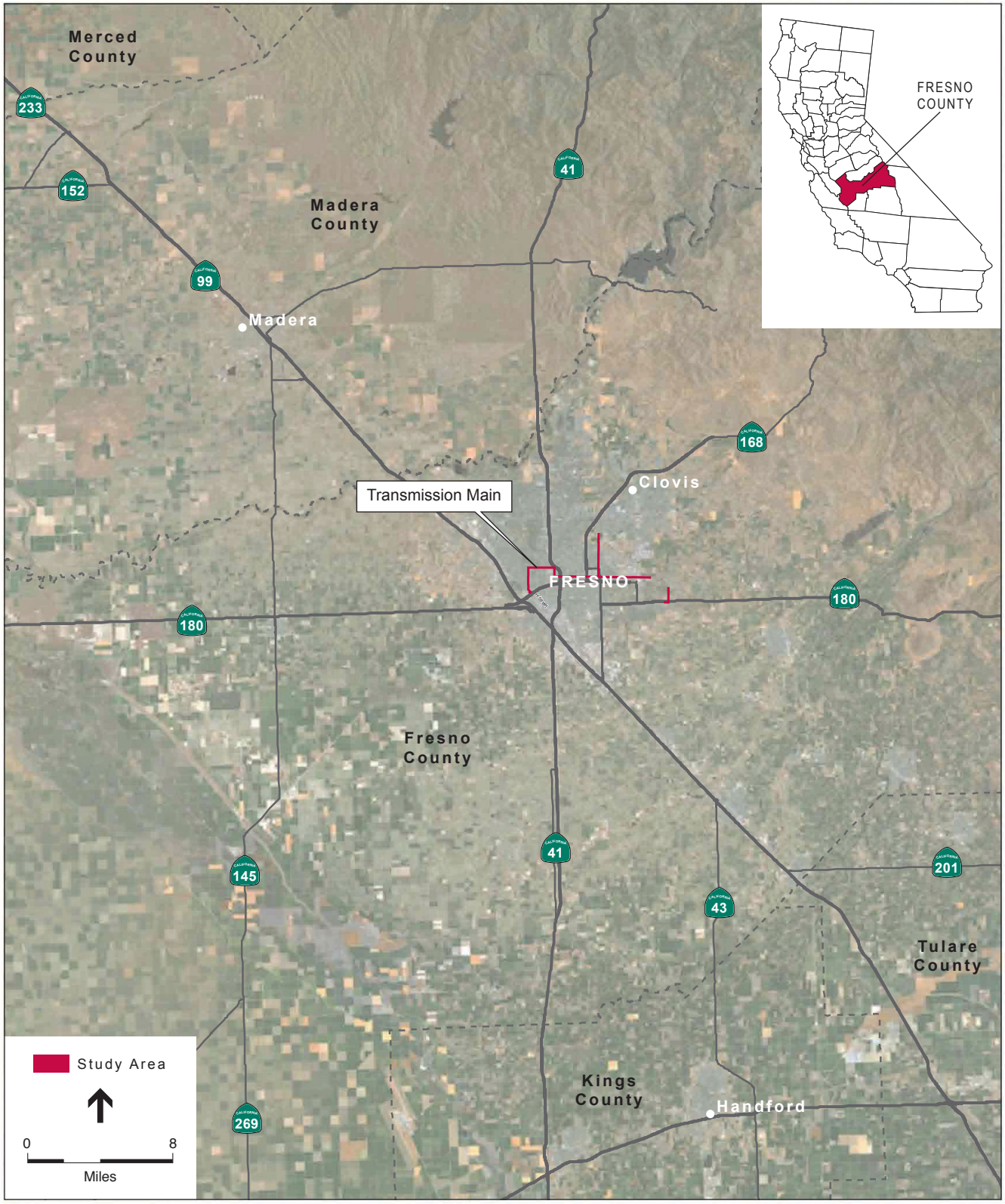
A staging area at the SE SWTF site would be required to store pipe, construction equipment, and other construction related items. The staging area would be established in an area that is open, free of natural vegetation, and easily accessed.

1.1.3 Project Area of Potential Effect

According to the implementing regulations of Section 106 of the NHPA, as amended, the APE is defined as:

> …the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16[d]).

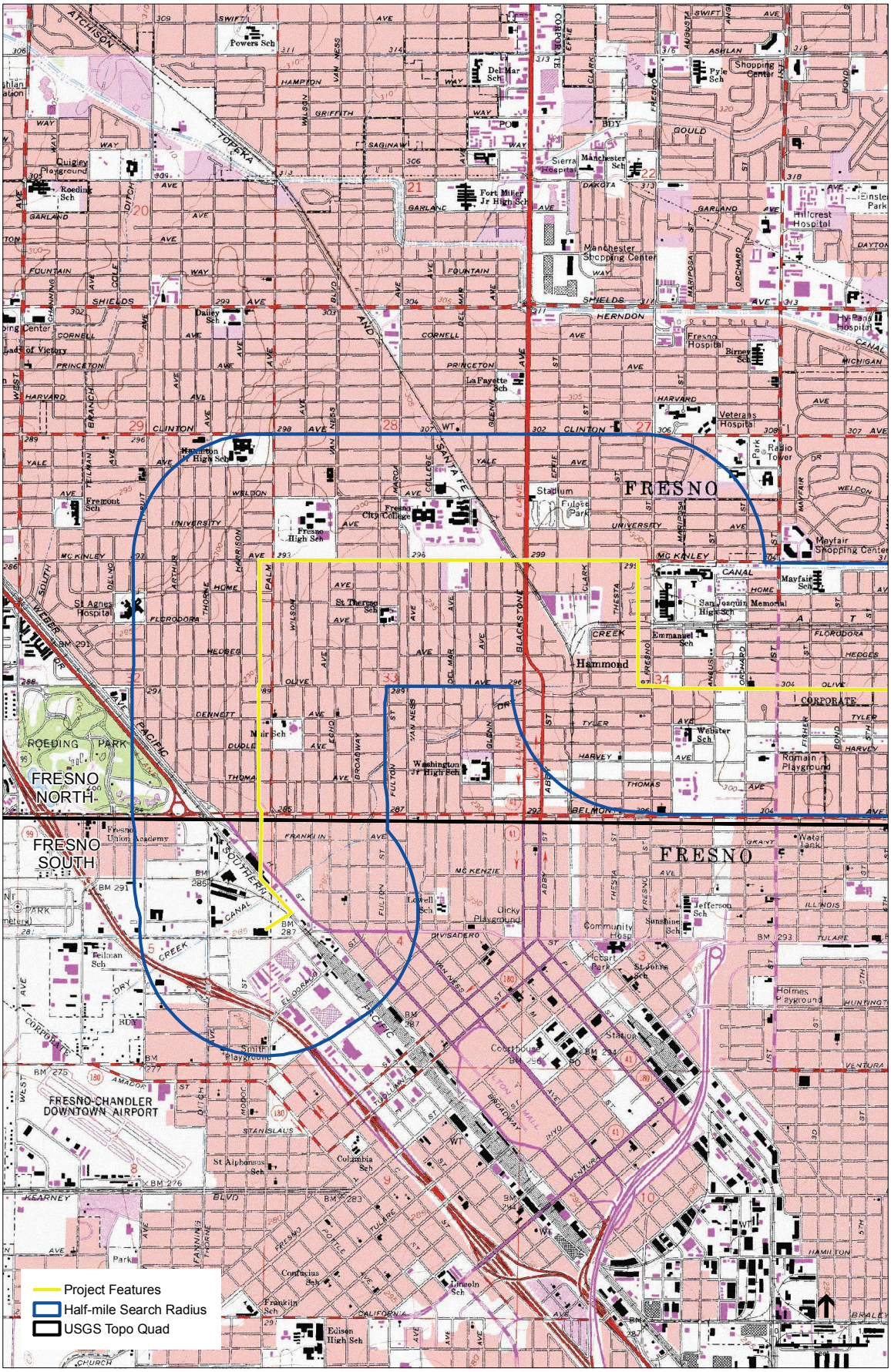
The APE described below for the proposed project includes both the archaeological and architectural APE. The proposed project horizontal APE includes the 13.1 miles of pipeline within the entire width of the road right of way and the construction staging area at the SE SWTF site. The vertical APE extends to the maximum depth of proposed construction, which is anticipated to be 20 feet deep for pits associated with jack and bore tunneling, but the majority of pipeline trenching construction will occur at a depth of 5-9 feet. **Figure 3** shows the project APE.



