FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

City of Fresno Environmental Assessment No. EA-14-026
Final Tiered Initial Study/Mitigated Negative Declaration
SCH #2014081078

Prepared for
City of Fresno

December 2014

ESA

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ERRATA FOR CITY OF FRESNO RECYCLED WATER DISTRIBUTION SYSTEM TIERED MITIGATED NEGATIVE DECLARATION (EA-14-026)

Introduction

The City of Fresno (City) circulated a Draft Tiered Initial Study and Notice to Adopt a Mitigated Negative Declaration (IS/MND) for the Fresno Recycled Water Distribution System (proposed project) from August 25, 2014 to September 23, 2014 (State Clearinghouse #2014081078). Following close of the public comment period and prior to adopting the MND, the City made refinements to the pipeline alignment for segment SW1C.

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 to the Draft Tiered IS Environmental Checklist regarding refinements to the pipeline alignment for segment SW1C would result in minor refinements to the alignment, and these edits do not meet the threshold of "substantial revisions" established by CEQA. Recirculation of the Draft Tiered IS and Notice of Intent (NOI) to Adopt a MND is therefore not required in accordance with CEQA Guidelines §15073.5(c)(4).

This Final MND has been prepared pursuant to CEQA Guidelines[1], which outline all aspects of the preparation of the Draft IS/MND and its review, as well as the 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 IS/MND is to provide corrections and clarity to certain facts set forth in the Draft IS/MND to ensure accuracy. The changes have been incorporated into the Final IS/MND. The changes do not substantially modify the conclusions or findings of the impact analysis included in the Draft IS/MND nor do they require any new or substantially modified mitigation measures. The alignment refinements and text changes are summarized below.

[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/

Refinements to Pipeline Segment SW1C.

The Draft IS/MND included a portion of segment SW1C placed within the right-of-way along West Nielsen Avenue and South Hughes Avenue. This segment instead is proposed to be placed within the right-of-way of South Hughes Avenue between West Nielsen Avenue and West Whitesbridge Avenue and would cross underneath State Route 180. From there, the pipeline would continue along West Whitesbridge Avenue approximately 0.5 miles west where it would follow along the alignment as discussed in the Draft IS/MND. In addition, an approximate 700 foot segment was added along South Teilman Avenue continuing north of West Nielsen Avenue. The Final IS/MND has been revised to reflect the refined alignment and updated cultural resources and biological resources survey results.

Summary of Text Changes to the Initial Study

Minor text changes, have been made to the Draft IS/MND and incorporated as part of the Final IS/MND. These changes do not substantially modify the impact analysis of the Draft IS/MND, but instead update the analysis for the refined described above. New text is shown in a double underline and text to be deleted is shown in ~~strike out~~. The changes identified below are clarifications or amplification of the information and analysis contained in the IS Environmental Checklist and does not change the results or conclusions.

Page 1-6:

TABLE 1-1
SUMMARY OF PROPOSED PIPELINES

Element	Location	Pipeline Length
SW1A	• W Jensen Ave from the RWRF to S Cornelia Ave; S Cornelia Ave north to W Whitesbridge Ave	16,849 ft
SW1B	• S Cornelia Ave at W Whitesbridge Ave north to W Belmont Ave; W Belmont Ave east to N Marks Ave;	20,658 ft
SW1C	• W Belmont Ave at N Marks Ave east to N Parkway Drive (Dr); N Parkway Dr north 1,200 ft; Crossing under State Route (SR) 99 to Roeding Park; in Roeding Park driveways and along the fence line between Storyland and the Chaffee Zoo southeasterly to W Belmont Ave; W Belmont Ave east to N Wesley Ave; south to W Franklin Ave; east to N Thorne Ave; northeast across Union Pacific Railroad (UPRR) to H Street (St); northwest to Belmont Ave; east to N Palm Ave; south to E Franklin Ave; • N Hughes Ave at W Belmont Ave south 4,000 ft; Crossing under SR 180; Continuing south on S Hughes Ave 800 ft to W Whitesbridge Ave to W Nielson Ave; W Nielson Ave east to S Teilman Ave; S Teilman Ave south to W Whitesbridge Ave; W Whitesbridge Ave east to C St; • S Teilman Ave at W Whitsebridge Ave at north to W Nielsen Ave; S Teilman Ave at W Nielsen Ave north 700 ft. • ~~W Whitesbridge Ave at S Teilman Ave west to S West Ave.~~ • S Fruit Ave at W Whitesbridge Ave north 900 ft • S Trinity St at E Whitesbridge Ave south 1,300 ft	~~32,155~~ 32,855ft

SW1C	• W Belmont Ave at N Marks Ave east to N Parkway Drive (Dr); N Parkway Dr north 1,200 ft; Crossing under State Route (SR) 99 to Roeding Park; in Roeding Park driveways and along the fence line between Storyland and the Chaffee Zoo southeasterly to W Belmont Ave; W Belmont Ave east to N Wesley Ave; south to W Franklin Ave; east to N Thorne Ave; northeast across Union Pacific Railroad (UPRR) to H Street (St); northwest to Belmont Ave; east to N Palm Ave; south to E Franklin Ave; • N Hughes Ave at W Belmont Ave south to W Nielson Ave; W Nielson Ave east to S Teilman Ave; S Teilman Ave south to W Whitesbridge Ave; W Whitesbridge Ave east to C St; • W Whitesbridge Ave at S Teilman Ave west to S West Ave. • S Fruit Ave at W Whitesbridge Ave north 900 ft • S Trinity St at E Whitesbridge Ave south 1,300 ft	32,155 ft
SW1D & SW4/S	• N Cornelia Ave at W Belmont Ave to W Shields Ave • W McKinley Ave at N Cornelia Ave east 2,300 ft • W Clinton Ave at N Cornelia Ave west to N Polk St; N Polk Ave south to W Yale Ave • Southeast on N H St from E Belmont Ave to H St; northeast on Monterey St to Broadway St; southeast on Broadway St to Los Angeles St; northeast on Los Angeles St to 200 ft past its intersection with M St. • Fulton St from Los Angeles St to E Hamilton St; E Hamilton Ave east to 650 ft east of S East Ave • S East Ave from E Hamilton Ave south for 975 ft • Mono St from H St southwest to 200 ft southwest of F St • Fresno St from H St northeast to S St	41,575 ft
Total		**~~111,237~~ 111,937 ft**

Page 1-9:

Installation of the proposed recycled water distribution pipelines would primarily involve trenching and jack-and-bore tunneling or directional drilling. The pipelines would be installed within the existing roadway right-of-way, where feasible, to minimize environmental impact and easement requirements. Tunneling and directional drilling would be required in order to pass under SR 99, SR 180, as well as existing aqueducts (located along N Cornelia Ave north of W Whitesbridge Ave; W Belmont Ave west of N Blythe Ave; W Nielsen Ave west of N Hughes Ave; W Nielsen Ave east of N Teilman Ave and N H St at E Arroyo Ave) and an at-grade railroad crossing (located at the corner of S East Ave and E Hamilton Ave). Road closures are not anticipated, though traffic control and temporary lane closures would be necessary.

Page 2-20:

Within the Project area, lacustrine habitat consists of ~~a~~ several storm water detention basins located ~~north~~ at the intersections of West Belmont Avenue and North Marks Avenue, West Belmont Avenue and North Golden State Boulevard, West Nielsen Avenue and South Teilman Avenue, and West Whitesbridge Avenue and South Roeding Drive. At the time of the reconnaissance-level surveys water was present within each of the basins. The substrate of the basins consisted of a clay bottom. The banks have a gradual slope and vary from ~~were~~ barren to

grassy; the tops of the banks and surrounding area typically consisted of a well maintained lawn or landscaping.

Page 2-21:

A formal wetland delineation has not been conducted for the Project area; however based on the reconnaissance surveys on October 22nd, 2013 and November 7th, 2014, wetlands and other waters of the U.S. are limited to Houghton Canal and Dry Creek Canal.

Page 2-22:

A list of special-status plant and animal species that have the potential to occur within the vicinity of the Project area was compiled based on data in the CNDDB (CDFW, ~~2013~~ 2014), CNPS Inventory of Rare and Endangered Plants (CNPS, ~~2013~~ 2014), and the USFWS List of Federal Endangered and Threatened Species that may be Affected by Projects in the Fresno South, Kearney Park, Herndon, and Fresno North Quads (USFWS, ~~2013~~ 2014; see **Figure 2.4-2**). Conclusions regarding habitat suitability and species occurrence are based on a reconnaissance-level area assessment conducted by ESA biologists, as well as existing literature and databases described previously.

Page 2-26:

Shevock's copper moss *Mielichhoferia shevockii (=Schizymenium shevockii)*	--/--/1B.2	Moss	--	Cismontane woodland (metamorphic, rock, mesic). Elevation: 750 – 1400 meters.	Absent. Habitat not present; not detected during surveys

Page 2-26:

Vireo bellii pusillus Least Bell's vireo	FE/CE	A summer resident of Southern California in low riparian in the vicinity of water or in dry river bottoms. Found in San Benito and Monterey counties and in coastal southern California from Santa Barbara County south; and along the western edge of the deserts in desert riparian habitat, in elevations below 2,000 feet. Nests are placed along margins of bushes or on twigs projecting into pathways, usually willow (*Salix* sp.), coyotebrush (*Baccharis* sp.), and mesquite (*Prosopis* sp.).	**Absent.** Suitable riparian habitat is not present within the Project Area. Additionally, the Project Area is located outside of the species' known range of occurrence.

Page 2-39:

References

California Department of Fish and Wildlife (CDFW). ~~2013~~ 2014. California Natural Diversity Database (CNDDB) search for the U.S. Geological Survey 7.5-minute Fresno South, Fresno North, Kearney Park, and Herndon topographic quadrangles, and surrounding 8 quadrangles; information accessed ~~October 17, 2013~~ November 17, 2014.

California Native Plant Society (CNPS), ~~2013~~ 2014. Inventory of Rare and Endangered Plants (online edition, v8-~~01a~~02). California Native Plant Society. Sacramento, CA. Accessed on Monday, ~~October 17, 2013~~ November 17, 2014.

United States Fish and Wildlife Service. ~~2013~~ 2014. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Project Area (358A , 358B, 379C and 379D) U.S.G.S. 7 1/2 Minute Quads. Species list generated ~~October 17, 2013~~ November 17, 2014.

Zeiner, D. C., W. F. Laudenslayer, Jr., and K. E. Mayer (compiling editors). 1988. California's wildlife. Volume I. Amphibians and reptiles. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento, California.

Page 2-59:

Based on a review of the Cortese List conducted in March 2014, ~~17~~ 20 listed sites are located within 0.5 miles of the Project (DTSC, 2014); however, none are located directly within the Project area. There are three leaking underground storage tank (LUST) cleanup sites located in the vicinity of the Project area, all with diesel as the listed potential contaminants of concern. There are ~~two~~ three voluntary cleanup sites in the vicinity of the Project area with potential contaminants of concern including arsenic, lead, polynuclear aromatic hydrocarbons, TPH-motor oil, and cyanide. ~~Four~~ Five evaluation sites were listed in the vicinity of the Project area. Two Three of these sites have no listed potential contaminants of concern, one has tetrachloroethylene and trichloroethylene and the other site has polynuclear aromatic hydrocarbons. There is one state response or national priorities list (NPL) site located in the vicinity of the Project area. Two hazardous waste facility sites were listed also listed in the vicinity of the Project Area, with one listed as a protective filer and the other being non-operating. One school site in the vicinity of the Project area has lead as the potential contaminant of concern. There are ~~three~~ four cleanup program sites in the vicinity of the Project area with potential contaminants of concern including lead, metals/heavy metals, petroleum/fuel/oils, volatile organic compounds, and gasoline.

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Fresno Recycled Water Distribution System Initial Study/Mitigated Negative Declaration

Appendices

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ENVIRONMENTAL CHECKLIST
Initial Study

1. **Project Title:** Fresno Recycled Water Distribution System
2. **Lead Agency Name and Address:** Department of Public Utilities – Wastewater Management, City of Fresno, 2600 Fresno Street, Fresno, CA, 93721
3. **Contact Person and Phone Number:** Kevin Norgaard, 559-621-5297
4. **Project Location:** City of Fresno, CA
5. **Project Sponsor's Name and Address:** Kevin Norgaard, Department of Public Utilities – Wastewater Management, City of Fresno, 2600 Fresno Street, Fresno, CA, 93721
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 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:

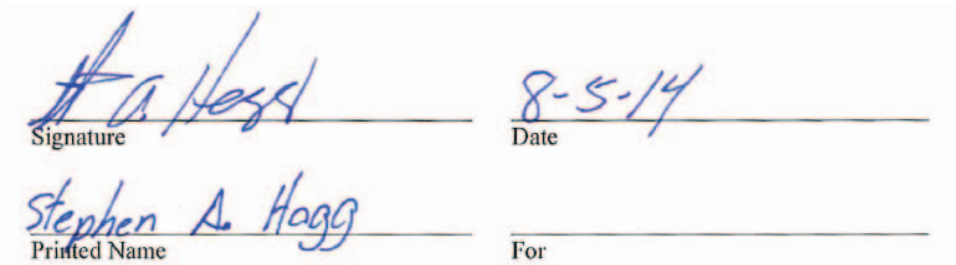
☐ I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the 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 Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the 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 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 Project, no further environmental documentation is required.



CHAPTER 1
Project Description

1.1 Introduction and Background

The proposed Recycled Water Distribution Pipeline Project (Project) would include installation of recycled water distribution pipelines and a proposed pump station in the City of Fresno's (City) Southwest (SW) Quadrant. The proposed distribution pipelines would convey tertiary treated recycled water from the Regional Water Reclamation Facility (RWRF) for urban reuse, groundwater recharge, and agricultural reuse as proposed as part of the City's Recycled Water Master Plan (Master Plan). The following discussion provides a summary of background and process information relevant to the Project.

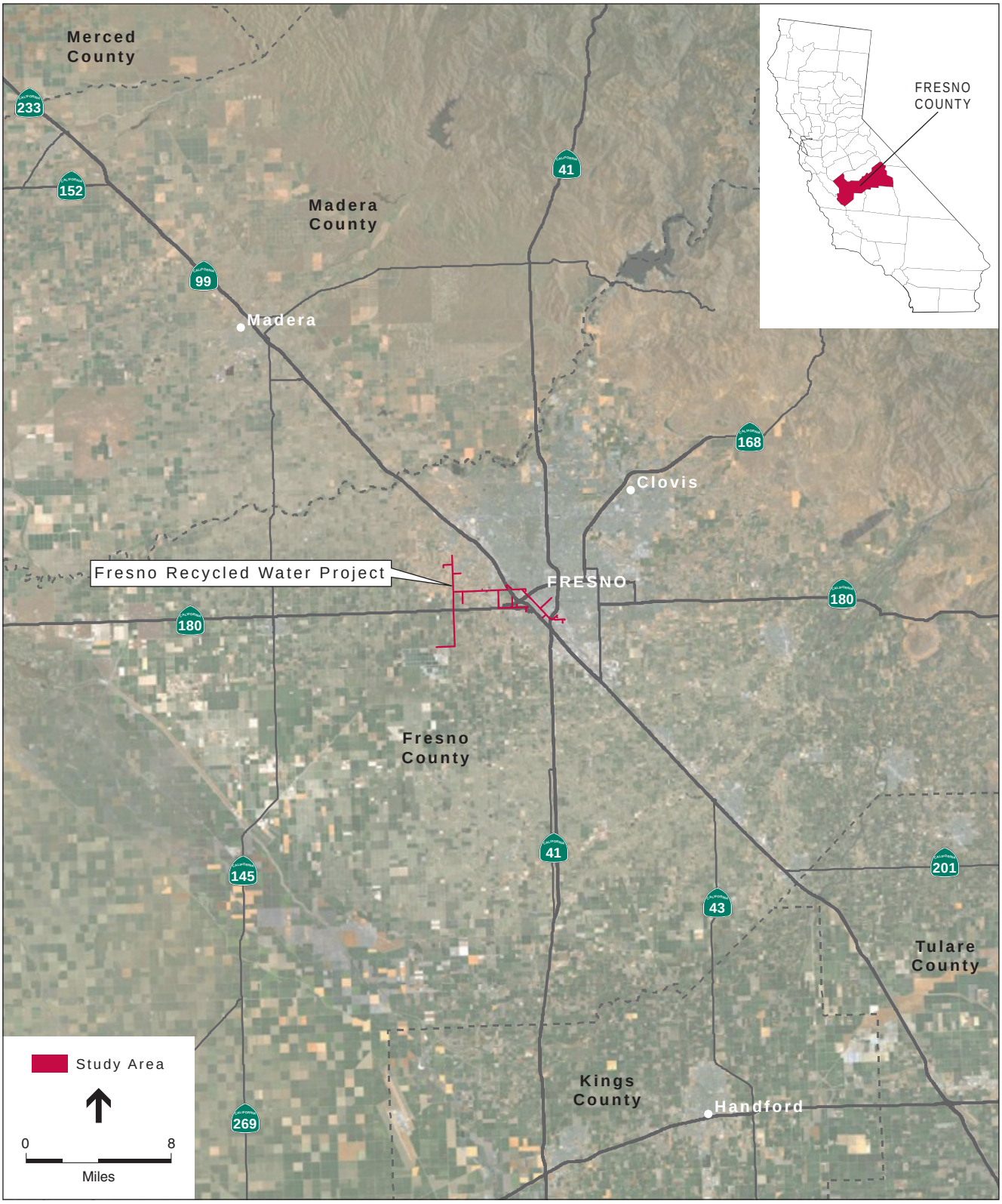
1.1.1 Existing Facilities

Operated by the City of Fresno, The RWRF provides wastewater treatment services to the cities of Fresno and Clovis, and other areas in the Fresno Metropolitan Area. The facility has a maximum capacity of 80 million gallons per day (mgd). During average dry weather flow, the RWRF treats approximately 68 mgd of wastewater, which is collected and conveyed to the RWRF by 1,700 miles of sanitary sewer lines.

The existing RWRF is located away from urban areas along the southwestern margin of the City (**Figure 1-1**). Treatment at the RWRF includes primary and secondary treatment processes, as well as additional processes to treat biosolids generated by the facility. Existing primary treatment facilities on site include screens, settling tanks, and skimming devices used to remove sand, grit, and larger solids. Existing secondary treatment facilities on site include aeration basins and sedimentation tanks. Solids handling facilities on site include anaerobic digestion and dewatering, which remove contaminants contained in wastewater through biological processes.

Treated wastewater is currently routed to 1,660 acres of percolation ponds located in the vicinity of the RWRF. The percolation ponds facilitate infiltration of plant effluent into the underlying groundwater. A portion of the plant effluent is also routed to nearby farmers, who use the water to irrigate fodder and fiber crops including cotton and alfalfa.

Recycled water distribution pipelines operated by the City are currently limited to those used to supply agricultural users with reclaimed water from the RWRF, plus an approximately one-mile recycled water distribution pipeline that serves the Copper River development. Recycled water from the RWRF is not presently managed for urban reuse, but would be with implementation of the Project and other projects proposed under the Master Plan.



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

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Figure 1-1
Regional Location Map

1.1.2 City of Fresno Recycled Water Master Plan

The City adopted a Recycled Water Master Plan in April 2013 that identifies potential recycled water use opportunities within the City and its Sphere of Influence (SOI), including Fresno County lands located in or adjacent to the SOI. The Master Plan includes a plan for the installation and operation of treatment, storage and distribution infrastructure to serve the Master Plan area with recycled water that would be implemented in a phased manner based on technical, funding, partnering, and other factors through 2025. The Master Plan informs the City's decision process in selecting recycled water projects that include expansion of the City's recycled water system to reduce the use of percolation ponds that currently handle effluent discharge, to offset potable water use, and to enhance the sustainability of the water supply.

In addition to the proposed Master Plan, the City has adopted (July 2014) a "Recycled Water Ordinance" to assist the City in implementing the Recycled Water Program set forth in the Master Plan. The purpose of the ordinance is to establish water recycling policy and criteria for its use within the current City limits as well as its SOI as lands within the sphere are annexed into the City. More specifically, the Ordinance contains provisions addressing various topics related to implementation of the goals, policies and objectives of the Master Plan.

1.1.3 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 Project, the City is the lead agency and will use the Initial Study to determine whether the Project has a significant effect on the environment.

If the lead agency finds substantial evidence that any aspect of the 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 Project at hand. If the agency finds no substantial evidence that the 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 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 mitigated negative declaration may be prepared. In the case of this 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, a mitigated negative declaration has been prepared.

1.1.4 CEQA Tiering

Tiering under CEQA refers using the analysis of general impacts contained in a broader EIR, such as the City of Fresno Recycled Water Master Plan Program EIR (Master Plan EIR; State Clearinghouse Number (SCH) #2010051015), to streamline the analysis of subsequent, related projects through a tiered EIR or a tiered negative declaration (CEQA Guidelines section 15152). The Project was initially evaluated under the Master Plan EIR at a programmatic level (CEQA Guidelines section 15168; please refer to Chapter 1 of the Master Plan EIR for a discussion of the programmatic nature of the Master Plan EIR, and additional discussion of tiering). This initial study/mitigated negative declaration (IS/MND) builds on the general analysis contained in the Master Plan EIR, and presents a project-specific CEQA analysis for the Project. Consistent with CEQA Guidelines section 15150, the Master Plan EIR is incorporated by reference into this IS/MND, including applicable environmental setting, impact analysis, and mitigation measures.

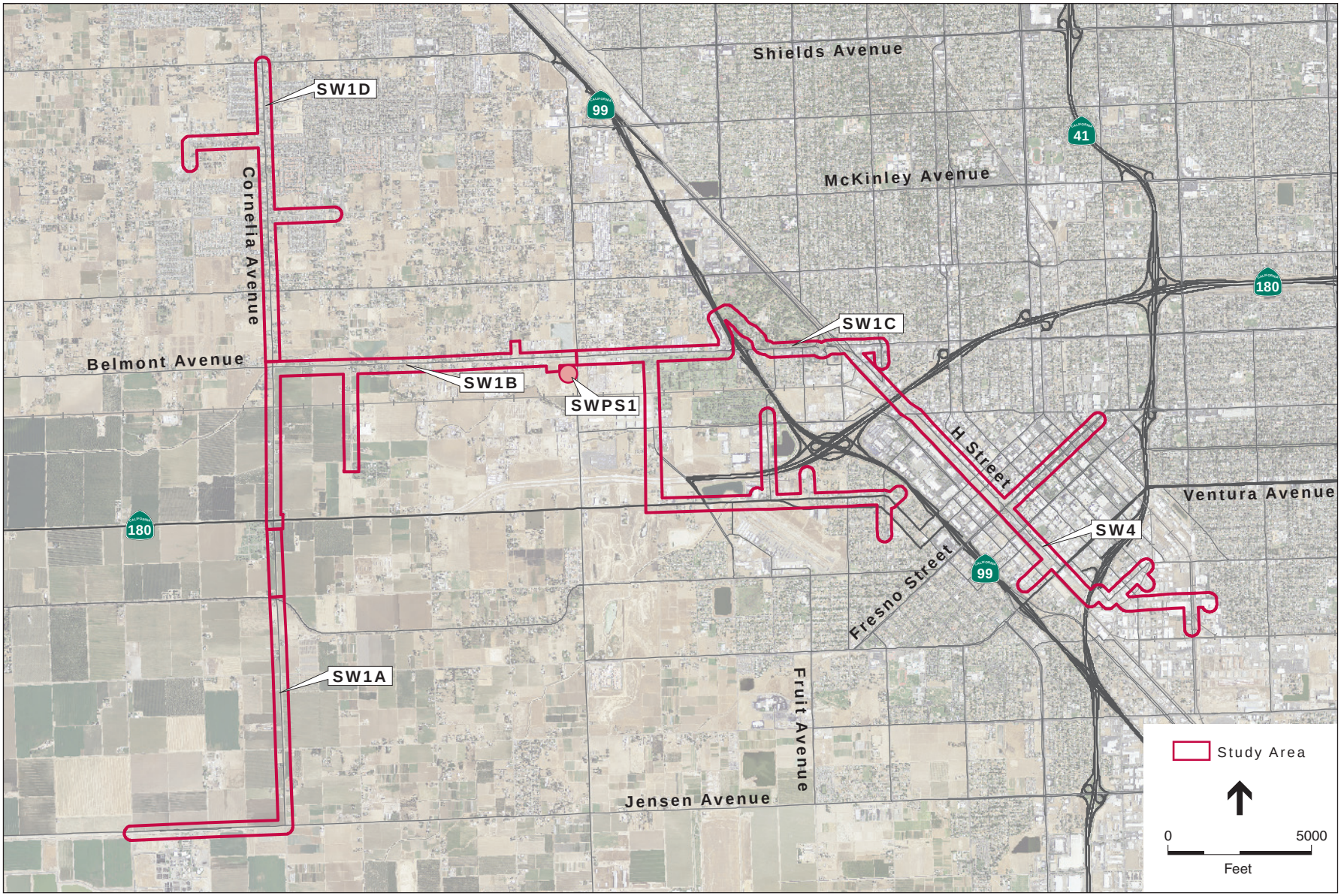
1.2 Project Location

The Project would be located in the SW Quadrant of the City and its SOI (**Figure 1-1**). Project distribution pipelines would extend from the existing Regional Wastewater Reclamation Facility (RWRF), located at Jensen Avenue (Ave) and Cornelia Ave in southwest Fresno, to the north and west into the SW Quadrant of the City. The proposed pipelines would serve urban areas including residential areas, Roeding Park, and downtown Fresno. **Figure 1-2** provides additional detail for the location of the proposed facilities. As shown, the proposed pipeline is broken into four segments (SW 1A, SW 1B, SW 1C, and SW 1D & SW 4/S). For additional detail regarding each of the four segments, please refer to **Table 1-1**.

1.3 Project Objectives

The overall objective of the Project is to support implementation of the recycled water distribution system proposed under the Master Plan. The objectives of the Master Plan include the planning and implementation of a recycled water treatment and distribution system that would:

- Protect and improve groundwater quality by reducing the use of percolation ponds currently used as part of the RWRF's effluent disposal process;
- Increase the use of recycled water through urban reuse, groundwater recharge, and agricultural reuse to help meet the water demands in the region;
- Expand the recycled water system to enable the City's offset of potable water use, thereby enhancing sustainability of the water supply; and
- Facilitate the goals related to recycled water use set forth in the City's Urban Water Management Plan.



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

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Figure 1-2
Project Study Area

1.4 Proposed Project

The Project would include installation of proposed recycled water distribution pipelines and a proposed pump station to convey recycled water for use in the SW Quadrant of the City. Specific Project features are described below.

1.4.1 Recycled Water Distribution Pipelines

The Project would include installation of approximately 22 miles of 8 to 54 inch diameter recycled water distribution pipelines to convey up to approximately 8.1 mgd of tertiary treated recycled water for urban reuse, groundwater recharge, and agricultural reuse within the SW Quadrant of the City (see **Figure 1-2**). All pipelines would be installed within roadways or roadway rights of way. Segment SW1C of the Project would be installed along existing streets where possible and otherwise avoid the zoo and future zoo facilities. **Table 1-1** summarizes the pipelines that are proposed under the Project.

TABLE 1-1
SUMMARY OF PROPOSED PIPELINES

Element	Location	Pipeline Length
SW1A	• W Jensen Ave from the RWRF to S Cornelia Ave; S Cornelia Ave north to W Whitesbridge Ave	16,849 ft
SW1B	• S Cornelia Ave at W Whitesbridge Ave north to W Belmont Ave; W Belmont Ave east to N Marks Ave;	20,658 ft
SW1C	• W Belmont Ave at N Marks Ave east to N Parkway Drive (Dr); N Parkway Dr north 1,200 ft; Crossing under State Route (SR) 99 to Roeding Park; in Roeding Park driveways and along the fence line between Storyland and the Chaffee Zoo southeasterly to W Belmont Ave; W Belmont Ave east to N Wesley Ave; south to W Franklin Ave; east to N Thorne Ave; northeast across Union Pacific Railroad (UPRR) to H Street (St); northwest to Belmont Ave; east to N Palm Ave; south to E Franklin Ave; • N Hughes Ave at W Belmont Ave south 4,000 ft; Crossing under SR 180; Continuing south on S Hughes Ave 800 ft to W Whitesbridge Ave; W Whitesbridge Ave east to C St; • S Teilman Ave at W Whitsebridge Ave at north to W Nielsen Ave; S Teilman Ave at W Nielsen Ave north 700 ft. • S Fruit Ave at W Whitesbridge Ave north 900 ft • S Trinity St at E Whitesbridge Ave south 1,300 ft	32,855 ft
SW1D & SW4/S	• N Cornelia Ave at W Belmont Ave to W Shields Ave • W McKinley Ave at N Cornelia Ave east 2,300 ft • W Clinton Ave at N Cornelia Ave west to N Polk St; N Polk Ave south to W Yale Ave • Southeast on N H St from E Belmont Ave to H St; northeast on Monterey St to Broadway St; southeast on Broadway St to Los Angeles St; northeast on Los Angeles St to 200 ft past its intersection with M St. • Fulton St from Los Angeles St to E Hamilton St; E Hamilton Ave east to 650 ft east of S East Ave • S East Ave from E Hamilton Ave south for 975 ft • Mono St from H St southwest to 200 ft southwest of F St • Fresno St from H St northeast to S St	41,575 ft
Total		**111,937 ft**

1.4.2 Recycled Water Pump Station

The Project would also include installation of a single pump station, which would be used to maintain pressure within the proposed pipelines by boosting the pressure of recycled water in the pipelines using electric pumps. The pump station would be connected to the proposed recycled water distribution pipeline located along West Belmont Avenue at one of two locations (**Figure 1-2**), where the City would select one option prior to the initiation of construction. The pump station's equipment (pumps, flow meters, pressure gages, remote telemetry switches, and manual switches) would be primarily housed in a single story building with a concrete pad, having a total footprint of approximately 1,800 square feet (20-ft by 60-ft). A 2,000 cubic ft (approximately 15,000 gallon) surge tank would be installed adjacent to the pump station. Electricity to run the pumps would be supplied from the grid through underground service. The pump station would be surrounded by a 6-foot block wall along the perimeter of the facility. A 20-ft by 200-ft paved road would provide maintenance vehicle access to the facility.

Pump station Option 1, if selected, would be located along the south side of W Belmont Ave, approximately 900 feet west of the intersection of W Belmont Ave and N Marks Ave (APN 326-060-31). The parcel is approximately 30 acres total, however, the City would purchase only 3.5 acres or less of the total property, to install the pump station equipment. The parcel is currently owned by Nicks Trucking Inc. It was part of the former Craycroft Brick Company plant, which was established on 100 acres in this vicinity in 1910. Clay and hardpan soils were excavated from the site until brick making activity ceased approximately 30 years ago. The southerly portion of APN 325-060-31 was permitted as a Class III (inert waste) landfill in the 1980s, and non-putrescible construction and demolition (C&D) material was used to fill pits formerly excavated for the clay used to manufacture bricks. This inert waste landfill was closed in 2005 in accordance with State of Califirnia regulations, but Nick's Trucking continues to operate a C&D hauling and transfer business on the southerly portion of the site. If land at the northerly edge of this larger property is selected for the pump station location under Option 1, the City would verify the absence of hazardous residues at the Option 1 site, and would apply to the Fresno County Department of Public Health, Environmental Health Division (the solid waste Lead Enforcement Agency) to formally amend the solid waste disposal site boundary prior to completing purchase of the land.

Pump station Option 2 would be located along the north side of W Belmont Ave, approximately 2,100 feet west of the intersection of W Belmont Ave and N Marks Ave (APN 449-110-13). The parcel is approximately 4.75 acres total. If Option 2 is selected, the City would purchase the entire 4.75 acre parcel from the current owner, J S J Enterprises, LLC, to support installation of the proposed pump station.

The pump station would include pumps and appurtenances that would be housed in a single story building with a concrete pad (with a total footprint of approximately 30-ft by 60-ft). A 2,000 cubic ft surge tank would also be included, and the building and surge tank would be surrounded by a 6-foot tall block wall around the perimeter of the facility. A 20-ft wide by 200-ft long paved access road would provide truck/maintenance access to the proposed pump station.

The pump station would be connected to the proposed recycled water distribution pipeline located along W Belmont Ave. The station would also include flow meters, pressure gages, and remote telemetry units. During operations, the pump station would boost recycled water pipeline pressure

using electric pumps. Electricity to run the pumps would be supplied from the grid through underground service. The pump station would also be equipped with portable emergency generator connections and manual transfer switches.

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 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 recycled water distribution system (*e.g.*, acquisition of property for utility right-of-way and installation of recycled water distribution facilities, Fresno County encroachment permits for installation of recycled water distribution facilities, and Agreements with Fresno County for road construction work related to installation and maintenance of recycled water distribution facilities).

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

Agency	Type of Approval
Federal Agencies	
N/A	N/A
State Agencies	
N/A	N/A
CVRWQCB	Responsible Agency; NPDES General Permit for Stormwater Discharge Associated with Construction
California Department of Transportation	Encroachment Permit
Cal OSHA	Construction or Excavation Permit
Local Agencies	
City of Fresno	Road Encroachment Permit

1.6 Construction Process and Schedule

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

1.6.2 Construction Site Preparation, Staging, and Equipment

Prior to the installation of the proposed pipeline and the proposed pump station, where applicable, any existing vegetation would be removed from the pipeline alignment and associated work areas, based on a 30 ft construction zone along roadways. Excavation, backfilling, and temporary storage of trench spoils would be contained within the construction zones and staging areas as relevant.

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 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 recycled water distribution pipelines would primarily involve trenching and jack-and-bore tunneling or directional drilling. The pipelines would be installed within the existing roadway right-of-way, where feasible, to minimize environmental impact and easement requirements. Tunneling and directional drilling would be required in order to pass under SR 99, SR 180, as well as existing aqueducts (located along N Cornelia Ave north of W Whitesbridge Ave; W Belmont Ave west of N Blythe Ave; W Nielsen Ave west of N Hughes Ave; W Nielsen Ave east of N Teilman Ave and N H St at E Arroyo Ave) and an at-grade railroad crossing (located at the corner of S East Ave and E Hamilton Ave). 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 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 recycled water. 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. Recycled water pipeline 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 recycled water. Slurry, typically bentonite (an inert clay), is used as a drilling lubricant. Recycled water pipeline 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

At various locations within pipeline construction zones, staging areas would be required to store pipe, construction equipment, and other construction related items. Staging areas would be established in areas near construction zones that are open, free of natural vegetation, and easily accessed (i.e., vacant lots). In some cases, staging areas could be used for the duration of the Project. In other cases, as pipeline construction moves along the route, the staging area could also be moved to minimize hauling distances and avoid disrupting any one area for extended periods of time. The City would require contractors to negotiate short-term temporary easements for staging areas. The location of each staging area would be determined by the contractor, with direction from the City, and would typically be located every three to five miles along pipeline alignments. The maximum size of the staging areas would be five acres. Additional staging areas could be located within wide construction corridors along proposed pipeline alignment.

Pump Station Construction

Construction of the selected pump station option would involve excavation and structural foundation installation, pump house construction, pump installation, access road installation, and final site restoration. Pump station exteriors would be built in accordance with standard construction methods for roofed masonry buildings. After they are built and the pumps installed, electrical equipment (e.g., machinery control consoles, switchboards, lighting, etc.) would be installed. Excavated soil would be reused on site with no off-site hauling or disposal anticipated. The size of construction crews would be highly variable, with 5 to 15 construction workers per day.