SOURCE: Microsoft, 2010; ESRI, 2012, Blari, Church, and Flynn, 2013; ESA, 2013

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 1
Regional Location

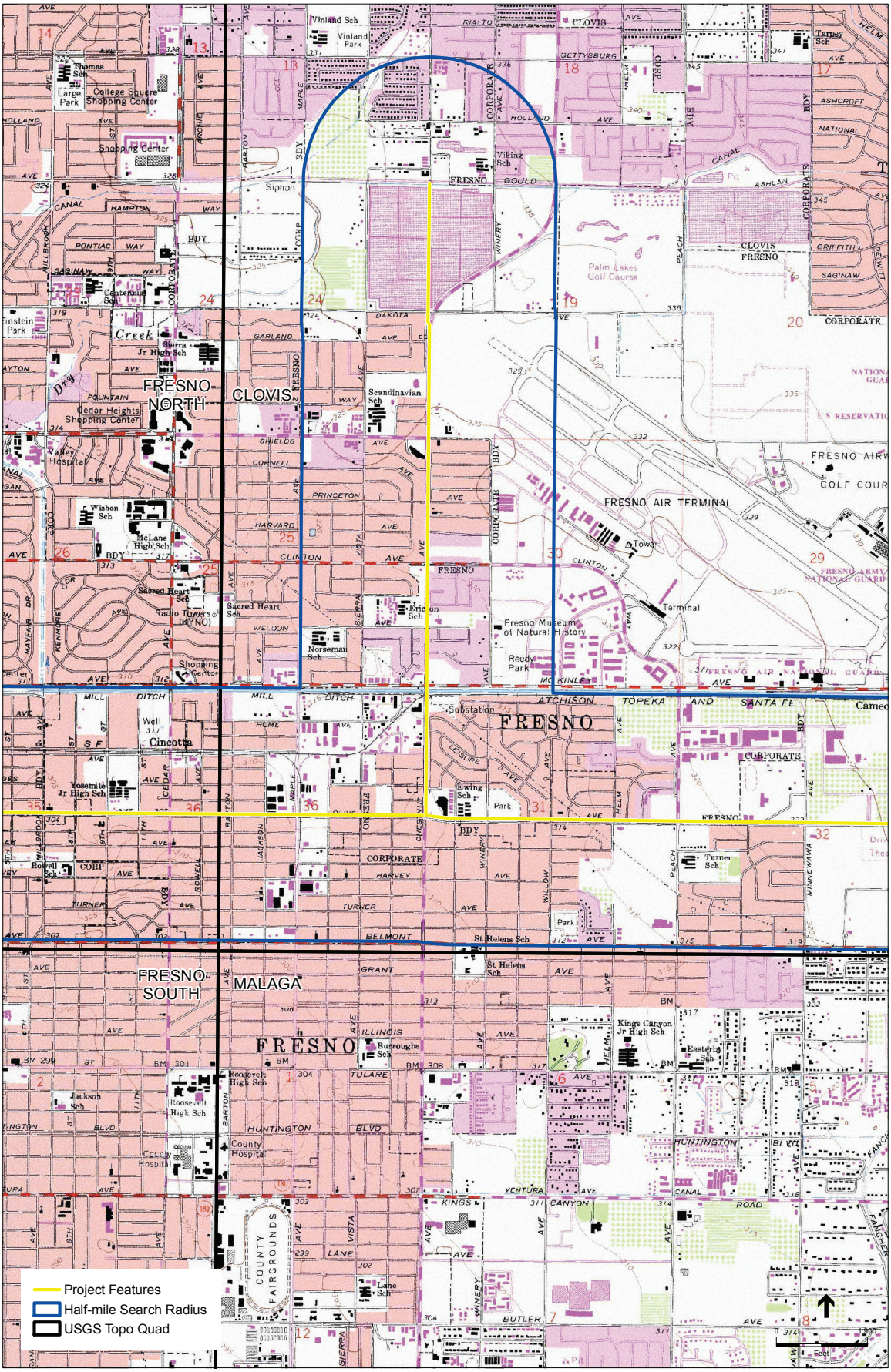


SOURCE: USGS 7.5' Topo Quads (Fresno North, 1981; Fresno South, 1982); ESA, 2015

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 2a

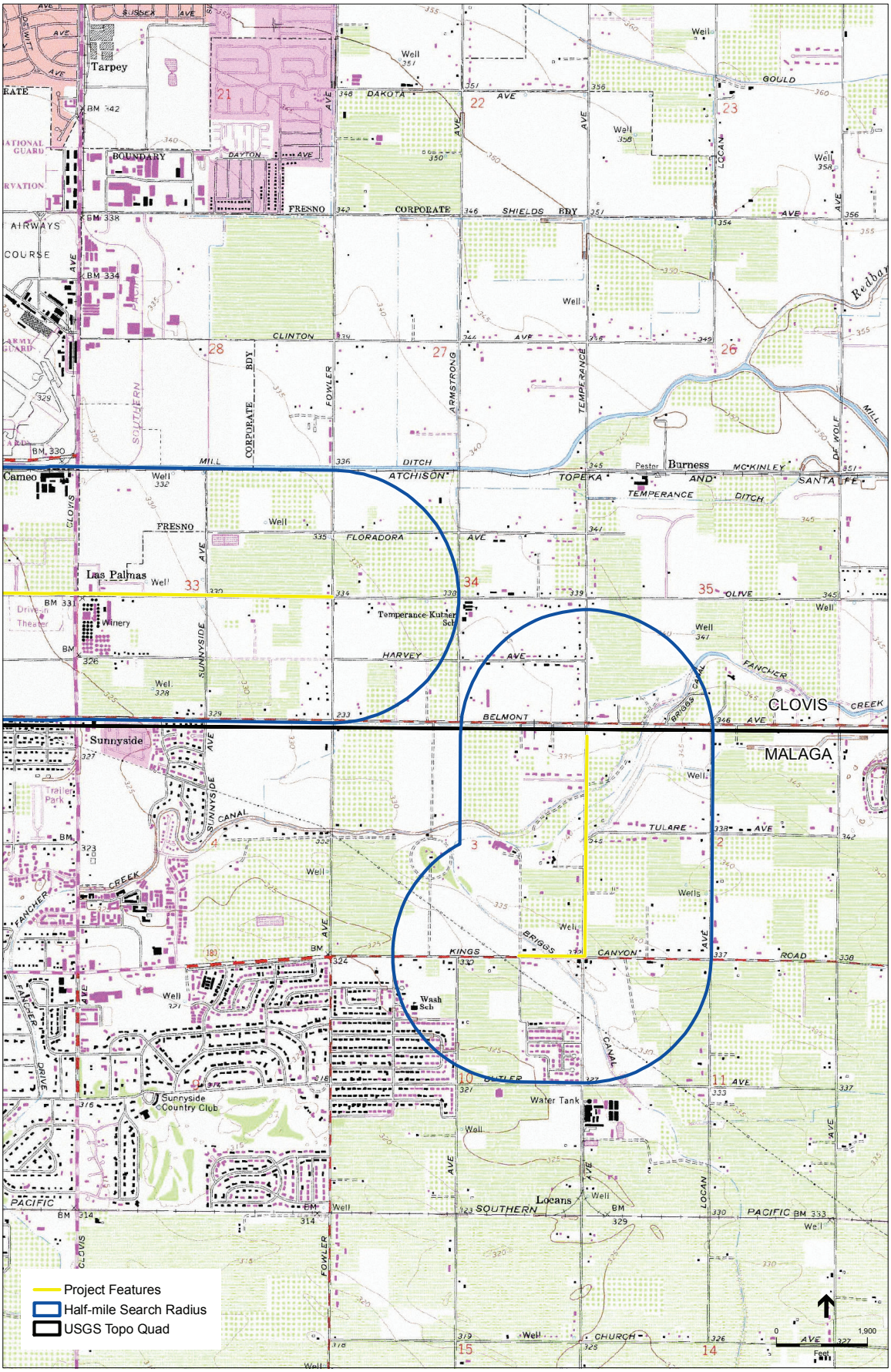
Cultural Records Search Map



SOURCE: USGS 7.5' Topo Quads (Clovis, 1982; Fresno North, 1981; Fresno South, 1982; Malaga, 1981); ESA, 2015

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 2b
Cultural Records Search Map



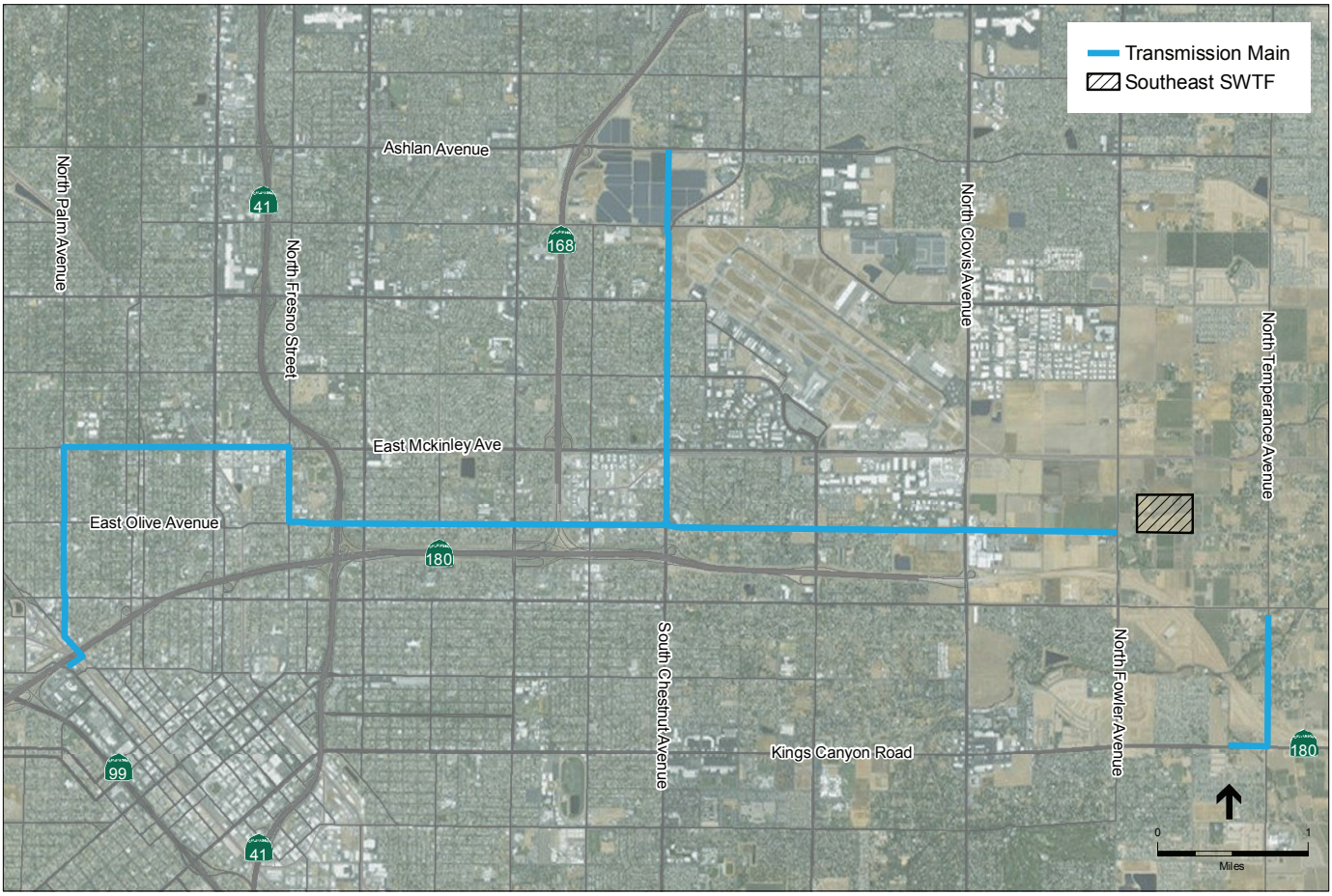
SOURCE: USGS 7.5' Topo Quads (Clovis, 1982; Malaga, 1981); ESA, 2015

Fresno Priority 2 Regional Transmission Mains . 150515

Figure 2c

Cultural Records Search Map

This page intentionally left blank



SOURCE: Microsoft, 2011; ESRI, 2012; AECOM, 2015; ESA, 2015

Fresno Priority 2 Regional Transmission Mainst . 150515

Figure 3
Project Area of Potential Effects

This page intentionally left blank

CHAPTER 2
Regulatory Framework

2.1 Federal

Historic properties are protected through the NHPA of 1966 (16 USC 470f) and it's implementing regulations (16 USC 470 et seq., 36 CFR 800, 36 CFR 60, and 36 CFR 63). The NHPA establishes the federal government's policy on historic preservation and the programs, including the National Register, through which that policy is implemented. Under the NHPA, historic properties include "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places" (16 USC 470w (5)).

Because implementation of the proposed project will include federal funding, as noted above, the project is required to comply with Section 106 of the NHPA. It is generally the federal agency's responsibility to consider the effects of the undertaking on historic properties, and to consult with the State Historic Preservation Officer (SHPO), Indian tribes, and other interested parties before granting permits, funding, or other authorization of the undertaking.

Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies (e.g., Bureau of Indian Affairs, Bureau of Land Management, U.S. Bureau of Reclamation, U.S. Army Corps Of Engineers, etc.), to consider the effects of the undertaking on historic properties, in consultation with the SHPO, Indian tribes, and other interested parties, and to afford the Advisory Council on Historic Preservation (ACHP) and the SHPO a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing on the National Register of Historic Places (National Register). Section 101(d)(6)(A) of the NHPA allows properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization to be determined eligible for inclusion in the National Register.

Under NHPA, a find is significant if it meets the National Register listing criteria at 36 CFR 60.4, as stated below:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history, or
>
> B. That are associated with the lives of persons significant in our past, or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

The American Indian Religious Freedom Act of 1978 protects access to sites of religious importance to Native Americans. On federal land, the Archaeological Resources Protection Act (ARPA) and Native American Graves Protection and Repatriation Act (NAGPRA) would apply. ARPA assigns penalties for vandalism and the unauthorized collection of archaeological resources on federal land and provides for federal agencies to issue permits for scientific excavation by qualified archaeologists. NAGPRA assigns ownership of Native American graves found on federal land to their direct descendants or to a culturally affiliated tribe or organization and provides for repatriation of human remains and funerary items to identified Native American descendants.

2.2 State

The State implements provisions in California Environmental Quality Act (CEQA) through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, oversees adherence to CEQA regulations. The OHP also maintains the California Historic Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the State's jurisdiction. Typically, a resource must be more than 50 years old to be considered as a potential historic resource. The OHP advises recordation of any resource 45 years or older, since "there is commonly a five year lag between resource identification and the date that planning decisions are made" (OHP, 1995).

2.2.1 California Environmental Quality Act

CEQA (codified at Public Resources Code sec 21000 et seq.) is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a project would have a significant effect on historical or unique archaeological resources. The Guidelines recognize that a historical resource includes: (1) a resource in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological

site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of CEQA Section 21083, which is a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the Project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

The Metro Plan Update EIR (State Clearinghouse No. 2013091021), which includes the proposed project, was certified by the City in June 2014.

2.2.2 California Register of Historical Resources

The California Register of Historical Resources (California Register) is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1[b]), as defined above. Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a cultural resource must be significant at the local, State, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is 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; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must be of sufficient age, and retain enough of its historic character or appearance (integrity) to convey the reason for its significance.

Additionally, the California consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historic resources;
- Historic resources contributing to historic districts; and
- Historic resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

2.3 Local

Fresno County 2000 General Plan

The Fresno County 2000 General Plan (2013) Open Space and Conservation Element contains several objectives and policies relevant to the protection of cultural resources within the project area. The Historical, Cultural, and Geological Resources section of the Open Space and Conservation Element provides policies directing the protection of historical, archaeological, and paleontological resources within the County.

> **Goal OS-J.** To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identify, and to recognize the county's valued assets that have contributed to past county events, trends, styles of architecture, and economy.
>
> **OS-J.1 Policy:** Preservation of Historic Resources
>
> The County shall encourage preservation of any sites and/or buildings identified as having historical significance pursuant to the list maintained by the Fresno County Historic Landmarks and Records Advisory Commission.

OS-J.2 Policy: Historic Resources Consideration

The County shall consider historic resources during preparation or evaluation of plans and discretionary development projects.

OS-J.14 Policy: Sites Protection and Mitigation

The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

City of Fresno General Plan

The City of Fresno General Plan (2014) Historic and Cultural Resources Element contains several goals, objectives, and policies relevant to the protection of cultural resources within the project area. The Element provides policy direction to maintain and enhance a citywide program for historic and cultural preservation.

General Plan Goal 6. Protect, preserve, and enhance natural, historic, and cultural resources.

Objective:

HCR-2. Identify and preserve Fresno's historic and cultural resources that reflect important cultural, social, economic, and architectural features so that residents will have a foundation upon which to measure and direct physical change.

Policies:

HCR-2-a. Identification and Designation of Historic Properties. Work to identify and evaluate potential historic resources and districts and prepare nomination forms for Fresno's Local Register of Historic Resources and California and National registries, as appropriate.

HCR-2-b. Historic Surveys. Prepare historic surveys according to California Office of Historic Preservation protocols and City priorities as funding is available.

HCR-2-c. Project Development. Prior to project approval, continue to require a project site and its Area of Potential Effects (APE), without benefit of a prior historic survey, to be evaluated and reviewed for the potential for historic and/or cultural resources by a professional who meets the Secretary of Interior's Qualifications. Survey costs shall be the responsibility of the project developer. Council may, but is not required, to adopt an ordinance to implement this policy.

HCR-2-d. Native American Sites. Work with local Native American tribes to protect recorded and unrecorded cultural and sacred sites, as required by State law, and educate developers and the community-at-large about the connections between Native American history and the environmental features that characterize the local landscape.

HCR-2-f. Archaeological Resources. Consider State Office of Historic Preservation guidelines when establishing CEQA mitigation measures for archaeological resources.

City of Fresno Historic Preservation Ordinance

Section 12-1601 through 12-1629 of the Fresno Municipal Code outlines the City of Fresno Historic Preservation Ordinance (1979, updated 1999), which is designed to "to preserve, promote and improve the historic resources and districts of the City of Fresno for educational, cultural, economic and general welfare of the public…." The ordinance establishes the Historic Preservation Committee, identifies the Designation Criteria for registering a local historic resource, and guidance for the alteration or demolition of locally designated historic resources within the City. Designation criteria for a locally registered historic resource:

1. It has been in existence more than fifty years and it possesses integrity of location, design, setting, materials, workmanship, feeling and association, and:
    a. It is associated with events that have made a significant contribution to the broad patterns of our history; or
    b. It is associated with the lives of persons significant in our past; or
    c. It embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic values; or
    d. It has yielded or may be likely to yield, information important in prehistory or history.
2. It has been in existence less than fifty years, it meets the criteria of subdivision (1) of subsection (a) of this section and is of exceptional importance within the appropriate historical context, local, state or national.

    The ordinance also includes guidance for the alteration or demolition of locally designated historic resources within the City. Section 12-16017h of the Fresno Municipal Code states that no application or proposal shall be approved or approved with modifications unless the Commission makes the following findings:

    a. The proposed work is found to be consistent with the purposes of this article and the Secretary of the Interior's Standards, not detrimental to the special historical, architectural or aesthetic interest or value of the Historic Resource; or
    b. The action proposed is necessary to correct an unsafe or dangerous condition on the property; or
    c. Denial of the application will result in unreasonable economic hardship to the owner. In order to approve the application, the Commission must find facts and circumstances, not of the applicant's own making, which establish that there are no feasible measures that can be taken that will enable the property owner to make a

reasonable economic beneficial use of the property or derive a reasonable economic return from the property in its current form; or

d. The site is required for a public use which will directly benefit the public health, safety and welfare and will be of more benefit to the public than the Historic Resource.

e. For applications for relocation of an Historic Resource, the Commission shall find that one or more of the above conditions exist, that relocation will not destroy the historical, architectural or aesthetic value of the Resource and that the relocation is part of a definitive series of actions which will assure the preservation of the Resource.

This page intentionally left blank

CHAPTER 3
Background Setting

3.1 Natural Setting

The proposed project is in the Fresno metropolitan area, within the San Joaquin Valley, a region with basin-type physiography. Basins are common in the San Joaquin Valley, and are commonly associated with hardpans and high clay content. Historically, this region supported extensive annual grasslands intermixed with a variety of vegetative communities including oak woodland, wetland, and riparian woodland. Intensive agricultural and urban development has resulted in large losses and conversion of these habitats. The remaining native vegetative communities exist as isolated remnant patches within urban and agricultural landscapes, or in areas where varied topography has made urban and/or agricultural development difficult. The natural setting along the pipeline alignment consists primarily of urban/developed habitat with pockets of annual grassland. Valley foothill riparian, seasonal wetland, and riverine habitats occur along East Trimmer Springs Road, on the north and south portions of the Fresno Canal. The SE SWTF includes fallow agricultural land.

3.2 Prehistoric Setting

Moratto (1984) provides an overview of the general prehistory of the San Joaquin Valley, summarized below.

During the Early Holocene, the area was populated by hunters of large game. Surface finds in the Tulare Basin have yielded some projectile points similar to particular Paleoindian variants (i.e., Clovis). This would suggest an initial occupation pre-dating 11,300 before present (B.P.). The Middle Holocene (4000 to 1000 B.C.) is characterized by pinto-like points, and groundstone tools, although its association is not certain. Excavations at Buena Vista Lake dating to after 2000 B.C. (Early Buena Vista Lake Phase) have uncovered handstones, millingstones, and extended burials.

As summarized in Moratto (1984), a chronology was devised for the southern San Joaquin Valley based on western Valley sites in 1969 by Olsen and Payen. It is composed of four temporally distinct complexes. The first complex, the Positas Complex ranges from 3300 to 2600 B.C. and is characterized by small shaped mortars, short cylindrical pestles, milling stones, perforated flat cobbles, and sea snail shell beads.

The Pacheco Complex, beginning in approximately 2600 B.C. and ending in roughly A.D. 300, has been divided into two phases. The Pacheco, Phase B (2600 to 1600 B.C.) is characterized by

biface[1] arrow points, abalone shell ornaments, and sea snail shell beads. The Pacheco, Phase A (1600 B.C. to A.D. 300) is represented by more varied types of shell beads, perforated canine teeth, bone awls, whistles, and grass saws; large stemmed and side-notched points; and an abundance of millingstones, mortars, and pestles. The shell and bone industries of the Pacheco Complex are most comparable to the Delta Middle Horizon Period.

The Gonzaga Complex (A.D. 300 to 1000) is represented by an assemblage similar to that of the Delta Late Horizon, Phase 1. This complex is characterized by extended burials, bowl mortars and shaped pestles, squared and tapered stem projectile points, fewer bone awls and grass saws, and a shell industry composed of distinctive shell ornaments and beads.

The Panoche Complex (A.D. 1500 to European Contact) is most comparable to the Delta Late Horizon, Phase 2. This complex is characterized by the presence of few millingstones, and varied mortars and pestles; small side-notched arrow points; clamshell disc beads, bone awls, whistles, saws, and tubes. Extended burials and primary and secondary cremations are also characteristic of the Panoche Complex.

3.3 Ethnographic Setting

At the time of contact, the proposed project area consisted of the southernmost territory occupied by the Northern Valley Yokuts. The Northern Valley Yokuts historically lived in California along the San Joaquin River as far north as where it bends north between the Calaveras and the Mokelumne rivers, as far south as Fresno, to the west to the Diablo Range, and as far east as the foothills of the Sierra Nevada. The Yokuts may have been fairly recent arrivals in the San Joaquin Valley, perhaps being pushed out of the foothills about 500 years ago.

Because aboriginal populations in the San Joaquin Valley were decimated early, most information regarding the Northern Valley Yokuts is gleaned from accounts of Spanish military men and missionaries that have been translated. A summary of these sources has been compiled by W. J. Wallace (1978), and it is upon this work that this brief ethnographic setting is based.

Population estimates for the Northern Valley Yokuts vary from 11,000 to more than 31,000 individuals. Populations were concentrated along waterways and on the more hospitable east side of the San Joaquin River. Villages, or clusters of villages, made up “miniature tribes” (tribelets) lead by headmen. Principal settlements were located on the tops of low mounds, on or near the banks of the larger watercourses. Settlements were composed of single family dwellings, sweathouses, and ceremonial assembly chambers. Dwellings were small and lightly constructed, semi-subterranean and oval. The public structures were large and earth covered.

Most Northern Valley Yokuts groups had their first contact with Europeans in the early 1800s, when the Spanish began exploring the Delta. The gradual erosion of Yokuts culture began during the mission period. Epidemics of European diseases played a large role in the decimation of the native population. With the secularization of the mission and the release of neophytes[2], tribal and

1 Biface means worked on both sides of the proposed projectile point.
2 Literally “new citizens,” neophytes means Native Americans who had converted to Christianity

territorial adjustments were set in motion. People returned to other groups, and a number of polyglot "tribes" were formed. Another blow to the aboriginal population came with the Gold Rush and its aftermath. In the rush to the southern mines, native populations were displaced from their existing territories. Ex-miners settling in the fertile valley applied further pressure to the native groups, and altered the landforms and waterways of the valley. Many Yokuts resorted to wage labor on farms and ranches. Others were settled on land set aside for them on the Fresno and Tule River Reserves. Today there are some 2000+ Yokuts are members of a federally recognized tribe. Additional descendants are affiliated with other cultural groups.

3.4 Historic Setting

Lieutenant Gabriel Moraga recorded the earliest European presence in the Fresno area during the earliest years of the nineteenth century. Moraga made several expeditions into the San Joaquin Valley to pursue runaway neophytes or find new potential mission sites and territories; however no permanent Spanish settlements were constructed in the vicinity. In 1826, Euro-American trappers, including Jedediah Strong Smith, began to enter the region in order to hunt the fur bearing animals that inhabited the Central Valley. Land grants issues by Spanish, and later Mexican, governors aided settlement of the valley, giving settlers large sections of land to use for farming and raising cattle. Prior to the Gold Rush, the San Joaquin Valley was devoted to grazing and hunting, as immense herds of cattle and some horses roamed the valley. With the resulting influx of population with the Gold Rush, food production was needed to support the mines, and the San Joaquin Valley developed to become an agricultural supplier. Some of the miners, disappointed in the search for gold, turned to farming in the fertile swamp lands in the San Joaquin Valley (Hoover, 2002).

State legislation in 1856 organized Fresno County from portions of Mariposa, Merced and Tulare counties. The government originally designated the town of Millerton, located twenty-five miles south of Fresno, as the first seat of government for Fresno County. The development of the Central Pacific Railroad (predecessor of the Southern Pacific Railroad) in 1872 resulted in the creation of the town of Fresno, originally called "Fresno Station" (Gudde, 1998). Edward H. Mix surveyed the original town site and organized it on a grid straddling the rail corridor and extending to the east side of the Central Pacific Railroad tracks along Front Street (present day H Street). By November 1872, Fresno had grown to include four hotels and restaurants, saloons, three livery stables, two stores, and a few permanent dwellings (Clough and Secrest, 1984). Following the destruction resulting from a major flood in Millerton in 1867, locals decided to move the county seat to Fresno in 1874. By the end of 1874, Fresno Station had grown to fifty-five buildings, including a county hospital and a school (Clough and Secrest, 1984). The railroad through Fresno County connected the northern part of California with Los Angeles, and the City of Fresno developed as one of the largest communities along the rail corridor. The agricultural success of the land, and the service and mobility made possible with the railroad, enabled Fresno to become the leading agricultural center of the San Joaquin Valley.

3.4.1 Irrigation in Fresno and the Fresno Irrigation District

Prior to the 1870s, "dry farming" dominated Fresno County between the San Joaquin and Kings Rivers. Dry farming relied on spring rains, however the 1860s experienced extensive drought

years, causing residents to explore alternative means or providing water for crops. Settlers dug ditches along major drainages, such as the Kings River, with the earliest supplying water to the community of Centerville via the Centerville Ditch (soon combined with the Sweem Ditch). In 1870, Moses Church purchased the Centerville and Sweem Ditches, and began enlarging and improving the canals, turning them towards Fresno with the intent of diverting its water to the essentially dry bed of Fancher Creek. Seeing the success of these efforts, landholders in Fresno began exploring irrigation as a means of improving their lands. In 1871Captain A.Y. Easterby, F. Roeding, and William Chapman joined forces, purchasing the majority of the Centerville and Sweem water rights, began constructing a connector with Fancher Creek, and established the Fresno Canal and Irrigation Company. They were successful in bringing water to Easterby's land, and it was the fertility of Easterby's crops that enticed Southern Pacific Railroad executives to locate a major railroad transfer nearby, at what would become the city of Fresno (Caltrans & JRP, 2000).

The arrival of the Southern Pacific Railroad in 1872, coinciding with completion of the first leg of the Fresno Canal, Easterby's Fancher Creek conduit, set in motion a great flurry of activity to develop and use the water of the Kings River. The modern canal system operated by the Fresno, Consolidated, and Alta irrigation districts was begun during the 1870s and 1880s, with a variety of private parties taking the lead (Caltrans & JRP, 2000). Church acted as superintendent of the newly formed Fresno Canal and Irrigation Company, and work began immediately on the construction of the Fresno Canal, measuring "20 feet wide on the bottom, 30 feet on the top, and 4 feet deep "(Grunsky, 1898). Expanding and enlarging natural waterways, such as Fancher Creek, as well as connecting with the Centerville and Sweem ditches, the Fresno Canal was completed in segments and in 1875. The Mill Ditch branch of the Fresno Canal was constructed in 1877 to divert water to a flour mill in downtown Fresno, but was soon converted to provide water to outlying colonies, including the Temperance Colony (Wallace W. Elliot Publishing Company, 1882).

By the turn of the century, these smaller irrigation companies had been absorbed by a few large private parties. The Fresno Canal and Irrigation Company experienced early and ongoing legal and financial troubles in the form of downstream land owners objecting to the diversion of water. In 1892 the Company resolved part of this problem by obtaining the water rights of the Spanish Land Grant Laguna de Tache Rancho. The 60,000 acre grant, with riparian water rights, was purchased for $1 million. The FCIC changed its name during this period to the Fresno Canal and Land Corporation, and while the addition of the new water rights aided in the operation of the Company, the actual delivery was not satisfactory for landowners. Because of this dissatisfaction, FID was created by a vote of the people in 1920 and in 1921 all the rights and property of the FCLC within the boundaries of the new 242,000 acre district, were purchased for the sum of $1.75 million. By the early 1920s, essentially all irrigation works on the Kings River were controlled by local special-purpose districts, such as the Fresno Irrigation District (Caltrans & JRP, 2000; unknown, nd "A Brief History of the Fresno Irrigation).

Immediately following its establishment, the FID immediately started making improvements to the system with $250,000 earmarked for this purpose (unknown, nd "A Brief History of the

Fresno Irrigation District). An important part of this improvement work included the complete replacement of approximately 5,000 service gates and turnouts, as well as the installation of numerous concrete structures to replace existing wooden structures that were no longer serviceable (unknown, nd "A Brief History of the Fresno Irrigation District; FID, 1928). In the 1950s and 1960s the Fresno Irrigation District undertook a series of improvements to its irrigation system, including the conversion of many open trench canals to pipelines. This includes portions of Temperance Canal, Eisen Canal, East Branch Canal, and the Hansen Canal. As a constantly maintained and updated system, much of the FID infrastructure has undergone ongoing maintenance and improvements, including during roadway replacement and rehabilitation (Kimura, FID, personal communication, 2014). The FID has been in continuous operation since 1920, and made numerous worthwhile improvements throughout its nearly 100 year history.