1.6.3 Anticipated Construction Schedule

The Project would be constructed in five phases, corresponding to the pipeline segments and pump station optional locations shown in **Figure 1-2**. In total, Project construction would require approximately 22 months to complete. Project pipeline segments and the proposed pump station would be installed according to the following schedule:

- Pipeline Segment SW1A: Month 1 to Month 8
- Pipeline Segment SW1B: Month 4 to Month 14
- Pipeline Segment SW1C: Month 9 to Month 22
- Pipeline Segments SW1D and SW4: Month 12 to Month 22
- Pump Station SWPS1: Month 4 to Month 12

The sequential major construction activities associated with the construction of the proposed pipelines are as follows:

- Mobilize construction equipment and materials
- Clear and grub site as needed
- Excavation/trenching
- Pipeline installation
- Backfill
- Complete final site grading and restoration/repaving

The sequential major construction activities associated with the construction of the proposed pump station are as follows:

- Mobilize construction equipment and materials
- Clear and grub site as needed
- Excavation as needed, trenching, and backfilling
- Foundation installation
- Pump station facility and housing installation
- Complete final site grading and restoration/paving

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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 Master Plan EIR the environmental issue is discussed; summary of existing conditions as relevant; applicable Master Plan EIR impacts and mitigation measures; and discussion of environmental checklist items, including findings for Project effects as corresponding 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 address in the Master Plan 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 no significant impacts, only less than significant impacts, result.
- **No Impact**: The Project does not create an impact.
- **Impact Addressed in Master Plan EIR**: An effect that was adequately addressed and mitigated to the extent feasible in the Master Plan EIR. For these effects an explanation is provided as to how the effect was addressed in the Master Plan 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:

    a. The Master Plan EIR found that the impact would be reduced to a less-than-significant level with the implementation of applicable Master Plan EIR mitigation measures;

2.1 Aesthetics

Section 4.11 of the Master Plan EIR addresses the aesthetics effects of implementing the Master 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 Project maps and drawings, a visual survey of the Project area, aerial and ground level photographs of the Project area, and planning documents.

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to aesthetics to be significant if the Master Plan 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 Master 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.

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan EIR and incorporated into this IS/MND 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.	PS	LS
4.11-3	Operation of project related facilities would introduce new sources of light and glare and increase ambient light in the project area.	PS	LS
4.11-4	Implementation of the proposed project, in combination with development of other projects, could contribute to adverse effects on local viewsheds.	PS	LS
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan 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 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, 2014). The 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) **Impact Addressed in Master Plan EIR.** The Project would entail the installation of a series of underground pipelines along existing public roadways. The proposed pipelines would be located in existing rights-of-way, including existing roadways and roadway margins. Following completion of construction, the pipelines would be buried and thus not visible. The selected pump station option would be installed in an area that includes existing industrial plus limited residential and municipal land uses. The selected pump station option would include a block wall enclosure, would not exceed 10 ft in height, and would be consistent with the character of surrounding existing buildings and facilities. Construction of the Project would result in short-term impacts to the existing visual character and quality of the Project area. 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 Project. The selected pump station (Option 1 or Option 2)would be relatively small and limited in extent. However, to ensure that the proposed pump station would be designed to match the existing character of its surroundings, and to ensure that the proposed construction activities would be minimized, implementation of Master Plan EIR Mitigation Measures 4.11-2a-c would be required. Implementation of these

mitigation measures would reduce potential impacts to less than significant by ensuring that (1) areas disturbed during construction would be restored to pre-existing conditions; (2) landscaping is appropriately applied and maintained for the selected pump station option; and (3) exterior coatings would be applied to the selected pump station option as needed to blend in with the surrounding landscape and minimize glare.

d) **Impact Addressed in Master Plan EIR.** 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. The selected pump station option would include nighttime lighting. Exterior lighting could adversely affect day and nighttime views by introducing a new source of light and glare. Therefore, implementation of Master Plan EIR Mitigation Measure 4.11-3 would be required. Implementation of this mitigation measure would reduce potential impacts to less than significant by ensuring that proposed lighting would adhere to City policies relating to light shielding.

References

California Department of Transportation (Caltrans), 2014. California Scenic Highway Program, available at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm; accessed March 21, 2014.

City of Fresno, 2002. 2025 Fresno General Plan. Prepared by City of Fresno Planning and Development Department. February 1, 2002.

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

2.2 Agricultural and Forest Resources

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

Environmental Setting

With the exception of the proposed pump station site (Option 1 or Option 2) and portions of the SW1C alignment that stretch through Roeding Park, the Project is located entirely within an existing paved road right-of-way in The City of Fresno and Fresno County. The proposed pump station site Option 1 and Option 2 are located on vacant or disturbed land as designated by the California Department of Conservation. (California Department of Conservation, 2013).

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to agricultural resources to be significant if the Master Plan 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.

Master Plan EIR Impacts

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

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
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan EIR*
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) **Less-than-Significant.** The majority of the Project is not located in an area with Prime, Unique, or Farmland of Statewide Importance or lands under Williamson Act contract. The entire SW1A alignment is adjacent to important farmland, a majority of which is under Williamson Act contract. The land is primarily designated as Prime Farmland, but also consists of Farmland of Statewide Importance, Unique Farmland, and also Farmland of Local Importance. Alignment SW1B is adjacent to Prime Farmland and large amounts of land under Williamson Act contract along Cornelia Ave, but is then bordered primarily by urban land with some Farmland of Local Importance and Unique Farmland present. Although farmland is located adjacent to Alignment SW1B, the pipeline would be installed within the existing roadway or along the shoulder of the roadway, and therefore would not disrupt existing farmland.

The vast majority of the remaining alignments are adjacent to urban and built-up land or rural residential land with small intermittent land designated as Farmland of Local Importance and no land under a Williamson Act contract. However, the proposed

pipelines would not be installed within farmland, and would instead be installed within roadways or along roadway shoulders. Neither pump station option is located on land designated as Important Farmland or under a Williamson Act Contract. Construction of the 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 Project would not convert agricultural lands to other uses, nor would it conflict with existing Williamson Act Contract.

c, d) **No Impact.** The Project is not located in an area zoned as forest, timberland or used for timber production As described above, the majority of the Project, with the exception of the pump station site options and portions of the SW1C alignment, is located entirely within an existing paved road right-of-way. The proposed pipeline alignment does not intersect any existing forest uses. As such, the Project would not convert forest lands to other uses, nor would it conflict with existing timberland zoning.

References

United States Department of Agriculture, Natural Resources Conservation Service (NRCS).Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed March 25, 2014.

California Department of Conservation, 2013. Fresno County Important Farmland 2010. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/fre10_e.pdf Accessed on March 25, 2014.

2.3 Air Quality

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

Environmental Setting

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 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 demonstrates how the region will attain the standard or that demonstrate reasonable improvement in air quality conditions. As noted, the SJVAPCD is responsible for developing attainment plans for the SJVAB, for inclusion into California's State Implementation Plan (SIP).

TABLE 2.3-1
SAN JOAQUIN VALLEY ATTAINMENT STATUS

	Designation/Classification	
Pollutant	**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, 2009b,*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 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 PM_{10} 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 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 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, 2009a) 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 State Implementation Plan (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 Project area is 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 minimus threshold of 10 tons of NO_x per year for extreme nonattainment (40 CFR Section 93.150 et sq.).

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to air quality to be significant if the Master Plan 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.

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below, that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan EIR and incorporated into this IS/MND 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
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan 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 Master Plan 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 has developed the San Joaquin Valley 1991 California Clean Air Act Air Quality Attainment Plan (AQAP), which continues to project nonattainment ozone/oxidants and particulate matter in the future. The Project would be subject to applicable Air District rules, regulations, and strategies. In addition, the Project may be subject to the San Joaquin Valley Unified Air Pollution Control District (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 Master Plan 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 Project would be consistent with the AQAP. As a result, the 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 Project construction on air quality, as relevant to the plan, please refer to inventory item 3.b.

b) **Impact Addressed in Master Plan EIR.** The Project consists of construction of pipelines and a pump station (Option 1 or Option 2) that would be used to convey and distribute recycled water within the City. Construction associated with 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 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 C**.

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	0.9	9.7	6.4	1.0	0.7	794
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**

a Project construction emissions estimates were made using CalEEMod, version 2013.2.2.
Values in **bold** are in excess of the applicable SJVAPCD significance threshold. NA = Not Available. Emissions shown are for the worst year of a 14 year construction period.

SOURCE: ESA, 2013.

Although the 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 Project implement a set of Standard Mitigation Measures as best management practices regardless of the significance determination. Implementation of Master Plan EIR Mitigation Measures 4.7-1a to 4.7-1c would minimize potential construction related air emissions, and ensure that potential emissions impacts contributed by the Project would be less-than-significant.

Operational activity would be powered by electrical pumps, and would include the storage and conveyance of water through pipes. The Project would not result in an increase in long-term operational traffic, because the Project would not add new operation period workers. Thus, the 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 Master Plan EIR.** As discussed in Checklist Item 3b, the Project is located within the SJVAPCD, which has been 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 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 Master Plan EIR Mitigation Measures 4.7-1a to 4.7-1c would minimize emissions of ozone precursors and particulate matter during construction, thereby reducing construction emissions to less-than-significant.

Also as referenced above, upon completion of construction activities emission sources resulting from Project operations would not result in net new emissions. As such, the 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 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 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 Project would result in emissions that are anticipated to be below relevant thresholds for criteria air pollutants during construction or operation of the Project.

e) **No Impact.** The Project consists of construction of pipelines and facilities to convey and distribute recycled water within the City. The Project would not introduce new wastewater treatment processes or other processes that would result in the generation of odors. Therefore, no new odor generating facilities would be developed under the Project, and 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

2.4 Biological Resources

Section 4.5 of the Master Plan EIR addresses the effects of implementing the Master Plan, including the Project, on biological resources. The following discussion provides Project specific information relevant to biological resources.

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, flat, 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.

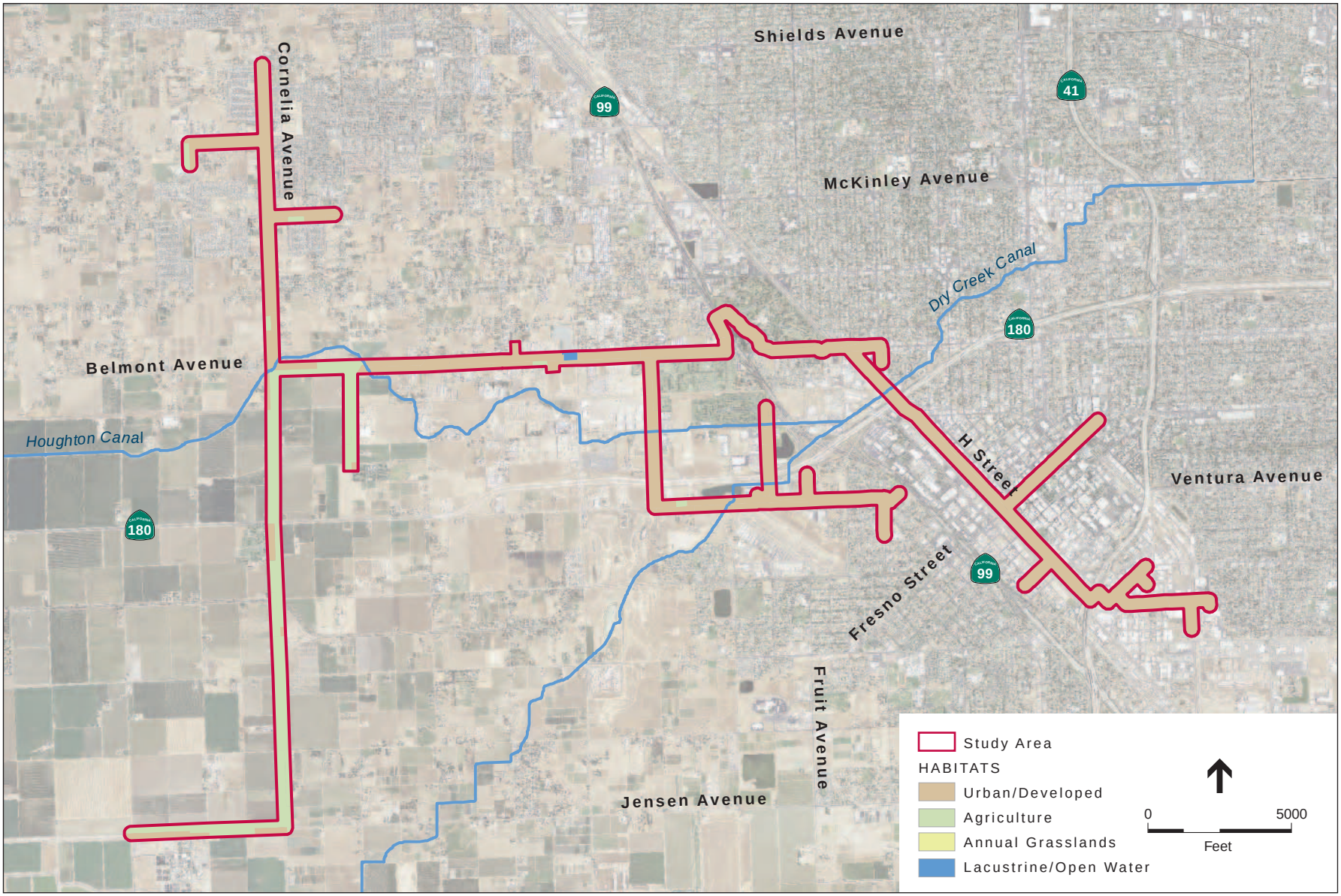
Historically, this region supported extensive annual grasslands intermixed with a variety of vegetative communities including oak woodland, wetland, and riparian woodland. Intensive agricultural and urban development has resulted in large losses and conversion of these habitats. The remaining native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

Elevation of the site ranges from approximately 253 ft above mean sea level (msl) along at the Fresno Wastewater Treatment Facility along West Jensen Ave to approximately 295 ft above msl in the southeast portion of the Project area along South East Ave. 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 agriculture, rural residential development, as well as industrial and commercial uses and open space. The types of wildlife habitat present in the Project area can be found in **Table 2.4-1** and **Figure 2.4-1**.

TABLE 2.4-1
PROJECT AREA HABITATS/VEGETATION COMMUNITIES

Habitat Type	Acres / Percent of Project Area[1]
Urban/Developed	948.6/74%
Agriculture	330.5/26%
Annual Grassland	3.45/0.3%
Open water (incl. riverine and lacustrine)	3.52/0.3%
Total	**1,282.5/100%**

SOURCE: ESA, 2013, 2014
[1]Acreages based on a 250' buffer on either side of the pipeline alignment



SOURCE: ESRP, 2004; USDA, 2012; Blair, Church, and Flynn, 2013; ESA, 2013

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Figure 2.4-1

Vegetation Communities in the Project Study Area

Vegetation Communities and Wildlife Habitats

Wildlife habitats were classified using the CDFWs *A Guide to Wildlife Habitats* (Mayer and Laudenslayer 1988), which is integrated with the California Wildlife Habitat Relationships (CWHR) System. Wildlife habitats generally correspond to plant communities. Habitats or vegetative communities are assemblages of plant species that occur together in the same area, which are defined by species composition and are repeated across landscapes. Both species composition and relative abundance define them. 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 plant communities described below generally correlate with wildlife habitat types and are those found within the Project area.

Urban/Developed

The Project area is located within the City of Fresno, a highly developed area consisting of residential housing and commercial and industrial infrastructure. Urban/developed portions of the Project Study Area include paved and unpaved roadways, parking lots, railroad tracks, residential development, industrial and commercial development. Urban areas are typically landscaped with ornamental species, paved, or otherwise developed and generally lack natural vegetation. In the Project area, urban/developed areas occur throughout. Urban environments generally provide limited habitat for common wildlife species such as rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), American crow (*Corvus brachyrhynchos*), house mouse (*Mus musculus*), and opossum (*Didelphis virginiana*).

Agriculture

Agricultural fields are the dominant land cover type in the western portion of the Project area, along North Cornelia Ave and the associated side roads. Agricultural habitats include a variety of crops ranging in size, shape, and growing patterns. Although most crops are planted in rows, alfalfa hay and small grains (rice, barley, and wheat) form dense stands with up to 100 percent canopy closure. Most croplands are planted with annuals that are planted in the spring and harvested during the summer or fall. Agricultural habitat within the Project area consists of wheat, alfalfa, lemongrass, tomatoes, fruit and nut orchards, and crops that were fallow at the time of survey.

Agricultural fields, such as hay fields and row crops, have high foraging habitat value for wildlife species such as Swainson's hawk (*Buteo swainsoni*) and other raptors. Orchards can provide nesting habitat for small songbirds, such as house sparrows, house finch (*Haemorhous mexicanus),* and Brewer's blackbirds (*Euphagus cyanocephalus*). Several bat species, particularly the pallid bat (*Antrozous pallidus*), have also been observed roosting in orchards.

Annual Grassland

Annual grassland generally occurs in open areas in valleys and foothills throughout coastal and interior California. This vegetation type is dominated by nonnative Mediterranean annual grasses

such as wild oats (*Avena* sp.), soft chess (*Bromus hordeaceus*), and ripgut brome (*Bromus diandrus*). Forbs occurring in annual grassland include spring vetch (*Vicia sativa*), redstem filaree (*Erodium cicutarium*), longbeak filaree (*E. botrys*), and bur clover (*Medicago polymorpha*). Wildlife such as western fence lizard (*Sceloporus occidentalis*), field mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), and black-tailed jackrabbit (*Lepus californicus*) commonly occur in annual grassland habitat. Within the project area, this habitat type occurs in association with the proposed location of the pump station Option #1, south of W Belmont Ave, west of Marks Ave. Ground squirrels (*Spermophilus beechyi*) and ground squirrel burrows were identified within this area.

Riverine

Riverine habitats are distinguished by intermittent (seasonal) or perennial (continually flowing) drainage channels. An intermittent channel has flowing water during certain times of the year, when groundwater provides water for stream flow, or during and immediately after precipitation events. During dry periods, intermittent streams may not have flowing water. A perennial channel has continuous flow in parts of its stream bed all year round during years of normal rainfall.

In the Project area, only one perennial channel was identified during the reconnaissance-level surveys. Houghton Canal flows through the Project area in a westerly direction and crosses under the intersection at Belmont Ave and North Cornelia Ave, again along Belmont Ave, just east of North Blythe Ave, and again under West Neilson Ave where it runs parallel to the proposed pipeline alignment for approximately 2,700 ft. It connects to Dry Creek Canal in the eastern portion of the Project area. Dry Creek Canal crosses at H St. and South Teilman Ave. Both Houghton Canal and Dry Creek Canal are man-made drainage canals that are primarily earthen-lined, transitioning to concrete where they cross under roads. The gradient is low to moderate and water velocity is generally slow to moderate. Substrate consists of a sandy silt muck and Eurasian milfoil (*Myriophyllum spicatum*) was the dominant vegetation type within the channel. The banks were barren or sparsely vegetated with weedy, non-native species and in some places had concrete or cobble rip-rap.

The open water zones of perennial channels provide resting and escape cover for many species of waterfowl. Gulls (*Larus* spp.), terns (*Sterna* spp.), osprey (*Pandion haliaetus*) and bald eagle (*Haliaeetus leucocaphalus*) hunt in open water. Near-shore waters provide food for waterfowl, herons, shorebirds, belted kingfisher (*Megaceryle alcyon*) and American dipper (*Cinclus mexicanus*). Many species of insectivorous birds (swallows, swifts, flycatchers) hawk their prey over water. Some of the more common mammals found in riverine habitats include Northern river otter (*Lontra canadensis*), mink (*Mustela vison*), common muskrat (*Ondatra zibethicus*), and beaver (*Castor canadensis*). Common wildlife species observed in and around the riverine habitat within the Project area included mallard (*Anas platyrhynchos*), and great egret (*Ardea alba*).

Lacustrine

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water (Cowardin *et. al*. 1979). They may vary from small ponds less than one hectare to large areas covering several square kilometers. Depth can vary from a few centimeters to hundreds of meters. Typical lacustrine habitats include permanently flooded lakes and reservoirs (e.g., Lake Tahoe and Shasta Lake), intermittent lakes (e.g., playa lakes) and ponds (including vernal pools) so shallow that rooted plants can grow over the bottom. Most permanent lacustrine systems support fish life; intermittent types usually do not.

Within the Project area, lacustrine habitat consists of several storm water detention basins located at the intersections of West Belmont Avenue and North Marks Avenue, West Belmont Avenue and North Golden State Boulevard, West Nielsen Avenue and South Teilman Avenue, and West Whitesbridge Avenue and S Roeding Drive. At the time of the reconnaissance-level surveys, water was present within each of the basin. The substrate of the basins is consisted of a clay bottom. The banks have a gradual slope and vary from barren to grassy; the tops of the banks and surrounding area typically consisted of a well maintained lawn or landscaping.

Lacustrine habitats, even man-made detention basins, have an important value to wildlife. Similar to riverine habitats, the open water zones of ponds and basins provide resting and escape cover for many species of waterfowl. Unlike natural lakes, regularly maintained basins, such as that within the Project area, generally do not provide habitat for aquatic species, such as fish and amphibians, so wildlife species that rely on this prey base are not expected to be present; however the open water zones do provide an important rest area for gulls, terns, herons (*Ardea* spp.), and other waterfowl. Many species of insectivorous birds (swallows, swifts, flycatchers) hawk their prey over water. Common wildlife species observed in and around the lacustrine habitat within the Project area included mallard, and Canada goose (*Branta canadensis*).

Wetland and Other Waters of the U.S.

Site Hydrology Overview

The Project area is situated on nearly flat terrain within the rural and industrialized portions of the City of Fresno. Houghton Canal flows through the Project area in a westerly direction and crosses under the intersection at Belmont Ave and North Cornelia Ave, again along Belmont Ave, just east of North Blythe Ave, and again under West Neilson Ave where it runs parallel to the proposed pipeline alignment for approximately 2,700 ft. It connects to Dry Creek Canal in the eastern portion of the Project area. Dry Creek Canal crosses at H St. and South Teilman Ave. Houghton Canal terminates at North Madera Ave and West Neilson Ave, outside of the Project area. Both features are man-made channels providing 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 surveys on October 22nd, 2013 and November 7th, 2014, wetlands and other waters of the U.S. are limited to Houghton Canal and Dry Creek Canal.

Special-Status Species

Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as deserving special consideration. Some of these species receive specific legal protection pursuant to federal or state endangered species legislation. Others lack such legal protection, but have been characterized as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special-status species" in this report because of their federal or state designation or other regulatory status as follows:

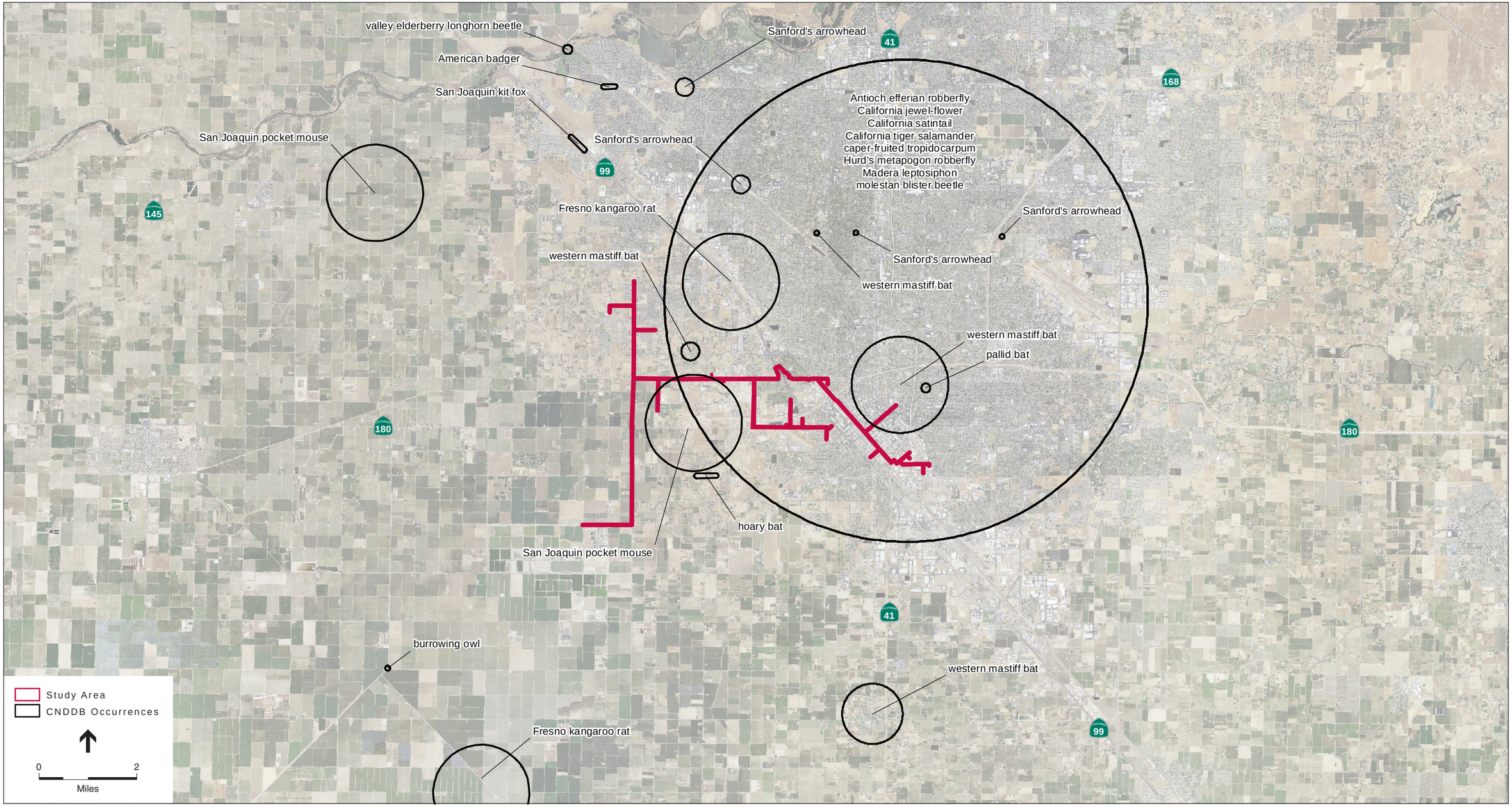
- plants or animals listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]);
- plants or animals that are candidates for possible future listing as threatened or endangered under FESA (61 FR 40, February 28, 1996);
- plants or animals listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] 670.5);
- plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- plants that meet the definitions of rare and endangered under CEQA (State CEQA Guidelines, Section 15380);
- plants considered under the CNPS to be "rare, threatened or endangered in California" (Lists 1A, 1B, and 2 in CNPS 2001);
- plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in CNPS 2001), which may be included as special-status species on the basis of local significance or recent biological information;
- animal species of special concern to CDFW;
- animals fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]); and
- birds of prey protected under the federal Bald and Golden Eagle Protection Act.

Potentially Affected Listed and Proposed Species

A list of special-status plant and animal species that have the potential to occur within the vicinity of the Project area was compiled based on data in the CNDDB (CDFW, 2014), CNPS Inventory of Rare and Endangered Plants (CNPS, 2014), and the USFWS List of Federal Endangered and Threatened Species that may be Affected by Projects in the Fresno South, Kearney Park, Herndon, and Fresno North Quads (USFWS, 2014; see **Figure 2.4-2**). Conclusions regarding habitat suitability and species occurrence are based on a reconnaissance-level area assessment conducted by ESA biologists, as well as existing literature and databases described previously.

Tables 2.4-2 and 2.4-3 list special-status plants and animals with the potential to occur within the Project area. Additionally, **Tables 2.4-1 and 2.4-2** also indicates the Project's "potential to impact" each species listed. The "Potential for Occurrence" category is defined as follows:

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



SOURCE: USDA, 2012; CNDDB, 2013; Blair, Church, and Flynn, 2013; ESA, 2013

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Figure 2.4-2

CNDDB Occurrences within 5 Miles of the Project Study Area

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TABLE 2.4-2
SPECIAL-STATUS PLANT SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status Fed/State/ CRPR	Phenology[a]	Flowering Period	Habitat	Potential to Occur
Listed Species					
California jewel-flower *Caulanthus californicus*	FE/CE/1B.1	Annual herb	Feb – May	Chenopod scrub; pinyon and juniper woodland; valley and foothill grassland with sandy soil. Elevation: 61 - 1000 meters.	Absent. Habitat not present; not identified during surveys
Greene's tuctoria *Tuctoria greenei*	FE/CR/1B.1	Annual herb	May - Sept	Vernal pools. Elevation: 30 – 1070 meters	Absent. Habitat not present; not detected during surveys
Hairy Orcutt grass *Orcuttia pilosa*	FE/CE/1B.1	Annual herb	May – Sept	Vernal pools. Elevation 46 - 200 meters.	Absent. Habitat not present; not identified during surveys
Hartweg's golden sunburst *Pseudobahia bahiifolia*	FE/CE/1B.1	Annual herb	March - April	Cismontane woodland and valley and foothill grasslands with clay, often acidic soils. Elevation: 15 – 150 meters	Absent. Habitat not present; not identified during surveys
Palmate-bracted bird's beak *Chloropyron palmatum*	FE/FE/1B.1	Annual herb (hemiparasitic)	May – Oct	Alkaline chenopod scrub and valley and foothill grassland. Elevation: 5 - 155 meters.	Absent. Habitat not present; not identified during surveys
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	FT/FE/1B.1	Annual herb	April – Sept	Vernal pools. Elevation: 10 - 755 meters.	Absent. Habitat not present; not identified during surveys
Succulent owl's-clover *Castilleja campestris var. succulenta*	FT/CE/1B.1	Annual herb (hemiparasitic)	April – May	Vernal pools that are often acidic. Elevation 50 - 750 meters.	Absent. Habitat not present; not identified during surveys
Non-Listed Special-Status Species					
Brittlescale *Atriplex depressa*	--/--/1.B.2	Annual herb	April – Oct	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools with alkaline, clay soils. Elevation: 1 – 320 meters.	Absent. Habitat not present; not detected during surveys
California satintail *Imperata brevifolia*	--/--/2B.1	Perennial herb (rhizomatous)	Sept - May	Mesic chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub. Elevation 0 - 1215 meters.	Absent. Habitat not present; not detected during surveys
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	--/--/1B.1	Perennial herb (bulbiferous)	May – Jun	Alkaline hills of valley and foothill grassland. Elevation 1 – 455 meters.	Absent. Habitat not present; not detected during surveys
Dwarf downingia *Downingia pusilla*	--/--/2B.2	Annual herb	March - May	Vernal pools and mesic valley and foothill grasslands. Elevation 1 – 455 meters.	Absent. Habitat not present; not detected during surveys

TABLE 2.4-2
SPECIAL-STATUS PLANT SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status Fed/State/ CRPR	Phenology[a]	Flowering Period	Habitat	Potential to Occur
Heartscale *Atriplex codulata var. cordulata*	--/--/1B.2	Annual herb	April – Oct	Chenopod scrub, meadows and seeps, valley and foothill grassland (sandy) in saline or alkaline soils. Elevation: 0 to 560 meters.	Absent. Habitat not present; not detected during surveys
Lesser saltscale *Atriplex minuscula*	--/--/1B.1	Annual herb	May – Oct	Chenopod scrub, playas, valley and foothill grassland with alkaline, sandy soils. Elevation 15 - 200 meters.	Absent. Habitat not present; not detected during surveys
Madera leptosiphon *Leptosiphon serrulatus*	--/--/1B.2	Annual herb	April – May	Cismontane woodland, and lower montane coniferous forest. Elevation: 300 - 1300 meters.	Absent. Habitat not present; not detected during surveys
Pinnacles buckwheat *Eriogonum nortonii*	--/--/1B.3	Annual herb	May – Sept	Often in recent burn areas in sandy soils in chaparral and valley and foothill grasslands. Elevation: 300 – 975 meters.	Absent. Habitat not present; not detected during surveys
Recurved larkspur *Delphinium recurvatum*	--/--/1B.2	Perennial herb	March - June	Chenopod scrub, cismontane woodland, and valley and foothill grasslands with alkaline soils. Elevation 3 - 790 meters.	Absent. Habitat not present; not detected during surveys
Sanford's arrowhead *Sagittaria sanfordii*	--/--/1B.2	Perennial herb (rhizomatous)	May – Oct	Marshes and swamps and other assorted shallow freshwater systems. Elevation 0 to 665 meters	Absent. Habitat not present; not detected during surveys
Shevock's copper moss *Mielichhoferia shevockii (=Schizymenium shevockii)*	--/--/1B.2	Moss	--	Cismontane woodland (metamorphic, rock, mesic). Elevation: 750 – 1400 meters.	Absent. Habitat not present; not detected during surveys
Spiny-sepaled button-celery *Eryngium spinosepalum*	--/--/1B.2	Annual/Perennial herb	April – May	Vernal pools and valley and foothill grasslands. Elevation: 80 – 255 meters.	Absent. Habitat not present; not detected during surveys
Subtle orache *Atriplex subtillis*	--/--/1B.2	Annual herb	June - October	Valley and foothill grasslands. Elevation 40 to 100 meters.	Absent. Habitat not present; not detected during surveys
Vernal pool smallscale *Atriplex persistens*	--/--/1B.2	Annual herb	June – Oct	Alkaline vernal pools. Elevation: 10 -115 meters.	Absent. Habitat not present; not detected during surveys

a Phenology is the study of periodic occurrences in nature, such as the ripening of fruit, and their relation to climate.

STATUS CODES:

FE: Federally listed as Endangered
FT: Federally listed as Threatened
CE: State of California listed as Endangered
CT: State of California listed as Threatened
CR: State of California listed as Rare

CRPR = California Rare Plant Rank
1A: Presumed extinct in California
1B: Rare, Threatened, or Endangered in California and elsewhere
2: Rare, Threatened, or Endangered in California, but more common elsewhere

SOURCES: CDFW, 2013; CNPS, 2013

TABLE 2.4-3
SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status Fed/State	Habitat	Potential to Occur
Listed Species			
Invertebrates			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/--	Breeds and forages exclusively on elderberry shrubs (*Sambucus mexicana*) typically associated with riparian forests, riparian woodlands, elderberry savannas, and other Central Valley habitats. Occurs only in the Central Valley of California. Prefers to lay eggs in elderberries 2–8 inches in diameter; some preference shown for "stressed" elderberries.	**Absent.** No elderberry shrubs were identified within the Project Area.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/--	Found in ephemeral freshwater habitats including alkaline pools, clay flats, vernal pools, vernal lakes, vernal swales, and other types of seasonal wetlands.	**Low.** Proposed Project Area is within species' known range but provides limited suitable habitat
Fish			
Central Valley steelhead *Oncorhynchus mykiss*	FT/CSC	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.	**Absent.** No perennial stream habitat occurs in or near the Project Area
Delta smelt *Hypomesus transpacificus*	FT/--	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.	**Absent.** No perennial stream habitat occurs in or near the Project Area
Amphibians			
California red-legged frog *Rana draytonii*	FT/CSC	A largely aquatic frog found at ponds and slow-moving streams with permanent or semipermanent water. California red-legged frogs opportunistically migrate into upland habitats during normal dispersal and may aestivate in upland environments.	**Low.** Aquatic and upland habitat values for CRLF are minimal within the Project Area. Species may use drainages as movement corridor.
California tiger salamander *Ambystoma californiense*	FT/CT	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Needs underground refuges and vernal pools or other seasonal water sources.	**Absent.** Aquatic and upland habitat values for CTS are not present. There are no suitable annual grassland areas or seasonally inundated pools present within the Project Area.
Reptiles			
Blunt-nosed leopard lizard *Gambelia* (=*Crotaphytus*) *sila*	FE/CE,FP	Found in semiarid grasslands, alkali flats, and washes. Prefers flat areas with open space for running, avoiding densely vegetated areas.	**Absent.** Suitable annual grassland habitat is not present within the Project Area.
Giant garter snake *Thamnophis gigas*	FT/CT	Found primarily in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks in California's interior.	**Absent.** Suitable aquatic and upland habitat are not present within the Project Area. Houghton Canal did not contain emergent vegetation and had limited water.