In summary, the City of Fresno pioneered gravity irrigation, which transformed the arid land into rich soil, enabling farming throughout Fresno County. As the geographical center of Fresno County, as well as California itself, Fresno acted as a trade center for the entire Central Valley (Hoover, 2002). Fresno incorporated in 1885, as a result of the prosperity brought about in the region by the introduction of irrigation. During the 1890s the city expanded from 2.94 square miles in 1890, to 34.862 square miles in 1900, with an increase in population from 10,818 to 12,470 (Clough and Secrest, 1984).

3.4.2 Fresno in the Twentieth Century

The 1910 census for Fresno showed a total population of 24,892. City boosters, hoping to double the population within a few short years, promoted Fresno as an attractive and modern Californian city, with handsome public buildings, established city parks, numerous banks and commercial opportunities, and large tracts of developable land outside the city proper (City of Fresno, 2008).

As the population grew, so did the City leader's desire to improve the reputation and prestige of the City through metropolitan planning. On April 21, 1916, the Fresno City Board of Trustees passed ordinance No. 794. This established Fresno's first planning commission and hired architect and planner Charles Henry Chaney to prepare a plan for Fresno to address anticipated growth following World War I. Chaney's plan proposed a civic center, a street system to accommodate increased automobile use, a park and recreation plan, a scenic road and boulevard system, and downtown revitalization. The recommendations were filed in 1918, but were not adopted by the city until July 1923 and did not become effective until that August (City of Fresno, 2008).

Throughout the prosperous 1920s, new residents flocked to Fresno, attracted by the City's agricultural wealth and prosperity. The Great Depression that began in 1929 had a significant impact on the San Joaquin Valley, with a great influx of people seeking employment in an already strained market. Midwestern farmers who could not find employment in the agricultural industry came to cities like Fresno looking for other forms of employment, but few urban jobs were available. President Franklin Delano Roosevelt's New Deal Program (1933-1939) sought to provide economic relief by providing assistance to large numbers of unemployed workers. In Fresno, the New Deal resulted in improvements to Fresno's Civic Center as well as five new buildings between 1936 and 1941: the Fresno Memorial Auditorium, the U.S. Post Office, the Fresno County Hall of Records

(adjacent to the County Courthouse), the Fresno Unified School District Administration Building, and the Fresno City Hall (City of Fresno, 2008).

Mobilization of industry in support of World War II ultimately ended the Great Depression. During the war, the nation's resources were devoted to the War efforts, with the United States acting as the primary manufacturer of war material for the European allies. California experienced a boost in the states regional economy upon receiving almost 12 percent of the government war contracts and producing 17percent of all war supplies. In addition to increased employment resulting from supporting the war effort, military bases were established throughout California resulting in an influx of servicemen and support staff. Increased employment led to an increase in personal income, which in turn improved the circumstances of both individuals and cities (City of Fresno, 2008).

In the years following World War II, California experienced a period of prosperity with unprecedented urban growth and economic expansion. In Fresno, the 1940 census reported 60,685 people, while the 1950 census reported a population of 91,669, not including Japanese citizens or military personnel. The population boom resulted in extensive building efforts with new civic and public buildings, highways, residential and commercial developments. Architecture moved away from historic styles and focused on more modernist elements and innovations (City of Fresno, 2008).

Suburban expansion drove much of the residential and commercial development outside of city centers. Agricultural parcels were subdivided to establish tract homes and regional shopping centers and facilities that would provide services for the new population. Additionally, community and regional planning during the mid-twentieth century was highly influenced by the automobile and freeways. Automobiles enabled people to move farther away from the downtown, resulting in businesses as well as municipal services expanding or moving to accommodate their customers' needs (City of Fresno, 2008).

CHAPTER 4
Methodology and Results

4.1 Archival Research

Information Center and ESA staff conducted a records search at the SSJVIC of the California Historical Resources Information System at California State University Bakersfield on August 25, 2015 (File No. RS# 15-316). Records search for the Priority 2 RTM project were accessed by reviewing the Fresno North, Clovis, Kearney Park, Fresno South, and Malaga, California7.5-minute quadrangle base maps. The SE SWTF area was analyzed previously as part of the Kings River Pipeline project (ESA, 2015), and was included in the records search conducted for that project (April 20, 2014, File No. RS# 14-156).

The study area for the records search was defined as the proposed project APE. The archival research results presented below include cultural resources and investigations located within ½ mile of the project APE. In addition to SSJVIC maps and site record forms, other sources that were reviewed included historic maps, the Directory of Properties in the Historic Property Data File for Fresno County, the National Register of Historic Places, the California Register of Historical Resources, the *California Inventory of Historic Resources* (1976), the *California Historical Landmarks* (1996), and the *California Points of Historical Interest* (1992). ESA staff conducted additional research by reviewing files at the City of Fresno Office of Historic Preservation, the Fresno State University Special Collections Archive, and the San Joaquin Valley Heritage & Genealogy Center at the main branch of the Fresno Public Library.

ESA staff review included the Fresno County List of Historic Places (FCLHP). The FCLHP was reviewed by cross referencing all streets within the proposed project APE, and determining the presence of any County listed resources within or adjacent to the project footprint.

4.1.1 Records Search Results

The records search was conducted to identify any previously documented cultural resource surveys or sites located within ½ mile buffer of the proposed project. Results of the records search indicate that 19 surveys are within or intersect the project alignment, and an additional 40 surveys were conducted within the ½ mile buffer of the pipeline alignment. **Table 1** below describes the cultural resource surveys identified within the project alignment as a result of the records search.

TABLE 1
CULTURAL SURVEYS LOCATED WITHIN OR INTERSECTING THE PROJECT APE

SSJVIC Report #	Title	Author	Date
FR-00135	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project.	Woodward-Clyde Consultants	1995
FR-00257	Historic Property Survey Report Route 180 Chestnut Avenue to Highland Avenue; 06-FRE-180, R60.9/R6736 06250-342400	DeLeuw, Cather and Company; David Chavez Associates	1990
FR-00535	Archaeological Survey Report for a Proposed Upgrade of Rural Route 180 Between Fowler and Cove Avenues, Fresno County, California	Far Western	1992
FR-00578	Archaeological Survey Report for Proposed Channelization on Route 180 at Temperance Avenue, Fresno County, California	Cal Trans	1981
FR-01231	Negative Archaeological Survey Report for the Construction of Route 180 Urban Project	Cal Trans	1994
FR-01231	Supplemental Historic Property Survey Report for the Route 180 Urban Project between Route 99 and Chestnut Avenue	Cal Trans	1994
FR-01231	Supplemental Historic Architectural Survey Report for the Route 180 Urban Project Sections of Cedar Avenue and East Thomas Avenue	Cal Trans	1993
FR-01651	Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project: Segment WS04: Sacramento to Bakersfield	Far Western Anthropological Research Group, Inc.	2000
FR-01740	Historic Architectural Survey Report for the Clovis Avenue Reconstruction Project, McKinley Avenue to Kings Canyon Road, Fresno, California	Applied EarthWorks, Inc.	2001
FR-01741	Negative Archaeological Survey Report for the Clovis Avenue Reconstruction Project, McKinley Avenue to Kings Canyon Road, Fresno, California	Applied EarthWorks, Inc.	2001
FR-02002	Cultural Resources Survey Report for Level 3 Long Haul Fiber Optic Project: WS04 Connection to Fresno 3R Facility, in the City of Fresno, Fresno County, California.	Chambers Group	2000
FR-02223	Second Supplemental Historical Architectural Survey Report for the State Route 180, Chestnut Avenue to Highland Avenue, Fresno County, California	Cal Trans	2002
FR-02234	Historic Property Survey Report Route 168 Urban Project: PM 0. Rout 180 to PM 9.0 Temperance Avenue 06-Fre-168 R0.0/R9.0 06255-34220 Contract No. 06SFP8803	Woodward-Clyde Consultants	1992
FR-02235	Historic Architectural survey Report #1 For Route 168 Urban Project 06-Fre-168 R0.0/R9.0 06255-342200	Woodward-Clyde Consultants	1992
FR-02240	Fresno Yosemite International Airport - Installation of Airport Surveillance Radar (ASR-11)	URS Greiner Woodward Clyde	1998
FR-02287	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California.	SWCA Environmental Consultants	2006
FR-02507	Historic Architectural Survey Report for the Rural Highway 180 Project Fowler Avenue to Cove Avenue, Fresno County, California	Woodward-Clyde Consultants	1992
FR-02567	Historic Property Survey Report for the Clovis Avenue to Kings Canyon Road, Fresno, California.	Palmer, Kevin	2001

Source: SSJVIC, 2015

SSJVIC staff identified one site within the APE (P-10-6099, the I.D. Schnabel Home at 610 E McKinley Avenue). However, field review determined this resource to be situated outside of, although adjacent to, the project APE. Consequently, there are no recorded historic resources within the APE. Field review identified five recorded structures located adjacent to, but outside of, the project APE. **Table 2** describes the resources identified adjacent to the APE.

TABLE 2
CULTURAL SITES LOCATED ADJACENT TO THE PROJECT APE

P# or Trinomial	Resource Name	Address	Eligibility Recommendation
P-10-5210	Unocal Warehouse	101 N Roosevelt	Appears eligible for National Register
P-10-5452	n/a	1333-1353 Palm Bungalow Court	Appears eligible for State and Local listing
P-10-5913	Josiah Royce Hall	1839 N Echo Ave	Fresno heritage property
P-10-6095	Bank of America NT Property	341 N Temperance	Appears ineligible
P-10-6097	Cutting Property	527 N Temperance	Appears ineligible
P-10-06099	I.D. Schnabel Home	610 E. McKinley Avenue Fresno 93728 (APN 451-041-16)	Appears ineligible

Source: SSJVIC, 2015

Review of the Caltrans Historic Bridge Inventory identified three bridges within the project APE. **Table 3** describes these bridges and notes Caltrans' determination of eligibility for each structure.

TABLE 3
BRIDGES LOCATED WITHIN THE APE

Bridge Number	Description	Year Built (widened/extended)	Eligibility Recommendation
42C0111	N Temperance Avenue over Fancher Creek	1925 (1967)	Bridge not eligible for National Register
42C0197	N Fresno Street over Dry Creek Canal	1958 (1979)	Bridge not eligible for National Register
42C0224	N. Chestnut Avenue over Mill Ditch	1959	Bridge not eligible for National Register

Source: Caltrans, 2012

ESA staff review of the FCLHP identified the Forthcamp Home (6158 E Floradora Avenue) located just north of the SE SWTF, outside of the APE, was identified. The FCLHP lists the Historic Fresno City College Administration building at the intersection of N Van Ness and E McKinley Avenues, but the building is set back approximately 800 feet from E McKinley Avenue. No other County designated resources were identified during archival review.

4.2 Native American Contact

As part of the Metro Plan EIR? Update, ESA staff contacted the NAHC on September 30, 2010 to request a database search for sacred lands or other cultural properties of significance within or adjacent to the proposed Metro Plan Update project area. A response was received on August 9, 2010. The sacred lands survey did not identify the presence of cultural resources in the proposed

Metro Plan Update area, with the exception of the area within ½ mile of the Friant and Herndon Quadrangles. The NAHC provided a list of Native American contacts that might have further knowledge of the proposed plan area with respect to cultural resources. Each person or organization identified by the NAHC was contacted by letter on March 3, 2010. On April 7, 2010, ESA received a letter from the Table Mountain Rancheria stating that they declined to participate, but would appreciate being notified if cultural resources are identified. On August 31, 2010, ESA received an email from Danielle Flowers of the Table Mountain Rancheria requesting more detailed information about any work proposed in the area around Behymer and Willow Avenues. ESA responded with additional information in September 1, 2010, and Ms. Flowers stated that the project is out of their area of concern.

A request for review of the current project APE under the requirements of AB52 was submitted to the NAHC on August 4, 2015. When no response was received, a follow up email was submitted on August 20, 2015. The NAHC responded stating that they were experiencing delays due to staffing shortages, and would be processing the request as soon as possible. Further follow up emails were submitted to the NAHC on September 22, 2015, October 7, 2015, and October 26, 2015. On October 26, 2015, the NAHC responded stating that they had emailed the response to ESA October 9, 2015, although no email had been received by ESA. On October 29, 2019, ESA received a response from the NAHC, providing a list of knowledgeable persons to contact, and stating that the results of the SLF search failed to indicate the presence of any known sacred Native American sites in the immediate project area. ESA contacted the individuals and organizations affiliated with the area as identified by the NAHC by letter on October 29, 2015 to solicit their comments and concerns regarding the project. No responses have been received by the writing of this report.

Appendix B includes all correspondence associated with the project.

4.3 Field Survey

4.3.1 Survey Methodology

On September 15, 2015, ESA archaeologist Josh Garr conducted a roadway survey of the proposed pipeline alignment. Due to the nature of the proposed project (construction within existing road right of ways within predominantly urban development), traditional survey methods were deemed ineffective. Survey methodology included driving the alignment and stopping to survey areas of visible native soils using single transects on either side of the road ROW. Some portions of the survey area were inaccessible due to construction activities or fencing, including the "Leaky Acres" groundwater recharge site. Resources, including those previously identified adjacent to the APE, were photographed and documented on appropriate DPR 523 forms.

4.3.2 Findings and Evaluation

No archaeological resources were identified during the course of the survey. ESA staff identified several historic period built resources adjacent to or intersecting the project APE, including the three of the six previously documented historic period structures noted in **Table 2.** The survey determined that the following four resources are either demolished or not considered truly adjacent

to the APE, and are subsequently not anticipated to be impacted by construction of the proposed project. As such they are exempted from further analysis.