TABLE 2.4-3
SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status Fed/State	Habitat	Potential to Occur
Birds			
Swainson's hawk *Buteo swansonii*	--/CT	Forages in grasslands, suitable grain or alfalfa fields, or livestock pastures adjacent to nesting habitat. Nests on large trees in open areas.	**High.** Suitable nesting and foraging habitat is present within the Project Area.
Vireo bellii pusillus Least Bell's vireo	FE/CE	A summer resident of Southern California in low riparian in the vicinity of water or in dry river bottoms. Found in San Benito and Monterey counties and in coastal southern California from Santa Barbara County south; and along the western edge of the deserts in desert riparian habitat, in elevations below 2,000 feet. Nests are placed along margins of bushes or on twigs projecting into pathways, usually willow (*Salix* sp.), coyotebrush (*Baccharis* sp.), and mesquite (*Prosopis* sp.).	**Absent.** Suitable riparian habitat is not present within the Project Area. Additionally, the Project Area is located outside of the species' known range of occurrence.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FC/CE	Found in willow-cottonwood riparian forests in isolated areas of the Sacramento Valley.	**Absent.** No suitable habitat is present within the Project Area.
Mammals			
Fresno kangaroo rat *Dipodomys nitratoides exilis*	FE/CE	Found in sparse grassland and open scrub communities in Fresno County. Most populations are considered extant other than populations at the Alkali Sink Ecological Reserve west of Fresno.	**Absent**. Suitable annual grassland habitat does not occur in the Project Area.
San Joaquin kit fox *Vulpes macrotis mutica*	FT/CSC	Found in grassland, scrubland, wetlands, agricultural, and urban habitats in the San Joaquin Valley.	**Moderate.** No suitable foraging or denning habitat is present within the Project Area however species may use agricultural fields as a movement corridor.
Non-Listed Special-Status Species			
Amphibians			
Western spadefoot *Spea hammondii*	--/CSC	Occurs 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.	**Absent.** Suitable habitat is not present within the Project Area.
Reptiles			
Western pond turtle *Actinemys marmorata*	--/CSC	Variety of aquatic habitats, both permanent and intermittent, with suitable aerial and aquatic basking sites. Needs upland habitats for nesting, overwintering, and aestivating.	**Low**. No suitable aquatic stream habitat occurs in or near the Project Area however species could use drainages as a movement corridor. Not noted during the reconnaissance-level survey.
Birds			
Burrowing owl *Athene cunicularia*	--/CSC	Found in open grasslands with low vegetation, golf courses, and disturbed/ruderal habitat in urban areas.	**Moderate.** The grassland, tilled, or barren lots scattered throughout the Project Area could provide potential nesting habitat while the agricultural fields within the vicinity of the Project Area could provide suitable foraging habitat.

TABLE 2.4-3
SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

Common Name Scientific Name	Status Fed/State	Habitat	Potential to Occur
Tricolored blackbird *Agelaius tricolor*	--/CSC	Breeds near fresh water in dense emergent vegetation or dense brush.	**Absent.** There were no dense stands of emergent vegetation or brush within the Project Area or the vicinity.
Mammals			
American badger *Taxidea taxus*	--/CSC	Requires sufficient food, friable soils to excavate dens and pursue prey, and relatively open, uncultivated ground	**Absent.** No suitable grassland habitat is present within or near the Project Area.
Pallid bat *Antrozous pallidus*	--/CSC	Arid deserts and grasslands of low elevations in California; often near rocky outcrops and water. Usually roosts in rock crevice or building, less often in cave, tree hollow, mine, etc. Prefers narrow crevices in caves as hibernation sites.	**Moderate**. Potentially suitable roosting habitat may be present within the mature trees at the rural residences and potentially within attics of abandoned buildings. In addition the orchards within the Project Area could provide suitable roosting habitat for this species.
Spotted bat *Euderma maculatum*	--/CSC	The habitats of the spotted bat are undisturbed roosts on cliffs along the Grand Canyon in Arizona, as well as open and dense deciduous and coniferous forests, hay fields, deserts, marshes, riparian areas and dry shrub-steppe grasslands in Arizona, California, Colorado, Utah, and British Columbia, Canada.	**Absent.** Suitable habitat is not present within the Project Area.
Western mastiff bat *Eumops perotis californicus*	--/CSC	Typically found in rocky cliff and canyon areas. Roosts in crevices and occasionally buildings, caves, tunnels, and hollow trees.	**Moderate.** Potentially suitable roosting habitat may be present within the mature trees at the rural residences and potentially within attics of abandoned buildings.

STATUS CODES:

FEDERAL	STATE	STATE
FC: Federal Candidate for listing	CE: State of California listed as Endangered	FP: California Fully Protected Species
FE: Federally listed as Endangered	CT: State of California listed as Threatened	CSC: California Species of Special Concern
FT: Federally listed as Threatened	CD: State of California Delisted	*: CDFW protected
FD Federal Delisted	CP: State of California proposed for listing	WL = CDFW Watch List
MMPA: Marine Mammal Protection Act		

SOURCES: CDFW, 2013; Jennings and Hayes, 1994; Shuford and Gardali, 2008; USFWS, 2013; WBWG, 2005; Zeiner et al., 1988-1990

Regulatory Context

Federal

U.S. Fish and Wildlife Service

The USFWS administers the FESA (16 U.S. Code [USC] 153 et seq.), the Migratory Bird Treaty Act (MBTA) (16 USC 703–711), and the Bald and Golden Eagle Protection Act (16 USC 668). These regulations are described below.

Federal Endangered Species Act. Under the FESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC § 1533(c)). Two federal agencies oversee the FESA: the USFWS has jurisdiction over plants, wildlife, and resident fish, while the National Marine Fisheries Service (NMFS) has jurisdiction over anadromous fish and marine fish and mammals. Section 7 of the FESA mandates that federal agencies consult with the USFWS and NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. The FESA prohibits the "take"[2] of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

Section 10 requires the issuance of an "incidental take" permit before any public or private action may be taken that could take an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan (HCP) that would offset the take of individuals that may occur, incidental to implementation of a proposed project, by providing for the protection of the affected species.

Pursuant to the requirements of the FESA, a federal agency reviewing a Project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the Project area and whether the proposed action will have a potentially significant impact on such species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC § 1536(3), (4)).

Protection of Nesting Birds - Migratory Bird Treaty Act. The MBTA (16 United States Code § 703 Supp. I, 1989) generally prohibits the killing, possessing, or trading of migratory birds, bird parts, eggs, and nests, except as provided by the statute.

U.S. Army Corps of Engineers

Clean Water Act, Section 404. The U.S. Army Corps of Engineers (Corps) administers Section 404 of the Clean Water Act (CWA). Section 404 regulates activities in wetlands and "other

[2] Take is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

waters of the United States." Wetlands are a subset of "waters of the United States" that are defined in the (CFR (33 CFR 328.3[a]; 40 CFR 230.3[s]) as:

1. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide.

2. All interstate waters including interstate wetlands. (Wetlands are defined by the federal government [33 CFR 328.3(b), 1991] as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions.)

3. All other waters—such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds—the use, degradation, or destruction of which could affect interstate or foreign commerce.

4. All impoundments of waters otherwise defined as waters of the United States under the definition.

5. Tributaries of waters identified in paragraphs (1) through (4).

6. Territorial seas.

7. Wetlands next to waters identified in paragraphs (1) through (6).

8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding the CWA jurisdiction remains with the U. S. Environmental Protection Agency (328.3[a][8] added 58 CFR 45035, August 25, 1993).

Although regulatory waters potentially under the jurisdiction of the Corps do occur in the Project area (Houghton Canal) they would not be affected by proposed activities.

State

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW), formerly identified as the California Department of Fish and Game, administers a number of laws and programs designed to protect fish and wildlife resources under the Fish and Game Code (FGC), such as CESA (FGC Section 2050, et seq.), Fully Protected Species (FGC Section 3511), Native Plant Protection Act (FGC Sections 1900 to 1913) and Lake or Streambed Alteration Agreement Program (FGC Sections 1600 to 1616). These regulations include the California Endangered Species Act, Fish and Game Code Section 3503, the Native Plant Protection Act, and the Lake or Streambed Alteration Program.

Local

The Recovery Plan for Upland Species of the San Joaquin Valley, California

The Project area lies within the coverage area of The Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS, 1998). The primary objective of this recovery plan is the recovery of 11 endangered and threatened species, along with protection and long-term conservation of candidate species and species of special concern. The species covered in the plan inhabit grasslands and scrublands of the San Joaquin Valley, adjacent foothills, and small valleys. Species covered within this plan are classified as Species of Local Concern (SLC) in this report.

The Recovery Plan does not identify the area within and surrounding the Project area as having regional biological significance for the species covered within the plan. The Project is not near or within areas proposed for reserves or where connectivity and linkages should be promoted.

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to biological resources to be significant if the Master Plan 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 Game 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 Game 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;
- 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; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Master Plan EIR Impacts

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

Biological Resources		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.5-1	Proposed project activities could result in potential disturbance or loss of burrowing owls and their habitat.	PS	LSM
4.5-2	Proposed project activities could result in potential disturbance or loss of horned lark and tri-colored blackbird, as well as raptor species and their habitat.	PS	LSM
4.5-3	Proposed project activities could result in potential disturbance or loss of valley elderberry longhorn beetle and their habitat.	PS	LSM
4.5-4	Proposed project activities could result in potential disturbance or loss of San Joaquin kit fox and their habitat.	PS	LSM
4.5-5	Proposed project activities could result in potential disturbance or loss of California tiger salamander and their habitat.	PS	LSM
4.5-6	Proposed project activities could result in potential disturbance or loss of western pond turtle and their habitat.	PS	LSM
4.5-7	Proposed project activities could result in potential disturbance or loss of San Joaquin pocket mouse and American badger and their habitat.	PS	LSM
4.5-8	Proposed project activities could result in potential disturbance or loss of Western mastiff bat and their habitat.	PS	LSM
4.5-9	Proposed project activities could result in potential disturbance or loss of special-status plants and their habitat.	PS	LSM
4.5-10	Proposed project activities could potentially result in disturbance or loss of waters of the United States (including wetlands) through direct and indirect impacts.	PS	LSM
4.5-11	Proposed project activities could potentially result in disturbance or loss of riparian habitat and/or lake or streambed alteration through direct and indirect impacts.	PS	LSM
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.	PS	LSM
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan EIR*
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, and 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 Master Plan EIR. The following subsections provide a discussion of potential effects to special-status plant and animal species.

Special-Status Plants

The Project area does not provide habitat for any special-status plant species. No special-status plant species are likely to occur within the area itself due to the high degree of disturbance associated with the surrounding land uses. The Project area is situated within the rural and industrialized portions of the City of Fresno. Construction activities associated with the recycled water distribution system will not impact adjacent habitats. Therefore, implementation of the Project will have no impact on special-status plants.

Special-Status Wildlife: Terrestrial Wildlife

While it is unlikely that San Joaquin kit fox would reside within the Project area, particularly due to very limited to no access to suitable upland habitat and many barriers inhibiting fox 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 upland habitat outside of the Project area. Suitable foraging habitat is present within the agricultural fields while suitable denning habitat is unavailable. If the species is present during construction, disturbance associated with these 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 Master Plan EIR Mitigation Measures 4.5-4a and 4.5-4b would reduce potential impacts to San Joaquin kit fox to a less than significant level by implementing preconstruction surveys, buffer zones around dens, worker education, and other measures as specified therein.

Special-Status Wildlife: Nesting Songbirds and Raptors

Potentially suitable nesting and foraging habitat for Swainson's hawk and burrowing owl is present within the Project area, primarily in western areas located outside of the City limits. If Swainson's hawk and/or burrowing owl, as well as other passerine birds and raptors protected by the Migratory Bird Treaty Act, are present on the site, construction activities could cause nest abandonment, or loss of reproductive potential at active nests located near the Project site. Other potential impacts to these species during Project construction include the potential for harm to individual birds, if present, and the loss of suitable nesting and foraging habitat. Therefore, the Project could have a potentially significant impact on nesting birds. Implementation of Master Plan EIR Mitigation Measure 4.5-2 would reduce potential impacts to nesting birds to a less than significant level by completing preconstruction surveys, avoiding nesting birds, and establishing buffer zones as warranted.

Special-Status Wildlife: Bat Species

Potentially suitable roosting habitat for pallid bat and western mastiff bat is present within the Project area, primarily in the western portion outside of the City limits within the foliage of the large mature trees planted around the residences, and within the foliage of orchards; however bat species may utilize the attics and loft areas of the rural residences, barns, and commercial and industrial infrastructure. If bats are found roosting within the foliage of the large mature trees, or within the orchards, they will have to relocate to another suitable roost site potentially exposing them to increased stress and chance of predation. Other potential impacts to these species during Project construction include the potential for harm to individual bats, if present, and the loss of suitable roosting and foraging habitat. Implementation of Master Plan EIR Mitigation Measure 4.5-8 would reduce or avoid to a less than significant level by completing preconstruction surveys and implementing avoidance and construction buffer areas as warranted.

b) **No Impact.** There are no sensitive natural communities that occur within the Project area.

c) **Impact Addressed in Master Plan EIR.** While a formal wetland delineation was not conducted at the time of the reconnaissance survey, Houghton Canal and Dry Creek Canal 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 jurisdictional wetlands were identified within the Project area. Because the Project does not intend to modify or perform work within these features (pipelines would be bored under these features), a Streambed Alteration Agreement would not be required. Indirect impacts, such as sedimentation or accidental spills to these features could occur as a result of Project construction. Implementation of Master Plan EIR Mitigation Measures 4.5-10 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 Project. For additional information regarding the General Construction Permit, please refer to Checklist Section 2.9, Hydrology and Water Quality.

d) **Impact Addressed in Master Plan EIR.** The 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 some of the recycled water distribution system crosses through or is adjacent to open agricultural fields, species such as San Joaquin kit fox, Swainson's hawk, and burrowing owl, could move into the construction area. Construction activities could result in a temporary loss or disturbance to essential habitat for seasonal movement for migratory wildlife species, such as the San Joaquin kit fox. Construction noise could also temporarily alter foraging patterns of resident wildlife species. Implementation of Master Plan EIR Mitigation Measures 4.5-4a and 4.5-4b would reduce potential impacts to migratory wildlife corridors to less-than-significant.

e) **Less-than-Significant with Mitigation**. The Project area supports numerous oak trees and landmark trees that are considered protected in accordance with the Fresno County General Plan Open Space and Conservation Element. Fresno County also maintains riparian vegetation protection under this Element, which requires development setbacks of 50-100 ft from streams depending on size and slope. In addition to the Open Space and Conservation Element, the Scenic Highway Element in the Fresno County General Plan requires County road improvement Projects involving scenic roads to be constructed to insure that maximum consideration is given to preservation of ornamental trees. All road construction Projects, as well as private land development Projects, should endeavor to retain healthy, mature trees along public roads.

These protection requirements would pertain to the large mature trees planted at the rural residences as well as along the roadways and near the canals. It is estimated that no more than a few large valley oak, eucalyptus, sycamore, California black walnut, and

cottonwood would be removed; however, the precise number of trees to be removed is not known at this time. These trees have nine-inch or greater diameters at standard height and are located within the limits of the proposed pipeline construction.

Impacts to protected oak or landmark trees are considered a potentially significant impact. This impact would be reduced to a less than significant level with the implementation of **Mitigation Measure BIO-1** and **Mitigation Measure BIO-2**.

Mitigation Measures

Mitigation Measure BIO-1: Protect Sensitive Tree Resources Adjacent to Construction Activities. Sensitive tree resources adjacent to construction activities may require additional protection. Where feasible, buffer zones should include a minimum one-foot-wide buffer zone outside the dripline for oaks and landmark trees. The locations of these resources would be clearly identified on the construction drawings and marked in the field by a Certified Arborist. Fencing or other barriers would remain in place until all construction and restoration work that involves heavy equipment is complete. Construction vehicles, equipment, or materials would not be parked or stored within the fenced area. No signs, ropes, cables, or other items would be attached to the protected trees. Grading, filling, trenching, paving, irrigation, and landscaping within the driplines of oak trees would be limited. Grading within the driplines of oak trees would not be permitted unless specifically authorized by a Certified Arborist. Hand-digging must be done in the vicinity of major trees and as recommended by a Certified Arborist to prevent root cutting and mangling by heavy equipment.

All oak tree mitigation and/or restoration will be consistent with the Fresno County General Plan, oak woodland and tree preservation policies.

Mitigation Measure BIO-2: The following measures will avoid or minimize potential construction-related impacts to oaks and other native heritage trees:

- Prior to removal of any trees, an ISA Certified Arborist shall conduct a tree survey in areas that may be impacted by construction activities. This survey shall document tree resources that may be adversely impacted by implementation of the Project. The survey will follow standard professional practices.
- Current vegetation and oaks will be retained to extent feasible. A Tree Protection Zone (TPZ) shall be established around any tree or group of trees to be retained. The TPZ will be delineated by an ISA Certified Arborist. The TPZ shall be defined by the radius of the dripline of the tree(s) plus one foot. The TPZ of any protected trees shall be demarcated using fencing that will remain in place for the duration of construction activities.
- Construction-related activities shall be limited within the TPZ to those activities that can be done by hand. No heavy equipment or machinery shall be operated within the TPZ. Grading shall be prohibited within the TPZ. No construction materials, equipment, or heavy machinery shall be stored within the TPZ.

- The Project Proponent will replace any trees removed to ensure no net loss of habitat functions or values. All trees planted will be purchased from a locally adapted genetic stock obtained within 50 miles of the Project site, where feasible. Oak species shall be replaced at a 3:1 ratio. All other species shall be replaced at a 2:1 ratio.

As an alternative to offsite mitigation, the Project proponent may contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision Fish and Game Code §1363(a), for the purpose of purchasing oak woodlands conservation easements, as specified under paragraph (1) of subdivision (d) of that section and the guidelines and criteria of the Wildlife Conservation Board. This measure may be implemented at such time as the Wildlife Conservation Board and/or CDFW establish guidelines, criteria, and a payment schedule for contribution to the Oak Woodlands Conservation Fund.

f) **No Impact**. The Project area is not within a Habitat Conservation and Natural Community Conservation Plan. Therefore, the Project will have no impact on any Habitat Conservation Plan or Natural Community Conservation Plan.

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2.5 Cultural Resources

Section 4.12 of the Master Plan EIR addresses the effects of implementing the Master Plan, including the Project, on cultural resources. For additional background information on cultural resources, please refer to that section.

Master Plan 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 historic resource as defined in CEQA Guidelines Section 15064.5;
- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Master Plan EIR Impacts

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

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 archaeological resources.	PS	LSM
4.12-3	Ground-disturbing activities associated with implementation of the Master Plan could result in damage to previously unidentified human remains.	PS	LSM
4.12-4	Ground-disturbing construction associated with implementation of the Master Plan could result in disturbance or destruction of a paleontological resource.	PS	LSM
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan EIR*
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) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☐	☒

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, five cultural resources have been previously recorded intersecting or immediately adjacent to the Fresno Recycled Water Plan Project area: P-10-4513, Belmont Ave Subway; P-10-6032, Webber Ave Overcrossing; P-10-4277, Water Tower; P-10-4299, Fresno Brewery; and SHL #873, Free Speech Fight Site. The construction of the proposed recycled 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. The construction of the proposed pump station (Option 1 or Option 2) would not be located in proximity to sensitive historic resources – no potentially sensitive resources were identified during a field reconnaissance by ESA staff, and the former Craycroft Brick Factory site is not listed on any state or local registers. Prior demolition and site clearing activities resulted in removal of all facilities associated with the former factory, as well as substantial alteration of the grounds. Therefore, the project would not affect sensitive resources. Field survey conducted by ESA historian Katherine Anderson identified a segment of the Houghton Canal in the vicinity of Belmont Ave, however Ms. Anderson recommends the canal ineligible for listing the National or California Registers, as it does not meet Federal or State criteria for significance, and has undergone considerable alteration to its physical integrity since its original construction. Therefore, the Project would have a less-than-significant impact on historical resources under CEQA.

b) **Impact Addressed in Master Plan 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.

Archival review completed at the San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System at California State University Bakersfield on October 21, 2013 (RS# 13-429) determined that identified 40 previously completed cultural resource conducted within ½ mile of the Project area. Previous survey efforts identified 106 cultural resources within ½ mile of the Project alignment, including five within the Project area (listed above in subsection "a"). No archaeological resources have been recorded within the Project area. The nearest recorded archaeological resource is approximately 600 ft south of the southernmost Project component, and consists of a scatter of historic debris (glass, ceramic, and brick).

ESA archaeologists Michael Vader, Joshua Garr, and historian Katherine Anderson conducted a field survey of the Project alignment in October, 2013 and July, 2014. Mr. Vader did not identify any prehistoric or historic period archaeological resources during the course of survey. While no evidence exists to indicate the presence of archaeological resources within the Project area, the Project area is located in an area that may have been attractive to prehistoric inhabitants. The accidental discovery of archaeological materials during ground-disturbing activities cannot be entirely discounted. In the unlikely event that archaeological materials are unearthed, implementation Master Plan 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.

c) **Impact Addressed in Master Plan 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 Master Plan EIR Mitigation Measures 4.12-4a and 4.12-4b would reduce 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.

d) **Impact Addressed in Master Plan 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 Master Plan EIR Mitigation Measure 4.12-3, which would contact the County coroner and the Native American Heritage Commission as warranted, would reduce Project impacts on undiscovered human remains to less than significant.

References

ESA, 2013. Fresno Recycled Water Distribution System Project, City of Fresno, Fresno County, California: Phase I Cultural Resources Study. Prepared for the City of Fresno, November 2013.

Matthews, Robert A. and John L. Burnett, 1965. California Geological Survey. Geological Atlas of California Map No 005, 1:250,000 scale.

2.6 Geology, Soils, and Seismicity

Section 4.3 of the Master Plan EIR addresses the effects of implementing the Master Plan, including the Project, related to geology, soils, and seismicity. The following discussion provides 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 ft above msl.

Soils

In the context of the Project alignment, each soil type may have properties that could present limitations for the construction of proposed facilities, including pipelines and the selected pump station option. Construction limitations include the potential for water and/or wind erosion, subsidence, shrink-swell behavior, and corrosion as described below.

- **Erosion** is the process whereby soil materials become detached and are transported either by wind or water. Rates of erosion can vary depending on the soil texture, structure, and amount of organic matter. The corresponding slope, length, and degree of steepness are also prime factors in determining the potential for soil erosion.
- **Subsidence** is the lowering of the land surface due to loss or compaction of underlying materials. Subsidence can occur as the result of hydrocompaction[3]; groundwater, gas, and oil extraction; or the decomposition of highly organic soils.
- **Expansive Soils** are soils that exhibit a "shrink-swell" behavior. "Shrink-swell" is the cyclical expansion and contraction that occurs in fine-grained clay sediments from wetting and drying. Structures located on soils with this characteristic may be damaged over a long period of time, usually as the result of inadequate foundation engineering.
- **Corrosive Soils** can damage underground utilities including pipelines and cables, and can weaken roadway structures. Soils within the Project alignment are classified as highly corrosive to concrete and/or steel.

Soils underlying the Project alignment are generally characterized as well drained alluvial soils (USDA, 1971). Primary soil types include:

- **Hanford-Delhi-Tujunga.** Hanford soils are typically found on alluvial fans and are derived from granite. These soils are well drained and have a low shrink-swell potential and low

[3] Hydrocompaction is the process of volume decrease and density increase upon saturation of moisture-deficient deposits.

erosion hazard. Hanford soils have a low to moderate potential for corrosion of untreated steel. Delhi soils are typically found on alluvial fans and are derived from granite. These soils are well drained and have a low shrink-swell potential and low erosion hazard. Delhi soils have a low potential for corrosion of untreated steel. Tujunga soils are typically found on alluvial fans and are derived from granite. These soils are well drained and have a low shrink-swell potential and low erosion hazard. Tujunga soils have a low potential for corrosion of untreated steel (NRCS, 2010).

- **San Joaquin-Cometa-Madera.** San Joaquin soils are typically found on alluvial fans and are derived from granite. These soils are well drained and have a moderate shrink-swell potential and low erosion hazard. San Joaquin soils have a high potential for corrosion of untreated steel. Cometa soils are typically found terraces and are derived from granite. These soils are well drained and have a moderate shrink-swell potential and low erosion hazard. Cometa soils have a high potential for corrosion of untreated steel. Madera soils are typically found on alluvial fans and terraces and are derived from granite. These soils are well drained and have a moderate shrink-swell potential and low erosion hazard. Madera soils have a high potential for corrosion of untreated steel (NRCS, 2010).

Seismicity

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. In addition, due to the distances from earthquakes whose epicenters lie to the east, west and south, risk associated with seismic ground shaking is also minimal. Known major faults are over 60 miles away and include the San Andreas Fault, Coalinga area blind thrust faults, and the Long Valley, Owens Valley, and White Wolf/Tehachapi fault systems. The Ortigalita Fault is the closest fault to the Project alignment and lies approximately 60 miles to the west. According to the Earthquake Shaking Potential for California map produced by the California Department of Conservation, the Project alignment is located in an area that will experience lower levels of shaking less frequently and in most earthquakes, only weaker masonry buildings would be damaged (California Department of Conservation, 2003). The relative earthquake safety of Fresno is considered such that State contingency plans designate the City as a location for emergency housing of persons who must be relocated following earthquake disasters in other parts of California (City of Fresno Planning and Development Department, 2002).

Regulatory Setting

The California Building Code (CBC) is another name for the body of regulations known as the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the CBSC, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable.

Published by the International Conference of Building Officials, the Uniform Building Code (UBC) is a widely adopted model building code in the United States. The California Building Code incorporates by reference the UBC with necessary California amendments. Through the CBC, the State provides a minimum standard for building design and construction. The CBC

contains specific requirements for seismic safety, excavation, foundations, retaining walls and site demolition. It also regulates grading activities, including drainage and erosion control. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. The International Conference of Building Officials also publishes detailed seismic maps, known as "Maps of Known Active Fault Near-Source Zones," for engineering purposes that are prepared by the State Division of Mines and Geology.

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to geology and soils to be significant if the Master Plan 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.

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below, that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan EIR and incorporated into this IS/MND 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.	PS	LSM
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.	PS	LSM
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
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan EIR
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?	☐	☒	☐	☐	☐
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 2025 Fresno General Plan (City of Fresno Planning and Development Department, 2002), 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 Master Plan EIR.** The closest known fault is the Ortigalita fault which is located approximately 60 miles to the west of the 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).[4] Soils underlying the

[4] San Francisco, by contrast, is rated at 1.8+ g.

City are characterized as having low liquefaction potential. In addition, the topography is relatively flat and landslides would be unlikely to occur. The 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, and for the installation of the proposed pump station (Option 1 or Option 2), within potentially seismically active areas. In order to ensure that potential impacts are minimized, implementation of Master Plan EIR Mitigation Measure 4.3.1a-c would be required. These measures would provide for the preparation of a soil and geotechnical engineering study for the project, and adhere to pipeline design guidelines provided by the American Water Works Association, and would therefore reduce potential impacts to less than significant.

a.iv) **Less-than-Significant.** Fresno 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 as cut-an-fill failures associated with trenching and excavations associated with infrastructure installation and preparation for building foundations. Even though the Project would involve trenching for the installation of pipelines, because the topography in the Fresno area is relatively flat and the Project does not include installation of any infrastructure within one-half mile of the bluffs along the San Joaquin River, the risks 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) **Impact Addressed in Master Plan EIR.** Construction activities would occur within existing right-of-ways 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, 2010; Figure 2.6-1). As a result, strong potential for aeolian soil erosion during construction and operation of the Project is not anticipated, and this impact would be less than significant.

c) **Less-than-Significant.** The 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. Additionally, in order to ensure that prior uses of the Option 1 pump station site and its vicinity, did not impair soil stability or compaction, implementation of **Mitigation Measure GEO-1** would be required. This measure would require completion of a Phase I and, if needed a Phase II Environmental Site Assessment including remediation, and would therefore reduce potential impacts to less than significant.

Mitigation Measures

Mitigation Measure GEO-1. If Option 1 is selected as the preferred site for the recycled water pump station, a Phase I (and if needed, Phase II) assessment(s) shall

be completed prior to purchase, and the prior owner(s) shall be responsible for remediation as necessary.

d) **Impact Addressed in Master Plan EIR.** Expansive clay soils are present in some parts of the City however the Project would be constructed in areas with soils having low to moderate shrink-swell potential. In addition, some soils along the Project area contain a high potential for corrosion of untreated steel. If left unprotected, these soils could damage underground utilities including pipelines. Implementation of Master Plan 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 Project does not include the installation of any septic systems or alternative wastewater disposal systems. Therefore, 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 March 25, 2014.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS).Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed March 25, 2014.

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 Master Plan EIR addresses the effects of implementing the Master Plan, including the Project, on greenhouse gas emissions and climate change. The following discussion provides Project specific information relevant to greenhouse gas emissions.

Regulatory 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.

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed AB 1493, which required Air Resources Board (ARB) to develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state."

To meet the requirements of AB 1493, the ARB approved amendments to the California CCR in 2004, adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961), and adoption of Section 1961.1 (13 CCR 1961.1), require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a

gross vehicle weight [GVW] rating of less than 10,000 pounds and which is designed primarily for the transportation of persons), beginning with model year 2009. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for model year 2016 are approximately 37 percent lower than the limits for the first year of the regulations, model year 2009. For light-duty trucks with an LVW of 3,751 pounds to a GVW of 8,500 pounds, as well as for medium-duty passenger vehicles, GHG emissions will be reduced approximately 24 percent between 2009 and 2016.

Because the Pavley standards (named for the bill's author, state Senator Fran Pavley) would impose stricter standards than those under the CAA, California applied to the EPA for a waiver under the CAA; this waiver was denied in 2008. In 2009, however, the EPA granted the waiver.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, then-Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 and the California Climate Change Scoping Plan

In 2006, the California legislature passed AB 32 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires the ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

Pursuant to AB 32, the ARB adopted a Climate Change Scoping Plan in December 2008 (CARB, 2008), which was re-approved by ARB on August 24, 2011, outlining measures to meet the 2020 GHG reduction limits. In order to meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business as usual emissions levels, or about 15 percent from today's levels. The Scoping Plan estimates a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, forestry, and other sources, with measures summarized in **Table 2.7-1** below. The ARB has identified an implementation timeline for the GHG reduction strategies in the Scoping Plan. Some measures may require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. Additionally, some emissions reductions strategies may require their own environmental review under CEQA or the National Environmental Policy Act (NEPA).

TABLE 2.7-1
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2e)
Transportation		
T-1	Pavley I and II – Light Duty Vehicle Greenhouse Gas Standards	31.7
T-2	Low Carbon Fuel Standard (Discrete Early Action)	15
T-3[1]	Regional Transportation-Related Greenhouse Gas Targets	5
T-4	Vehicle Efficiency Measures	4.5
T-5	Ship Electrification at Ports (Discrete Early Action)	0.2
T-6	Goods Movement Efficiency Measures. • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.5
T-7	Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)	0.93
T-8	Medium- and Heavy-Duty Vehicle Hybridization	0.5
T-9	High Speed Rail	1
Electricity and Natural Gas		
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards Additional Efficiency and Conservation Programs	15.2
E-2	Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss)	6.7
E-3	Renewables Portfolio Standard (33% by 2020)	21.3
E-4	Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of publicly owned utilities) • Target of 3000 MW Total Installation by 2020	2.1
CR-1	Energy Efficiency (800 Million Therms Reduced Consumptions) • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs	4.3
CR-2	Solar Water Heating (AB 1470 goal)	0.1
Green Buildings		
GB-1	Green Buildings	26
Water		
W-1	Water Use Efficiency	1.4†
W-2	Water Recycling	0.3†
W-3	Water System Energy Efficiency	2.0†
W-4	Reuse Urban Runoff	0.2†
W-5	Increase Renewable Energy Production	0.9†
W-6	Public Goods Charge (Water)	TBD†
Industry		
I-1	Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	TBD
I-2	Oil and Gas Extraction GHG Emission Reduction	0.2
I-3	GHG Leak Reduction from Oil and Gas Transmission	0.9

TABLE 2.7-1
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2e)
I-4	Refinery Flare Recovery Process Improvements	0.3
I-5	Removal of Methane Exemption from Existing Refinery Regulations	0.01
Recycling and Water Management		
RW-1	Landfill Methane Control (Discrete Early Action)	1
RW-2	Additional Reductions in Landfill Methane • Increase the Efficiency of Landfill Methane Capture	TBD†
RW-3	High Recycling/Zero Waste • Commercial Recycling • Increase Production and Markets for Compost • Anaerobic Digestion • Extended Producer Responsibility • Environmentally Preferable Purchasing	9†
Forests		
F-1	Sustainable Forest Target	5
High Global Warming Potential (GWP) Gases		
H-1	Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Services (Discrete Early Action)	0.26
H-2	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)	0.3
H-3	Reduction of Perfuorocarbons in Semiconductor Manufacturing (Discrete Early Action)	0.15
H-4	Limit High GWP Use in Consumer Products Discrete Early Action (Adopted June 2008)	0.25
H-5	High GWP Reductions from Mobile Sources • Low GWP Refrigerants for New Motor Vehicle Air Conditioning Systems • Air Conditioner Refrigerant Leak Test During Vehicle Smog Check • Refrigerant Recovery from Decommissioned Refrigerated Shipping Containers • Enforcement of Federal Ban on Refrigerant Release during Servicing or Dismantling of Motor Vehicle Air Conditioning Systems	3.3
H-6	High GWP Reductions from Stationary Sources • High GWP Stationary Equipment Refrigerant Management Program: - Refrigerant Tracking/Reporting/Repair Deposit Program - Specifications for Commercial and Industrial Refrigeration Systems • Foam Recovery and Destruction Program • SF Leak Reduction and Recycling in Electrical Applications • Alternative Suppressants in Fire Protection Systems • Residential Refrigeration Early Retirement Program	10.9
H-7	Mitigation Fee on High GWP Gases	5
Agriculture		
A-1	Methane Capture at Large Dairies	1.0†

[1] This is not the SB 375 regional target. ARB will establish regional targets for each Metropolitan Planning Organization (MPO) region following the input of the regional targets advisory committee and a consultation process with MPO's and other stakeholders per SB 375.

† GHG emission reduction estimates are not included in calculating the total reductions needed to meet the 2020 target.

AB 32 also anticipates that local government actions will result in reduced GHG emissions. ARB has identified a GHG reduction target of 15 percent from current levels for local governments themselves and notes that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions.

The Scoping Plan relies on the requirements of Senate Bill 375 (discussed below) to implement the carbon emission reductions anticipated from land use decisions. SB 375 was enacted to align local land use and transportation planning to further achieve the state's GHG reduction goals. SB 375 requires regional transportation plans (RTPs), developed by Metropolitan Planning Organizations (MPOs), to incorporate a "sustainable communities strategy" that would achieve GHG emission reduction targets set by the ARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects, such as transit-oriented development. SB 375 would be implemented over the next several years. The Metropolitan Transportation Commission (MTC) is responsible for developing RTPs for the Bay Area. MTC's 2013 RTP will be its first plan subject to SB 375.

Senate Bills and Executive Orders

Executive Order S-1-07, signed by then-Governor Schwarzenegger in 2007, proclaimed that the transportation sector is the main source of GHG emissions in California, and directed the ARB to determine whether this Low Carbon Fuel Standard could be adopted as a discrete, early-action measure after meeting the mandates in AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009. Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, then-Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Portfolio Standard to 33 percent renewable power by 2020. The 33 percent by 2020 goal was codified in April 2011 with SB X1-2, which was signed by Governor Edmund G. Brown, Jr. This new RPS preempts the ARB 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must adopt the new Renewable Portfolio Standard (RPS) goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020.

SB 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue requiring analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, no later than July 1, 2009 (OPR, 2008). The California Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On December 30, 2009, the Natural Resources Agency adopted the state CEQA Guidelines amendments, as required by SB 97. These state CEQA Guidelines amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents.

The amendments were reviewed by the Office of Administrative Law and became effective March 18, 2010.

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact related to greenhouse gases to be significant if the Master Plan 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).

Master Plan EIR Impacts

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

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
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan 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). The 2009 Mitigated Negative Declaration (MND)

prepared for the update to the 2025 Fresno General Plan Air Quality Element 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. 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. To determine the direct impact of the Project with respect to climate change and GHGs, specifically construction activities, four types of analyses are used to determine whether the 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)[5] 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 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 800 metric tons/year of CO_2e (see also **Appendix C**). No permanent employees or daily worker trips would be required to operate the pipeline and proposed pump station (Option 1 or Option 2); however, periodic inspection and maintenance would be conducted as needed. These trips would be negligible from a GHG emissions perspective. Furthermore, electricity

[5] 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.

usage during operations would be limited to that needed to supply the single proposed pump station (Option 1 or Option 2), which would be limited. Therefore the 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 Project's annual contribution would be insignificant, and therefore the 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 Project would include pipelines that are sized to minimize friction loss and would develop all new pumping facilities that would make use of current, high energy efficiency equipment 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, 2009a) 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 has 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 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 August 24, 2011.

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 Master Plan EIR addresses the effects of implementing the Master Plan, including the 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.[6] 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 March 2014, 20 listed sites are located within 0.5 miles of the Project (DTSC, 2014); however, none are located directly within the Project area. There are three leaking underground storage tank (LUST) cleanup sites located in the vicinity of the Project area, all with diesel as the listed potential contaminants of concern. There are three voluntary cleanup sites in the vicinity of the Project area with potential contaminants of concern including arsenic, lead,

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

polynuclear aromatic hydrocarbons, TPH-motor oil, and cyanide. Five evaluation sites were listed in the vicinity of the Project area. Three of these sites have no listed potential contaminants of concern, one has tetrachloroethylene and trichloroethylene and the other site has polynuclear aromatic hydrocarbons. There is one state response or national priorities list (NPL) site located in the vicinity of the Project area. Two hazardous waste facility sites were listed also listed in the vicinity of the Project Area, with one listed as a protective filer and the other being non-operating. One school site in the vicinity of the Project area has lead as the potential contaminant of concern. There are four cleanup program sites in the vicinity of the Project area with potential contaminants of concern including lead, metals/heavy metals, petroleum/fuel/oils, volatile organic compounds, and gasoline.

Additional consultation was completed with Fresno County Public Health Department Environmental Health Services Division (EHS), the county's Lead Enforcement Agency for solid waste permitting, regarding the Option 1 site for the booster pump station. The southerly portion of this 30-acre property was permitted as an inert waste disposal site, but the entire parcel boundary was recorded as the solid waste landfill boundary by EHS in the late 1990s, when the permit was issued. While non-putrescible inert waste is not expected to create landfill gas, there is some potential for the construction and demolition debris buried on the site to contain asbestos (from old linoleum floor coverings, pipe insulation, exterior cladding tiles, or "popcorn" ceiling texture material) and lead (from old paint and plumbing/soldering). EHS has no record of any material being buried in the area of APN 326-060-31 where the Option 1 pump station would be located. At the present time, there is no confirmation of asbestos, lead, or other hazardous substances being present on any part of the Option 1 site, but the potential for occurrence exists.

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to hazards and hazardous materials to be significant if the Master Plan 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.

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below, that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan EIR and incorporated into this IS/MND 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.	PS	LSM
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
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan 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?	☐	☒	☐	☐	☐

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Master Plan EIR*
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?	☐	☐	☒	☐	☐
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) **Impact Addressed in Master Plan EIR.** 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 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 Master Plan EIR. Compliance with these laws and requirements would ensure that potential impacts would be minimized.

b) **Less than Significant with Mitigation.** The Project would involve trenching and site preparation activities that could release hazardous materials associated with existing contaminated soils and/or groundwater into the environment. The possible location of pump station Option 1 in the northeast corner of APN 326-060-31 is expected to be

outside of areas previously used for landfilling of inert materials and for handling of C&D wastes, and is thereby likely to avoid any potentially contaminated soil that may be associated with these activities, in the southwest portion of APN 326-060-31. Although no known hazardous materials sites are located within the Project area, interference with unknown sites, or stray residues associated with former landfill activities in the vicinity of the Option 1 site could still result in release of hazardous materials into the environment. Implementation of Master Plan EIR Mitigation Measures 4.9-1a to 4.9-1c would be required. These measures provide for the completion of a Phase I site assessment for the Project area, and implement measures to manage subsurface contamination, if encountered. Additionally, implementation of **Mitigation MeasureGEO-1** would be required, which would ensure an appropriate degree of protection from any hazardous residues associated with historic and ongoing activities on or in the vicinity of the Option 1 pump station site. Incorporation of these measures would ensure that potential impacts would be reduced to less than significant.

Mitigation Measures

Implement Mitigation Measure GEO-1.

c) **Impact Addressed in Master Plan EIR.** 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 Project facilities within on quarter mile of a school would be less-than-significant.

d) **No Impact.** The 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. As stated previously, the possible location of pump station Option 1 in the northeast corner of the property would be opposite potentially contaminated soil and would occupy a relatively small installation site when compared to the total parcel size, thereby avoiding potentially contaminated soil in the southwest portion of the parcel. Therefore, the 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 approximately 3 miles east of the Project area and the Fresno Chandler Executive Airport is located within 1 mile of the Project area. However, the Project does not include any structures of significant height or include any activities that would impair operations of the Fresno Chandler Executive Airport or any other airport use. The Project would not affect airport safety. No specific mitigation is required.

g) **Impact Addressed in Master Plan EIR.** Construction of transmission mains along both proposed alignments would occur within existing right of ways 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 Master Plan 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, 2014. 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 Master Plan EIR addresses the effects of implementing the Master Plan, including the 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 Fanning Creek in the areas of the Downtown transmission main alignment. 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 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.

Groundwater recharge in the system results from river and stream seepage, canal seepage, deep percolation of irrigation water, and substantial intentional recharge. Several local entities, including the City of Fresno, City of Clovis, Fresno Irrigation District (FID), and Fresno Metropolitan Flood Control District (FMFCD) have formed a cooperative to use and operate various groundwater recharge facilities to support substantial groundwater recharge in the subbasin.

Groundwater Quality and Arsenic

Groundwater in the vicinity of the Project alignment has moderate levels of total dissolved solids (TDS). TDS concentrations generally range from about 200 to 700 milligrams per liter (mg/L), although values greater than 600 mg/L are rare in upper (e.g., typically used) aquifer layers. At greater depth, groundwater having TDS concentrations of 2,000 mg/L or greater has been identified (DWR, 2006). A 2006 survey by the State Department of Public Health (414 samples across the subbasin) indicated an average of 240 mg/L, ranging from 40 to 570 mg/L (DWR, 2006). Portions of the groundwater basin are also subject to impairments associated with historic or ongoing releases of hazardous chemicals from superfund and other hazardous materials sites.

Water System Description

The City of Fresno primarily relies on groundwater to provide most of its water. In mid-2004, the Fresno surface water treatment facilities (SWTF) began operation, which now serves to support delivery of surface water to the City, for municipal and industrial uses. The large diameter transmission mains evaluated in this document are pipelines recommended for development by the 1996 Metropolitan Water Resources Management Plan.

During periods of high summer demand, the 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 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 those water mains to be constructed by the Project.

Flooding and Drainage

The FMFCD is the agency responsible for constructing and maintaining the flood and drainage control facilities within the Project alignment. The FMFCD adopted a Stormwater Management Master 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 Project would intersect a delineated 100-year floodplain only at waterway crossings, located along W Nielsen Ave and along S Teilman Ave. The Project would include trenchless construction under these waterways.

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:

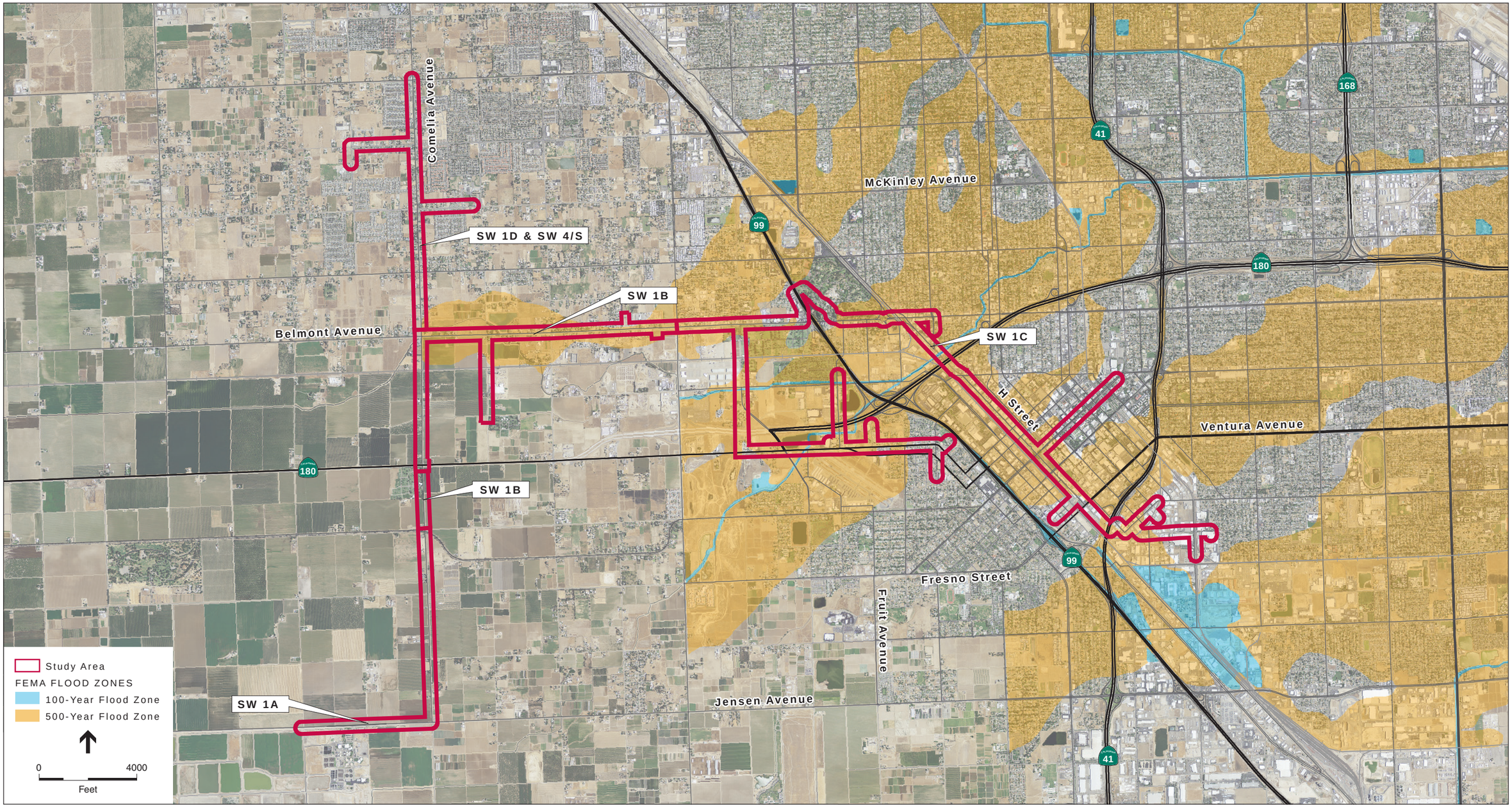
- Effluent and receiving-water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge;
- Prohibitions on discharges not specifically allowed under the permit; and
- Provisions that describe required actions by the discharger, including industrial pre-treatment,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

On September 2, 2009, the SWRCB adopted a new General Construction Permit for Discharges of Storm Water Associated with Construction Activities, effective on July 1, 2010, replacing the existing permit. The new permit 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 updated permit, additional and more stringent monitoring, reporting, and training requirements for management of stormwater pollutants are implemented.



SOURCE: ESRI, 2012; USDA, 2012; FEMA, 2013; ESA, 2013

Fresno Recycled Water Distribution System . 130412

Figure 2.9-1
FEMA Floodplains

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Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to hydrology and water quality to be significant if the Master Plan 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;
- 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.

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below, that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan EIR and incorporated into this IS/MND 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.	PS	LSM
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
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

The Master Plan did not include the construction of any new housing, and the Master Plan did not propose the placement of housing within a 100-year flood hazard zone. Therefore, the Master Plan 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 Master Plan 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 Master Plan EIR**. Construction of the Project, including the proposed pipelines and the pump station (Option 1 or Option 2), could result in increased levels of water pollution emanating from the water main and storage tank installation areas. Specifically, construction activities such as grading and trenching would result in 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, buildings, roadways, and other impervious surfaces can result in a decrease in the amount of rainwater that can replenish groundwater in those areas. Accordingly, increasing the cover of impervious surfaces can, in some cases, cause a significant reduction in groundwater recharge, resulting in significant impacts to groundwater quantity or quality. The Project alignment would involve construction of approximately 20.7 miles of recycled water transmission mains up to 24 inches in diameter, with the mains buried and the surface restored to its previous state. The Project alignment would not convert natural and other non-paved surfaces to pavement, buildings, roadways, and other impervious

surfaces and would not result in a decrease in the amount of rainwater that can replenish groundwater in those areas. The installation of the selected pump station option would result in a minor increase in impervious surfaces over that which currently exists. The selected pump station option would result in only a small surface area being converted to impervious surfaces, and adjacent land surfaces would continue to provide infiltration capacity and groundwater recharge. Therefore, no significant change in groundwater infiltration or level is anticipated. The 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 Project, the natural drainage pattern of the area would be temporarily disrupted, and soils could be subject to accelerated erosion, with sediments deposited in downstream receiving waters. 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.

The permanent location of the pump station (Option 1 or Option 2) would result in a minor increase in impervious surfaces over that which currently exists, thereby increasing the amount of surface runoff and reducing the amount of water infiltrating into the soil. The amount of impervious surfaces created with implementation of Project facilities would be minimal because pipelines would be placed primarily in existing roadway alignments, construction-related erosion and sedimentation impacts would be temporary in nature, and new impervious surfaces would be limited to small utility cabinets and vaults.

Construction and operation of the 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. Project pipelines would be constructed underground, primarily within existing road rights-of-way; thus, drainage patterns would not be altered by construction, and Project pipelines would not generate additional impervious surfaces that would contribute to additional runoff that would lead to flooding. Therefore, construction and operation of the Project would have less-than-significant impacts related to capacity of existing or planned storm water drainages systems.

g,i,j) **No Impact.** The Project would not result in the placement of water pipelines or the selected pump station (Option 1 or Option 2) within flood hazard areas. The 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 from these hazards.

h) **No Impact.** The Project alignments 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 W Nielsen Ave and S Teilman Ave. Underground pipelines would not impede or redirect flood flows or otherwise increase the potential for flooding. Neither pump station option would not be located within a 100-year flood hazard area. As a result, no impact would occur.

2.10 Land Use and Land Use Planning

Section 4.2 of the Master Plan EIR addresses the effects of implementing the Master Plan, including the 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 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, public schools and several cemeteries. All of the alignments would be installed largely within existing paved road right-of way and would not alter adjacent land uses once Project construction is completed. At various locations within the pipeline construction zones, staging areas would be required to store pipe, construction equipment, and other construction related items. Staging areas would be established in areas near construction zones that are open and easily accessed (i.e., vacant lots).

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to land use and land use planning to be significant if the Master Plan 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 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

Master Plan EIR Impacts

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

Land Use and Land Use Planning		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.2-1	The proposed project would include the siting and operation of recycled water facilities that could conflict with existing and planned land uses and land use planning policies.	LS	N/A
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

The EIR concluded that further analysis of the other significance criteria shown above was not warranted because no aspect of the Master Plan would result in the physical dividing of an established community, and because there is no adopted habitat conservation plan or natural community conservation plan that is applicable within the City SOI. For additional discussion, please refer to Section 4.2 of the Master Plan 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 Master Plan 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 Project would install underground pipelines and one pump station (Option 1 or Option 2). These facilities would either be located underground, or would be limited in extent to a small area of one single parcel within the City. Therefore, the 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) **Impact Addressed in Master Plan EIR.** Construction-related activities, including proposed staging areas, would be temporary and not permanently affect existing adjacent land uses. Aboveground appurtenances including blowoffs and similar structures would be small and spaced every 1,500 to 2,500 ft. The Project alignments would not result in a change to existing or planned land uses; therefore, there would be no conflicts with land use plans. The current Option 1 pump station site is included within the solid waste disposal site boundary for inert wastes, as discussed previously. The City would be required to amend the solid waste disposal site boundary in order to avoid any potential conflict of use at this site. Implementation of **Mitigation Measure LU-1** would be required. This mitigation measure would ensure that the solid waste disposal site boundary would be amended to exclude the Option 1 site, thereby avoiding potential conflict of use, and reducing potential impacts to less than significant.

Mitigation Measures

Mitigation Measure LU-1. If the Option 1 pump station location is chosen, prior to closing escrow on acquisition of any portion of the Nick's Trucking, Inc. property, the City shall apply to the Fresno County Public Health Department Environmental Health Division for an amendment to the existing solid waste disposal site boundary on APN 326-060-31. The City shall work with the County Public Health Department Environmental Health Division to ensure that the Option 1 site boundary is entirely excluded from the disposal site boundary, prior to closing of escrow on the Option 1 property.

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 Project alignment 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

Mineral resources were reviewed in the initial study that was completed for the Master Plan EIR, which is contained in **Appendix A** of the Master Plan EIR. Potential impacts were found to be less than significant for the Master Plan, and were not evaluated further in the Master Plan EIR. The following discussion provides Project specific information relevant to mineral resources.

Environmental Setting

According to the Fresno 2025 General Plan, 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. Two river areas in the Fresno P-C have been given special Resource Area designation for their concentration of aggregate materials: the upper Kings River and the San Joaquin River. Deposits in these areas are known to be of high quality, may be relatively easily mined, and are close to consumers. A portion of the San Joaquin River Resource Area is located within the City of Fresno's SOI. The 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.

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 Master Plan 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?	☐	☐	☐	☒	☐

a - b) **No Impact.** The Project alignment 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 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.

References

City of Fresno, 2002a. *2025 Fresno General Plan.* Prepared by City of Fresno Planning and Development Department, February 1, 2002.

2.12 Noise

Section 4.8 of the Master Plan EIR addresses the noise related effects of implementing the Master Plan, including the 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[7] (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).[8]

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

7 Hertz is a unit of frequency equivalent to one cycle per second
8 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, 1998). 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 effect 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, 1995). 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 Project vicinity include residences and a school located adjacent to the proposed water line alignment. Sensitive receptors within the Project area include residences, schools and three churches. The closest sensitive receptor would be located within 50 ft of the Project.

Master Plan EIR Standards of Significance

The Master Plan EIR considers a noise related impact to be significant if the Master Plan 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.

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below, that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan 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.	PS	LSM
4.8-2	Project construction could expose persons and structures to ground-borne vibration or ground-borne noise levels.	PS	LSM
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
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan 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 Master Plan EIR.** Equipment noise during construction of the proposed pipeline and selected pump station option is the primary concern in evaluating short-term noise impacts. During operation, noise from the Project would be similar in nature to existing operations. Operational noise would be generated by the operation of the selected pump station option, which would represent only a minimal, if any change in comparison to existing conditions. Maintenance associated with the Project would also 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 CNEL9) resulting in noise

9 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

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."

The City of Fresno Municipal Code, Chapter 10, Article 1 (Table 2-5) establishes noise standards for the Project area consistent with the 2025 Fresno General Plan as shown in **Table 2.12-1**. 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, 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 Master Plan EIR Mitigation Measure 4.8.1 would be required, which implements specific noise control measures for construction within City limits or within 1,500 ft of sensitive receptors.

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 Master Plan 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 pipeline. 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, *Transit Noise and Vibration Impact Assessment*, April 1995.

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 Master Plan 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.

c) **Less-than-Significant.** As discussed in Checklist Items 12a and 12d, the noise associated with the operation of the Project (operation of electric pumps at the selected pump station option) would not result in a substantial increase to ambient noise levels over that which currently exist.

e – f) **Less-than-Significant.** The Project does not involve the development of noise-sensitive land uses, and thus, implementation of the Project would not expose people to excessive aircraft noise.

References

City of Fresno, 2013Municipal Code, City of Fresno, California. Available online at http://library.municode.com/index.aspx?clientId=14478. Accessed on April 17, 2014, 2011.

2.13 Population and Housing

Section 5.2 of the Master Plan EIR addresses the effects of implementing the Master Plan, including the 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 Master Plan 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:

Master Plan EIR Impacts

The Master Plan EIR concluded that the Master Plan 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 recycled water that would be made available as a result of the Project would not meet a demand greater than what has been approved as part of the Fresno 2025 General Plan. Instead, recycled water would be used to meet a small percentage of projected demand in 2025 that would otherwise be met by using limited groundwater or imported surface water supplies.

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 Master Plan 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 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 Project would

develop the infrastructure necessary to provide recycled water supply to the City of Fresno through build out (2025). Therefore, the 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 RWMP EIR, the significance of potential population growth as it relates to the Project is determined if the Project would or would not be consistent with applicable land use plans. Implementation of the Project would distribute recycled water to meet a small portion of the total demand from planned development that was evaluated in the adopted 2025 Fresno General Plan, General Plan MEIR and Air Quality MND. Recycled water distributed under the Project would be used to offset demand that would otherwise be met using groundwater or imported surface water supplies. Therefore, the Project would not result in direct or indirect growth inducement, and this impact is considered less than significant.

b,c) **No Impact.** The Project would involve installation of new recycled water pipelines 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 impacts would occur.

2.14 Public Services

Section 4.10 of the Master Plan EIR addresses the effects of implementing the Master Plan, including the 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 City limits. Services offered to the Project alignment include uniformed patrol response to calls for service, crime prevention, tactical crime enforcement, and traffic enforcement/accident prevention. In addition to the main police office near the City Hall, there are five City police offices. 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.

TABLE 2.14-1
POLICE OFFICE LOCATIONS NEAR PROJECT ALIGNMENT

City Police Office	Location	Project Alignment	Distance from Project Alignment
Police Headquarters	2323 Mariposa Mall, Fresno, CA 93721	SW4	Less than one mile
Southwest Police Office	1211 Fresno St., Fresno, CA 93706	SW4 and SW1C	Less than one mile

The California Highway Patrol (CHP) service area is along the State and Interstate highway system that dissects the Project area. The Project's pipeline alignments cross under Highway 99 (SW1C) and Highway180 (SW1C and SW4). The CHP collaborates with both county and city police departments when the need arises.

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 3, 6 and 13) along or near the Project alignment, as shown in **Table 2-14-2**.

TABLE 2-14-2
FIRE PROTECTION STATIONS AND EMS LOCATIONS NEAR PROJECT ALIGNMENT

City Fire Station No.	Location	Project Alignment	Distance from Project Alignment
Station No. 22	806 S. Garfield, Fresno, CA 93706	SW1B	About 1.75 miles
Station No. 19	3187 W. Belmont, Fresno, CA 93722	SW1B	About .75 miles
Station No. 16	2510 N. Polk, Fresno, CA 93722	SW1D	About 1 mile
Station No. 3	1406 Fresno St., Fresno, CA 93706	SW4	About .75 miles

The City has an automatic aid agreement with the Fresno County Fire Protection District and the North Central Fire Protection District in which the nearest fire station responds to an emergency regardless of the jurisdiction within which it is located; however, this agreement does not include emergency medical services. The City also has an automatic aid agreement with the City of Clovis which include both fire and first responder emergency medical services. The City has mutual aid agreements with surrounding fire jurisdictions that allow for multi-jurisdictional response for disasters or fires of great magnitude. None of these other facilities are located near the Project alignments.

The Fresno Fire Department also provides first responder emergency medical service for all City residents; however, advanced life support (paramedic) and emergency transport are not provided by the Fresno Fire Department. Emergency transport within the City of Fresno is provided by American Ambulance, an exclusive private contractor who does not have emergency transport facilities near the Project alignments. Fresno County along with the medical community establishes the criteria for the delivery of advanced life support and emergency medical service.

Schools

The Fresno County Office of Education School District provides public school education services in the area of the Project. There are four public schools and 5 private schools located adjacent to the Project, as indicated in **Table 2.14-3** below.

TABLE 2-14-3
SCHOOLS NEAR PROJECT ALIGNMENT

Name of School	Location	Project Alignment	Distance from Project Alignment
McKinley Elementary School	4444 W. McKinley Ave, Fresno, CA 93722	SW1D	Adjacent
Polk Elementary School	2195 N Polk Ave, Fresno, CA 93722	SW1D	Adjacent
Belmont Middle School	8 E Belmont Ave, Fresno, CA 93728	SW1C	Adjacent
Teilman School	11 S Teilman Ave, Fresno, CA 93706	SW1C	Adjacent
Pershing Continuation School	855 W Nielsen Ave, Fresno, CA 93706	SW1C	Adjacent
Pathway Community Day School	11 S Teilman Ave, Fresno, CA 93706	SW1C	Adjacent
Columbia Elementary School	1025 S. Trinity St,.Fresno, CA 93706	SW1C	Adjacent
Fresno Academy for Civic and Entrepreneurial Leadership School	1713 Tulare St #202, Fresno, CA 93721	SW4	Adjacent
Fulton Special Education	121 Fulton St, Fresno, CA 93721	SW4	Adjacent

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to public services to be significant if the Master Plan 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).

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below, that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan 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 public services.	LS	N/A
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan 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 Master Plan EIR.** As described above and in the Master Plan EIR, the Project would not generate new population growth above existing assumed levels. In addition, the operation and maintenance of the 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 Project. Thus, the Project would not increase the demand for the kinds of public services that would support new residents, such as schools, parks, fire, police, or other public facilities.

2.15 Recreation

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

Environmental Setting

Rotary Storyland & Playland

The Rotary Storyland and Playland park is located at 890 W Belmont Ave Fresno. The park includes a walk-through park of stories and nursery rhymes as well as a small family amusement park with 13 rides and a small water park.

Fink-White Playground

Fink-White Playground is located at 535 S. Trinity Fresno This park is a full-service center providing recreational programs and activities. The park has 2 baseball/softball fields, 2 basketball courts, a football/soccer field, swimming pools, social hall and a computer lab.

Roeding Park

Roeding Park is located at 890 W Belmont Ave Fresno. The park is 157 Acres and includes a lake, several ponds, and groves of ash, cedar, pine, and eucalyptus, maple, and redwood trees. There are two children's playgrounds, 96 picnic tables and 9 picnic shelters scattered throughout the park.

Master Plan EIR Standards of Significance and Impacts

The Master Plan EIR considered impacts to recreation within Section 4.10, Public Services. For a review of the significance criteria and the impacts considered under Section 4.10 of the Master Plan EIR, please refer to Section 2.14 of this document, or Section 4.10 of the Master Plan 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 Master Plan 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 Project would involve installation of new recycled water pipelines and one pump station (Option 1 or Option 2) that would connect the Fresno – Clovis Regional Waste Water Reclamation Facility to the City. These activities 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 Project implementation.

Construction could interfere with access to portions of the Rotary Storyland and Playland park and Roeding 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 would not result in a significant impact.

b) **No Impact.** The Project does not include construction of any new recreational facility, and would not otherwise result in the construction of any such facility. Furthermore, the 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 Master Plan EIR addresses the effects of implementing the Master Plan, including the 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 Project:

TABLE 2-16-1
AFFECTED ROADWAY SEGMENTS

Segment	Anticipated Level of Disruption
Jensen Ave: East of Grantland Drive to Cornelia 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
Cornelia Ave: Jensen Ave to Shields 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
Whitesbridge Ave: Cornelia Ave to Blythe Ave, West Ave to Walnut Ave, and Hughes Ave to C 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
Blythe Ave: Whitesbridge Ave to South of Belmont 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: Cornelia Ave to Blythe 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
Clinton Ave: Cornelia Ave to Polk 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

Segment	Anticipated Level of Disruption
Polk Ave: Clinton Ave to Yale 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
Belmont Ave: Cornelia Ave to Polk Ave SR 99 and SR 99 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
Hughes Ave: Belmont Ave to Whitesbridge 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
Teilman Ave: Nielsen Ave to Whitesbridge 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
Trinity St.: Whitesbridge Ave to Stanislaus 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. Belmont Ave to Los Angeles 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
Los Angeles St. H St. to Butler 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
Hamilton Ave Fulton St. to East 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
East Ave Hamilton Ave to California 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
Mono St.: H St. to E 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.: H St. to S 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

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to transportation and traffic to be significant if the Master Plan 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

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below, that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan 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.	PS	LSM
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.	PS	LSM
4.6-3	Project construction would potentially cause traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways.	PS	LSM
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.	PS	LSM
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

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 Master Plan 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?	☐	☐	☐	☐	☒

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*	*Impact Addressed in Master Plan EIR*
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 Master Plan 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, Cornelia Ave, Belmont 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 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 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 Project would not exceed level-of-service standards established by the City of 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 Master Plan EIR Mitigation Measures 4.6-1a and 4.6-1b would ensure that effects on traffic flow conditions would be less-than-significant.

The impacts during peak traffic periods would be significant under alternate one-way traffic flow conditions because levels of service 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 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 Master Plan EIR Mitigation Measure 4.6-1b as described above.

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

d) **Impact Addressed in Master Plan EIR.** The Project would not permanently change the existing or planned transportation network in the vicinity of the Project site 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 Project. Implementation of Master Plan EIR Mitigation Measure 4.6-1b would reduce traffic-related safety hazards to a less than significant level.

e) **Impact Addressed in Master Plan 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 time. With the incorporation of Master Plan EIR Mitigation Measures 4.6-1a and 4.6-1b, these impacts would be reduced to less-than-significant.

f) **No Impact.** The 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 Master Plan EIR addresses the effects of implementing the Master Plan, including the 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 Fresno SWTF began operation, which now serves to support delivery of surface water to the City, for municipal and industrial uses. During periods of high summer demand, the 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 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 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, Gourd 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 Project alignment is provided by the City of Fresno. The City owns and operates the Fresno-Clovis 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 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 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, the Orange Avenue Landfill. The American Avenue Landfill is owned and operated by Fresno County. The Orange Avenue Landfill is privately owned and is expected to close soon. 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.

Master Plan EIR Standards of Significance

The Master Plan EIR considers an impact to utilities to be significant if the Master Plan 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.
- Result in conflict with other existing utilities, causing interference with their operation or function.

Master Plan EIR Impacts

The Master Plan EIR identifies the impacts shown below, that would result from implementation of the Master Plan. Impacts are presented with their corresponding levels of significance before and after application of mitigation measures applied in the Master Plan EIR. Mitigation measures adopted under the Master Plan 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.	PS	LSM
PS = Potentially Significant LS = Less than Significant LSM = Less than Significant with Mitigation Incorporated NI = No Impact			

The Master Plan involved the treatment, distribution and use of recycled water, which would generate rather than require new or expanded water supplies. The Master Plan EIR concluded that the Master Plan would offset the use of potable water, thereby reducing the total volume of water supply required within the City SOI. For these reasons, the Master Plan EIR determined that there would be no need for new or expanded entitlements to accommodate the City's water supply needs, no impact would occur with this issue, 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 Master Plan 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 Project entails the construction of new recycled water transmission facilities and a proposed pump station (Option 1 or Option 2). These recycled water transmission mains would not conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board, and the Project would not require any connection to the local sewer system. Therefore, no impacts related to wastewater would occur.

b) **No Impact.** The Project entails the construction of new recycled water transmission mains which would expand the existing water transmission system. This Initial Study evaluates and addresses potential impacts associated with the Project. The Project would maximize the use of available groundwater and surface water supplies by extending the City's recycled water transmission capability to meet demand in the vicinity of the Project area. The Project would occur in conjunction with upgrades to the RWRF, which would be evaluated separately.

c) **Less-than-Significant.** The permanent location of the above ground pump station (Option 1 or Option 2) would result in a minor increase in impervious surfaces over that which currently exists, thereby increasing the amount of surface runoff. However, the amount of impervious surfaces created would be and limited to the area of the selected pump station. This area would drain into existing storm drainage facilities maintained and operated by the City. Drainage volumes would be limited and construction of new drainage facilities outside of the Project area would not be required to manage flows. As a result, the Project would not require construction of a storm drainage system or expansion of an existing stormwater drainage facility.

d) **No Impact.** The Project would not involve development of new residential, commercial or industrial land uses; therefore, the 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 recycled water penetration into the existing system and minimize use of the City's existing surface and groundwater supplies. The Project would not require new or expanded water supply resources or entitlements.

f - g) **Impact Addressed in Master Plan EIR.** 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. Furthermore, disposal of all waste would comply with applicable regulations including regulations that require recycling of construction waste. As a result, landfill and solid waste impacts would be less than significant.

References

City of Fresno, 2002. *2025 Fresno General Plan.* Prepared by City of Fresno Planning and Development Department, February 1, 2002.

2.18 Mandatory Findings of Significance

Chapter 5 of the Master Plan EIR addresses significant irreversible environmental changes, significant unavoidable impacts, and cumulative impacts. Cumulative impacts are also addressed for each resource area impact analysis in Chapter 4 of the Master Plan 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 Master Plan EIR*
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?	☐	☒	☐	☐	☐

a) **Less-than-Significant with Mitigation.** As discussed the Air Quality; Biological Resources; Cultural Resources; Geology, Soils, and Seismicity; Hazards and Hazardous Materials; Hydrology and Water Quality; Noise; Recreation; and the Transportation and Traffic sections of this IS/MND, the Project would result in potentially significant temporary impacts as a result of construction of the selected pump station option. However, adoption and implementation of mitigation measures described in this IS/MND would reduce these individual impacts to less than significant levels.

b) **Less-than-Significant with Mitigation.** Potential cumulative scenario impacts of the Project are evaluated in Chapter 5 of the Master Plan EIR, and throughout the impact analysis presented in Chapter 4 of the Master Plan EIR. Briefly, and as relevant to this specific 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 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 Project impacts to less than significant.

c) **Less-than-Significant with Mitigation.** The proposed construction and operation of the large diameter 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 Project impacts to less than significant.

CHAPTER 3
Responses to Comments

3.1 Introduction

This chapter includes copies of the comment letters received during the public review period of the Fresno Recycled Water Distribution System Draft Tiered IS/MND and responses to all of the substantive comments during the public review period from August 22, 2014 through September 23, 2014.

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	Central Valley Flood Protection Board	September 17, 2014
B	Governor's Office of Planning and Research, State Clearing House and Planning Unit	September 24, 2014

3.3 Individual Comment Responses

This section provides individual responses to written comments received from agencies and interested persons commenting on the Draft IS/MND. Each comment letter was assigned a letter and a comment number (i.e., A-1, A-2, etc.) corresponding with the letter assigned in Table 1-1. Each comment letter has been reproduced in its entirety followed by the responses to each comment within the letter. Where a response to a similar comment has been provided in another response the reader is referred to the appropriate response or section. All changes to the Draft Tiered IS/MND for clarification or amplification are described in the response and referred by the page number on which the original text appears in the Draft MND (Appendix B). Added text is <u>underlined</u>; deleted text is ~~stricken~~.

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-2380 FAX: (916) 574-0682

September 17, 2014

Mr. Kevin Norgaard
California Public Utilities Commission
Wastewater Management
2600 Fresno Street
Fresno, California 93721

Subject: CEQA Comments: Fresno Recycled Water Distribution System, Mitigated Negative Declaration, SCH No. 2014081078

Location: Fresno County

Dear Mr. Norgaard:

CVFPB - 1

Central Valley Flood Protection Board (Board) staff has reviewed the subject document and provides the following comments:

The proposed project is located within Dry Creek which is under Board jurisdiction. The Board enforces its Title 23, California Code of Regulations (23 CCR) for the construction, maintenance, and protection of adopted plans of flood control that protect public lands from floods. Adopted plans of flood control include federal-State facilities of the State Plan of Flood Control, regulated streams, and designated floodways. The geographic extent of Board jurisdiction includes the Central Valley, and all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins (23 CCR, Section 2).

Pursuant to 23 CCR a Board permit is required prior to working in the Board's jurisdiction for the following:

- Placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (23 CCR Section 6);

- Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (23 CCR Section 6);

- Vegetation plantings require submission of detailed design drawings; identification of vegetation type; plant and tree names (both common and scientific); quantities of each type of plant and tree; spacing and irrigation method; a vegetative management plan for maintenance to prevent the interference with flood control operations, levee maintenance, inspection, and flood fight procedures (23 CCR Section 131).