- Unocal Warehouse (P-10-5210) has been demolished since its original documentation, and no evidence of the building remains.
- Josiah Royce Hall (P-10-6095) is a historic building on the Fresno High School campus at 1839 North Echo Avenue. The building is still in use. While the larger high school property is adjacent to the alignment, the hall is oriented away from the alignment along North Echo Avenue, approximately 700 feet north of the alignment, and as such would not be impacted by project construction or operation.
- The Cutting Property (P-10-6097) at 527 North Temperance Avenue has been demolished since its original documentation, and a modern residential structure is currently situated on the property.
- The Bank of America NT Property (P-10-6095) at 341 North Temperance Avenue has been demolished since its original documentation, and no evidence of the building remains.

The remaining two previously identified resources (P-10-5452, 1333-1353 Palm Bungalow Court and P-10-06099, I.D. Schnabel Home at 610 E. McKinley Ave) are described below.

Field staff also identified and documented four historic period canals: the Dry Creek Canal, Mill Ditch, Fancher Creek Canal, and Briggs Canal. These resources are further described and evaluated below. **Appendix C** contains DPR forms that document these resources. Previous evaluation of the SE SWTF site identified the Forthcamp Home (6158 E Floradora Avenue) just north of the SE SWTF, outside of the APE, also described below. **Appendix C** contains the County Landmarks Commission Nomination form for the Forthcamp Home. No other cultural resources were identified during the course of survey.

Forthcamp Home (6158 E Floradora Avenue)

SOURCE: Fry, 1975

City of Fresno Priority 2 RTM Project. 150515

Figure 4
Forthcamp Home (6158 E Floradora Ave)

The Fresno County Landmark Forthcamp home is located just north of the SE SWTF, a potential staging area, outside of the APE, 825 feet east from the intersection of N Fowler and E Floradora Avenues. The building is oriented east/west, perpendicular to E Floradora Avenue, and is shielded on the north, east, and southern sides by mature hedges, junipers, and other dense landscaping. Decorative wrought iron fencing encircles the property. The two story structure, constructed in 1913 by John Jasper for Ernest August Forthcamp, reflects the Arts and Crafts architectural style with feature gables, decorative eaves, a full width porch, and bouldered foundation and chimney (**Figure 4**).

John D Forthcamp arrived in Fresno in 1874, after emigrating from Germany. A sheep rancher, Forthcamp purchased property to for his stock in areas now encompassed within the City boundaries. As Fresno grew, Forthcamp plotted 60 acres into residential tracts and named the street Forthcamp Avenue (now North Fulton). He then purchased 20 acres in the Temperance Colony, establishing a small vineyard. John married Lena Pannemann and their son Ernest August, born 1884. John died two years later, age 42, but Lena remarried and continued to operate the vineyard in Temperance Colony. Ernest, raised and educated in Fresno, took over operations of the family properties in 1902, adding land until the Forthcamp Vineyard encompassed 140 acres. In 1913, Ernest had John Jasper build the home he and his mother resided in. Ernest died in 1957 (Fresno County Landmarks Commission, 1984; **Appendix C**)

The Fresno County List of Historic Places identifies the residence as eligible under the local register for its association with the pioneer Forthcamp family, as well as due to its architectural qualities. The County list notes that the residence is not listed in the California or National Registers.

1333-1353 Palm Bungalow Court, P-10-5452

SOURCE: ESA, 2015

City of Fresno Priority 2 RTM Project. 150515

Figure 5
1333-1353 Palm Bungalow Court

The complex at 1333-1353 N Palm Avenue consists of a "double bar" bungalow court community configured around a large central courtyard (**Figure 5**). The six units reflect a California Bungalow appearance, along with some modest neo-Colonial Revival or Classical-Revival elements. Constructed in 1916, the complex is associated with some of the earliest episodes of court housing in Fresno beginning in the 1910s. Additionally, the court complex lies within the Fresno Tower District, and reflects an association with the architectural style that is indicative of the district's early development. Previous consultants recommend this resource potentially eligible under National and California Register criteria A/1 and C/3, and eligible under Fresno's Local register under elements 1 and 3(Brady, 2004). The current survey and evaluation effort rely on this finding of eligibility, and no additional evaluation was conducted as a part of the current effort. An updated DPR form is included for this resource in **Appendix C**.

I.D. Schnabel Home (610 E. McKinley Ave), P-10-06099,

SOURCE: ESA, 2015

City of Fresno Priority 2 RTM Project. 150515

Figure 6
I.D. Schnabel Home

The craftsman bungalow at 610 E McKinley Avenue was constructed in 1919, and is considered a nice but typical example of housing constructed throughout the community in the early twentieth century (**Figure 6**). Previous evaluation by City Preservation staff recommended it ineligible for listing in the local, state, or federal registers (City of Fresno, 2005). The current survey and evaluation effort supports this finding of ineligibility, and no additional evaluation was conducted as a part of the current effort.

Fancher Creek Canal

SOURCE: ESA, 2015

City of Fresno Priority 2 RTM Project. 150515

Figure 7
Fancher Creek Canal

This historic period canal consists of a segment of the Fancher Creek Canal where it intersects the proposed pipeline alignment along N Temperance Avenue (**Figure 7**). This segment consists of a modified creek used for irrigation and water conveyance purposes. The canal is vaguely trapezoidal and measures 30 feet wide at the top, 15 feet wide at the base, and approximately 15 feet deep.

In 1870, Church purchased Sweem's Ditch with the intent of diverting its water to the essentially dry bed of Fancher Creek, which in turn connected with A.Y. Easterby's acreage. Church and Easterby subsequently purchased the Centerville Canal and began constructing a connector with Fancher Creek. To continue this work, they and others organized the Fresno Canal and Irrigation Company, which was successful in bringing water to Easterby's land. As noted above, the fertility of Easterby's crops enticed Southern Pacific Railroad executives to locate a major railroad transfer nearby, at what would become the city of Fresno. The modern canal system operated by the Fresno, Consolidated, and Alta irrigation districts began during the 1870s and 1880s, with a variety of private parties taking the lead. By the turn of the century, these smaller irrigation companies had been absorbed by a few large private parties. By the early 1920s,

essentially all irrigation works on the Kings River were controlled by local special-purpose districts (JRP and Caltrans, 2000).

Previous evaluations of nearby segments of this canal by ESA as part of the Kings River Pipeline project recommended the canal ineligible for listing due to lack of integrity. The original form is no longer apparent in the current alignment' review of historic atlases and topographic maps show that the creek alignment has been modified several times since the early 20th century. Similar to that previously evaluated segment, this portion of Fancher Creek Canal no longer reflects its historical alignment or design, and as such is recommended ineligible for listing in the California and National Registers. An updated DPR form is included for this resource in **Appendix C**.

Briggs Canal

SOURCE: ESA, 2015

City of Fresno Priority 2 RTM Project. 150515

Figure 8
Briggs Canal

This historic period canal consists of a segment of the Briggs Canal where it intersects the proposed pipeline alignment (**Figure 8**) along N Temperance Avenue and E Kings Canyon Road. The trapezoidal earthen canal measures 8 feet wide at the top, 3 feet wide at the base, and approximately 6 feet deep. A modern concrete culvert with metal grate runs underneath both N Temperance Avenue and E Kings Canyon Road, presumably dating to the most recent period

road improvement construction. The Briggs Canal runs in a northeast/southwest alignment through E Kings Canyon Road and northwest/southeast through N Temperance Avenue within the APE. The canal parallels Fancher Creek Canal at the intersection of N Temperance Avenue. Per Caltrans' and JRP's *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures*, the Briggs Ditch has been previously evaluated in 1991 and recommended ineligible for listing in the National and California Registers (Caltrans & JRP, 2000). A site record documenting evaluation did not appear in the records search conducted for the current project. The current survey and evaluation effort supports this finding of ineligibility, and no additional evaluation was conducted for the current effort. An updated DPR form is included for this resource in **Appendix C**.

Mill Ditch

SOURCE: Google, 2015

City of Fresno Priority 2 RTM Project. 150515

Figure 9
Mill Ditch

This historic period canal consists of a segment of the Mill Ditch where it intersects the proposed project APE at N Chestnut just south of McKinley Ave. (**Figure 9**). The trapezoidal earthen canal measures 60 feet wide at the top, 15 feet wide at the base, and approximately 15 feet deep. A modern concrete bridge with broken concrete rip rap crosses the canal at N Chestnut Avenue, and the modern riprap extends the length of the segment within the APE. The canal runs in an east/west alignment through the project APE.

Moses Church constructed the Mill Ditch branch of the Fresno Canal in 1877 to divert water to a flour mill in downtown Fresno (the Champion Mill at Fresno and N Streets), but in 1890 the ditch

was deemed a nuisance and filled within City limits. Its outlying alignment was converted to provide water to outlying colonies, including the Temperance Colony (Vandor, 1919; Fresno Bee, 1942).

Previous evaluations of nearby segments of this canal by ESA as part of the Kings River Pipeline project recommended the canal ineligible for listing due to lack of integrity. While the Mill Ditch was part of some of the earliest irrigation canal construction in Fresno, and could perhaps be considered significant, ESA recommends that the lack of integrity renders this segment of the Mill Ditch within the APE ineligible for either the California or National Registers. The original form is no longer apparent in the current alignment, and the ditch shows evidence of enlargement and modernization through the introduction of new materials, such as the introduction of the concrete riprap, and the use of modern machinery to expand and maintain the canal, rather than the canal's original hand dug character. An updated DPR form is included for this resource in **Appendix C**.

Dry Creek Canal

SOURCE: ESA, 2015

City of Fresno Priority 2 RTM Project. 150515

Figure 10
Dry Creek Canal

This historic period canal consists of a segment of the Dry Creek Canal where it intersects the proposed pipeline alignment on N Fresno Street (**Figure 10**). The modern trapezoidal concrete

canal measures 35 feet wide at the top, 20 feet wide at the base, and approximately 15 feet deep. A modern concrete culvert runs underneath N Fresno Street, presumably dating to the most recent period of roadway improvement. The canal runs in an approximate east/west alignment through the project APE.

Review of historic maps and County Atlases identify Dry Creek Canal within the project vicinity as early as 1891, although the alignment has been noticeably modified since its original construction (Thompson, various). Historically the canal appears to have been a natural creek converted for irrigation purposes in the late nineteenth century, contemporaneous to numerous other historic period canals and ditches throughout Fresno. Archival review indicated that the segment of the canal, as a portion of the original alignment, is associated with the early local development of the irrigation system that encouraged the development of the City of Fresno (Criterion A/1). The proposed period of significance for this association is similar to the other early canal systems, dating circa 1870 to 1920. The canal segment does not appear to have direct, unique connections with important individuals but rather is one of many minor canals and connecting canal systems (Criterion B/2). The canal does not reflect distinctive characteristics of a type, period, region or method of construction, but rather appears as a creek used for irrigation purposes with no architectural distinction (Criterion C/3). Finally, the segment does not appear to possess the potential to yield, information important to the prehistory or history (Criterion D/4).

While the Dry Creek Canal appears to have been part of some of the late nineteenth century irrigation canal development in Fresno, and could perhaps be considered significant under Criterion A/1, ESA recommends that the lack of integrity renders this segment of Dry Creek Canal ineligible, as it no longer reflects its appearance during the proposed period of significance. The original form is no longer apparent in the current alignment, as review of historic atlases and topographic maps show that the creek alignment has been modified several times since the early 20th century. Additionally, the canal appears significantly modified from its original design, showing evidence of enlargement and modernization through the introduction of new materials, such as the introduction of the concrete riprap, and the use of modern machinery to expand and maintain the canal. A DPR form is included for this resource in **Appendix C**.

This page intentionally left blank

CHAPTER 5
Conclusions and Recommendations

The various canal segments identified within the proposed project APE (Mill Ditch, Fancher Creek Canal, Briggs Canal, and Dry Creek Canal) date to the earliest period of the development of irrigation and agricultural in the vicinity of Fresno, and may contribute to understanding of early local development of irrigation within the Fresno area (Criterion A/1). Continuous maintenance, modernization, and alterations have resulted in significant loss of all aspects integrity, except location. The canal segments no longer adequately convey their appearance with regard to their respective periods of significance. ESA recommends that the canal segments reported here do not appear to meet the criteria for listing in the California or National Registers. As such, they are not considered historic properties for purposes of NEPA or a historical resource per CEQA.

Two previously documented resources were identified adjacent to, but outside of, the proposed pipeline APE: P-10-5452 (1333-1353 Palm Bungalow Court) and P-10-06099 (I.D. Schnabel Home, 610 E. McKinley Ave). The I.D. Schnabel home had been previously recommended ineligible and the current analysis concurs with this earlier finding. The 1916 bungalow court at 1333-1353 Palm Avenue (P-10-5452) are associated with some of the earliest examples of court housing in Fresno beginning in the 1910s, and the court reflects an association with the Fresno Tower District architectural style. Previous consultants recommend this resource potentially eligible under National and California Register criteria A/1 and C/3, and eligible under Fresno's Local register under elements 1 and 3. The current survey and evaluation also concurs with this earlier finding. The proposed construction of the pipeline alignment in the road ROW along N Palm Avenue would not result in a direct adverse effect to this potentially historic property. Vibration related indirect impacts decrease over distance, and the construction of the pipeline will occur more than 25 feet from the parcel, and would not result in vibration related impacts. Proposed construction efforts would result in a temporary, indirect change to the historic setting of the property. Following completion of the pipeline construction, N Palm Avenue would be returned to its original appearance, and no permanent changes to the setting of the building would remain. As such, a finding of no adverse effect to historic properties is recommended for P-10-5452.

The Fresno County List of Historic Places identifies the Forthcamp Home (6158 E Floradora Avenue), located north of the SE SWTF, as eligible under the local register for its association with the pioneer Forthcamp family, as well as its architectural qualities. The County list notes that the residence is not listed in the California or National Registers. As a locally listed resource, this property is considered a historical resource for the purposes of CEQA, although not considered a historic property under NEPA. This historic resource is located outside of, but adjacent to, the SE SWTF staging area APE. The use of the nearby SE SWTF as a staging area would not result in

significant direct or indirect affects to the Forthcamp home, and as such a finding of no adverse effect to historic properties is recommended for this property as well.

Archaeological survey did not result in the identification of any prehistoric or historic period archaeological resources within the proposed project area. Overall, ESA recommends that the proposed project would result in no adverse effect on historic properties.

Consistent with the mitigation measures adopted for the Metro Plan Update EIR (State Clearinghouse No. 2013091021), the following measures will be conducted in the event of accidental discovery. In the event that previously unidentified archaeological or Native American resources are uncovered during project implementation, all work should cease in the vicinity of the find until it can be evaluated by a qualified archaeologist, defined as one meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (U.S. Department of the Interior 2012). If the find is determined to be potentially significant, the archaeologist (in consultation with the lead agency and appropriate Native American group(s) if the find is prehistoric or Native American in nature) should develop a treatment plan.

If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then identify the person(s) thought to be the Most Likely Descendent.

Review of the Project and the potential for Project implementation to affect historic properties within the APE has determined that there are no known historic properties adjacent to or within project APE. Therefore a determination of No Historic Properties Affected is recommended.

CHAPTER 6
References

Beck, Warren A. And Ynez D. Haase, 1974. *Historical Atlas of California*. University of Oklahoma Press, Norman.

Brady, John, 2004. Site Record for P-10-5452 1333-1353 Palm Bungalow Court. On File with the SSJVIC.

California Department of Parks and Recreation (DPR), 1976. *California Inventory of Historic Resources.*

California Department of Parks and Recreation (DPR), 1996. *California Historical Landmarks*.

California Department of Transportation, 2007. *A Historical Context and Archaeological Research Design for Agricultural Properties in California*. Division of Environmental Analysis, California Department of Transportation, Sacramento, CA.

City of Fresno, 2005. Site Record for P-10-6099 ID Schnabel Home. Completed by Karanna Hattersly-Drayton. On File with the SSJVIC.

Cohen, Andrew Neal, 1996. *Gateway to the Inland Coast: The Story of the Carquinez Strait* (Sacramento, California: California State Lands Commission, The Carquinez Strait Preservation Trust, and the Carquinez Strait MOU Coordinating Council.

Flores, Jefferey. 2013, Personal communication with R. Scott Baxter, ESA, May 3, 2013.

Fredrickson, D. A., 1973. *Early cultures of the North Coast Ranges*, California. Ph.D. dissertation. University of California, Davis. Davis, CA.

Fresno Bee, 1/4/1942. Anderson, John. Father of Fresno Irrigation. On file at Henry Madden Library - California State University, Fresno.

Fresno County Landmarks Commission,1984. Historic Resources Inventory Nomination Form: The Forthcamp Home (6158 E Floradora Avenue). On File with the City of Fresno Historic Preservation Commission.

Glover, Leslie and Paul Bouey, 1994. Willow Slough Bypass Wetland Project. Prepared by Far Western Anthropological Research Group, Inc. for United States Department of the Army.

Hoover, Mildred Brooke, Hero Eugene Rensch, Ethel Rensch, and William N. Abeloe, 2002. *Historic Spots in California.* Fourth edition, revised by Douglas E. Kyle. Stanford University Press, Stanford, California.

Johnson, Patti J., 1978. Patwin. In: *Handbook of North American Indians,* volume 8, edited by Robert F. Heizer, pp. 350-360. Smithsonian Institution, Washington, D.C.

Jones & Stokes, 1999. Site Record for Resource P-57-0400 (SPRR). On file at the Northwest Information Center, Sonoma State University.

JRP, 1996. Site Record for Resource P-48-000549 (UPRR, formerly SPRR). On file at the Northwest Information Center, Sonoma State University.

JRP Historical Consulting Services and California Department of Transportation, 2000. Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures. Sacramento, CA.

Kroeber, A. L., 1925. *Handbooks of the Indians of California*. Berkeley, CA.: California Book Company.

McCarthy, H., 1985. *Linguistics and its Implications for California Ethnogeography and Culture History*. Pages 20–35 in Ethnography and Prehistory of the North Coast Ranges, California, Publication Number 8, Center for Archaeological Research, University of California, Davis, CA.

McKern, W.C., 1922. *Functional Families of the Patwin*. American Archaeology and Ethnology 13 (7): 235-258.

Moratto, M. J., 1984. *California Archaeology*. San Francisco: Academic Press.

Office of Historic Preservation (OHP), 1992. *California Points of Historical Interest*.

Shapiro, William and Kieth Syda, 1997. An Archaeological Assessment Within Reclamation District 2035, Yolo County, California, Part of the Cultural Resources Inventory and Evaluation for U.S. Army Corps of Engineers, Sacramento District, PL84-99, Levee Rehailitation on the Feather, Bear, Sacramento, and San Joaquin Rivers System COE Water Basin System Designation Sac 05, DACW05-97-P-0465. Prepared by Pacific Legacy for the USACE.

Thompson, Thomas, 1891, 1907, 1909, 1911, 1913, 1920, and 1930. Official Historical Atlas of Fresno County. On file at the Fresno County Public Library.

University of California, Davis (UC Davis), 2003. UC Davis Long Range Development Plan. UC Davis. http://sustainability.ucdavis.edu/progress/commitment/planning/lrdp.html

Vandor, Paul 1919. History of Fresno County, California, with biographical sketches of the leading men and women of the county who have been identified with its growth and development from the early days to the present. Los Angeles, Calif., Historic Record Company.

Whistler, K.A., 1977. *Wintun Prehistory: An Interpretation Based on Reconstruction of Plant and Animal Nomenclature*. Pages 157-174 in Proceedings of the Third Annual Meeting of the Berkeley Linguistics Society, Berkeley Linguistics Society. Berkeley, CA.

Yolo County, 2009. Adopted 2030 Countywide General Plan, www.yolocounty.org/Index.aspx?page=1965, accessed on November 2011.

Appendix A
Personnel Qualifications

Brad Brewster

Architectural Historian / Preservation Planner

EDUCATION

M.S., Urban Design and Planning, and M.S. Certificate in Historic Preservation, University of Washington

B.S., City and Regional Planning, California Polytechnic State University, San Luis Obispo

20 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

American Planning Association

National Trust for Historic Preservation

San Francisco Architectural Heritage

Brad has 20 years of experience in environmental planning, with technical expertise in the preparation and management of environmental review documents under CEQA, and a focus in historic preservation planning and historic architectural resources. He has served as project manager for numerous EIRs and Mitigated Negative Declarations in the San Francisco Bay Area, and has surveyed and evaluated hundreds of historic resources throughout the United States for listing on national, state and local levels. Brad has additionally completed numerous historic evaluations required under Section 106 of the National Historic Preservation Act, and has documented many historic buildings in accordance with the Historic American Building Survey/Historic American Engineering Record (HABS/HAER) standards.

Relevant Experience

Fresno County Courthouse Focused EIR, Fresno, CA. *Architectural Historian.* ESA, as a part of the AOC on-call, prepared environmental CEQA documents for construction of a new courthouse in downtown Fresno, replacing the existing 1966 federal courthouse building. Brad conducted an evaluation and recordation of the existing courthouse building, which included archival review at state and local repositories, interviews with knowledgeable individuals, and field survey. ESA recommended the 1966 courthouse be considered eligible for listing due to its association with mid-century urban renewal in the City of Fresno.

SFPUC WSIP Crystal Springs Pipeline #2. *Cultural Resources Project Manager.* As part of an ESA+Orion Joint Venture to prepare an EIR for the SFPUC's Crystal Springs Pipeline #2 replacement project, Brad managed cultural resources subconsultants, including Circa Historic Property Development and Archaeological Resources Technology (ART). Brad peer-reviewed the cultural resources technical reports on behalf of the SFPUC, and prepared the cultural resources section of the EIR. Key cultural issues included construction vibration impacts on nearby historic structures including a circa 1920 vehicular bridge, as well as potential construction disturbance to known archaeological sites. Brad helped the SFPUC develop appropriate mitigation measures to protect cultural resources from construction-borne damage. D206166.05

SFPUC Westside Recycled Water Project EIR. *Historic Architecture Analyst.* Brad is providing analysis of historic architecture for the San Francisco Westside Recycled Water Project, a part of the San Francisco Water Supply Improvement Program. The proposed project will include recycled water treatment, storage, and distribution facilities for users located on the west side of San Francisco. Water will be treated to a tertiary level at the Oceanside Recycled Water Treatment Facility, and a network of pipelines will distribute the recycled water to a series of reservoirs and pump stations, including the Golden Gate Park Reservoir & Pump Station, the Booster

Pump Station at Golden Gate Park, and the Lincoln Park Reservoir & Pump Station located near Lincoln Park Golf Course.

Monterey Regional Desalination Project Cultural Resources Study and EA. *Cultural Resources Project Manager.* As consultants to Denise Duffy & Associates, Inc., the ESA Cultural Resources Group led by Brad, is preparing a cultural resources report in support of Section 106 of the NHPA, as well as the cultural resources section of an Environmental Assessment (EA) under NEPA. The proposed project would be California's second largest desalination project, and would extend new pipelines, construct wells, and build a new treatment plant and reservoir to serve the Monterey Peninsula. ESA is working closely with regulatory agencies such as the US Bureau of Reclamation to prepare the cultural resources study, including consultation with Native American tribes, as required under Section 106 and NEPA. Potential effects of the project include ground-disturbance to unrecorded buried sites, as well as ground-borne construction vibration on nearby historic structures, especially those in the Presidio of Monterey and Old Town Monterey Historic District.

SFPUC WSIP San Antonio Backup Pipeline Project. *Historic Architecture Analyst.* Brad is providing analysis of historic architecture for the San Antonio Backup Pipeline (SABPL) Project, part of the San Francisco Public Utilities Commission's (SFPUC's) Water System Improvement Program (WSIP). The proposed project will include installation of a backup pipeline, and construction of a discharge facility and a chemical facility. The backup pipeline will be constructed parallel to the existing San Antonio Pipeline (SAPL). The discharge and chemical facilities will reduce adverse discharge impacts to San Antonio Creek. The goal of the SABPL Project is to provide a means of discharging the full Hetch Hetchy (HH) flow in the event of an emergency water quality outage of the transmission system downstream of the Alameda East Portal (AEP) and also serve as a backup to the existing SAPL.

SFPUC Seismic Upgrade of Bay Division Pipeline No. 3 & 4. *Historic Architecture Analyst*. Brad is providing analysis of historic architecture for the Seismic Upgrade of Bay Division Pipeline (BDPL) Nos. 3 and 4 at the Hayward Fault Project, part of the San Francisco Public Utility Commission's (SFPUC's) Water System Improvement Program (WSIP). The proposed project will replace the existing BDPL No. 3 with a new parallel pipeline across the main trace and two secondary traces of the Hayward Fault, Interstate 680, and Mission Boulevard in Fremont. The BDPL No. 4 is adjacent to the BDPL No. 3 and will undergo minor seismic upgrades. The goal of the proposed project is to improve the seismic and hydraulic reliability of SFPUC's water supply transmission system serving the San Francisco Peninsula area.

EBMUD Lamorinda Water Treatment and Transmission Improvements Program Project EIR. *Historic Resources Manager.* Brad surveyed and evaluated numerous EBMUD project sites in Lafayette, Moraga, and Orinda (i.e. "Lamorinda') in western Contra Costa County for the existence of known or potential historic resources that could be affected by the proposed water treatment and transmission improvement project. Tasks included site visits, archival research, and preparation of a cultural resources section for the program EIR. EBMUD was formed in 1923 to provide water from the Sierra Nevada Mountains to East Bay customers. The project included construction of numerous pipelines, pumping facilities, dams, and treatment plants, including the 1935 Art Deco-style Orinda Filter Plant, a designated City of Orinda historic landmark. Numerous recorded archaeological sites are located within EBMUD project site boundaries. Recommended mitigation measures were primarily focused on avoidance of recorded and potentially unrecorded archaeological sites in the construction zones.

Katherine Anderson

Senior Associate II

EDUCATION

Masters of Arts in Public History, California State University, Sacramento

B.A., History, Minor in Women's Studies and Anthropology/Geograpy, California Polytechnic State University, San Luis Obispo

9 YEARS EXPERIENCE

CERTIFICATIONS/ REGISTRATION

Section 106 training, Advisory Council for Historic Preservation

GIS for Resource Managers, UC Davis

PROFESSIONAL AFFILIATIONS

California Council for the Promotion of History

California Preservation Foundation

AWARDS

[insert text]

Kathy is a cultural resources analyst involved with a variety of ESA projects involving historic period structures, buildings, and districts. Her role entails establishing a base historical context for the respective projects, conducting archival review at regional and state repositories, documenting and evaluating historic resources for eligibility for the National and California Registers, and drafting technical reports meeting Federal, State, and Local requirements. Kathy has completed evaluations for pre and post World War II residential and commercial buildings, water conveyance systems, mining and industrial buildings and structures, airports, as well as historic period roads, trails, and railway features. Kathy has experience working in projects located throughout the Central Valley, as well as Sierra Nevada, Southern California, and western Nevada.