Other local, federal and State agency permits may be required and are the responsibility of the applicant to obtain.

Board permit application forms and our complete 23 CCR regulations can be found on our website at http://www.cvfpb.ca.gov/. Maps of the Board's jurisdiction including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and Board designated floodways are also available on a Department of Water Resources website at http://gis.bam.water.ca.gov/bam/.

Additional Considerations Related to Potential Impacts of Vegetation and Hydraulics

Accumulation and establishment of woody vegetation that is not managed may have negative impacts on channel capacity and may increase the potential for levee over-topping or other failure. When vegetation develops and becomes habitat for wildlife, maintenance to initial baseline conditions typically becomes more difficult as the removal of vegetative growth may be subject to federal and State resource agency requirements for on-site mitigation. The proposed project should include mitigation measures to avoid decreasing floodway channel capacity.

Adverse hydraulic impacts of proposed encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The proposed project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. If possible off-site mitigation outside of the Board's jurisdiction should be used when mitigating for vegetation removed at the project location.

CVFPB -1 Cont.

If you have any questions please contact James Herota at (916) 574-0651, or via email at james.herota@water.ca.gov.

Sincerely,

ACTING FOR
Len Marino, P.E.
Chief Engineer

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

Letter A – Central Valley Flood Protection Board

Comment A-1 **The comment from the Central Valley Flood Protection Board (CVFPB) notes that any work for the construction, maintenance and protection of adopted plans of flood control that protect public lands from floods conducted within the CVFPB's jurisdiction will require a Board permit pursuant to Title 23, California Code of Regulations (23 CCR).**

Response A-1 The comments contained within this letter do not specifically address issues, content or recommended changes in the Draft Tiered IS/MND, but rather detail the requirements of the CVFPB's issuance of an encroachment permit.

The City of Fresno is legislatively excluded from the jurisdiction of the CVFPB. SB1070 (Cogdill-2010), specifically amends the delineation and map of the jurisdiction of the CVFPB to exclude the southern banks of the San Joaquin River and supports the designation of the upper plain of the southern bank of the San Joaquin River as tributary to the Tulare Lake Basin, not the San Joaquin. No water from the City, or more specifically the regions in the Reclaimed Water master plan, are within the tributary area of the Dry Creek watershed, or the jurisdiction of the CVFPB.

EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

KEN ALEX
DIRECTOR

September 24, 2014

Kevin Norgaard
California Public Utilities Commission - Wastewater Management
2600 Fresno Street
Fresno, CA 93721

Subject: Fresno Recycled Water Distribution System
SCH#: 2014081078

Dear Kevin Norgaard:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on September 23, 2014, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

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 contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2014081078
Project Title Fresno Recycled Water Distribution System
Lead Agency Public Utilities Commission

Type MND Mitigated Negative Declaration

Description Note: Tiered SCH# 2010051015

The Project would distribute up to approximately 8.1 million gallons per day (mgd) of tertiary-treated wastewater as recycled water across the southwestern quadrant of the City of Fresno. The Project includes construction and operation of approximately 22 miles of 8 to 54-inch diameter recycled water distribution lines, plus a pump station to help maintain system pressure. All pipelines would be installed within roadways or roadway right of way. The proposed pipelines would connect to the City's Regional Water Reclamation Facility, which is undergoing upgrades under a separate project. The environmental documentation for the present Recycled Water Distribution Project is tiered from the City of Fresno Recycled Water Master Plan Program EIR (SCH# 2010051015).

Lead Agency Contact

Name Kevin Norgaard
Agency California Public Utilities Commission - Wastewater Management
Phone 559 621 5297 **Fax**
email
Address 2600 Fresno Street
City Fresno **State** CA **Zip** 93721

Project Location

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

Proximity to:

Highways Hwy 180, 168, 99, 41
Airports
Railways UPRR
Waterways Dry Creek, Fanning 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; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 6; Air Resources Board; Regional Water Quality Control Bd., Region 5 (Fresno); Native American Heritage Commission; Public Utilities Commission; State Lands Commission; Central Valley Flood Protection Board

Date Received 08/22/2014 **Start of Review** 08/25/2014 **End of Review** 09/23/2014

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-2380 FAX: (916) 574-0682

CISCR 9/23/14 e

September 17, 2014

Mr. Kevin Norgaard
California Public Utilities Commission
Wastewater Management
2600 Fresno Street
Fresno, California 93721

Subject: CEQA Comments: Fresno Recycled Water Distribution System, Mitigated Negative Declaration, SCH No. 2014081078

Location: Fresno County

Dear Mr. Norgaard:

Central Valley Flood Protection Board (Board) staff has reviewed the subject document and provides the following comments:

The proposed project is located within Dry Creek which is under Board jurisdiction. The Board enforces its Title 23, California Code of Regulations (23 CCR) for the construction, maintenance, and protection of adopted plans of flood control that protect public lands from floods. Adopted plans of flood control include federal-State facilities of the State Plan of Flood Control, regulated streams, and designated floodways. The geographic extent of Board jurisdiction includes the Central Valley, and all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins (23 CCR, Section 2).

Pursuant to 23 CCR a Board permit is required prior to working in the Board's jurisdiction for the following:

- Placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (23 CCR Section 6);

- Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (23 CCR Section 6);

- Vegetation plantings require submission of detailed design drawings; identification of vegetation type; plant and tree names (both common and scientific); quantities of each type of plant and tree; spacing and irrigation method; a vegetative management plan for maintenance to prevent the interference with flood control operations, levee maintenance, inspection, and flood fight procedures (23 CCR Section 131).

Other local, federal and State agency permits may be required and are the responsibility of the applicant to obtain.

Board permit application forms and our complete 23 CCR regulations can be found on our website at http://www.cvfpb.ca.gov/. Maps of the Board's jurisdiction including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and Board designated floodways are also available on a Department of Water Resources website at http://gis.bam.water.ca.gov/bam/.

Additional Considerations Related to Potential Impacts of Vegetation and Hydraulics

Accumulation and establishment of woody vegetation that is not managed may have negative impacts on channel capacity and may increase the potential for levee over-topping or other failure. When vegetation develops and becomes habitat for wildlife, maintenance to initial baseline conditions typically becomes more difficult as the removal of vegetative growth may be subject to federal and State resource agency requirements for on-site mitigation. The proposed project should include mitigation measures to avoid decreasing floodway channel capacity.

Adverse hydraulic impacts of proposed encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The proposed project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. If possible off-site mitigation outside of the Board's jurisdiction should be used when mitigating for vegetation removed at the project location.

If you have any questions please contact James Herota at (916) 574-0651, or via email at james.herota@water.ca.gov.

Sincerely,

Michael C.

ACTING FOR
Len Marino, P.E.
Chief Engineer

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

Letter B – Governors Office of Planning and Research, State Clearinghouse and Planning Unit

Comment B-1 **The comment states that the Governor's Office of Planning and Research, State Clearinghouse and Planning Unit acknowledges that the IS/MND complies with the State Clearinghouse review requirements for draft environmental documents, pursuant to CEQA.**

Response B-1 Comment noted

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Appendix A
Mitigation Monitoring and Reporting Program

ESA

APPENDIX A

Mitigation Monitoring and Reporting Program For the Fresno Recycled Water Distribution System City of Fresno EA-14-026

A.1 Requirement

CEQA states that when mitigation measures are required to reduce or avoid a potentially significant impact, a program for monitoring or reporting those measures shall be adopted by the Lead Agency (CEQA Guidelines 15097). The purpose of the mitigation monitoring and reporting program (MMRP) is to ensure timely compliance with required mitigation measures.

A.2 Mitigation Monitoring and Reporting Program

The environmental analysis contained in the Fresno Recycled Water Distribution System project Initial Study / Mitigated Negative Declaration (IS/MND) is tiered off of the City of Fresno Recycled Water Master Plan Program EIR (Master Plan EIR; State Clearinghouse Number (SCH) #2010051015). This MMRP lists all mitigation measures from the Master Plan EIR that are relevant to the project. Additional, 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 IS/MND; they are duplicated in this Mitigation Monitoring and Reporting Program (MMRP) for compliance and monitoring purposes.

In addition, following the certification of the Master EIR for the 2025 Fresno General Plan (City MEIR #10130), all subsequent projects having potential environmental impacts are required to compile and adopt the MEIR MMRP. The 2025 Fresno General Plan MEIR MMRP is included as Appendix B.

Table A-1 outlines the MMRP for the Fresno Recycled Water Distribution System project. The table lists all relevant EIR mitigation measures and project-specific mitigation measures, the agency (s) responsible for monitoring compliance, and when monitoring will occur. The table may be signed and dated by the designated monitor when compliance has been verified.

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
AESTHETICS				
Master Plan EIR Measure 4.11.2a: Following construction activities, the implementing agencies shall restore disturbed areas by reestablishing pre-existing conditions including topography, repaving roadways, replanting trees, and/or reseeding with a native seed mix typical of the immediate surrounding area.	Fresno Department of Public Works	Fresno Department of Public Works	Following project construction	
Master Plan EIR Measure 4.11.2b: During facility design, the City shall prepare a landscape plan for each aboveground project facility. The landscape plan shall include measures to restore disturbed areas by reestablishing existing topography, including replanting trees and/or reseeding with a native seed mix typical of the immediately surrounding area. The landscape plan shall include a required seed mix and plant palate. Vegetation screening shall be included in the landscape plan in order to shield proposed aboveground facilities from public view. The landscape plan shall include a monitoring plan to ensure that the site restoration and the establishment of vegetation is successful.	Fresno Department of Public Utilities	Fresno Department of Public Utilities	During preparation of project construction documents	
Master Plan EIR Measure 4.11.2c: The implementing agencies shall ensure that recycled water facility designs include non-glare exterior coatings that are colored an earth tone to blend in with the surrounding landscape.	Fresno Department of Public Utilities	Fresno Department of Public Utilities	During preparation of project construction documents	
Master Plan EIR Measure 4.11.3: The proposed project facilities, when constructed, shall adhere to City policies relating to the shielding of light to reduce any potential negative effects from new light sources. The City shall install security lighting with directional shields to concentrate lighting toward the project site. The nighttime security and associated parking lighting fixtures will be equipped with directional shields that aim light downward and away from adjacent properties and public roadways. In addition, lighting fixtures will be placed to concentrate light onsite to avoid spillover onto adjacent properties and public roadways.	Fresno Department of Public Utilities	Fresno Department of Public Utilities	During preparation of project construction documents	
AIR QUALITY				
Master Plan EIR Measure 4.7.1a: 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 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.	Fresno Department of Utilities, Wastewater Division	Fresno Department of Public Works	During preparation of Construction Documents / prior to project construction	

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
• 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 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 PM_{10} shall be implemented where feasible. These measures include: • Limit traffic speeds on unpaved roads to 15 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.				

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
Master Plan EIR 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 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.	Fresno Department of Utilities, Wastewater Division	Fresno Department of Public Works	During project construction	
Master Plan EIR Measure 4.7.1c: Off-road construction equipment used on site achieve fleet average emissions equal to or less than the Tier II emissions standard of 4.8 NO_x g/hp-hr.	Fresno Department of Utilities, Wastewater Division	Fresno Department of Public Works	During project construction	
BIOLOGICAL RESOURCES				
Master Plan EIR Measure 4.5.2: Prior to commencement of construction, a qualified biologist shall conduct a pre-construction survey for: horned lark, tri-colored blackbird, raptors, and other protected 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 CDFG, around the active nest. The no-work buffer may vary depending on species and site specific conditions as approved by CDFG. Appropriate mitigation measures include 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 CDFG and the City of Fresno. These measures will ensure compliance with the Migratory Bird Treaty Act and California Department of Fish and Game Code 3503.5.	Fresno Department of Utilities, Wastewater Division qualified biologist and/or construction contractor	Fresno Department of Public Utilities	Prior to project construction	
Master Plan EIR Measure 4.5.4a: 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.	Fresno Department of Utilities, Water Division qualified biologist and/or construction contractor	Fresno Department of Public Works	Prior to project construction / during project construction	

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
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 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.				
Master Plan EIR Measure 4.5.4b: 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.	Fresno Department of Utilities, Wastewater Division qualified biologist and/or construction contractor	Fresno Department of Public Works	During project construction	
Master Plan EIR Measure 4.5.8: To ensure that impacts to the special-status bat species and their habitat are avoided or reduced, the following measures shall be implemented: • Before construction activities (i.e., ground clearing and grading, including trees removal) within 200 feet of trees that could support special-status bats, a qualified bat biologist shall survey for special-status bats. If no evidence of bats (i.e., direct observation, guano, staining, or strong odors) is observed, no further mitigation shall be required. • If evidence of bats is observed, the City of Fresno and its contractors shall implement the following measures to avoid potential impacts on breeding populations: • A no-disturbance buffer of 250-feet shall be created around active bat roosts during the breeding season (April 15 through August 15). Bat roosts initiated during construction are presumed to be unaffected by the indirect effects of noise and construction disturbances. However, the direct take of individuals will be prohibited. • Removal of trees showing evidence of active bat activity shall occur during the period least likely to affect bats, as determined by a qualified bat biologist (generally between February 15 and October 15 for winter hibernacula, and between August 15 and April 15 for maternity roosts). If the exclusion of bats from potential roost sites is necessary to prevent indirect impacts due to construction noise and human activity adjacent, bat exclusion activities (e.g., installation of netting to block roost entrances) shall also be conducted during these periods.	Fresno Department of Utilities, Wasteater Division qualified biologist and/or construction contractor	Fresno Department of Public Works	Prior to project construction / during project construction	

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
Master Plan EIR Measure 4.5.10: 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 CDFG 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. • In addition, the RWQCB regulates these features under Section 401 of the CWA; the County 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.	Fresno Department of Utilities, Wastewater Division qualified biologist and/or construction contractor	Fresno Department of Public Utilities	Prior to project construction	
Mitigation Measure BIO-1: Protect Sensitive Tree Resources Adjacent to Construction Activities. Sensitive tree resources adjacent to construction activities may require additional protection. Where feasible, buffer zones should include a minimum one-foot-wide buffer zone outside the dripline for oaks and landmark trees. The locations of these resources would be clearly identified on the construction drawings and marked in the field by a Certified Arborist. Fencing or other barriers would remain in place until all construction and restoration work that involves heavy equipment is complete. Construction vehicles, equipment, or materials would not be parked or stored within the fenced area. No signs, ropes, cables, or other items would be attached to the protected trees. Grading, filling, trenching, paving, irrigation, and landscaping within the driplines of oak trees would be limited. Grading within the driplines of oak trees would not be permitted unless specifically authorized by a Certified Arborist. Hand-digging must be done in the vicinity of major trees and as recommended by a Certified Arborist to prevent root cutting and mangling by heavy equipment. All oak tree mitigation and/or restoration will be consistent with the Fresno County General Plan, oak woodland and tree preservation policies.	Fresno Department of Utilities, Wastewater Division qualified arborist and/or construction contractor	Fresno Department of Public Utilities	During preparation of Construction Documents / prior to project construction / during project construction	

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
Mitigation Measure BIO-2: The following measures will avoid or minimize potential construction-related impacts to oaks and other native heritage trees: • Prior to removal of any trees, an ISA Certified Arborist shall conduct a tree survey in areas that may be impacted by construction activities. This survey shall document tree resources that may be adversely impacted by implementation of the Project. The survey will follow standard professional practices. • Current vegetation and oaks will be retained to extent feasible. A Tree Protection Zone (TPZ) shall be established around any tree or group of trees to be retained. The TPZ will be delineated by an ISA Certified Arborist. The TPZ shall be defined by the radius of the dripline of the tree(s) plus one foot. The TPZ of any protected trees shall be demarcated using fencing that will remain in place for the duration of construction activities. • Construction-related activities shall be limited within the TPZ to those activities that can be done by hand. No heavy equipment or machinery shall be operated within the TPZ. Grading shall be prohibited within the TPZ. No construction materials, equipment, or heavy machinery shall be stored within the TPZ. • The Project Proponent will replace any trees removed to ensure no net loss of habitat functions or values. All trees planted will be purchased from a locally adapted genetic stock obtained within 50 miles of the Project site, where feasible. Oak species shall be replaced at a 3:1 ratio. All other species shall be replaced at a 2:1 ratio. • As an alternative to offsite mitigation, the Project proponent may contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision Fish and Game Code §1363(a), for the purpose of purchasing oak woodlands conservation easements, as specified under paragraph (1) of subdivision (d) of that section and the guidelines and criteria of the Wildlife Conservation Board. This measure may be implemented at such time as the Wildlife Conservation Board and/or CDFW establish guidelines, criteria, and a payment schedule for contribution to the Oak Woodlands Conservation Fund.	Fresno Department of Utilities, Wastewater Division qualified arborist and/or construction contractor	Fresno Department of Public Utilities	Prior to project construction / during project construction	
CULTURAL RESOURCES				
Master Plan EIR Measure 4.12.2b: 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.	Fresno Department of Utilities, Wastewater Division; qualified cultural resource specialist and/or construction contractor	Fresno Department of Public Utilities	During preparation of Construction Documents / During project construction	

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
Master Plan EIR Measure 4.12.2c: During construction, should prehistoric or historic-period subsurface cultural resources be discovered, all activity in the vicinity of the find shall stop and a 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 will be, 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.	Fresno Department of Utilities, Wastewater Division; qualified cultural resource specialist and/or construction contractor	Fresno Department of Public Utilities	During preparation of Construction Documents / During project construction	
Master Plan EIR Measure 4.12.3: 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 proposed project proponent 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.	Fresno Department of Utilities, Wastewater Division; qualified cultural resource specialist and/or construction contractor	Fresno Department of Public Works	During preparation of Construction Documents / During project construction	
Master Plan EIR Measure 4.12.4a: 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).	Fresno Department of Utilities, Wastewater Division; qualified cultural resource specialist and/or construction contractor	Fresno Department of Public Works	During preparation of Construction Documents / During project construction	
Master Plan EIR Measure 4.12.4b: Prior to all Master Plan facilities involving excavations greater than 6 feet in depth (including pipeline crossings and groundwater reuse 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 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.	Fresno Department of Utilities, Wastewater Division; qualified cultural resource specialist and/or construction contractor	Fresno Department of Public Works	During preparation of Construction Documents / During project construction	

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
• 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).				
GEOLOGY, SOILS, AND SEISMICITY				
Master Plan EIR Measure 4.3.1a: The City shall prepare a site-specific soil and geotechnical engineering study prior to final design of individual projects under the Master Plan. 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 the all appropriate State and local regulatory agencies including, but not limited to, city of Fresno Public Works department for review and approval. All feasible recommendations addressing potential seismic hazards and soil constraints shall be implemented.	Fresno Department of Utilities, Wastewater Division	Fresno Department of Public Works	During preparation of Construction Documents / prior to project construction	
Master Plan EIR Measure 4.3.1b: All buildings shall conform to CBC standards for seismicity, engineered slope stability, and erosion control, as relevant.	Fresno Department of Utilities, Wastewater Division	Fresno Department of Public Works	During preparation of Construction Documents / prior to project construction	
Master Plan EIR Measure 4.3.1c: All pipelines shall designed and installed consistent with the guidelines published by the American Water Works Association.	Fresno Department of Utilities, Wastewater Division	Fresno Department of Public Works	During preparation of Construction Documents / prior to project construction	
Mitigation Measure GEO-1: If Option 1 is selected as the preferred site for the recycled water pump station, a Phase I (and if needed, Phase II) assessment(s) shall be completed prior to purchase, and the prior owner(s) shall be responsible for remediation as necessary.	Fresno Department of Utilities, Wastewater Division	Fresno Department of Public Works	Prior to land purchase / prior to project construction	

TABLE A-1
MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
HAZARDS AND HAZARDOUS MATERIALS				
Master Plan EIR Measure 4.9.1a: Prior to final project design and any earth disturbing activities, the City shall conduct a Phase I Site Assessment. The Phase I Site Assessment shall be prepared by a REA or other qualified professional to assess the potential for contaminated soil or groundwater conditions at the project site. The Phase I Site Assessment shall include a review of appropriate federal and State hazardous materials databases, as well as relevant local hazardous material site databases for hazardous waste on-site and off-site locations within a one quarter mile radius of the project site. The Phase I Site Assessment shall also include a review of existing or past land uses and aerial photographs, summary of results of reconnaissance site visit(s), and review of other relevant existing information that could identify the potential existence of contaminated soil or groundwater. If no contaminated soil or groundwater is identified or if the Phase I Site Assessment does not recommend any further investigation then the City shall proceed with final project design and construction.	Fresno Department of Utilities, Wastewater Division; REA or other qualified professional and/or construction contractor	Fresno Department of Public Works	During preparation of Construction Documents / prior to project construction	
Master Plan EIR Measure 4.9.1b: If existing soil or groundwater contamination is identified and if the Phase 1 Site Assessment recommends further review, the City shall retain a REA to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations prior to any earth disturbing activities. The environmental professional shall prepare a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.	Fresno Department of Utilities, Wastewater Division; REA or other qualified professional and/or construction contractor	Fresno Department of Public Works	During preparation of Construction Documents / prior to project construction	
Master Plan EIR Measure 4.9.1c: If unidentified or suspected contaminated soil or groundwater is encountered during construction activities, work shall be halted in the area of potential exposure, and the type and extent of contamination shall be identified by a REA. The environmental professional shall prepare a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.	Fresno Department of Utilities, Wastewater Division; REA or other qualified professional and/or construction contractor	Fresno Department of Public Works	During project construction	
Master Plan EIR Measure 4.6.1a: **See Master Plan EIR Measure 4.6.1a**	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	Prior project construction	
Master Plan EIR Measure 4.6.1b: See **Master Plan EIR Measure 4.6.1b**	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	During preparation of Construction Documents / prior to project construction	

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MITIGATION MONITORING PROGRAM
FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
Mitigation Measure GEO-1: **See Mitigation Measure GEO-1**	Fresno Department of Utilities, Wastewater Division	Fresno Department of Public Works	Prior to land purchase / prior to project construction	
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	During project construction	
Land Use and Land Use Planning				
Mitigation Measure LU-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. If the Option 1 pump station location is chosen, prior to closing escrow on acquisition of any portion of the Nick's Trucking, Inc. property, the City shall apply to the Fresno County Public Health Department Environmental Health Division for an amendment to the existing solid waste disposal site boundary on APN 326-060-31. The City shall work with the County Public Health Department Environmental Health Division to ensure that the Option 1 site boundary is entirely excluded from the disposal site boundary, prior to closing of escrow on the Option 1 property.	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	During project construction	
NOISE				
Master Plan EIR Measure 4.8.1: The City and its contractors shall implement 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 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	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	During project construction	

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Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
shielding impact tools. • 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.				
Master Plan EIR Measure 4.8.2: The City and its contractors shall implement 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 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.	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	During project construction	
TRANSPORTATION AND TRAFFIC				
Master Plan EIR Measure 4.6.1a: Prior to construction, the City of Fresno and its contractor(s) shall coordinate with the appropriate local government departments, 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.	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	Prior project construction	
Master Plan EIR Measure 4.6.1b: The following requirements shall be incorporated into contract specifications prepared by the City for the project: • The contractor(s) shall obtain any necessary road encroachment permits prior to construction and shall comply with conditions of approval attached to project implementation. As part of the	Fresno Department of Utilities, Wastewater Division; and/or construction contractor	Fresno Department of Public Works	During preparation of Construction Documents / prior to project construction	

TABLE A-1
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FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
road encroachment permit process, the contractor(s) shall 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 shall likely include, but are not necessarily limited to, the following: o 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. o Control and monitor construction vehicle movements through the enforcement of standard construction specifications by periodic onsite inspections. o 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. o 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. o 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 12 to 15-foot-wide paved travel lane, then the road will be closed in accordance with a traffic control plan approved by the City Traffic Engineer. o Include signage to direct pedestrians and bicyclists around project construction work zones that displace sidewalks and/or bike lanes. o 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. o 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. o 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. o 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				

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FRESNO RECYCLED WATER DISTRIBUTION SYSTEM

	Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Monitoring Timing	Monitoring Sign-Off
	provide flaggers in the school areas to ensure traffic and pedestrian safety.				
o	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.				
o	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.				

Appendix B

Mitigation Monitoring and Reporting Program from the 2025 Fresno General Plan – City MEIR

ESA

MEIR Mitigation Measure Monitoring Checklist for the Southwest Component of the City of Fresno Recycled Water Distribution System

City of Fresno Environmental Assessment (EA) Number EA-14-026

November 18, 2014

INCORPORATING MEASURES FROM MASTER ENVIRONMENTAL IMPACT REPORT (MEIR) NO. 10130 / CERTIFIED FOR THE 2025 FRESNO GENERAL PLAN (SCH No. 2001071097) AND THE FINDING OF MITIGATED NEGATIVE DECLARATION APPROVED FOR ENVIRONMENTAL ASSESSMENT NO. A-09-02 (RELATING TO PLAN AMENDMENT NO. A-09-02, THE AIR QUALITY UPDATE TO THE FRESNO GENERAL PLAN)

Following is the mitigation monitoring checklist from MEIR No. 10130 as applied to the above-noted project's environmental assessment, required by City Council Resolution No. 2002-378 and Exhibit E thereof (adopted on November 19, 2002 to certify the MEIR for the 2025 Fresno General Plan Update. On June 25, 2009, through its Resolution No. 2009-146, the City Council adopted Environmental Assessment No. A-09-02 confirming the finding of a Mitigated Negative Declaration prepared for General Plan Amendment Application No. A-09-02 which updated the Air Quality Section of the Resource Conservation Element of the 2025 Fresno General Plan and incorporated additional and revised mitigation measures as necessary within the following monitoring checklist.

A - Incorporated into Project
B - Mitigated
C - Mitigation in Progress
D - Responsible Agency Contacted
E - Part of City-wide Program
F - Not Applicable

NOTE: Letters B-Q in mitigation measures refer to the respective sections of Chapter V of MEIR No. 10130

MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
B-1. Development projects that are consistent with plans and policies but that could affect conditions on major street segments predicted by the General Plan MEIR traffic analysis to perform at an Average Daily Traffic (ADT) level of service (LOS) D or better in 2025, with planned street improvements, shall not cause conditions on those segments to be worse than LOS E before 2025 without completing a traffic and transportation evaluation. This evaluation will be used to determine appropriate project-specific design measures or street/transportation improvements that will contribute to achieving and maintaining LOS D.	Prior to approval of land use entitlement	Public Works Dept./Traffic Planning; Development & Resource Management Dept.				X		X

A - Incorporated into Project
B - Mitigated
C - Mitigation in Process
D - Responsible Agency Contacted
E - Part of City-Wide Program
F - Not Applicable

MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
B-2. Development projects that are consistent with plans and policies but that could affect conditions on major street segments predicted by the General Plan MEIR traffic analysis to perform at an ADT LOS E in 2025, with planned street improvements, shall not cause conditions on those segments to be worse than LOS E before 2025 without completing a traffic and transportation evaluation. This evaluation will be used to determine appropriate project-specific design measures or street/ transportation improvements that will contribute to achieving and maintaining LOS E.	Prior to approval of land use entitlement	Public Works Dept./Traffic Planning; Development & Resource Management Dept.				X		X
B-3. Development projects that are consistent with plans and policies but that could affect conditions on major street segments predicted by the General Plan MEIR traffic analysis to perform at an ADT LOS F shall not cause further substantial degradation of conditions on those segments before 2025 without completing a traffic and transportation evaluation. This evaluation will be used to determine appropriate project-specific design measures or street/ transportation improvements that will contribute to achieving and maintaining a LOS equivalent to that anticipated by the General Plan. Further substantial degradation is defined as an increase in the peak hour vehicle/capacity (v/c) ratio of 0.15 or greater for roadway segments whose v/c ratio is estimated to be 1.00 or higher in 2025 by the General Plan MEIR traffic analysis.	Prior to approval of land use entitlement	Public Works Dept./Traffic Planning; Development & Resource Management Dept.				X		X
B-4. For development projects that are consistent with plans and policies, a site access evaluation shall be required to the satisfaction of the Public Works Director. This evaluation shall, at a minimum, focus on the following factors: a. Disruption of vehicular traffic flow along adjacent major streets, appropriate design measures for on-site vehicular circulation and access to major streets (number, location and design of driveway approaches), and linkages to bicycle/pedestrian circulation systems and transit services. b. In addition, for development projects that the City determines may generate a projected 100 or more peak hour vehicle trips (either in the morning or evening), the evaluation shall determine the project's contribution to increased peak hour vehicle delay at major street intersections adjacent or proximate to the project site. The evaluation shall identify project responsibilities for intersection improvements to reduce vehicle delay consistent with the LOS anticipated by the 2025 Fresno General Plan. For	Prior to approval of land use entitlement	Public Works Dept./Traffic Planning; Development & Resource Management Dept.				X		X

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F - Not Applicable

MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
projects which affect State Highways, the Public Works Director may direct the site access evaluation to reference the criteria presented in Caltrans Guide for the Preparation of Traffic Impact Studies.								
B-5. Circulation and site design measures shall be considered for development projects so that local trips may be completed as much as possible without use of, or with reduced use of, major streets and major street intersections. Appropriate consideration must also be given to compliance with plan policies and mitigation measures intended to promote compatibility between land uses with different traffic generation characteristics.	Prior to approval of land use entitlement	Public Works Dept./Traffic Planning; Development & Resource Management Dept.				X	X	
B-6. New development projects and major street construction projects shall be designed with consideration and implementation of appropriate features (considering safety, convenience and cost-effectiveness) to encourage walking, bicycling, and public transportation as alternative modes to the automobile.	Prior to approval or prior to funding of major street project.	Public Works Dept./Traffic Planning; Development & Resource Management Dept.	X			X	X	
B-7. Bicycle and pedestrian travel and use of public transportation shall be facilitated as alternative modes of transportation including, but not limited to, provision of bicycle, pedestrian and public transportation facilities and improvements to connect residential areas with public facilities, shopping and employment. Adequate rights-of-way for bikeways, preferably as bicycle lanes, shall be provided on all new major streets and shall be considered when designing improvements for existing major streets.	Ongoing	Public Works Dept./Traffic Planning; Development & Resource Management Dept.				X	X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
C-1. In cooperation with other jurisdictions and agencies in the San Joaquin Valley Air Basin, the City shall take the following necessary actions to achieve and maintain compliance with state and federal air quality standards and programs. a. Develop and incorporate air quality maintenance considerations into the preparation and review of land use plans and development proposals. b. Maintain internal consistency within the General Plan between policies and programs for air quality resource conservation and the policies and programs of other General Plan elements. c. City departments preparing environmental review documents shall use computer models (software approved by local and state air quality and congestion management agencies) to estimate air pollution impacts of development entitlements, land use plans and amendments to land use regulations. d. Adopted state and SJVAPCD protocols, standards, and thresholds of significance for greenhouse gas emissions shall be utilized in assessing and approving proposed development projects. e. Continue to route information regarding land use plans, development projects, and amendments to development regulations to the SJVAPCD for that agency's review and comment on potential air quality impacts.	Ongoing	Development & Resource Management Dept.	X			X		
C-2. For development projects potentially meeting SJVAPCD thresholds of significance and/or thresholds of applicability for the Indirect Source Review Rule (Rule 9510) in their unmitigated condition, project applicants shall complete the SJVAPCD Indirect Source Review Application prior to approval of the development project. Mitigation measures incorporated into the ISR analysis shall be incorporated into the project as conditions of approval and/or mitigation	Ongoing	Development & Resource Management Dept and SJVAPCD	X			X		

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
C-3. The City shall implement all of the Reasonably Available Control Measures (RACM) identified in Exhibit A of Resolution No. 2002-119, adopted by the Fresno City Council on April 9, 2002. These measures are presented in full detail in Table VC-3 of the MEIR.	Ongoing	Various city departments	X				X	
C-4. The City shall continue efforts to improve technical performance, emissions levels and system operations of the Fresno Area Express transit system, through such measures as: a. Selecting and maintaining bus engines, transmissions, fuels and air conditioning equipment for efficiency and low air pollution emissions. b. Siting new transit centers and other multi-modal transportation transfer facilities to maximize utilization of mass transit. c. Continuing efforts to improve transit on-time performance, increase frequency of service, extend hours of operation, add express bus service and align routes to capture as much new ridership as possible. d. Initiating a program to allow employers and institutions (e.g., educational facilities) to purchase blocks of bus passes at a reduced rate to facilitate their incentive programs for reducing single-passenger vehicle use.	Ongoing	Fresno Area Express					X	
D-1. The City shall monitor impacts of land use changes and development project proposals on water supply facilities and the groundwater aquifer.	Ongoing	Dept of Public Utilities and Development & Resource Management Dept.	X		X	X	X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
D-2. The City shall ensure the funding and construction of facilities to mitigate the direct impacts of land use changes and development within the 2025 General Plan boundaries. Groundwater wells, pump stations, intentional recharge facilities, potable and recycled water treatment and distribution systems shall be expanded incrementally to mitigate increased water demands. Site specific environmental evaluations shall precede the construction of these facilities. Results of this evaluation shall be incorporated into each project to reduce the identified environmental impacts.	Ongoing (City-wide); and prior to approval of land use entitlement as applicable	Department of Public Utilities and Development & Resource Management Dept.	X		X	X	X	
D-3. The City shall implement the future water supply plan described in the City of Fresno Metropolitan Water Resources Management Plan Update and shall continue to update this Plan as necessary to ensure the cost-effective use of water resources and continued availability of good-quality groundwater and surface water supplies.	Ongoing	Department of Public Utilities	X		X	X	X	
D-4. The City shall work with the Fresno Metropolitan Flood Control District to prevent and reduce the existence of urban stormwater pollutants to the maximum extent practical and ensure that surface and groundwater quality, public health, and the environment shall not be adversely affected by urban runoff, and shall comply with NPDES standards.	Ongoing	Development & Resource Management Dept.	X			X	X	
D-5. The City shall preserve undeveloped areas within the 100-year floodway within the city and its general plan area, particularly the San Joaquin Riverbottom, for uses that will not involve permanent improvements which would be adversely affected by periodic floods. The City shall expand this protected area in the Riverbottom pursuant to expanded floodplain and/or floodway maps, regulations, and policies adopted by the Central Valley Flood Protection Board and the National Flood Insurance Protection Program.	Ongoing	Development & Resource Management Dept.					X	X

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
D-6. The City shall establish special building standards for private structures, public structures and infrastructure elements in the San Joaquin Riverbottom that will protect: a. Allowable construction in this area from being damaged by the intensity of flooding in the riverbottom; b. Water quality in the San Joaquin River watershed from flood damage-related nuisances and hazards (e.g., the release of raw sewage); and c. Public health, safety and general welfare from the effects of flood events.	Ongoing	Development & Resource Management Dept.						X
D-7. The City shall advocate that the San Joaquin River not be channelized and that levees shall not be used in the river corridor for flood control, except those alterations in river flow that are approved for surface mining and subsequent reclamation activities for mined sites (e.g., temporary berms and small side-channel diversions to control water flow through ponds).	Ongoing	Development & Resource Management Dept.						X
D-8. The City shall maintain a comprehensive, long-range water resource management plan that provides for appropriate management and use of all sources of water available to the planning area, and shall periodically update this plan to ensure that sufficient and sustainable water supplies of good quality will be economically available to accommodate existing and planned urban development. Project-specific and city-wide water conservation measures shall be directed toward assisting in reaching the goal of balancing City groundwater operations by 2025.	Ongoing	Department of Public Utilities	X			X	X	
D-9. The City shall continue its current water conservation programs and implement additional water conservation measures to reduce overall per capita water use within the City with a goal of reducing the overall per capita water use in the City to its adopted target consumption rate. The target per capita consumption rate adopted in 2008 is a citywide average of 243 gallons per person per day, intended to be reached by 2020 (which includes anticipated water conservation resulting from the on-going residential water metering program and additional water conservation by all customers: 5% by 2010, and an additional 5% by 2020.)	Ongoing	Department of Public Utilities	X		X	X	X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
D-10. All development projects shall be required to comply with City Department of Public Utilities conditions intended for the City to reach its overall per capita water consumption rate target. Project conditions shall include, but are not limited to, water use efficiency for landscaping, use of artificial turf and native plant materials, reducing turf areas, and discouraging the development of artificial lakes, fountains and ponds unless only untreated surface water or recycled water supplies are used for these decorative and recreational water features, as appropriate and sanitary.	Prior to approval of land use entitlement	Department of Public Utilities	X		X	X	X	
D-11. When and if the City adopts a formal management plan for recycled and/or reclaimed water, all development shall comply with its standards and requirements. Absent a formal management plan for recycled and/or reclaimed water, new development projects shall install reasonably necessary infrastructure, facilities and equipment to utilize reclaimed and recycled water for landscape irrigation, decorative fountains and ponds, and other water-consuming features, provided that use of reclaimed or recycled water is determined by the Department of Public Utilities to be feasible, sanitary, and energy-efficient.	Prior to approval of development project	Department of Public Utilities	X		X	X	X	
D-12. All applicants for development projects shall provide data (meeting City Department of Public Utilities criteria for such data) on the anticipated annual water demand and daily peak water demand for proposed projects. If a development project would increase water demand at a project location (or for a type of development) beyond the levels allocated in the version of the City's Urban Water Management Plan (UWMP) in effect at the time the project's environmental assessment is conducted, the additional water demand will be required to be offset or mitigated in a manner acceptable to the City Department of Public Utilities. Allocated water demand rates are set forth in Table 6-4 of the 2008 UWMP as follows: *(continued on next page)*	Prior to approval of development project	Department of Public Utilities	X			X	X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
(*continued from previous page)*								

FOR GROSS DEVELOPED PROJECT ACREAGE OF THE FOLLOWING DEVELOPMENT CATEGORIES (Analysis shall include acreage to street centerlines.)	PER-UNIT FACTORS, in acre-ft/acre/yr, for projects projected to be completed during these intervals:		
	01/01/05 THROUGH 12/31/10	01/01/10 THROUGH 12/31/24	AFTER 01/01/25
Single family residential	3.8	3.5	3.5
Multi-family residential	6.5	6.2	6.2
Commercial and institutional	2	1.9	1.9
Industrial	2	1.9	1.9
Landscaped open space	3	2.9	2.9
South East Growth Area	3.4	3.2	3.2
NOTE: The above land use classifications and demand allocation factors may be amended in future updates of the Urban Water Management Plan			

D-13. The City will conform to the requirements of Waste Discharge Requirements Order 5-01-254, including groundwater monitoring and subsequent Best Practical Treatment and Control (BPTC) assessment and findings.	Ongoing	Department of Public Utilities	**X**		**X**	**X**	**X**	
E-1. The City shall continue to implement and pursue strengthening of urban growth management service delivery requirements and annexation policy agreements, including urging that the county continue to implement similar measures within the boundaries of the 2025 Fresno General Plan, to promote contiguous urban development and discourage premature conversion of agricultural land.	Ongoing	Development & Resource Management Dept.					**X**	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
E-2. To minimize the inefficient conversion of agricultural land, the City shall pursue the appropriate measures to ensure that development within the planned urban boundary occurs consistent with the General Plan and that urban development occurs within the city's incorporated boundaries.	Ongoing	Development & Resource Management Dept.					X	
E-3. The City shall pursue appropriate measures, including recordation of right to farm covenants, to ensure that agricultural uses of land may continue within those areas of transition where planned urban areas interface with planned agricultural areas.	Ongoing	Development & Resource Management Dept.					X	
E-4. Development of agricultural land, or fallow land adjacent to land designated for agricultural uses, shall incorporate measures to reduce the potential for conflicts with the agricultural use. Implementation of the following measures shall be considered: a. Including a buffer zone of sufficient width between proposed residences and the agricultural use. b. Restricting the intensity of residential uses adjacent to agricultural lands. c. Informing residents about possible exposure to agricultural chemicals. d. Where feasible and permitted by law, exploring opportunities for agricultural operators to cease aerial spraying of chemicals and use of heavy equipment near proposed residences. e. Recordation of right to farm covenants to ensure that agricultural uses of land can continue.	Ongoing	Development & Resource Management Dept.						X
F-1. The City shall ensure the provision for adequate trunk sewer and collector main capacities to serve existing and planned urban and economic development, including existing developed uses not presently connected to the public sewer system, consistent with the Wastewater Master Plan. Where appropriate, the City will coordinate with the City of Clovis and other agencies to ensure that planning and construction of facilities address regional needs in a comprehensive manner.	Ongoing	Dept. of Public Utilities and Development & Resource Management Dept.			X	X	X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
F-2. The City shall continue the development and use of citywide sewer flow monitoring and computerized flow modeling to ensure the availability of sewer collection system capacity to serve planned urban development.	Ongoing	Dept. of Public Utilities	X		X	X	X	
F-2-a. The City shall provide for containment and management of leathers and sludge adequate to prevent groundwater degradation.	Ongoing	Dept. of Public Utilities					X	X
F-3. The City shall ensure the provision of adequate sewage treatment and disposal by using the Fresno-Clovis Regional Wastewater Reclamation Facility as the primary facility when economically feasible for all existing and new development within the General Plan area. Smaller, subregional wastewater treatment facilities may also be constructed as part of the regional wastewater treatment system, when appropriate. This shall include provision of tertiary treatment facilities to produce recycled water for landscape irrigation and other non-potable uses. Site specific environmental evaluation and development of Waste Discharge Requirements by the Regional Water Quality Control Board shall precede the construction of these facilities. Mitigation measures identified in these evaluations shall be incorporated into each project to reduce the identified environmental impacts.	Ongoing	Dept. of Public Utilities	X		X	X	X	
F-4. The City shall ensure that adequate trunk sewer capacity exists or can be provided to serve proposed development prior to the approval of rezoning, special permits, tract maps and parcel maps, so that the capacities of existing facilities are not exceeded.	Ongoing/prior to approval of land use entitlement	Dept. of Public Utilities and Development & Resource Management Dept.			X	X	X	
F-5. The City shall provide adequate solid waste facilities and services for the collection, transfer, recycling, and disposal of refuse for existing and planned development within the City's jurisdiction. Site specific environmental evaluation shall precede the construction of these facilities. Results of this evaluation shall be incorporated into each project to reduce the identified environmental impacts.	Ongoing/prior to construction	Dept. of Public Utilities			X	X	X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
G-1. Site specific environmental evaluation shall precede the construction of new police and fire protection facilities. Results of this evaluation shall be incorporated into each project to reduce the identified environmental impacts.	Ongoing/prior to construction	Fire Dept/Police Dept/ Development & Resource Management Dept.						X
H-1. Site specific environmental evaluation shall precede the construction of new public parks. Results of this evaluation shall be incorporated into the park design to reduce the environmental impacts.	Ongoing/prior to construction	Parks and Recreation Dept. & Development & Resource Management Dept.						X
I-1. Projects that could adversely affect rare, threatened or endangered wildlife and vegetative species (or may have impacts on wildlife, fish and vegetation restoration programs) may be approved only with the consent of the California Department of Fish and Game (and the U.S. Fish and Wildlife Service, as appropriate) that adequate mitigation measures are incorporated into the project's approval.	Ongoing/prior to approval of land use entitlement	Development & Resource Management Dept.				X		
I-2. Where feasible, development shall avoid disturbance in wetland areas, including vernal pools and riparian communities along rivers and streams. Avoidance of these areas shall including siting structures at least 100 feet from the outermost edge of the wetland. If complete avoidance is not possible, the disturbance to the wetland shall be minimized to the maximum extent possible, with restoration of the disturbed area provided. New vegetation shall consist of native species similar to those removed.	Ongoing/prior to approval of land use entitlement	Development & Resource Management Dept.				X		X
I-3. Where wetlands or other sensitive habitats cannot be avoided, replacement habitat at a nearby off-site location shall be provided. The replacement habitat shall be substantially equivalent in nature to the habitat lost and shall be provided at a ratio suitable to assure that, at a minimum, there is no net less of habitat acreage or value. Typically, the U.S. Fish and Wildlife Service and	Ongoing/prior to approval of land use entitlement and during construction	Development & Resource Management Dept.				X		X

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
California Department of Fish and Game require a ratio of three replacement acres for every one acre of high quality riparian or wetland habitat lost.								
I-4. Existing and mature riparian vegetation shall be preserved to the extent feasible, except when trees are diseased or otherwise constitute a hazard to persons or property. During construction, all activities and storage of equipment shall occur outside of the drip lines of any trees to be preserved.	Ongoing/prior to approval of land use entitlement and during construction	Development & Resource Management Dept.						X
I-5. Within the identified riparian corridors, environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values and only uses consistent with these values shall be allowed (e.g., nature education and research, fishing and habitat enhancement and protection).	Ongoing/prior to approval of land use entitlement and during construction	Development & Resource Management Dept.						X
I-6. All areas within identified riparian corridors shall be maintained in a natural state or limited to recreation and open space uses. Recreation shall be limited to passive forms of recreation, with any facilities that are constructed required to be non-intrusive to wildlife or sensitive species.	Ongoing/prior to approval of land use entitlement and during construction	Development & Resource Management Dept.						X
J-1. If the site of a proposed development or public works project is found to contain unique archaeological or paleontological resources, and it can be demonstrated that the project will cause damage to these resources, reasonable efforts shall be made to permit any or all of the resource to be scientifically removed, or it shall be preserved in situ (left in an undisturbed state). In situ preservation may include the following options, or equivalent measures: a. Amending construction plans to avoid the resources. b. Setting aside sites containing these resources by deeding them into permanent conservation easements. c. Capping or covering these resources with a protective layer of soil before building on the sites. d. Incorporating parks, green space or other open space into the project to	Ongoing/prior to approval of land use entitlement	Development & Resource Management Dept.	X				X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
leave these resources undisturbed and to provide a protective cover over them. e. Avoiding public disclosure of the location of these resources until or unless the site is adequately protected from vandalism or theft.								
J-2. An archaeological assessment shall be conducted for the project if prehistoric human relics are found that were not previously assessed during the environmental assessment for the project. The site shall be formally recorded, and archaeologist recommendations shall be made to the City on further site investigation or site avoidance/ preservation measures.	Ongoing/prior to submittal of land use entitlement application	Development & Resource Management Dept.	X				X	
J-3. If there are suspected human remains, the Fresno County Coroner shall be contacted immediately. If the remains or other archaeological materials are possibly of Native American origin, the Native American Heritage Commission shall be contacted immediately, and the California Archaeological Inventory's Southern San Joaquin Valley Information Center shall be contacted to obtain a referral list of recognized archaeologists.	Ongoing	Development & Resource Management Dept./ Historic Preservation Commission staff	X				X	
J-4. Where maintenance, repair stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings (Weeks and Grimmer, 1995), the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus not significant.	Ongoing	Development & Resource Management Dept./ Historic Preservation Staff	X					X
K-1. The City shall adopt the land use noise compatibility standards presented in Figure VK-2 for general planning purposes.	Ongoing	Development & Resource Management Dept.	X				X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
K-2. Any required acoustical analysis shall be performed as required by Policy H-1-d of the 2025 Fresno General Plan for development projects proposing residential or other noise sensitive uses as defined by Policy H-1-a, to provide compliance with the performance standards identified by Policies H-1-a and H-1-k. (Note: all are policies of the 2025 Fresno General Plan.) The following measures can be used to mitigate noise impacts; however, impacts may not be fully mitigated within the 70 dBA noise contour areas depicted on Figure VK-4. ■ Site Planning. See Chapter V for more details. ■ Barriers. See Chapter V for more details. ■ Building Designs. See Chapter V for more details.	Ongoing/upon submittal of land use entitlement application	Development & Resource Management Dept.	X				X	
K-3. The City shall continue to enforce the California Administrative Code, Title 24, Noise Insulation Standards. Title 24 requires that an acoustical analysis be performed for all new multi-family construction in areas where the exterior sound levels exceed 60 CNEL. The analysis shall ensure that the building design limits the interior noise environment to 45 CNEL or below.	Ongoing/prior to building permit issuance	Development & Resource Management Dept.					X	X
L-1. Any construction that occurs as a result of a project shall conform to current Uniform Building Code regulations which address seismic safety of new structures and slope requirements. As appropriate, the City shall require a preliminary soils report prior to subdivision map review to ascertain site specific subsurface information necessary to estimate foundation conditions. This report shall reference and make use of the most recent regional geologic maps available from the California Department of Conservation, Division of Mines and Geology.	Ongoing	Development & Resource Management Dept.	X				X	
N-1. The City shall cooperate with appropriate energy providers to ensure the provision of adequate energy generated and distribution facilities, including environmental review as required.	Ongoing	Development & Resource Management Dept.					X	

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MITIGATION MEASURE	WHEN IMPLEMENTED	COMPLIANCE VERIFIED BY	A	B	C	D	E	F
Q-1. The City shall establish and implement design guidelines applicable to all commercial and manufacturing zone districts. These design guidelines will require consideration of the appearance of non-residential buildings that are visible to pedestrians and vehicle drivers using major streets or are visible from proximate properties zoned or planned for residential use.	Ongoing	Development & Resource Management Dept.					X	X

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Appendix C
Air Quality

Fresno Pipeline/Pump Station Project Construction

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	46.00	Acre	46.00	2,003,760.00	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 - Total Disturbed Area of 46 acres for 2015

Construction Phase - Split Grading, Trenching, and Paving phases in the year 2015. Will increase equipment assumptions to account for overlap.

Off-road Equipment - Default Equipment - based on total acreage to be disturbed (accounts for all project components)

Off-road Equipment - Doubled default equipment numbers for Paving to account for potential concurrent paving activities

Off-road Equipment - No defautl equipment in model for Trenching. Assumed multiple Trenchers and Tractors/Loaders/Backhoes to account for multiple concurrent trenching activities

Trips and VMT - Added vendor trips to account for material delivery

Grading - Total Disturbed Acres in 2015 ~46

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	75.00	125.00
tblConstructionPhase	NumDays	55.00	115.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	2/15/2016	12/31/2015
tblGrading	AcresOfGrading	312.50	46.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.9702	9.7199	6.4123	8.3600e-003	0.4501	0.5572	1.0073	0.2226	0.5126	0.7352	0.0000	788.8690	788.8690	0.2222	0.0000	793.5343
Total	**0.9702**	**9.7199**	**6.4123**	**8.3600e-003**	**0.4501**	**0.5572**	**1.0073**	**0.2226**	**0.5126**	**0.7352**	**0.0000**	**788.8690**	**788.8690**	**0.2222**	**0.0000**	**793.5343**

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					
2015	0.9702	9.7199	6.4123	8.3600e-003	0.4501	0.5572	1.0073	0.2226	0.5126	0.7352	0.0000	788.8681	788.8681	0.2222	0.0000	793.5334
Total	**0.9702**	**9.7199**	**6.4123**	**8.3600e-003**	**0.4501**	**0.5572**	**1.0073**	**0.2226**	**0.5126**	**0.7352**	**0.0000**	**788.8681**	**788.8681**	**0.2222**	**0.0000**	**793.5334**

	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	9.2188	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.2188**	**0.0000**	**4.3000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.2000e-004**	**8.2000e-004**	**0.0000**	**0.0000**	**8.7000e-004**

2.2 Overall Operational

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	9.2188	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.2188**	**0.0000**	**4.3000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.2000e-004**	**8.2000e-004**	**0.0000**	**0.0000**	**8.7000e-004**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2015	5/5/2015	7	125	
2	Trenching	Trenching	5/6/2015	9/7/2015	7	125	
3	Paving	Paving	9/8/2015	12/31/2015	5	115	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 46

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
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	6	8.00	97	0.37
Trenching	Trenchers	4	8.00	80	0.50
Paving	Pavers	4	8.00	125	0.42
Paving	Paving Equipment	4	8.00	130	0.36
Paving	Rollers	4	8.00	80	0.38

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
Grading	8	20.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	10	25.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	30.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2015

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					0.4008	0.0000	0.4008	0.2095	0.0000	0.2095	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4234	4.9404	3.1775	3.8600e-003		0.2376	0.2376		0.2186	0.2186	0.0000	367.7638	367.7638	0.1098	0.0000	370.0695
Total	**0.4234**	**4.9404**	**3.1775**	**3.8600e-003**	**0.4008**	**0.2376**	**0.6384**	**0.2095**	**0.2186**	**0.4282**	**0.0000**	**367.7638**	**367.7638**	**0.1098**	**0.0000**	**370.0695**

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	5.5200e-003	0.0432	0.0596	9.0000e-005	4.1900e-003	7.8000e-004	4.9700e-003	1.1300e-003	7.2000e-004	1.8400e-003	0.0000	8.1947	8.1947	8.0000e-005	0.0000	8.1964
Worker	5.2400e-003	6.7200e-003	0.0663	1.2000e-004	0.0186	8.0000e-005	0.0187	4.7800e-003	7.0000e-005	4.8500e-003	0.0000	9.0006	9.0006	5.2000e-004	0.0000	9.0115
Total	**0.0108**	**0.0499**	**0.1259**	**2.1000e-004**	**0.0228**	**8.6000e-004**	**0.0237**	**5.9100e-003**	**7.9000e-004**	**6.6900e-003**	**0.0000**	**17.1953**	**17.1953**	**6.0000e-004**	**0.0000**	**17.2078**

3.2 Grading - 2015

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					0.4008	0.0000	0.4008	0.2095	0.0000	0.2095	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4234	4.9404	3.1775	3.8600e-003		0.2376	0.2376		0.2186	0.2186	0.0000	367.7634	367.7634	0.1098	0.0000	370.0690
Total	**0.4234**	**4.9404**	**3.1775**	**3.8600e-003**	**0.4008**	**0.2376**	**0.6384**	**0.2095**	**0.2186**	**0.4281**	**0.0000**	**367.7634**	**367.7634**	**0.1098**	**0.0000**	**370.0690**

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	5.5200e-003	0.0432	0.0596	9.0000e-005	4.1900e-003	7.8000e-004	4.9700e-003	1.1300e-003	7.2000e-004	1.8400e-003	0.0000	8.1947	8.1947	8.0000e-005	0.0000	8.1964
Worker	5.2400e-003	6.7200e-003	0.0663	1.2000e-004	0.0186	8.0000e-005	0.0187	4.7800e-003	7.0000e-005	4.8500e-003	0.0000	9.0006	9.0006	5.2000e-004	0.0000	9.0115
Total	**0.0108**	**0.0499**	**0.1259**	**2.1000e-004**	**0.0228**	**8.6000e-004**	**0.0237**	**5.9100e-003**	**7.9000e-004**	**6.6900e-003**	**0.0000**	**17.1953**	**17.1953**	**6.0000e-004**	**0.0000**	**17.2078**

3.3 Trenching - 2015

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	0.2793	2.5531	1.6176	2.0300e-003		0.1998	0.1998		0.1838	0.1838	0.0000	193.8727	193.8727	0.0579	0.0000	195.0882
Total	**0.2793**	**2.5531**	**1.6176**	**2.0300e-003**		**0.1998**	**0.1998**		**0.1838**	**0.1838**	**0.0000**	**193.8727**	**193.8727**	**0.0579**	**0.0000**	**195.0882**

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	5.5200e-003	0.0432	0.0596	9.0000e-005	2.4400e-003	7.8000e-004	3.2200e-003	7.0000e-004	7.2000e-004	1.4100e-003	0.0000	8.1947	8.1947	8.0000e-005	0.0000	8.1964
Worker	6.5500e-003	8.4000e-003	0.0829	1.5000e-004	0.0125	1.0000e-004	0.0126	3.3200e-003	9.0000e-005	3.4100e-003	0.0000	11.2508	11.2508	6.5000e-004	0.0000	11.2643
Total	**0.0121**	**0.0516**	**0.1425**	**2.4000e-004**	**0.0149**	**8.8000e-004**	**0.0158**	**4.0200e-003**	**8.1000e-004**	**4.8200e-003**	**0.0000**	**19.4455**	**19.4455**	**7.3000e-004**	**0.0000**	**19.4607**

3.3 Trenching - 2015

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	0.2792	2.5531	1.6176	2.0300e-003		0.1998	0.1998		0.1838	0.1838	0.0000	193.8725	193.8725	0.0579	0.0000	195.0879
Total	**0.2792**	**2.5531**	**1.6176**	**2.0300e-003**		**0.1998**	**0.1998**		**0.1838**	**0.1838**	**0.0000**	**193.8725**	**193.8725**	**0.0579**	**0.0000**	**195.0879**

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	5.5200e-003	0.0432	0.0596	9.0000e-005	2.4400e-003	7.8000e-004	3.2200e-003	7.0000e-004	7.2000e-004	1.4100e-003	0.0000	8.1947	8.1947	8.0000e-005	0.0000	8.1964
Worker	6.5500e-003	8.4000e-003	0.0829	1.5000e-004	0.0125	1.0000e-004	0.0126	3.3200e-003	9.0000e-005	3.4100e-003	0.0000	11.2508	11.2508	6.5000e-004	0.0000	11.2643
Total	**0.0121**	**0.0516**	**0.1425**	**2.4000e-004**	**0.0149**	**8.8000e-004**	**0.0158**	**4.0200e-003**	**8.1000e-004**	**4.8200e-003**	**0.0000**	**19.4455**	**19.4455**	**7.3000e-004**	**0.0000**	**19.4607**

3.4 Paving - 2015

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	0.1923	2.0896	1.2432	1.8500e-003		0.1174	0.1174		0.1080	0.1080	0.0000	176.1858	176.1858	0.0526	0.0000	177.2903
Paving	0.0435					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2358**	**2.0896**	**1.2432**	**1.8500e-003**		**0.1174**	**0.1174**		**0.1080**	**0.1080**	**0.0000**	**176.1858**	**176.1858**	**0.0526**	**0.0000**	**177.2903**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6700e-003	0.0287	0.0396	6.0000e-005	1.6200e-003	5.2000e-004	2.1400e-003	4.6000e-004	4.8000e-004	9.4000e-004	0.0000	5.4413	5.4413	5.0000e-005	0.0000	5.4424
Worker	5.2200e-003	6.6900e-003	0.0661	1.2000e-004	9.9500e-003	8.0000e-005	0.0100	2.6500e-003	7.0000e-005	2.7200e-003	0.0000	8.9646	8.9646	5.1000e-004	0.0000	8.9754
Total	**8.8900e-003**	**0.0354**	**0.1056**	**1.8000e-004**	**0.0116**	**6.0000e-004**	**0.0122**	**3.1100e-003**	**5.5000e-004**	**3.6600e-003**	**0.0000**	**14.4059**	**14.4059**	**5.6000e-004**	**0.0000**	**14.4178**

3.4 Paving - 2015

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	0.1923	2.0896	1.2432	1.8500e-003		0.1174	0.1174		0.1080	0.1080	0.0000	176.1856	176.1856	0.0526	0.0000	177.2901
Paving	0.0435					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2358**	**2.0896**	**1.2432**	**1.8500e-003**		**0.1174**	**0.1174**		**0.1080**	**0.1080**	**0.0000**	**176.1856**	**176.1856**	**0.0526**	**0.0000**	**177.2901**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6700e-003	0.0287	0.0396	6.0000e-005	1.6200e-003	5.2000e-004	2.1400e-003	4.6000e-004	4.8000e-004	9.4000e-004	0.0000	5.4413	5.4413	5.0000e-005	0.0000	5.4424
Worker	5.2200e-003	6.6900e-003	0.0661	1.2000e-004	9.9500e-003	8.0000e-005	0.0100	2.6500e-003	7.0000e-005	2.7200e-003	0.0000	8.9646	8.9646	5.1000e-004	0.0000	8.9754
Total	**8.8900e-003**	**0.0354**	**0.1056**	**1.8000e-004**	**0.0116**	**6.0000e-004**	**0.0122**	**3.1100e-003**	**5.5000e-004**	**3.6600e-003**	**0.0000**	**14.4059**	**14.4059**	**5.6000e-004**	**0.0000**	**14.4178**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

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

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

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

5.3 Energy by Land Use - Electricity

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.2188	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.7000e-004
Unmitigated	9.2188	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.7000e-004

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	1.3931					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.8257					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.7000e-004
Total	**9.2188**	**0.0000**	**4.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.2000e-004**	**8.2000e-004**	**0.0000**	**0.0000**	**8.7000e-004**

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	1.3931					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.8257					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.7000e-004
Total	**9.2188**	**0.0000**	**4.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.2000e-004**	**8.2000e-004**	**0.0000**	**0.0000**	**8.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

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

7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

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

Mitigated

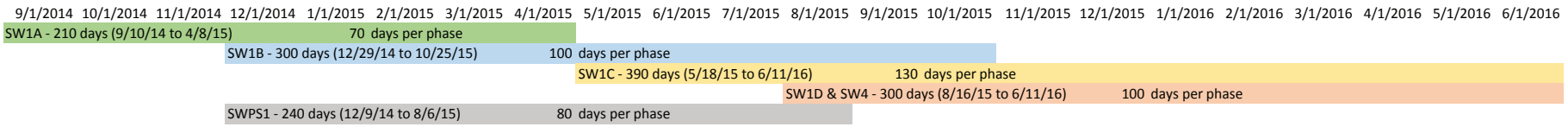
	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Fresno Pipeline Construction Assumptions



TOTALS

Pipeline Segment	Area			
SW1A	397980	sf	9.1	acres
SW1B	686880	sf	15.8	acres
SW1C	930960	sf	21.2	acres
SW1D/SW4	1255260	sf	28.8	acres
SWPS1	4850	sf	0.1	acres
		Total	75	acres disturbed

Worse-Case

Year 2015	Days	Proportion of Construction	Acres
SW1A	98	46.67%	4.246667
SW1B	298	99.33%	15.69467
SW1C	227	58.21%	12.33949
SW1d/SW4	137	45.67%	13.152
SWPS1	218	90.83%	0.090833
		Total	46

Worse-Case

Year 2015	Days	Proportion	TotLength	Prop Length	
SW1A	98	46.67%	13266	6190.8	
SW1B	298	99.33%	22896	22743.36	
SW1C	227	58.21%	31032	18062.22	
SW1d/SW4	137	45.67%	41842	19107.85	
SWPS1	218	90.83%	215	195.2917	
			Totals	66299.51	12.6
				feet	miles

Appendix D

Phase 1 Cultural Resources Study

ESA

FRESNO RECYCLED WATER DISTRIBUTION SYSTEM PROJECT

Phase I Cultural Resources Study

Prepared for
City of Fresno

November 2014

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

Author:
Katherine Anderson, M.A.
Michael Vader

Project Site Location:
U.S.G.S. Quadrangle: Kearney Park, Herndon, Fresno North and Fresno South, California

FRESNO RECYCLED WATER DISTRIBUTION SYSTEM PROJECT

Phase I Cultural Resources Study

Prepared for
City of Fresno

November 2014

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Fresno Recycled Water Distribution System Project Phase I Cultural Resources Study

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EXECUTIVE SUMMARY

The City of Fresno (City) intends to construct approximately 21.2 miles of recycled water transmission pipelines within existing roadways in the western portion of the City and its Sphere of Influence. The City proposes the construction and installation of new conveyance infrastructure to promote expanded beneficial use of recycled water in the region. The City will be the Lead Agency pursuant to California Environmental Quality Act (CEQA). The proposed project will result in the need for a 404 Clean Water Act Permit, resulting in the U.S. Army Corps of Engineers acting as the Lead Agency pursuant to the National Environmental Protection Act (NEPA).

ESA conducted a records search for this project at the San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System at California State University Bakersfield on October 21, 2013 (RS# 13-429) and September 23, 2014 (RS# 14-333). Staff accessed records by consulting the Kearney Park, Herndon, Fresno North and Fresno South, California USGS 7.5-minute quadrangle maps, in Fresno County. The study area encompasses the alignment of the proposed conveyance infrastructure. The archival research results include cultural resources and investigations located within ½ mile of the project APE, and identified 58 previously completed cultural resource conducted within ½ mile of the project APE. Previous survey efforts identified 176 cultural resources within ½ mile of the project APE, including five within the project APE (P-10-4513, Belmont Avenue Subway, P-10-6032, Webber Avenue Overcrossing, P-10-4277, Water Tower, P-10-4299, Fresno Brewery, SHL #873, Free Speech Fight Site).

ESA requested a search of the Native American Heritage Commission's (NAHC) Sacred Lands File (SLF) database. The results of the SLF search failed to indicate the presence of any known sacred Native American sites in the immediate project APE. ESA contacted the individuals and organizations affiliated with the area as identified by the NAHC by letter on March 3, 2010 for the Recycled Water Master Plan PEIR and November 14, 2013 for the current project to solicit their comments and concerns regarding the project. Jim Redmoon contacted ESA requesting additional project information on March 15, 2010. On March 16, ESA staff returned Mr. Redmoon's phone call and provided additional information regarding the project. Follow up emails and phone calls were conducted on November 5, 2014. On November 17, 2014, Chairman David Alvarez of the Traditional Choinumni Tribe contacted ESA, stating that he did not see any issues with cultural resources for the project site. No additional comments have been received at the time of writing.

ESA archaeologists Michael Vader and Joshua Garr, along with historian Katherine Anderson conducted a field survey of the project APE in October, 2013 and July 2014. Neither Mr. Vader nor Mr. Garr identified any prehistoric or historic period resources during the course of survey.

Ms. Anderson re-identified the five previously documented historic period structures recommended eligible within or adjacent to the project APE, and determined the proposed project will not result in direct or indirect impacts to these resources that would hinder their ability to convey their historic significance. Ms Anderson also identified the Houghton Canal within the Project APE as older than 50 years, and subsequently potentially eligible for listing in the California and National Registers. ESA's evaluation of the Houghton Canal recommended the resource as ineligible for listing in the California and National Registers, as it lacks significant association with historic events or people (Criteria 1/A and 2/B), architectural distinction (Criterion 3/C), or potential to yield information important in history (Criterion 4/D). Additionally, the canal has been significantly modified since its original nineteenth century construction, including changes to its alignment, widening, and physical alterations, resulting in significant impacts to its physical integrity. Subsequently, the proposed project will result in no anticipated impacts to historical resources.

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.

CHAPTER 1
Introduction

ESA is preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the City of Fresno, who intend to construct approximately 21.2 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence. The City proposes the construction and installation of facilities to promote expanded beneficial use of recycled water in the region. This report documents the existing conditions of the project site, with regard to cultural resources, for use in the ISN/MND ESA is completing for the City.

This report has been prepared in compliance with the California Environmental Quality Act (CEQA), and documents the results of a Phase 1 Cultural Resources Survey. The County will be the Lead Agency pursuant to CEQA. Additionally, the project requires the approval of the U.S. Army Corps of Engineers as a result of the regulatory approval required for implementation of a 404 Clean Water Act Permit. The project will also meet the requirements of Section 106 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA).

ESA personnel involved in the preparation of this report include Michael Vader, and Katherine Anderson, M.A., report contributors, as well as quality assurance by Rebecca Allen, Ph.D., RPA. **Appendix A** includes the authors' resumes.

1.1 Project Description and Location

The Project would include installation of proposed recycled water distribution pipelines and a proposed pump station to convey recycled water for irrigation use in the SW Quadrant of the City. Specific Project features are described below.

Recycled Water Distribution Pipelines

The Project would include installation of approximately 21.2 miles of 8 to 24 inch diameter recycled water distribution pipelines to convey up to approximately 8.1 mgd of tertiary treated recycled water for urban reuse, groundwater recharge, and agricultural reuse within the SW Quadrant of the City (see **Figures 1 and 2**). All pipelines would be installed within roadways or roadway rights of way. **Table 1** summarizes the pipelines that are proposed under the Project.

TABLE 1
SUMMARY OF PROPOSED PIPELINES

Element	Location	Pipeline Length
SW1A	• W Jensen Ave from the RWRF to S Cornelia Ave; S Cornelia Ave north to W Madison Ave	16,849 ft
SW1B	• S Cornelia Ave at W Madison Ave north to W Belmont Ave; W Belmont Ave east to N Marks Ave; • W Whitesbridge Ave at S Cornelia Ave east to N Blythe Ave; N Blythe Ave north 1680 feet	20,658 ft
SW1C	• W Belmont Ave at N Marks Ave east to N Parkway Dr; N Parkway Dr north 1,200 feet; Crossing under SR 99 to Roeding Park; Roeding Park to W Belmont Ave; W Belmont Ave to N Palm Ave; • N Hughes Ave at W Belmont Ave south to W Nielson Ave; W Nielson Ave east to S Teilman Ave; S Teilman Ave south to W Whitesbridge Ave; W Whitesbridge Ave east to C St; • W Whitsebridge Ave at S Teilman Ave west to S West Ave. • S Fruit Ave at W Whitesbridge Ave north 900 ft • S Trinity St at E Whitesbridge Ave south 1,300 ft	32,855 ft
SW1D & SW4/S	• N Cornelia Ave at W Belmont Ave to W Shields Ave • W McKinley Ave at N Cornelia Ave east 2,300 feet • W Clinton Ave at N Cornelia Ave west to N Polk St; N Polk Ave south to W Yale Ave • Southeast on N H St from E Belmont Ave to H St; northeast on Monterey St to Broadway St; southeast on Broadway St to Los Angeles St; northeast on Los Angeles St to 200 feet past its intersection with M St. • Fulton St from Los Angeles St to E Hamilton St; E Hamilton Ave east to 650 ft east of S East Ave • S East Ave from E Hamilton Ave south for 975 ft • Mono St from H St southwest to 200 ft southwest of F St • Fresno St from H St northeast to S St	41,575 ft
Total		**111,937 ft**

Recycled Water Pump Station

The Project would also include installation of a single pump station, which would be used to maintain pressure within the proposed pipelines. The pump station would be located on a City-owned lot immediately east of the existing Fresno Fire Department Station No. 19 and would be set back approximately 40 feet (ft) from the south side of W. Belmont Avenue (Figures 1 and 2). The pump station would include pumps and appurtenances that would be housed in a single story building with a concrete pad (with a total footprint of approximately 30-ft by 60-ft). A 2,000 cubic ft surge tank would also be included, and the building and surge tank would be surrounded by a 6-foot tall block wall around the perimeter of the facility. A 20-ft wide by 200-ft long paved access road would provide truck/maintenance access to the proposed pump station.

The pump station would be connected to the proposed recycled water distribution pipeline located along W Belmont Ave. The station would also include e flow meters, pressure gages, and remote telemetry units. During operations, the pump station would boost recycled water pipeline pressure using electric pumps. Electricity to run the pumps would be supplied from the grid through underground service. The pump station would also be equipped with portable emergency generator connections and manual transfer switches.