Relevant Experience

Fresno County Courthouse Focused EIR, Fresno, CA. *Architectural Historian.* ESA, as a part of the AOC on-call, prepared environmental CEQA documents for construction of a new courthouse in downtown Fresno, replacing the existing 1966 federal courthouse building. Kathy conducted an evaluation and recordation of the existing courthouse building, which included archival review at state and local repositories, interviews with knowledgeable individuals, and field survey. ESA recommended the 1966 courthouse be considered eligible for listing due to its association with mid-century urban renewal in the City of Fresno. **D210276.01**

City of Fresno Large Diameter Pipeline Project, Fresno, CA, *Cultural Resources Analyst.* ESA is assisting the City in the preparation of an ISMND to address environmental impacts associated with construction of two backbone water transmission system pipelines, approximately 4 miles in length each. The pipelines, to be buried within existing street rights of way, will be constructed in downtown Fresno and in north Fresno. Kathy's responsibilities included archival review of the project area, field survey, identification of historic structures within the project area (which included historic residences, irrigation ditches and canals, and railroads), coordination with City staff regarding potential impacts to cultural resources, and recommendations for mitigation to minimize impacts to cultural resources.**D209311.00**

Metropolitan Water Resources Management Plan Update EIR, Fresno, CA, *Cultural Resources Analyst.* Kathy's responsibilities include archival review of the project area, field survey, evaluation of historic structures identified within the project area and recommendations for mitigation to minimize impacts to cultural resources. ESA is assisting the City of Fresno in the preparation of an EIR for the City of Fresno Metropolitan Water Resources Management Plan (Metro Plan) Update, which presents near-term and future projects to provide sufficient and

reliable water supplies to meet demand through build out of the 2025 General Plan. Near-term projects proposed include: (1) expansion of the existing Northeast Surface Water Treatment facility (SWTF); (2) construction of a new Southeast SWTF with administrative offices and corporation yard; and (3) installation of a major water transmission main system. **D208754.00**

City of Fresno Recycled Water Plan Program EIR, Fresno, CA, *Cultural Resources Analyst.* ESA is assisting the City in the preparation of a program EIR for its Recycled Water Master Plan including Recycled Water Ordinance. The Program EIR evaluates the Master Plan's long-term elements at a program level. Kathy's responsibilities included archival review of the project area, coordination with City staff regarding potential impacts to cultural resources, identification of historic structures within the project area, and recommendations for mitigation to minimize impacts to cultural resources.**D209405.00**

City of Fresno Recycled Water Distribution System Project, Fresno, CA, *Cultural Resources Analyst.* ESA is assisting the City in the preparation of CEQA Plus environmental clearance document for installation of approximately 23 miles of recycled water pipeline and a new pump station to distribute recycled water to the Southwest Quadrant of the City of Fresno. Kathy's responsibilities included archival review of the project area, field survey, identification of historic structures within the project area (which included historic residences, irrigation ditches and canals, and railroads), and recommendations for mitigation to minimize impacts to cultural resources. **D130412.00**

Kings River Intake Permitting Support, Fresno, CA. *Cultural Resource Analyst and Architectural Historian.* Environmental Science Associates (ESA) completed an Environmental Impact Report (EIR) for the City of Fresno Metropolitan Water Resources Management Plan (Metro Plan) Update. A component of the Metro Plan was the installation of a new intake and pipeline to direct water to a proposed surface water treatment facility. Several options for this component were identified in the EIR. In order to facilitate selection of the best option, ESA was retained by the City's Metro Plan Implementation Program Managers to conduct reconnaissance field investigation to identify any constraints or opportunities that would inform selection of the route and final design of the infrastructure. Kathy managed the completion of a Section 106 compliant cultural resources report that documented archival review, field survey, native American coordination, and mitigation recommendations for the proposed project alignment. Several historic period canals were determined to intersect the project alignment, but were recommended ineligible for listing in the National Reigster. **140311**

City of Davis Recycled Water Project, Davis, CA, *Cultural Resources Analyst.* ESA is assisting the City in the preparation of Draft and Final EIR and MMP for the conveyance and use of reclaimed water from the WWTP to the Conaway Ranch in Yolo County. City of Davis Recycled Water Project. Kathy's responsibilities included archival review of the project area, identification of historic structures within the project area, compilation of archaeological survey findings, and recommendations for mitigation to minimize impacts to cultural resources. **D209071.00**

JOSHUA GARR

Field Archaeologist

Josh is an accomplished field archaeologist with more than seven years of experience, and has worked with us on surveys, archaeological testing, and most recently as a monitor for the California High Speed Rail project and for the City of Fresno. He came to ESA by working with Scott Baxter on the excavation of several historic ships near Candlestick Park in 2011. Josh lives in Chico, is loosely based out of the Sacramento office, and can mostly be found in the field, usually on this planet.

Education

B.A., Anthropology, University of California, Santa Cruz

7 Years Experience

Certifications/Registrations

CSUC Certificate in Forensic Identification (Complete, except internship)

Relevant Experience

CHST Construction Package 1, Fresno, CA. ***Field Archaeologist.*** As a subconsultant to the Tutor Perini Zachary Parsons (TPZP) Joint Venture, ESA is providing environmental compliance support services for the Merced to Fresno segment of the California High Speed Rail project. Tasks included conducting pre-construction surveys for biological and cultural resources, compliance monitoring during construction, compliance tracking and reporting. Approximately 60 miles in length, the Merced to Fresno segment includes both biological and cultural resources such as the historic Chinatown in downtown Fresno, vernal pool and seasonal wetland habitat and crossings of the San Joaquin and Fresno Rivers. Josh is becoming well acquainted with the staff at TPZP, the High Speed Rail Authority, and their contractors, and is familiar with their various departments and procedures. He serves as an archaeological monitor and surveyor on this project.

Fresno Large Diameter Pipeline, Fresno, CA. ***Field Archaeologist.*** ESA is preparing a project-level CEQA document and associated regulatory permits for the City of Fresno Large Diameter Pipeline Project. The CEQA document (anticipated to be an Initial Study/ Mitigated Negative Declaration) will address environmental impacts associated with construction of two backbone water transmission system pipelines, approximately 4 miles in length each. The pipelines will be buried within existing street rights of way. Potential Issues impacts and, potentially, growth inducing impacts. Josh has become versed in the history, architecture, and cultures of the historic Chinatown district in Fresno through this project. In addition, he is familiar with the construction process of this pipeline. He serves as a monitor on this project.

Sacramento Regional County Sanitation District Advanced Wastewater Treatment Plan, Elk Grove, CA. ***Field Archaeologist.*** ESA is assisting the Sacramento Regional County Sanitation District with a preparation of an EIR for the Sacramento Regional Wastewater Treatment Plant Advanced Wastewater Treatment Plant Project. The proposed Project will include upgrading the existing wastewater treatment facility and is anticipated to result in improved treated effluent water quality that will not increase permitted treatment capacity. As a subconsultant to Ascent Environmental, ESA is responsible for Tasks 2/3 of the EIR (Aesthetics, Cultural Resources, Geology/Soils, and Public Health

Relevant Experience (Continued)

and Safety/Haz Mat), Task 4 all of the construction monitoring, and Task 5 Permitting (404, NHPA/Section 106, 1600, and 401 WQC). Josh has become familiar with the project area through archaeological survey and shovel testing.

SMF Master Plan Environmental Overview, Sacramento, CA. ***Field Archaeologist.*** ESA is providing all environmental services supporting the master planning effort. Our work is going beyond the standard environmental overview section of a master plan with the intention of doing most of the work that will feed into the follow-on EA and EIR. We are also assisting with planning mitigation strategies for the project and are working with the agencies to ensure their expedited approvals. The Airport Master Plan will provide a Capital Improvement Program for future development of the airport, as well as an ALP drawing set, meeting FAA criteria. The update will provide the Sacramento County Airport System with a comprehensive overview of the airport's needs over the next twenty years and beyond.

Modesto City-County Airport Environmental, Modesto, CA. ***Field Archaeologist.*** ESA is providing environmental planning services for the Modesto City-County Airport. The project includes the development of a Tree Removal Plan, NEPA and CEQA documentation, and specialized assistance including the preparation of federal airport improvement program grant application. The project has received a Categorical Exclusion (CatEx) from the FAA and the CEQA work is under way. Josh assisted with the survey of this project area.

New Bullard's Bar FERC Relicensing Program. ***Field Archaeologist.*** Assisted in cultural resources inventory of New Bullard's Bar Reservoir, Yuba County, California. Josh assisted with the survey of this project area.

Dutch Slough. ***Field Archaeologist.*** Conducted subsurface testing at a prehistoric site for the Dutch Slough Wetland Mitigation Project in Contra Costa County, California. Josh assisted digging and sifting a number of test pits for this project

Comstock Mining Co. Baseline Study, Silver City, NV. ***Field Archaeologist.*** Assisted in the cultural resources inventory of approximately 500 acres near Silver City Nevada for a slated precious metals open pit mine. The project resulted in the recordation of over 500 archaeological and architectural resources. Josh assisted with the survey of this project area.

Appendix B
Native American Correspondence

From: Kathy Anderson
Sent: Tuesday, September 22, 2015 9:30 AM
To: 'NAHC NAHC'
Cc: 'katy.sanchez@nahc.ca.gov'
Subject: RE: AB52 Sacred lands file check and contact list request
Attachments: Fig1_Fresno RTM.PDF

Good morning,

I was hoping to check in on the status of this request. When might we expect to receive a response from the NAHC?

Thank you

Kathy

From: NAHC NAHC [mailto:nahc@nahc.ca.gov]
Sent: Tuesday, August 25, 2015 10:47 AM
To: Kathy Anderson
Subject: RE: AB52 Sacred lands file check and contact list request

Good Morning,

The usual turnaround time is 15 days. However, we have been experiencing delays due to staff shortage. We will be processing your request as soon as possible.

Thank you,

Office Technician Typing
Receptionist to the Native American Heritage Commission/
Scheduling Assistant to Tribal Advisor Cynthia Gomez

Contact:
Phone:916-373-3710
Fax:916-373-5471
Email: NAHC@NAHC.ca.gov

From: Kathy Anderson [KAnderson@esassoc.com]
Sent: Thursday, August 20, 2015 11:39 AM
To: NAHC NAHC
Cc: Sanchez, Katy@NAHC
Subject: RE: AB52 Sacred lands file check and contact list request

Good Morning

I wanted to check in about getting an update on the status of this SLF/AB52 request. What kind of turn around time is the NAHC currently experiencing?

Thank you!

Kathy

From: Kathy Anderson
Sent: Tuesday, August 04, 2015 11:29 AM
To: 'nahc@nahc.ca.gov'
Subject: AB52 Sacred lands file check and contact list request

Good Morning,

ESA is conducting environmental studies for the Fresno Regional Transmission Mains Project, Fresno, Fresno County. The project is located on the Fresno South, Fresno, Clovis, and Malaga USGS 7.5' Quads; T/R: T/R: 13S: 20E (Sec 4, 33, 34, 35, 36) 21E (Sec 3, 19, 30, 31, 32, 33) (See attached map). The proposed Priority 2 Regional Transmission Mains Project (Project) would include the installation of approximately 13.1 miles of distribution pipeline in the City of Fresno, to be placed within existing rights-of-way (ROW) of segments Palm Avenue, McKinley Avenue, Olive Avenue, and Chestnut Avenue. The Environmental Impact Report (EIR) for the City of Fresno Metropolitan Water Resources Management Plan Update (Metro Plan Update) was certified in May 2014. That EIR included an evaluation of impacts associated with implementation of the Metro Plan at both a project and programmatic level with implementation of specific future projects (such as the proposed project) to be examined in subsequent environmental review documents tiered from the Metro Plan Update EIR. The project would implement a new segment of pipeline, which was not identified in the Metro Plan Update EIR. Therefore, the proposed California Environmental Quality Act (CEQA) document will be tiered from the Metro Plan Update EIR consistent with CEQA Guidelines sections 15152 and 15168, and will focus the analysis on those issues specific to the proposed project that were not evaluated in the program EIR. The initial study/mitigated negative declaration (IS/MND) will build on the general analysis contained in the Metro Plan Update, and presents a project-specific CEQA analysis for the Project.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA is requesting that a search be conducted of the sacred lands files and records of traditional cultural properties that may exist within or adjacent to the project area. I would also like to request a list of Native American individuals and organizations that should be contacted about potential sites and resources of importance to Native Americans, per the requirements of AB52.

Thank you for your time and cooperation regarding this matter. Please contact me at 916-564-4500 if you have any questions.

Sincerely,

Kathy Anderson

Katherine Anderson, MA
Senior Historian
ESA | Cultural Resources
2600 Capitol Avenue, Suite 200
Sacramento, CA 95816
916.564.4500 main | 916.564.4501 fax
kanderson@esassoc.com | www.esassoc.com
Follow us on Facebook | Twitter | LinkedIn

Todd Gordon

From: noreply@nahc.ca.gov
Sent: Thursday, October 29, 2015 11:09 AM
To: Todd Gordon
Subject: Scanned image from NAHC AR-M355N
Attachments: AR-M355N_20151029_100851.pdf

DEVICE NAME:
DEVICE MODEL: SHARP AR-M355N
LOCATION:

FILE FORMAT: PDF MMR(G4)
RESOLUTION: 300dpi x 300dpi

Attached file is scanned image in PDF format.
This file can be read by Adobe Acrobat Reader.
The reader can be downloaded from the following URL:

http://www.adobe.com/

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

October 9, 2015

Kathy Anderson
ESA Association

Email to: KAnderson@esassoc.com

RE: Native American Consultation, Pursuant to Public Resources Code Sections 21080.1, 21080.3.1 and 21080.3.2, Fresno Regional Transmission Mains Project, Priority 2 Regional, Fresno County.