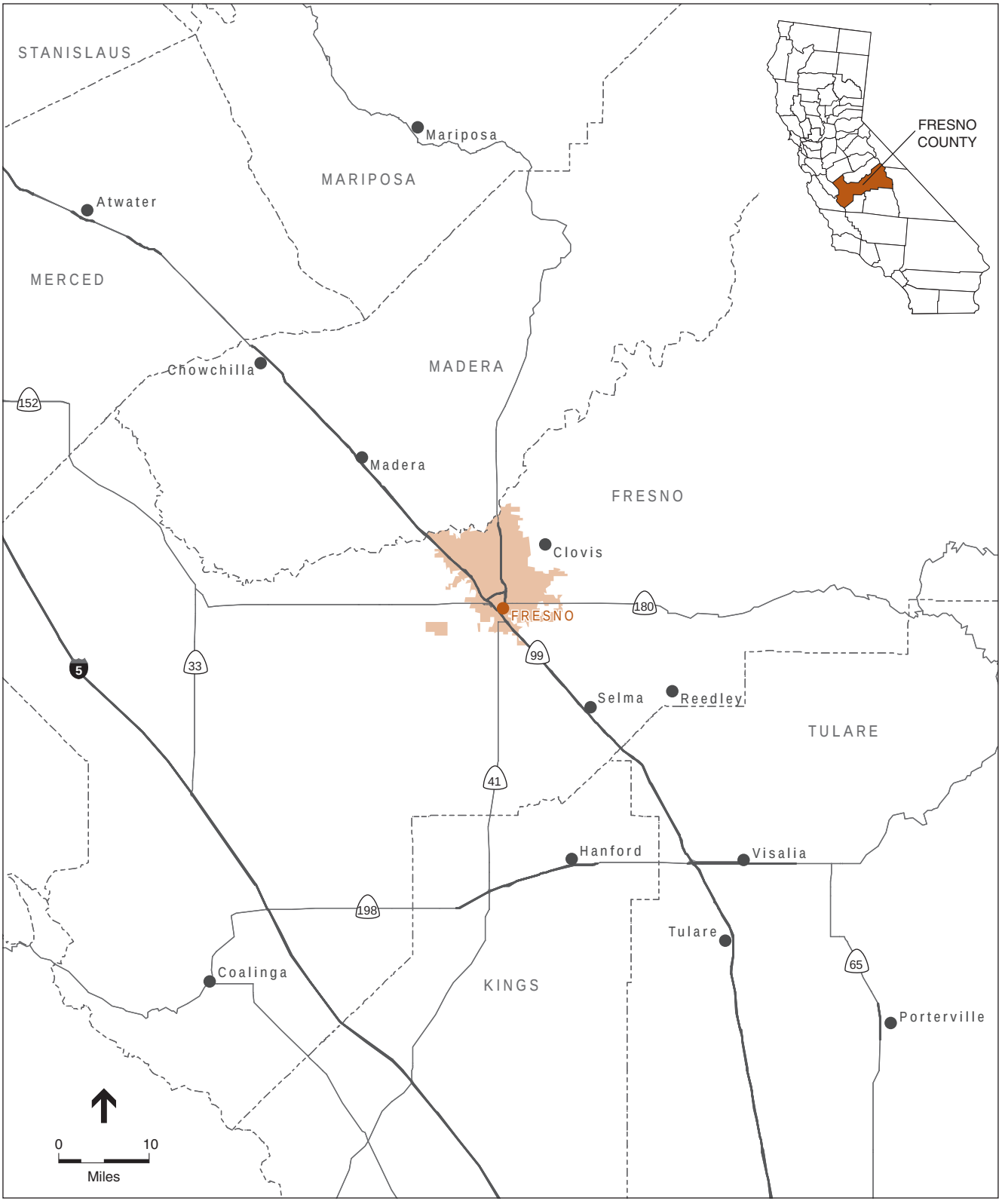
The project APE of potential effect (APE) is primarily along North Cornelia Avenue and Belmont Avenue and includes portions of West Clinton Avenue and North Polk Avenue, West McKinley Avenue, West Whitesbridge Avenue and North Blythe Avenue off of North Cornelia Avenue, and portions of North Hughes Avenue, South Teilman Avenue, South Fruit Avenue, West Whitesbridge Avenue and South Trinity Street off of Belmont Avenue, within the City of Fresno (**Figures 1 and 2**). Also included in the project Study Area is H Street off of Belmont, extending down to South East Avenue. Elevation of the site ranges from approximately 253 feet above mean sea level (msl) along at the Fresno Wastewater Treatment Facility along West Jensen Avenue to approximately 295 feet above msl in the southeast portion of the project APE along South East Avenue. 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 Study Area boundaries include agriculture, rural residential development, as well as industrial and commercial uses and open space.

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 proposed project will involve construction of 21.2 miles of 8 to 24 inch diameter recycled water distribution pipelines installed within roadways or roadway rights of way, and a single pump station, which would be used to maintain pressure within the proposed pipelines, located on a City-owned lot immediately east of the existing Fresno Fire Department Station No. 19 and would be set back approximately 40 feet (ft) from the south side of W. Belmont Avenue. The horizontal APE includes the 21.2 miles of pipeline, the pump station footprint, and the construction staging areas (on site at the pump station, and within the 30 foot staging area along the pipeline alignment). The vertical APE will extend to the maximum depth of proposed construction, which is anticipated to be 6 feet deep for the pipeline construction. Construction staging will occur in areas near construction zones that are open, free of natural vegetation, and easily accessed (i.e., vacant lots). The location of each staging area would be determined by the contractor, with direction from the City, and would typically be located every three to five miles along pipeline alignments. The maximum size of the staging areas would be five acres. **Figure 3** shows the project APE.



SOURCE: DeLorme Street Atlas USA, 2000; and ESA, 2009

City of Fresno Recycled Water Master Plan PEIR . 209405

Figure 1
Regional Vicinity Map

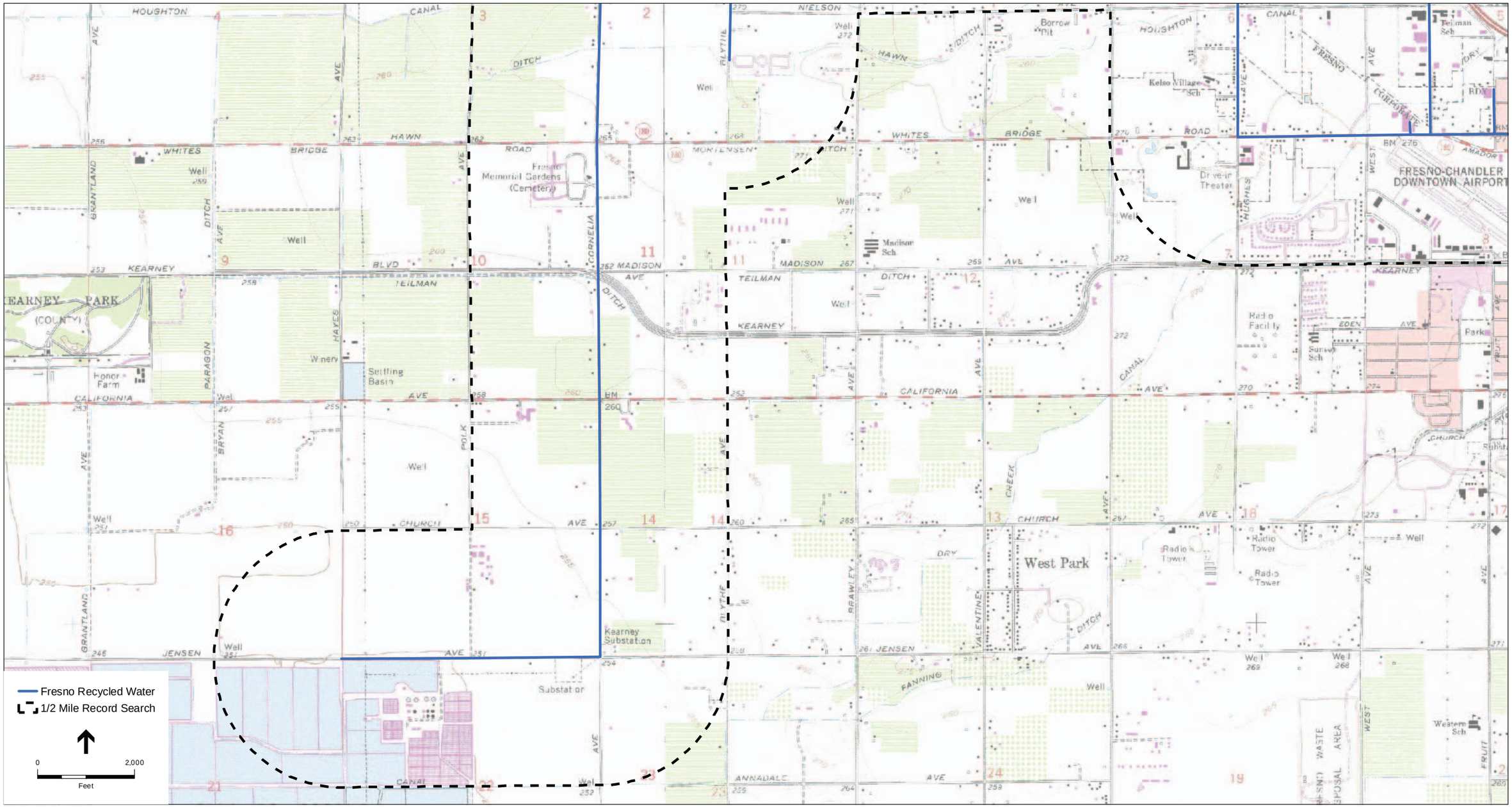
Fresno Recycled Water
1/2 Mile Record Search
0
2,000
Feet

SOURCE: USGS, 1965-1982; ESRI, 2012; Blair, Church, and Flynn, 2014; ESA, 2014

Fresno Recycled Water Plan

Figure 2a

Project Location

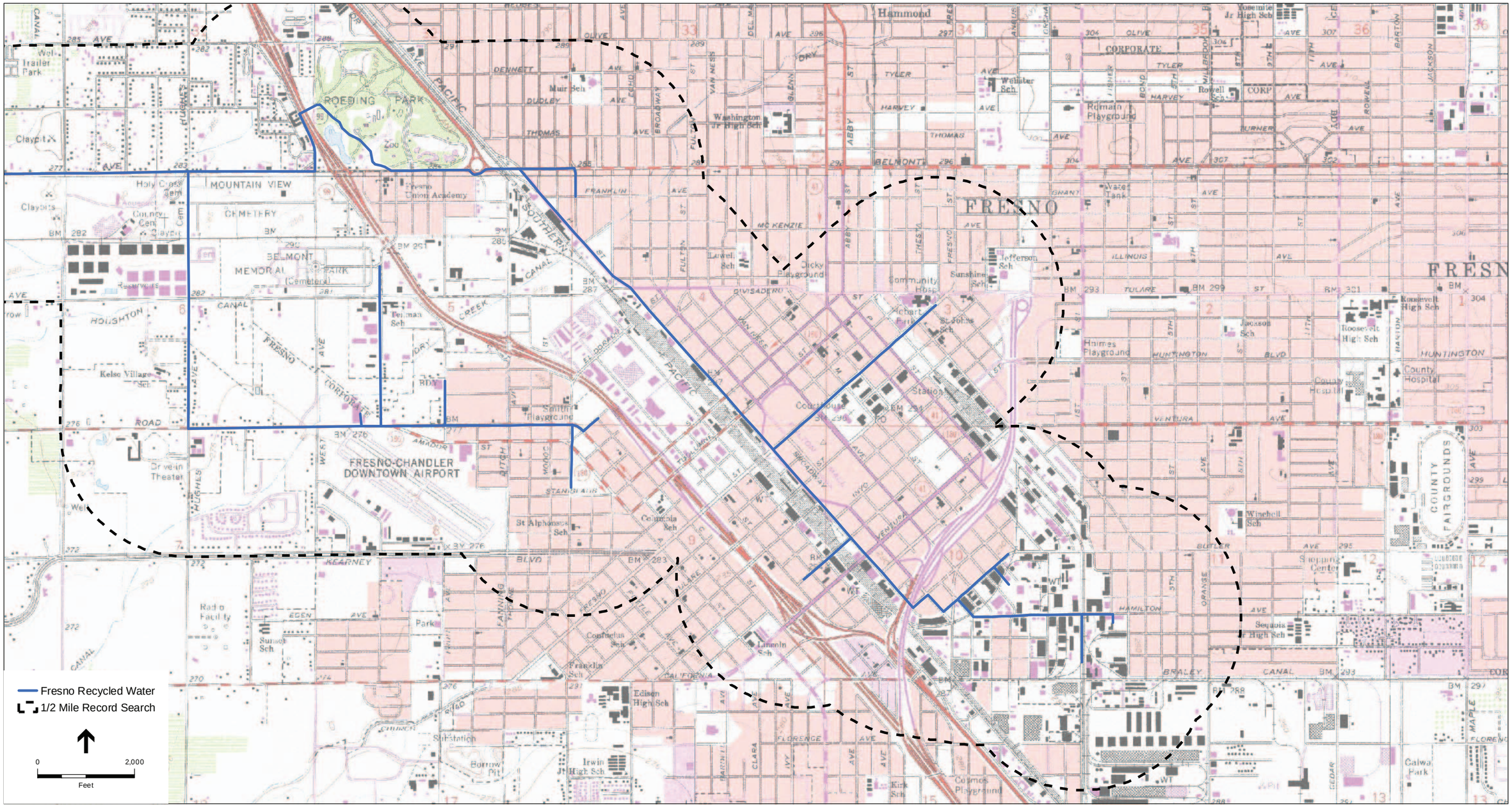


SOURCE: USGS, 1965-1982; ESRI, 2012; Blair, Church, and Flynn, 2014; ESA, 2014

Fresno Recycled Water Plan

Figure 2b

Project Location



SOURCE: USGS, 1965-1982; ESRI, 2012; Blair, Church, and Flynn, 2014; ESA, 2014

Fresno Recycled Water Plan

Figure 2c

Project Location

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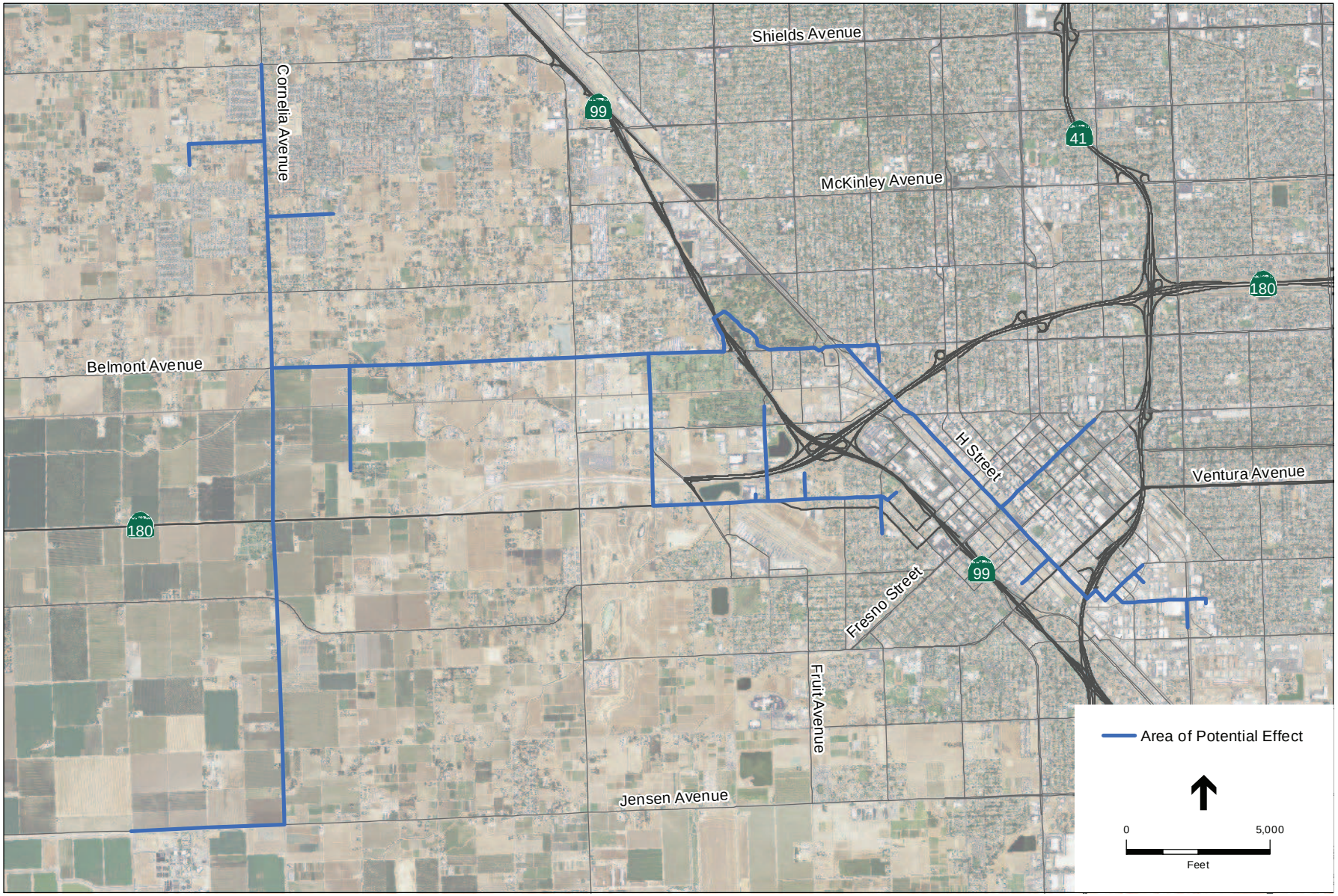

SOURCE: USDA, 2012; ESRI, 2012; Blair, Church, and Flynn, 2014; ESA, 2014

Fresno Recycled Water Project . 130412

Figure 3

Area of Potential Effect

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CHAPTER 2
Regulatory Framework

2.1 Federal

Historic properties are protected through the National Historic Preservation Act (NHPA) of 1966 (16 USC 470f) and its 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. The 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. The 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 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 State Historic Preservation Officer (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).

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)).

California Register of Historical Resources

The California Register of Historic 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 of Historic Places criteria (PRC Section 5024.1[b]). 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

City of Fresno 2025 General Plan

The City of Fresno 2025 General Plan (2002) Resource Conservation Element Historic Resources section contains several objectives and policies relevant to the protection of cultural resources within the project APE. The Historic Resources section of the Resource Conservation Element provides policy direction to protect, and to continue appropriate use of, Fresno's historic resources.

G-11. Objective: Safeguard Fresno's heritage by preserving resources which reflect important cultural, social, economic, and architectural features so that community residents will have a foundation upon which to measure and direct physical change.

G-11-d Policy: Prehistoric resources (those containing archaeological and paleontological material) shall be protected.

- In any public or private project it shall be a condition of project permits that work stop immediately in the immediate vicinity of a find if archaeological and/or nonhuman fossil material is encountered on the project site.
- If there are suspected human remains, the Fresno County Coroner shall be immediately contacted. If the remains or other archaeological materials are possibly Native American in origin, the Native American Heritage Commission shall be immediately contacted, and

the California Archaeological Inventory's Southern San Joaquin Valley Information Center shall be contacted to obtain a referral list of recognized archaeologists.

- An archaeological assessment shall be conducted for the project if prehistoric human relics are found that were not previously assessed during the environmental assessment for the project. The site shall be formally recorded, and archaeologists' recommendations shall be made to the city on further site investigation or site avoidance/preservation measure.
- If non human fossils are uncovered, the Museum of Paleontology at U.C. Berkeley shall be contacted to obtain a referral list of recognized paleontologists. If the paleontologist determines the material to be significant, it shall be preserved.

G-11-e Policy: If the site of a proposed development or public works project is found to contain unique prehistoric (archaeological or paleontological) resources, and it can be demonstrated that the project will cause damage to these resources, reasonable efforts shall be made to permit any or all of the resource to be scientifically removed, or it shall be preserved in situ (left in an undisturbed state). In situ preservation may include the following options, or equivalent measures:

- amending construction pans to avoid prehistoric resources
- setting aside sites containing these resources by deeding them into permanent conservation easements
- capping or covering these resources with a protective layer of sole before building on the sites
- incorporating parks, green space, or other open space in the project to leave prehistoric sites undisturbed and to provide a protective cover over them
- in order to protect prehistoric resources from vandalism or theft, their location shall not be publically disclosed until or unless the site is adequately protected.

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, which includes the following criteria:

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.

CHAPTER 3
Background Setting

3.1 Prehistoric Setting

During the Early Holocene, large game hunting societies populated the area. 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 Gonzaga Complex (A.D. 300 to 1000) 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 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.

3.2 Ethnographic Setting

At the time of contact, the proposed project APE 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

[1] Biface means worked on both sides of the proposed projectile point.

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 territorial adjustments were set in motion. People returned to other groups, and a number of polyglot "tribes" were formed. The final 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.

3.3 Historic Background

Lieutenant Gabriel Moraga recorded the earliest European presence in the vicinity of the Project 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).

2 Native Americans who had converted to Christianity

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.

Fresno incorporated in 1885, as a result of the prosperity brought about in the region by the introduction of irrigation. 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. Seeing the success of these efforts, landholders in Fresno began exploring irrigation as a means of improving their lands. 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).

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). 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).

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CHAPTER 4
Methodology and Results

4.1 Archival Research

ESA staff conducted a records search for the Recycled Water Distribution System at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System at California State University Bakersfield on October 21, 2013 (RS# 13-429) and September 23, 2014 (RS#14-433). Records were accessed by reviewing the Kearney Park, Herndon, Fresno North and Fresno South, California 7.5-minute quadrangle base maps. ESA staff conducted additional research using the files and literature at ESA, as well as at the Fresno State University Special Collections Department, and the San Joaquin Valley Heritage & Genealogy Center at the main branch of Fresno Public Library. The records search included a 1/2-mile radius around the Recycled Water Distribution System project APE in order to: (1) determine whether known cultural resources had been recorded within or adjacent to the Recycled Water Distribution System project APE; (2) assess the likelihood of unrecorded cultural resources based on historical references and the distribution of environmental settings of nearby sites; and (3) develop a context for identification and preliminary evaluation of cultural resources.

Included in the review were the California Inventory of Historical Resources California Department of Parks and Recreation, 1976) and the Historic Properties Directory Listing (Office of Historic Preservation, 2013). The Historic Properties Directory (HPD) includes listings of the California and National Registers, and the most recent listing of the California Historical Landmarks and California Points of Historical Interest.

Staff conducted additional research completed by reviewing the materials maintained at the Fresno State University Special Collections Archive and the San Joaquin Valley Heritage & Genealogy Center at the main branch of the Fresno Public Library. Materials at these repositories include a number of historic topographic maps, as well as historic period atlases of Fresno County.

Previous Cultural Resources Investigations and Results

The results of the records searches indicate that 58 cultural resources studies have been previously conducted within the 1/2-mile records search radius around the project APE, including seventeen investigations intersecting portions of the project APE. **Table 2** describes these surveys.

One hundred and seventy six cultural resources have been previously recorded within the records search radius for the project APE, including five within the project APE. **Table 3** summarizes these sites and structures, including archaeological and architectural resources. Confidential **Appendix B** includes records search maps identifying the location of the resources documented within ½ mile of the APE.

TABLE 2
CULTURAL RESOURCE STUDIES PREVIOUSLY CONDUCTED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

SSJVIC Report # (FR)	Year	Author	Title	In Project APE (y/n)
21	1996	Flint, Sandra S.	Archaeological Inventory of the Fresno Wastewater Treatment Plant Expansion Project, Fresno County, California	y
41	1997	Sandra S. Flint	Cultural Resources Monitoring Report City of Fresno Wastewater Treatment Plant 80 MGD Expansion Project	n
135	1995	Hatoff, Brian, Voss, Barb, Waechter, Sharron, Bente, Vance, and Wee, Stephen	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project	y
151	1995	Pavlik, Robert C.	Supplemental Historical Architectural Survey Report/ Historical Property Survey Report for Highway Construction in the City and County of Fresno, California	n
249	1994	Bowen, Carrie L.	Historic Property Survey Report and Findings of No Affect for Route 180 Study Area of Preservation of Right of Way from Route 99 to Brawly Avenue in the City of Fresno	y
250	1994	Fisher, Jim	Historical Architectural Survey Report for the Proposed Construction of Route 180 from Brawly Avenue to Throne Avenue in the City of Fresno	y
301	1994	Bissonnette, Linda Dick	Phase I Cultural Resources Assessment, City of Fresno,	y
382	1990	Kennedy, Michael	Negative Archaeological Survey Report	y
679	1995	Roper, C. Kristina	Cultural Resources Inventory for the Federal Courthouse, Fresno County, California	y
754	1995	Thad VanBueren	Historic Property Clearance Report for the Proposed New Fresno Amtrak Station in Fresno, CA (75-633702-32002)	n
755	1995	Thad VanBueren	Historical Study Report for the Proposed Fresno Amtrack Station in Fresno, California (75-633702-32002)	n
924	1982	Wren, Donald G.	Archaeological Field Reconnaissance Report Summary for Centre Plaza - Hotel and Conference Center	n
927	1982	Wren, Donald G.	Archaeological Field Reconnaissance Report Summary for the Redevelopment Project - Fresno, California	n
1005	1988	Wren, Donald G.	An Archaeological Field Reconnaissance Report Summary – G Street Extension, Fresno, Fresno County, California	n
1604	1999	Wren, Donald G.	An Archaeological Survey Basin RR-3/Basin ZZ Project, Fresno Metropolitan Flood Control District, Fresno, California	n
1609	1998	Roper, C. Kristina A	Cultural Resources Survey for the Initial Study and Mitigated Negative Declaration for Basins CH and CK, Fresno County, California Sierra Valley Cultural Planning	n
1618	1999	Sandra S. Flint	Archaeological Monitoring for the Dry Creek Canal Relocation, City of Fresno Wastewater Treatment Plant Expansion Project, Fresno County, California	n
1640	1999	Unknown	Negative Archaeological Survey Report	y
1651	2000	Nelson, Wendy	Cultural Resources Survey for the Level 3 Communications Long Haul Fiber Optics Project: Segment WS04: Sacramento to Bakersfield	y
1784	2000	Billat, Lorna Beth	Nextel Communications Wireless Telecommunications Service Facility - Fresno County	n
1807	1998	Brewer, Chris	HABS for the Burnett Nurses Home Building in Fresno	n
1933	2003	Brady, Jon L.	Historic Property Survey for Proposed School Site N Fresno, California	
1935	2001	Tracy Bakic	Historic Property Survey Report: Santa Fe Depot Renovation Project, City of Fresno, Fresno County, California (EA 06-965100; 3ENVR 6ENVREV)	n

TABLE 2
CULTURAL RESOURCE STUDIES PREVIOUSLY CONDUCTED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

SSJVIC Report # (FR)	Year	Author	Title	In Project APE (y/n)
1974	2002	Billat, Lorna Beth	Nextel Communications Wireless Telecommunications Service Facility – Fresno County, California	n
2002	2000	Mason, Roger D. and Shepard, Richard S.	Cultural Resources Survey for the Level 3 Long Haul Fiber Optics Project: WS04 Connection to Fresno 3R Facility, in the City of Fresno, Fresno County, California	y
2026	2004	Brady, Jon L.	Archaeological and Historical Level 1 Survey of the Proposed Whites Bridge Reconstruction Project, Fresno, California	y
2071	2004	Brady, Jon L.	Archaeological Survey for Telecommunication and Power Line within Roeding Business Park Redevelopment Plan Area, Fresno, California	y
2107	2005	Parker, Lori D.	FAT-001B Downtown Fresno	n
2116	2005	Brady, Jon L.	Archaeological Survey of Three Alternatives Sties for the Regional Co-Composting Facility, City of Fresno, California	n
2120	2005	Unknown	Cultural Resources Assessment – 5167 W. Clinton Avenue, City of Fresno, Fresno County	y
2122	2004	Unknown	Cultural Resources Literature Review – McKinley II Three Parcels, W. McKinley Avenue Between N. Polk and N. Cornelia Avenues, Fresno, Fresno County, California (APNs 312-280-19, 312-280-26 and 312-280-30)	n
2157	2005	Billat, Lorna	Cultural Resources Study of the Tower District Project Nextel Communications Site No. CA3251G	n
2172	2006	Unknown	Cedar-Butler SC-10132B	n
2224	1998	Wren, Donald G.	An Archaeological Survey: Potential Elementary or Middle School Site Project Central Unified School District	n
2232	2004	Brady, Jon L.	Second Supplemental Historic Resource Evaluation Report for the State Route 180 West Freeway Project, Brawley Avenue and Hughes -West Diagonal	n
2244	2005	Dondaldson, Milford Wayne	National Parks Service (NPS) Land and Water Conservation Fund (LWCF) Program Application for the Fulton Mall Children's Play Equipment Replacement Project, City of Fresno, Fresno County, California	y
2248	2005	Donaldson, Milford Wayne	National Parks Service (NPS) Land and Water Conservation Fund (LWCF) Program Application for the Chaffee Zoo Exterior Lighting Replacement Project, City of Fresno, Fresno County, California	n
2250	2005	Unknown	Cultural Resource Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate FS-504-04 (Marks Olive), 2703 West Dudley Avenue, Fresno, Fresno County, California	n
2258	2006	Nettles, Wendy M.	Historical Resources Evaluation Report for the Willow and Shepherd Avenues Signal Light Project in Clovis and Fresno, Fresno County, California	n
2287	2006	Cindy Arrington	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California.	n
2294	2007	Roper, C. Kristina	A Cultural Resources Survey for the 19.84 Acre Kanderian Property, Fowler, Fresno County, California	n
2304	2008	Kovak, Amy	Supplemental Cultural Resources Inventory and Evaluation Report for the Madera Ranch Quarry Project	n
2307	2008	Losee, Carolyn	Cultural Resources Investigation for AT&T Project CN2541-A "North Van Ness" 616 North Fulton Street, Fresno City and County, California 93728 EBI Project #61081866	n
2324	2008	Billat, Lorna	Belmont FRN-016	n

TABLE 2
CULTURAL RESOURCE STUDIES PREVIOUSLY CONDUCTED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

SSJVIC Report # (FR)	Year	Author	Title	In Project APE (y/n)
2329	2010	Bonner, W.H.	Cultural Resources Records Search and Site Visit for Clearwire Candidate CA-FN02004 (DT Fresno), 1401 Fulton Street, Fresno, Fresno County, California	n
2340	2008	Billat, Lorna	Highway 99 and 180 FRN-017B	n
2364	2007	Orfila, Rebecca S.	Cultural and Architectural Resources Assessment of Block 76 for the City of Fresno Subsurface Water Tank Project (APN 468-29-XXX)	y
2396	2006	Bridget Maley, Jody Stock, Shayne Watson, and Lauren MacDonald	Chinatown Historic Resource Survey	n
2416	2010	P. Kayanski	Fresno Reliability Transmission Project	n
2432	2007	Cindy L. Baker and Mary L. Maniery	Cultural Resource Inventory and Evaluation of United States Army Reserve 63D Regional Readiness Command Facilities; Contract No. W912C8-05-P-0052	n
2467	2012	Keith Warren and Randy Baloian	Archaeological Site Sensitivity Assessment for the Former Fresno-2 Manufactured Gas Plant, Fresno, California	n
2499	2008	Brewer, Chris	Historical Resources Evaluation Report for the District 6 Office Building Infrastructure Study Project - 1352 West Olive Avenue, Fresno, Fresno County, California EA 06-0K560K	n
2501	2008	Binning, Jeanne	Historic Property Survey Report for Route 180 Planned Westside Expressway from I-5 to Valentine Ave, Fresno, Fresno County, California	y
2505	2006	Leach-Palm, Laura, Rosenthal, Jeffrey, Byrd, Brian, Mikkelson, Pat, and Waechter, Sharon	Preliminary Assessment of the Archaeological Sensitivity for the Route 180 Westside Expressway Route Adoption Study Between Interstate 5 and the City of Fresno, Fresno County, California Interstate 5 PM 9.0 (KP 14.5) to 06-FRE-180 PM 54.2 (KP 87.2)…	y
2506	2006	Brady, Jon and Bunse, Rebecca	Final Historic Resources Sensitivity Study Route 180 Westside Expressway Route Adoption Study	y
2557	2012	Peterson, Cher and Crawford, Kathleen	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC, Candidate SC08752A (Fresno Downtown), 1457 Van Ness Avenue Fresno, Fresno County, California.	n
2560	2012	Peterson, Cher and Crawford, Kathleen	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC, Candidate SC08734A (Fresno Grizzlies), 801 Van Ness Avenue Fresno, Fresno County, California.	n

SOURCE: SSJVIC, 2013 and 2014

TABLE 3
CULTURAL RESOURCES PREVIOUSLY IDENTIFIED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

P#/ Trinomial	Year	Resource Name, location	Description	In Project APE (y/n)
P-10-3081	1996	Wastewater Treatment Facility, *S607* W. Jensen Avenue, Fresno, CA 93706- 58	Historic Trash Scatter	n
P-10-3669	1984	Susan Sims Home	Single family residence	n
P-10-4273	1978	2326 Fresno Street, Fresno, California	Fresno Street Auditorium	n
P-10-4277	1978	44 Fresno Street, Fresno, California	Water Tower	y
P-10-4278	1978	2527 Fresno Street, Fresno, CA	Twinning Laboratories	n
P-10-4279	1978	2607 Fresno Street, Fresno, CA	Civic Center Professional Building	n
P-10-4299	1978	100 M Street, Fresno, CA	Fresno Brewery	y
P-10-4328	1978	Fulton Mall at Tulare, Fresno, CA	Bank of Italy Building	n
P-10-4333	1978	1400-1428 Fulton, Fresno, CA	Warnor's Theater	n
P-10-4334	1978	1401 Fulton, Fresno, CA	P.G. & E. Building	n
P-10-4344	1978	2281 Tulare Street, Fresno, CA	Hall of Records	n
P-10-4346	1978	2344 Tulare Street, Fresno, CA	Malmbridge Apartments	n
P-10-4348	1978	Van Ness and Calaveras Street, Fresno, California	Fresno Bee Building	n
P-10-4354	1978	851 Van Ness Street, Fresno, CA	Hotel Californian	n
P-10-4370	1978	Resource Name - YWCA Activity Building / Einstein Home	Single family residence	n
P-10-4371	1978	Resource Name – YWCA Residence	Single family residence	n
P-10-4374	1978	2055 San Joaquin Street, Fresno, CA	The Romain Home	n
P-10-4378	1978	Holy Trinity Armenian Apostolic Church	Religious building	n
P-10-4390	1978	2844 Fresno Street, Fresno, CA	The Brix Home	n
P-10-4394	1978	1007 R Street, Fresno, CA	Muex Home	n
P-10-4396	1978	1050 S Street, Fresno, CA	Rehorn Residence	n
P-10-4408	1977	Warehouse Row Buildings	Commercial Building	n
P-10-4411	1978	Santa Fe Hotel	Commercial Building	n
P-10-4412	2001	2650 Tulare Street, Fresno, CA	Fresno Atchison, Topeka, and Santa Fe (ATSF) Railroad Property	n
P-10-4418	1978	2130 Kern Street, Fresno, CA	Fresno Republican Printer Building	n
P-10-4513	2000	100 West Block of Belmont Ave at Union Pacific Railroad (near Thorne Ave), Fresno, CA	Belmont Avenue Subway	y
P-10-4931	1994	1102 F Street, Fresno, CA	Basque Hotel	n
P-10-5021	1994	Nishikawa Building	Commercial Building	n

TABLE 3
CULTURAL RESOURCES PREVIOUSLY IDENTIFIED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

P#/ Trinomial	Year	Resource Name, location	Description	In Project APE (y/n)
P-10-5024	1994	Bill's Bait and Building	Commercial Building	n
P-10-5027	1994	570 So. Hughes Avenue property	Single family residence	n
P-10-5028	1994	110 S. Hughes Avenue, Fresno, CA	110 S. Hughes Avenue, Fresno, CA	n
P-10-5029	1994	348 S Hughes Avenue, Fresno, CA	348 S Hughes Avenue, Fresno, CA	n
P-10-5030	1994	611 S Hughes Avenue, Fresno, CA	611 S Hughes Avenue, Fresno, CA	n
P-10-5032	1994	Smith Residence	Single family residence	n
P-10-5033	1994	509 S Teilman Avenue, Fresno, CA	509 S Teilman Avenue	n
P-10-5034	1994	422 S Fruit Avenue, Fresno, CA	National Linen Service	n
P-10-5076	1991	2411 E. Divisadero, Fresno, CA	Brinker Building	n
P-10-5077	1991	2429 E. Divisadero, Fresno, CA	2429 E. Divisadero, Fresno, CA	n
P-10-5078	1991	110 N. Fresno Street, Fresno, CA	110 N. Fresno Street, Fresno, CA	n
P-10-5079	1991	125, 127, 129, 131 N. Fresno Street, Fresno, California	Eaton Flats	n
P-10-5122	1995	701 L Street	California Transit Company	n
P-10-5123	1995	730-750 Van Ness Avenue, Fresno, CA	730-750 Van Ness Avenue, Fresno, CA	n
P-10-5227	1996	1631 West Thomas, Fresno, CA	1631 West Thomas, Fresno, CA	n
P-10-5232	2003	Bldg. No. 1; 392 N. Thesta	Single family residence	n
P-10-5233	2003	Bldg. No. 2; 388 N. Thesta	Single family residence	n
P-10-5234	2003	Bldg. No. 3; 384 N. Thesta	Single family residence	n
P-10-5235	2003	Bldg 4; 2315E. Washington	Multiple Family Property	n
P-10-5236	2003	Bldg. No. 5; 2319 E. Washington	Single family residence	n
P-10-5237	2003	Bldg. No. 6;2325 E. Washington	Single family residence	n
P-10-5238	2003	Bldg. No. 7: 2335 E. Washington	Single family residence	n
P-10-5239	2003	Bldg. No. 8; 2341 E. Washington	Single family residence	n
P-10-5240	2003	Bldg. No. 9; 2345 E. Washington	Single family residence	n
P-10-5241	2003	Bldg. No. 10; 2413 E. Washington	Single family residence	n
P-10-5242	2003	Bldg. No. 11; 2419 E. Washington	Single family residence	n
P-10-5243	2003	Bldg. No. 12; 401 N. Fresno	Commercial Building	n
P-10-5244	2003	Bldg. No. 13; 395 N. Fresno	Commercial Building	n
P-10-5245	2003	Bldg. No 14; 379-383 N. Fresno	Multiple Family Property	n