Dear Ms. Anderson,

As of July 1, 2015, Public Resources Code Sections 21080.1, 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law. Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the potential "area of project affect" (APE).

In accordance with Public Resources Code Section 21080.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;

   - If the probability is low, moderate, or high that cultural resources are located in the APE.

- Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and

- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. The request form can be found at http://www.nahc.ca.gov/slf_request.html. USGS 7.5-minute quadrangle name, township, range, and section required for the search.

   SFL Check Completed with Negative Results.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: katy.sanchez@nahc.ca.gov.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Governmental Program Analyst

Native American Heritage Commission
Tribal Consultation List
Fresno County
October 8, 2015

Big Sandy Rancheria
Elizabeth D. Kipp, Chairperson
P.O. Box 337 / 37387 Auberry — Western Mono
Auberry , CA 93602
lkipp@bsrnation.com
(559) 374-0066
(559) 374-0055

Cold Springs Rancheria of Mono Indians
Jeffery Lee, Chairperson
P.O. Box 209 — Mono
Tollhouse , CA 93667
(559) 855-5043

Dumna Wo-Wah Tribal Goverment
Robert Ledger SR., Tribal Chairperson
2216 East Hammond Street — Dumna/Foothill Mono
Fresno , CA 93703
ledgerrobert@ymail.com
(559) 519-1742 Office

Dunlap Band of Mono Indians
Benjamin Charley, Sr., Chairperson
Box 45 — Mono
Dunlap , CA 93621
(559) 338-2545

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road — Mono
Clovis , CA 93619
rwgoode911@hotmail.com
(559) 299-3729 Home
(559) 355-1774 - cell

Picayune Rancheria of Chukchansi
Reggie Lewis Chairperson
8080 Palm Ave, Suite 207 — Chukchansi / Yokut
Fresno , CA 93711

Santa Rosa Rancheria Tachi Yokut Tribe
Rueben Barrios Sr., Chairperson
P.O. Box 8 — Tache Tachi Yokut
Lemoore , CA 93245
(559) 924-1278

Table Mountain Rancheria
Leanne Walker-Grant, Chairperson
P.O. Box 410 — Yokuts
Friant , CA 93626
(559) 822-2587

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 — Yokuts
Friant , CA 93626
(559) 325-0351
(559) 217-9718 - cell

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue
Fresno , CA 93720
davealvarez@sbcglobal.net — Choinumni
(559) 323-6231
(559) 217-0396 Cell

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed

Fresno Regional Transmission Mains Project, Priority 2 Regional, Fresno County.

Native American Heritage Commission
Tribal Consultation List
Fresno County
October 8, 2015

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas , CA 93906
kwood8934@aol.com
(831) 443-9702

Foothill Yokuts
Mono
Wuksache

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed

Fresno Regional Transmission Mains Project, Priority 2 Regional, Fresno County.

Appendix C
DPR 523 Forms

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 ***Resource Name or #:** Dry Creek Canal

P1. Other Identifier: Dry Creek Canal
***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Fresno
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Fresno North **Date:** 1981 **T13S** ; **R** 20E ; **¼ of** **¼ of Sec** 34 ; M.D. **B.M.**
c. Address: City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
Canal intersects N Fresno Street approximately 300 feet south of the intersection of E McKinley Avenue and N Fresno Streets.

***P3a. Description:**

This historic period canal consists of a segment of the Dry Creek Canal where it intersects the proposed pipeline alignment on N Fresno Street. The modern trapezoidal concrete canal measures 35 feet wide at the top, 20 feet wide at the base, and approximately 15 feet deep. A modern concrete culvert runs underneath N Fresno Street, presumably dating to the most recent period of roadway improvement. The canal runs in an approximate east/west alignment through the project APE.

***P3b. Resource Attributes:** AH6. Water conveyance system
***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo: Dry Creek Canal, facing northeast

***P6. Date Constructed/Age and Sources: 1891** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
City of Fresno
2600 Fresno St.
Fresno, CA

***P8. Recorded by:** Katherine Anderson | ESA
2600 Capitol Ave, Sacramento CA

***P9. Date Recorded:** 09/15/15
***P10. Survey Type:** Intensive

***P11. Report Citation:** ESA, 2015. City of Fresno Priority 2 Regional Transmission Mains Project. Prepared for the City of Fresno. September 2015.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6y

***Resource Name or #** Dry Creek Canal

B1. Historic Name: Dry Creek Canal
B2. Common Name: Dry Creek Canal
B3. Original Use: irrigation canal
B4. Present Use: water conveyance
***B5. Architectural Style:** vernacular
***B6. Construction History:**
ca 1891 original construction

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: unknown
b. Builder: unknown
***B10. Significance: Theme:** n/a **Area:** n/a
Period of Significance: n/a **Property Type:** n/a **Applicable Criteria:** n/a

Review of historic maps and County Atlases identify Dry Creek Canal within the project vicinity as early as 1891, although the alignment has been noticeably modified since its original construction (Thompson, various). Historically the canal appears to have been a natural creek converted for irrigation purposes in the late nineteenth century, contemporaneous to numerous other historic period canals and ditches throughout Fresno. Archival review indicated that the segment of the canal, as a portion of the original alignment, is associated with the early local development of the irrigation system that encouraged the development of the City of Fresno (Criterion A/1). The proposed period of significance for this association is similar to the other early canal systems, dating circa 1870 to 1920. The canal segment does not appear to have direct, unique connections with important individuals but rather is one of many minor canals and connecting canal systems (Criterion B/2). The canal does not reflect distinctive characteristics of a type, period, region or method of construction, but rather appears as a creek used for irrigation purposes with no architectural distinction (Criterion C/3). Finally, the segment does not appear to possess the potential to yield, information important to the prehistory or history (Criterion D/4).
While the Dry Creek Canal appears to have been part of some of the late nineteenth century irrigation canal development in Fresno, and could perhaps be considered significant under Criterion A/1, ESA recommends that the lack of integrity renders this segment of Dry Creek Canal ineligible, as it no longer reflects its appearance during the proposed period of significance. The original form is no longer apparent in the current alignment, as review of historic atlases and topographic maps show that the creek alignment has been modified several times since the early 20th century. Additionally, the canal appears significantly modified from its original design, showing evidence of enlargement and modernization through the introduction of new materials, such as the introduction of the concrete riprap, and the use of modern machinery to expand and maintain the canal.

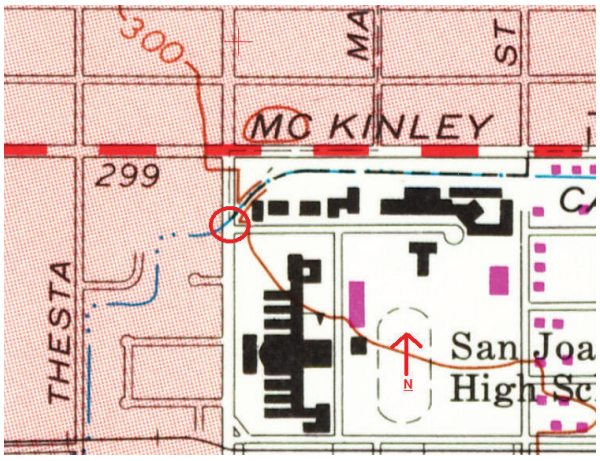
B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**
Thompson, Thomas, 1891, 1907, 1909, 1911, 1913, 1920, and 1930. Official Historical Atlas of Fresno County. On file at the Fresno County Public Library.

B13. Remarks:

***B14. Evaluator:** Katherine Anderson | ESA

***Date of Evaluation:** September 20, 2015



(This space reserved for official comments.)

*Required information

***Recorded by:** Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento, CA 95816

***Date:** 09/23/15 ☐ Continuation ■ Update

P1. Other Identifier: 1333-1353 N Palm Bungalow Court

The complex at 1333-1353 N Palm Avenue consists of a "double bar" bungalow court community configured around a large central courtyard (Figure 5). The six units reflect a California Bungalow appearance, along with some modest neo-Colonial Revival or Classical-Revival elements. Constructed in 1916, the complex is associated with some of the earliest episodes of court housing in Fresno beginning in the 1910s. Additionally, the court complex lies within the Fresno Tower District, and reflects an association with the architectural style that is indicative of the district's early development. Previous consultants recommend this resource potentially eligible under National and California Register criteria A/1 and C/3, and eligible under Fresno's Local register under elements 1 and 3(Brady, 2004). The current survey identified no changes to the integrity of this complex, and rely on the previous finding of eligibility.

***P8. Recorded by:** Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento, California 95814

***P9. Date Recorded:** September 15, 2015

*P2. Location: County: Fresno
*b. USGS 7.5' Quad: **Fresno North (1981)** T **13S;** R **20E;** Sec **32**
c. Address: N Palm Ave, Fresno 93727

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 1 of 1 *Resource Name or # Briggs Canal

*Recorded by: Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento, CA 95816

*Date: 09/23/15 ☐ Continuation ■ Update

P1. Other Identifier: Briggs Canal

This historic period canal consists of a segment of the Briggs Canal where it intersects the proposed pipeline alignment along N Temperance Avenue and E Kings Canyon Road. The trapezoidal earthen canal measures 8 feet wide at the top, 3 feet wide at the base, and approximately 6 feet deep. A modern concrete culvert with metal grate runs underneath both N Temperance Avenue and E Kings Canyon Road, presumably dating to the most recent period road improvement construction. The Briggs Canal runs in a northeast/southwest alignment through E Kings Canyon Road and northwest/southeast through N Temperance Avenue within the APE. The canal parallels Fancher Creek Canal at the intersection of N Temperance Avenue.

Per Caltran's and JRP's Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures, the Briggs Ditch has been previously evaluated in 1991 and recommended ineligible for listing in the National and California Registers (Caltrans & JRP, 2000). A site record documenting evaluation did not appear in the records search conducted for the current project. The current survey and evaluation effort supports this finding of ineligibility, and no additional evaluation was conducted for the current effort.

***P8. Recorded by:** Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento, California 95814

***P9. Date Recorded:** September 15, 2015

*P2. Location: County: Fresno
*b. USGS 7.5' Quad: **Malaga (1981)** T **14S;** R **21E;** Sec **3**
c. Address: N Temperance Ave, Fresno 93727

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 1 of 1 *Resource Name or # Fancher Creek Canal

*Recorded by: Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento, CA 95816

*Date: 09/23/15 ☐ Continuation ■ Update

P1. Other Identifier: Fancher Creek Canal

This historic period canal consists of a segment of the Fancher Creek Canal where it intersects the proposed pipeline alignment along N Temperance Avenue. This segment consists of a modified creek used for irrigation and water conveyance purposes. The canal is vaguely trapezoidal and measures 30 feet wide at the top, 15 feet wide at the base, and approximately 15 feet deep.

Previous evaluations of nearby segments of this canal by ESA as part of the Kings River Pipeline project recommended the canal ineligible for listing due to lack of integrity. The original form is no longer apparent in the current alignment' review of historic atlases and topographic maps show that the creek alignment has been modified several times since the early 20th century. Similar to that previously evaluated segment, this portion of Fancher Creek Canal no longer reflects its historical alignment or design, and as such is recommended ineligible for listing in the California and National Registers.

***P8. Recorded by:** Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento, California 95814

***P9. Date Recorded:** September 15, 2015

*P2. Location: County: Fresno
*b. USGS 7.5' Quad: **Malaga (1981)** T **14S;** R **21E;** Sec **3**
c. Address: N Temperance Ave, Fresno 93727

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

 *Resource Name or # Mill Ditch

*Recorded by: Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento, CA 95816

*Date: 09/23/15 ☐ Continuation ■ Update

P1. Other Identifier: Mill Ditch

This historic period canal consists of a segment of the Mill Ditch where it intersects the proposed project APE at N Chestnut just south of McKinley Ave. The trapezoidal earthen canal measures 60 feet wide at the top, 15 feet wide at the base, and approximately 15 feet deep. A modern concrete bridge with broken concrete rip rap crosses the canal at N Chestnut Avenue, and the modern riprap extends the length of the segment within the APE. The canal runs in an east/west alignment through the project APE.

Previous evaluations of nearby segments of this canal by ESA as part of the Kings River Pipeline project recommended the canal ineligible for listing due to lack of integrity. While the Mill Ditch was part of some of the earliest irrigation canal construction in Fresno, and could perhaps be considered significant, ESA recommends that the lack of integrity renders this segment of the Mill Ditch within the APE ineligible for either the California or National Registers. The original form is no longer apparent in the current alignment, and the ditch shows evidence of enlargement and modernization through the introduction of new materials, such as the introduction of the concrete riprap, and the use of modern machinery to expand and maintain the canal, rather than the canal's original hand dug character.

***P8. Recorded by:** Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento, California 95814

***P9. Date Recorded:** September 15, 2015

*P2. Location: County: Fresno
*b. USGS 7.5' Quad: **Malaga (1981)** T **13S;** R **20E;** Sec **36**
c. Address: N Chestnut Ave, Fresno 93727