TABLE 3
CULTURAL RESOURCES PREVIOUSLY IDENTIFIED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

P#/ Trinomial	Year	Resource Name, location	Description	In Project APE (y/n)
P-10-5246	2003	Bldg. No. 15; 2428 E. Washington	Single family residence	n
P-10-5247	2003	Map No. 16; 365 N. Fresno	Multiple Family Property	n
P-10-5248	2003	Bldg. No. 17; 349 N. Fresno	Single family residence	n
P-10-5249	2003	Bldg. No. 18; 337 N. Fresno	Single family residence	n
P-10-5250	2003	Bldg. No. 19; 301 North Fresno	Commercial Building	n
P-10-5251	2003	Bldg. No. 20: 2409 E. McKenzie	Single family residence	n
P-10-5252	2003	Bldg. No. 21; 320 N. Howard	Single family residence	n
P-10-5253	2003	Bldg. No. 22: 336 N. Howard	Single family residence	n
P-10-5254	2003	Bldg. No. 23; 346 N. Howard	Single family residence	n
P-10-5255	2003	Bldg. No. 24; 2420 E. Washington	Multiple Family Property	n
P-10-5256	2003	Bldg. No. 25; 2416 E. Washington	Single family residence	n
P-10-5257	2003	Bldg. No. 26; 2404 E. Washington	Single family residence	n
P-10-5258	2003	Bldg. No. 27; 303 N. Howard	Single family residence	n
P-10-5259	2003	Bldg. No. 28; 333 N. Howard	Single family residence	n
P-10-5260	2003	Bldg. No. 29; 2324 E. Washington	Single family residence	n
P-10-5261	2003	Bldg. No. 30; 2316 E. Washington	Single family residence	n
P-10-5262	2003	Bldg. No. 31; 2312 E. Washington	Single family residence	n
P-10-5263	2003	Bldg. No. 32; 320 N. Thesta	Single family residence	n
P-10-5265	2001	Fresno Railroad Spurs	Fresno Railroad Spurs	n
P-10-5266	2001	Santa Fe Avenue, Fresno, California	BNSF Freight Loading Platform	n
P-10-5267	2001	2625 Inyo Street, Fresno, CA	Basque French Bakery	n
P-10-5268	2001	911 Santa Fe Avenue, Fresno, CA	American Ambulance	n
P-10-5269	2001	2600 Tulare Street, Fresno, CA	2600 Tulare Street, Fresno, CA	n
P-10-5410	2004	612 N. Mayor	Single family residence	n
P-10-5411	2004	626 N. Mayor	Single family residence	n
P-10-5412	2004	630 N Mayor	Single family residence	n
P-10-5413	2004	654 N. Mayor	Single family residence	n
P-10-5414	2004	664 N. Mayor	Lithic scatter	n
P-10-5415	2004	Frank H. Ball Playground	Community Center	n

TABLE 3
CULTURAL RESOURCES PREVIOUSLY IDENTIFIED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

P#/ Trinomial	Year	Resource Name, location	Description	In Project APE (y/n)
P-10-5416	2004	631 A Street	Single family residence	n
P-10-5417	2014	635 A Street	Single family residence	n
P-10-5418	2004	655 A Street /942 Mono Street	Single family residence	n
P-10-5419	2004	1003 Mono Street	Single family residence	n
P-10-5444	2004	1331 N Street, Fresno, CA	Royal Court Apartments	n
P-10-5446	2004	1249 P Street, Fresno, CA	1223-1249 P Street Apartment Court	n
P-10-5447	2004	543-607 Hammond Apartment Court	Multiple Family Property	n
P-10-5451	2004	950-960 E Divisadero, Fresno, CA	950-960 E Divisadero Bungalow Court	n
P-10-5578	2004	Leymel Hall USAR Center/AMSA 14	none	n
P-10-5839	2006	1010 E Street, Fresno, CA	1010 – 1016 E Street	n
P-10-5840	2006	920 E Street, Fresno, CA	920-922 E Street	n
P-10-5841	2006	818 E Street, Fresno, CA	818, 820, 828, and 842 E Street	n
P-10-5842	2006	956 China Alley, Fresno, CA	956 China Alley	n
P-10-5843	2006	921 China Alley, Fresno, CA	Bing Kong Association Building	n
P-10-5844	2006	931 China Alley, Frenso CA	931-937 China Alley	n
P-10-5845	2006	1048 E Street, Fresno, CA	1048 E Street	n
P-10-5846	2006	1060 E Street, Fresno, CA	1060 E Street	n
P-10-5847	2006	804 F Street, Fresno, CA	804 F Street	n
P-10-5848	2006	818 F Street, Fresno, CA	818-822 F Street	n
P-10-5849	2006	824 F Street, Fresno, CA	824-832 F Street	n
P-10-5850	2006	829 F Street, Fresno, CA	829-833 F Street	n
P-10-5851	2006	836 F Street, Fresno, CA	Azteca Theatre	n
P-10-5852	2006	837 F Street, Fresno CA	837 F Street	n
P-10-5853	2006	841 F Street, Fresno, CA	841 F Street	n
P-10-5854	2006	844 F Street, Fresno, CA	844-846 F Street	n
P-10-5855	2006	901 F Street, Fresno, CA	Nippon Building No. 1	n
P-10-5856	2006	912 F Street, Fresno, CA	912 F Street	n
P-10-5857	2006	914 F Street, Fresno, CA	914-920 F Street	n
P-10-5858	2006	922 F Street, Fresno, CA	922-926 F Street	n

TABLE 3
CULTURAL RESOURCES PREVIOUSLY IDENTIFIED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

P#/ Trinomial	Year	Resource Name, location	Description	In Project APE (y/n)
P-10-5859	2006	927 F Street, Fresno, CA	927-931 F Street	n
P-10-5859	2006	1045 F Street, Fresno, CA	1045 F Street	n
P-10-5860	2006	930 F Street, Fresno, CA	Bow on Association Building	n
P-10-5861	2006	933 F Street, Fresno, CA	933-935 F Street	n
P-10-5862	2006	937 F Street, Fresno, CA	Peacock Department Store Building	n
P-10-5863	2006	938 F Street, Fresno, CA	938-954 F Street	n
P-10-5864	2006	947 F Street, Fresno, CA	Bank of America Building	n
P-10-5865	2006	1010 F Street, Fresno, CA	1010 F Street	N
P-10-5866	2006	1027 F Street, Fresno, CA	1027-1029 F Street	N
P-10-5867	2006	1038 F Street, Fresno, CA	1038 F Street	n
P-10-5868	2006	1042 F Street, Fresno, CA	1042 F Street	n
P-10-5870	2006	1047 F Street, Fresno, CA	1047 F Street	n
P-10-5871	2006	1129 F Street, Fresno, CA	1129 F Street	n
P-10-5872	2006	1143 F Street, Fresno, CA	1143 F Street	n
P-10-5873	2006	911 Fagan Alley, Fresno, CA	911-919 Fagan Alley	n
P-10-5874	2006	942 Fagan Alley, Fresno, CA	942 Fagan Alley	n
P-10-5875	2006	1502 Tulare Street, Fresno, CA	1502-1520 Tulare Street	n
P-10-5876	2006	1528 Tulare Street, Fresno, CA	1528-1548 Tulare Street	n
P-10-5877	2006	1515 Inyo Street, Fresno, CA	1515 Inyo Street	n
P-10-5878	2006	1501 Kern Street, Fresno, CA	Nippon Building No. 2	n
P-10-5879	2006	1526 Kern Street, Fresno, CA	Dick's	n
P-10-5880	2006	1528 Kern Street, Fresno, CA	Komoto's Department Store	n
P-10-5881	2006	1441 Tulare Street, Fresno, CA	1441-1447 Tulare Street	n
P-10-6013	2007	Panoche Substation	Public Utility Building	n
P-10-6032	2004	Weber Avenue, Fresno, CA	Weber Avenue Overcrossing	y
P-10-6036	2002	Lahvosh Bakery	Commercial Building	n
P-10-6037	2002	2319 Santa Clara	Commercial Building	n
P-10-6039	2002	522 N Street	Foundations	n
P-10-6040	2002	530 N Street	Single family residence	n

TABLE 3
CULTURAL RESOURCES PREVIOUSLY IDENTIFIED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

P#/ Trinomial	Year	Resource Name, location	Description	In Project APE (y/n)
P-10-6041	2002	540 N Street	Single family residence	n
P-10-6042	2002	453 N Street	Single family residence	n
P-10-6043	2002	529 O Street	Single family residence	n
P-10-6067	2004	Ostergaard Property	Single family residence	n
P-10-6071	2004	190 N. Marks Avenue, Fresno, CA	Williams Property	n
P-10-6072	2004	2137, 2145, 2203, 2211, and 2215 E. El Dorado Street, Fresno, CA	State of California Property	n
P-10-6073	2004	2218 W. El Dorado Street, Fresno, CA	Marmolejo Property	n
P-10-6074	2004	432 S. Hughes, Fresno, CA	Alvarado Property	n
P-10-6074	2004	426 S Hughes, Fresno, CA	Brewer Property	n
P-10-6075	2004	Brewer Property	Single family residence	n
P-10-6076	2004	410 S Hughes Avenue, Fresno, CA	Ambers Property	n
P-10-6077	2004	404 S. Hughes, Fresno, CA	Association for Retarded Citizens Property	n
P-10-6078	2004	206 S. Hughes, Fresno, CA	Richardson Property	n
P-10-6079	2004	204 S. Hughes Avenue, Fresno, CA	Anderson Property	n
P-10-6080	2004	2317 W. Nielsen Ave, Fresno, CA	Amivisca Property	n
P-10-6081	2004	130 S. Hughes, Fresno, CA	Perales Property	n
P-10-6082	2004	140 S Hughes Ave, Fresno, CA	Roa Property	n
P-10-6083	2004	136 S. Hughes, Fresno, CA	Podsakoff Property	n
P-10-6084	2004	320, 322, and 324 S Hughes, Fresno, CA	Banuelos Property	n
P-10-6085	2004	Woodworth Property	Single family residence	n
P-10-6086	2004	2008 S. Hughes, Fresno, CA	Wight Property	n
P-10-6087	2004	343 & 347 S Hughes Ave, Fresno, CA	Jeffress Property	n
P-10-6088	2004	335 S. Hughes, Fresno, CA	Woodworth Property	n
P-10-6105	1999	Residence	Single family residence	n
P-10-6142	2011	858 G Street/1620 Kern Street, Fresno, CA	Fresno Block 534 Site	n
P-10-6144	2011	1018-1034 F Street, Fresno, CA	Fresno Chinatown Block 50	n
P-10-6219	2008	California Department of Transportation District 6 Office	Single family residence	n
P-10-6220	2009	California Department of Motor Vehicles: Fresno Office Complex	Government building	n
P-10-6269	2012	Selland Arena and William Saroyan Theatre, Fresno Convention and Entertainment Center	Public utility building	n

TABLE 3
CULTURAL RESOURCES PREVIOUSLY IDENTIFIED WITHIN THE PROJECT APE AND 1/2 MILE BUFFER

P#/ Trinomial	Year	Resource Name, location	Description	In Project APE (y/n)
P-10-6340	1997	WPI-2	Theater	n
P-10-6985	2004	234 S Hughes, Fresno, CA	Woodworth Property	n
SHL #873	1979	In Planter, 100ft SW of Clock Tower, Fulton and Mariposa Mall, Fresno, CA	Site of the Fresno Free Speech Fight of the Industrial Workers of the World	y

SOURCE: SSJVIC, 2013, 2014

Five cultural resources have been recorded within or immediately adjacent to the Fresno Recycled Water Plan project APE (P-10-4513, Belmont Avenue Subway, P-10-6032, Webber Avenue Overcrossing, P-10-4277, Water Tower, P-10-4299, Fresno Brewery, SHL #873, Free Speech Fight Site).

Archaeological Resources

No archaeological resources have been recorded within the project APE. Nearby, one archaeological site (P-10-3081) has been recorded within 600 feet of the southern-most project APE. P-10-3081 is a site consisting of a scatter of historic debris (glass, ceramic, brick), most of which dates from the 1930's to the 1940's. This resource has not been previously evaluated and does not appear to be eligible to the National Register or California Register due to the disturbed context of the site.

Historic Architectural Resources

P-10-4513, or Belmont Avenue Subway is a concrete railroad overcrossing above a lowered portion of Belmont Avenue. It also includes associated pedestrian tunnel and decorative walls, sidewalks, handrails, and pedestrian tunnel associated with the portion of Belmont Avenue as it passes beneath the rail bridge. This resource does not appear to have been previously evaluated although it may be eligible to the National Register or California Register due its significance in Depression Era civil engineering projects related to the railroad industry in California and Fresno County. P-10-4513 intersects the alignment of the Fresno Recycled Water Plan project APE.

P-10-6032, or Webber Avenue Overcrossing, is a bridge that consists of a single span of precast, prestressed T-beams. The bridge spans just under 67 feet and has two lanes of 22 feet and a six foot sidewalk on the south side, and concrete window railings. The bridge contains ten concrete T-beams, each 36 inches deep, 36 inches wide on top and 16 inches wide at the bottom, with six inch thick vertical webs. This bridge is the first of its kind in the state of California, and was completed in 1953. The Weber Avenue Overcrossing was constructed as a traffic improvement project and is not associated with significant persons or events in the history of Fresno that would make it eligible for National Register listing under Criteria A or B. The bridge appears to be significant as an early example of the use of prestressed concrete, and the first vehicle bridge in California to use this construction technique. As one of the pioneering examples of this innovative construction technique in California, the Weber Avenue Overcrossing considered by Caltrans eligible for National Register listing under Criterion C, at the state level, and is considered an historical resource for the purpose of compliance with CEQA. P-10-6032 intersects the alignment of the Fresno Recycled Water Plan project APE.

P-10-4277 is an approximate 100 foot tall Water Tower that was built in 1894. The tower is made of double wall brick construction with a three foot wide passage separating the 2 walls. A 250,000 gallon Swedish steel tank is atop of the structure. The Tower was nominated and received National Register designation in 1971 and one year later became one of three California water towers to receive landmark recognition by the American Water Works Association. P-10-4277 is adjacent to the alignment of the Fresno Recycled Water Plan project APE.

P-10-4299, or Fresno Brewery, is a Romanesque-red brick, highly detailed structure. It has two partial stories with a single-story porch on two sides. Built in 1907, the structure also contains a full basement. Cast iron columns decorate the porch and the brick work itself, which is highly detailed, and are the only ornamentation for the structure. Semi-circular arches accentuate the double hung windows recessed into the façade. This structure is one of the few unaltered buildings of this period and the porch of corrugated iron is very typical of the period. This building was nominated and adopted into the National Register in 1983. P-10-4299 is adjacent to the alignment of the Fresno Recycled Water Plan project APE.

SHL #873 is a plaque at the site of the Fresno Free Speech Fight Site of the Industrial Works of the World. The wording on the plaque states:

> SITE OF THE FRESNO FREE SPEECH FIGHT
>
> AT THE CORNER OF MARIPOSA AND I STREET, FROM OCTOBER 1910 TO MARCH 1911, THE INDUSTIRAL WORKERS OF THE WORLD FOUGHT FOR THE RIGHT OF FREE SPEECH IN THEIR EFFORTS TO ORGANIZE FRESNO'S UNSKILLED LABOR FORCE. THIS WAS THE FIRST ATTEMPT AT ORGANIZING THE VALLEY'S UNSKILLED WORKERS.

This plaque is already a State Historical Landmark and although it does not appear to have been evaluated for National Register status, it appears to be eligible due to its association with this historic event. SHL #873 is adjacent to the alignment of the Fresno Recycled Water Plan project APE.

Summary of Historic-period Buildings and Structures

The Fresno Brewery (P-10-4299) and Fresno Water Tower (P-10-4277) are immediately adjacent to the alignment of the Fresno Recycled Water Plan project APE. No other National Register listed properties are located within or adjacent to the project APE.

Belmont Avenue Subway (P-10-4513) and Webber Avenue Overcrossing (P-10-6032) are two potentially-eligible historic properties have been identified as intersecting the alignment of the Fresno Recycled Water Plan project APE.

SHL #873 is located adjacent to the alignment of the Fresno Recycled Water Plan project APE. No other California SHP or CPI listed properties are within or adjacent to the project APE.

4.2 Native American Contact

ESA staff contacted the Native American Heritage Commission (NAHC) on February 24, 2010 to request a database search for sacred lands or other cultural properties of significance within or adjacent to the proposed Recycled Water Master Plan project APE. A response was received on March 1, 2010. The sacred lands survey did not identify the presence of cultural resources in the

proposed project APE, with the exception of the area within ½ mile of the Recycled Water Plan area within the Herndon Quadrangle. The NAHC provided a list of Native American contacts that might have further knowledge of the proposed project APE with respect to cultural resources. Each person or organization identified by the NAHC was contacted by letter on March 3, 2010. On March 15, 2010, Jim Redmoon of the Dumna Tribal Government called ESA requesting additional information about the proposed project. ESA returned his call and left a message detailing project activities, and no further calls from the Dumna Tribal Government were received. Follow up letters regarding this current project were sent out November 14, 2013. Additional follow up emails and phone calls were conducted on November 5, 2014. On November 17, 2014, Chairman David Alvarez of the Traditional Choinumni Tribe contacted ESA, stating that he did not see any issues with cultural resources for the project site. Chairman Alvarez also requested that in the event of accidental discovery, all relevant entities be notified promptly. No additional responses have been received as of the writing of this report (November 2013). (**Appendix C** includes copies of all correspondence).

4.3 Field Survey

Survey Methodology

ESA archaeologists Michael Vader, Joshua Garr, and historian Katherine Anderson conducted a field survey of the Project APE in October 24, 2013 and July 16, 2014. A combination of pedestrian and windshield survey strategies were employed wherein unimproved road shoulders were surveyed on foot, while the more developed areas along the roadways were subject to a windshield survey for the presence of historic-period built resources. Ground surface visibility in the areas subject to a pedestrian survey ranged from approximately 75 to 100 percent. No historic or prehistoric archaeological resources were identified during field survey. Survey Findings (below) describes identified historic-period built resources, other than those previously identified by the records search.

Survey Findings

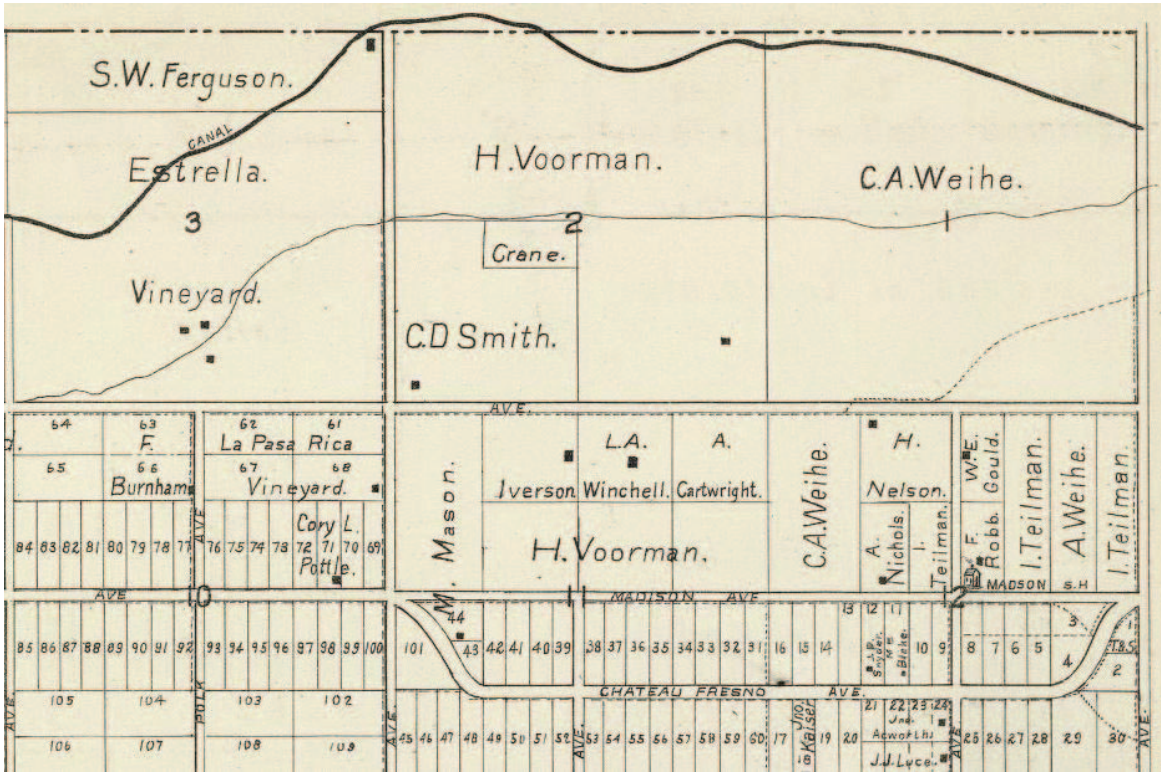
In addition to the five resources described above as adjacent to or intersecting the recycled water alignment, field survey and archival review identified the Houghton Canal as intersecting the project APE in the vicinity of Belmont Avenue and Cornelia Avenue. DPR forms for the Houghton Canal are included in **Appendix D**.

Evaluation of the Houghton Canal

The Houghton Canal is one of the large laterals of the Fresno Irrigation District. The Houghton Canal appears on maps as early as 1891 as an unnamed canal or ditch (Thompson, 1891, see Figure 4 below), although the alignment of the canal has been considerably altered throughout its long history. The 1917 legal description of the Houghton Canal describes it as:

> *<u>Houghton Canal.</u> Beginning at a point in the west bank of Dry Creek Canal near the northeast corner of the northwest corner of the southeast quadrant of Section 5, T14S,*

R20E. MDB&M, and running thence in a general westerly direction 15.74 miles to the center of section 2, T14S, R17E, MDB&M. (CPUC, 1917)



SOURCE: Thompson, 1891

Fresno Recycled Water Project. 130412

Figure 4
Historic Alignment of Houghton Canal in Project Vicinity

The Houghton Canal crosses the project APE twice along Belmont Avenue, first at Cornelia Avenue and then again just east of Blythe Avenue. Within the project APE (Belmont Avenue Right of Way), the canal consists of a modern concrete lined canal culvert crossing underneath Belmont Avenue in two locations. Just outside the project APE, the canal is earthen lined with concrete and cobble rip rap, measuring approximately 25 feet across at the top and 8 feet across as the bottom of the canal (See Figure 5 below).

SOURCE: ESA, 2013

Fresno Recycled Water Project. 130412

Figure 5
Houghton Canal at Belmont and Cornelia Avenues

Archival review of materials online, at the Fresno Special Collections Research Center, and Fresno Public Library San Joaquin Valley Heritage & Genealogy Center provided little additional information on the history of the canal.

ESA staff recommends the canal as not eligible for listing in the California or National Registers. Archival research did not indicate any significant association between the canal and known historical events or persons (Criteria 1/A and 2/B). The canal potentially dates to the late nineteenth century, and is associated with the development of agriculture and the colony system in Fresno, but not to a significant extent than other canals, such as the Centerville, Gould, or Enterprise Canals, more effectively demonstrate (JRP & Caltrans, 2000). The canal does not appear to embody the distinctive characteristics of a type, period, or method of construction and possesses no distinguishing design or artistic values (Criterion 3/C). The canal does not appear to have the potential to yield information important in history (Criterion 4/D). Finally, realignment throughout its history, as well as modern construction of the culvert and crossings over Belmont Avenue has resulted in the alteration of the canal, impacting its physical integrity. As such, ESA recommends the canal ineligible for listing in the California or National Registers.

CHAPTER 5
Conclusions and Recommendations

5.1 Archaeological Resources

Archival review and field survey identified no archaeological resources within the alignment of the Fresno Recycled Water Plan project APE.

In the unlikely event that cultural materials are unearthed during construction, work should halt in that area until a qualified archaeologist and a Native American representative can assess the significance of the find. A professional archaeologist is defined as one meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (U.S. Department of the Interior 2012). Additional archaeological survey will be needed if project limits are extended beyond the present survey limits. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. 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 an archaeological testing and/or treatment plan, depending on the nature of the resource.

The possibility of encountering human remains during ground-disturbing construction activities cannot be entirely discounted. As stated in Section 7050.5 of the California Health and Safety Code, it is a misdemeanor to knowingly disturb a human grave. If human graves are encountered, work should halt in the vicinity and the County Coroner should be notified. At the same time, an archaeologist should be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 48 hours of this identification.

5.2 Historic-period Resources (Buildings, Structures)

As described above, five previously identified resources considered either eligible or listed in the National and California Registers are adjacent to or intersecting the recycled water alignment. The construction of the proposed recycled 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. Intersecting resources include Webber Over

Crossing and the Belmont Avenue Subway, both located above the road where the alignment will be located. Neither of these resources will be impacted by construction of the pipeline.

The Houghton Canal was identified as intersecting the project APE in the vicinity of Belmont Avenue and Cornelia Avenues. ESA staff recommend the canal as ineligible for listing in the National or California Registers. Once concurrence has occurred with this finding, no additional analysis or mitigation is recommended for historic-period resources.

CHAPTER 6
References

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Appendix A
Personnel Qualifications

KATHERINE ANDERSON

Senior Associate I

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.

Education

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

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

Certifications

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

7 Years Experience

Relevant Experience

Comstock Mining BLM Baseline Studies, Virginia City, NV. ***Architectural Historian.*** ESA was tasked with providing baseline cultural resource and biological studies for the mining project proposed by Comstock Mining Inc. Kathy's responsibilities include assisting in the documentation of architectural resources within Storey and Lyon Counties within the project area. This included the establishment of a historic context for the area, field survey, archival review, and documentation and evaluation of over 60 mining related resources including buildings, walls, foundations, and other resources. **D211229.00**

Yuba County Water Agency Cultural Resources. ***Architectural Historian.*** ESA was tasked with providing a historic context and architectural resources evaluation for the YCWA Bullard's Bar FERC project. Kathy's responsibilities include assisting in the documentation of architectural resources within the project area and creating a historic context for the area. This included the establishment of a historic context for the area, archival review, and documentation and evaluation of over 9 hydroelectric related resources including powerhouses, dams, and other resources. **D211647.00**

City of Sacramento Ornamental Streetlights, Sacramento, CA. ***Architectural Historian.*** The City of Sacramento retained ESA to assess existing ornamental street lights in the Curtis Park and Land Park neighborhoods for their historic significance under state and local register criteria. Kathy's responsibilities included archival research at local repositories, interviews with knowledgeable individuals, and field review. ESA determined the streetlights to not be individually eligible for listing in the National, California, or Sacramento registers, nor were they determined eligible as a district. **D120619.00**

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**

Relevant Experience (Continued)

Marysville Regional Wastewater Project, Marysville, CA. ***Cultural Resource Analyst.*** ESA assisted in preparing the CEQA document and providing permitting support to evaluate the potential impacts of the recommended alternative to address the proposed improvements to the City's WWTF. Kathy's responsibilities include archival review and field survey identifying historic period structures and resources within the project area, and determination of adverse impacts resulting from implementation of the proposed project. **D211313.00**

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**

Woodbridge Irrigation District Stockton Water Transfer, Stockton, CA. ***Section Writer.*** Kathy assisted in providing the cultural resources analysis of impacts relating to the construction of the Woodbridge Irrigation District project, which included identification and evaluation of any potential historic structures within the project area (including the Woodbridge Canal), as well as any impacts to cultural resources resulting from the implementation of the project. **D207769.00**

MICHAEL VADER

Associate Archaeologist

Michael is an archaeologist and environmental compliance monitor with experience working on survey, data recovery, and monitoring projects. Michael has experience with project management, has led crews on multiple surveys, and is familiar with environmental compliance documents. He has worked on a variety of energy and water infrastructure projects throughout southern California, including projects in Riverside, San Diego, Imperial, San Bernardino, Los Angeles, Orange, Santa Barbara, and San Luis Obispo counties. Michael regularly works as part of a team, coordinating with construction personnel and Native American representatives.

Education

B.A., Physical Anthropology, University of California, Santa Barbara

9 Years Experience

Relevant Experience

City of Los Angeles Department of Water and Power, Foothill Trunk Line Project, Los Angeles, CA. ***Archaeologist.*** ESA archaeologists have prepared a Phase I cultural resources study and EIR cultural resources section for the Los Angeles Department of Water and Power Trunk Line Project, located in the City of Los Angeles, CA. The proposed project includes the replacement of 16,600 feet of existing 24-inch, 26-inch, and 36-inch diameter welded steel pipe and 30-inch diameter riveted steel pipe with a 54-inch diameter welded steel pipe along Foothill Boulevard within the districts of Pacoima and Sylmar. Michael conducted archival research and contributed to the technical report and EIR cultural resources section.

Joshua Basin Water District Water Basin and Pipeline Project. San Bernardino County, CA. ***Archaeologist.*** ESA archaeologists have conducted testing at site CA-SBR-13305/H and surveyed an alternate pipeline route for the Joshua Basin Water District Water Basin and Pipeline project. The project includes the construction of an approximately 30-acre recharge basin facility and a 24,000 linear foot extension of the Morongo Basin Pipeline along public roadways. Michael assisted in the site testing and conducted the survey of the alternate pipeline through the City of Joshua Tree.

City of Los Angeles Department of Water and Power, Well V817 Rose Valley Pipeline Installation Project, Inyo County, CA. ***Archaeologist.*** ESA archaeologists have conducted an Extended Phase I investigation of site CA-INY-6980/H, and prepared an Extended Phase I testing report, as well as a MND for the Los Angeles Department of Water and Power Well V817 Rose Valley Pipeline Installation Project, located in Inyo County. The project involves the installation of an 8-inch diameter water pipeline with a length of 1,542 feet that would transport pumped water from Well V817 southwest to a staging area near the First Los Angeles Aqueduct. Michael assisted with testing of site CA-INY-6980/H, which consisted of a high-density scatter of prehistoric artifacts, and contributed to the Extended Phase I testing report.

Relevant Experience (Continued)

West Hills Water Treatment Plant Project. San Benito County, CA. ***Archaeologist.*** ESA archaeologists have prepared a Phase I cultural resources survey report for the proposed West Hills Water Treatment Plant Project located just southwest of the City of Hollister in San Benito County, CA. The proposed project would improve drinking water quality, water supply reliability, and would serve to balance regional water resources in the Hollister Urban Area and includes the construction of the West Hills Water Treatment plant and associated facilities, a raw water pump station, a raw water pipeline, and a treated water pipeline. Michael contributed to the Phase I cultural resources survey report.

Cadiz Valley Water Conservation, Recovery, and Storage Project. San Bernardino County, CA. ***Archaeologist.*** ESA archaeologists conducted a Phase I cultural resource assessment and prepared a cultural resource technical report and an EIR section in support of the Cadiz Valley Water Conservation, Recovery, and Storage Project located in San Bernardino County, CA. The project includes the construction of facilities including a wellfield and manifold system, water conveyance facilities, a tie-in to the Colorado River Aqueduct, access roads, staging areas, and power supply and distribution facilities, in order to conserve and recover native groundwater that is now lost due to evaporation. Michael assisted in the Phase I cultural resources assessment and contributed to the technical report.

Sweetwater Authority, Sweetwater Reservoir Water Main Replacement, San Diego, CA. ***Archaeological Technician.*** ESA was retained by Sweetwater Authority to prepare an IS/MND for the replacement of a 36-inch pipeline leading from Sweetwater Dam. Sweetwater Dam was originally constructed in the late 19th century and was subject to upgrades in 1917. ESA conducted a Phase 1 Cultural Resources Assessment including archival research, pedestrian, survey, historical research, Native American outreach, and the preparation of a technical report documenting archaeological and historic-architectural resources that might be impacted by the project. The study concluded features that would be altered by the project were contributing elements to the historic dam would need to be replaced in kind in order to avoid project impacts. Michael assisted in the pedestrian survey for the Phase I Assessment.

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.

REBECCA ALLEN, PH.D., RPA

ESA's Northern California Cultural Resources Director

Dr. Rebecca Allen primarily conducts studies of the historic past and public outreach programs. She has served as project manager on dozens of environmental, historical and archaeological projects throughout the west, and written many cultural resource management documents. Dr. Allen has worked extensively on transportation-related projects in California, on federal and state properties, city and county lands, as well as private holdings. She has recorded and evaluated historic adobe, logging, mining, ranching, rural settlement, and urban residential sites, as well as historic structures and landscapes. Dr. Allen has also participated in the creation of museum exhibits, public lectures, popular publications, interactive interpretive displays, site tours, video documentaries, local newspaper articles, television interviews, and web site content.

Education

Ph.D. Historical Archeology, University of Pennsylvania.

M.A., American Civilization (American History), University of Pennsylvania.

B.A., Anthropology with high distinction, and Classics (history and art history) with honors, University of Arizona. Phi Beta Kappa.

25 Years Experience

Professional Affiliations

Society for Historical Archaeology, Associate Editor of *Historical Archaeology*

SHA and University of Nebraska Press, Co-Series editor, Historical Archaeology of the West

California Council for the Promotion of History, Registered Historian No. 569

California Preservation Foundation

Register of Professional Archaeologists

Society for California Archaeology

Relevant Experience

Santa Clara University - Research and Data Recovery of Historic Period Resources CEQA Report Project, City of Santa Clara and Santa Clara University. *Principal Investigator*. Dr. Allen coauthored an overarching Campus Treatment Plan, approved by the City of Santa Clara, that included an assessment of potential direct and indirect impacts to cultural resources during planned University construction projects (buildings, parking lots, and roadways) as part of a 10-year Capital Plan. The plan also assesses the significance of these resources, and suggests mitigation and preservation alternatives. Dr. Allen participated in the completion of data recovery at several locations where mission-era resources and features associated with a 19th century residential community had been discovered, as well as several testing of other areas where non-significant resources were encountered.

Stanford Gymnasium, Archeological Testing and Evaluation for the Concert Hall Project, Dana Peak, Program Manager, County of Santa Clara Planning. *Peer Reviewer*. Dr. Allen conducted a review of The Stanford University Men's Gymnasium Ruin, Archaeological Testing and Evaluation for the Concert Hall Project, by Stanford campus archaeologist and students. Dr. Allen provided recommendations to the County of Santa Clara on CEQA evaluation and significance.

San Francisco Transit Center – Research Design and Treatment Plan. *Co-Principal Investigator.* Dr. Allen conducted research and planning for data recovery for six city blocks in downtown San Francisco. She also served as co-author of a research design and treatment plan.

PG&E Gas Line Replacement, Pacific Gas and Electric, Santa Clara. *Co-Principal Investigator.* Dr. Allen researched and conducted planning for excavation of controlled units for gas line replacement project in area archaeologically sensitive for Mission and American Period sites in Santa Clara. She also served as lead author for, Work Plan for the PG&E Gas Line Replacement Project, Santa Clara, Santa Clara County, California.

Fountain Slide Repair Project, California Department of Transportation, District 3. *Historical Archaeologist.* Dr. Allen led research and data recovery effort for the Fountain Slide Repair Project and co-authored the Phase III

Relevant Experience (Continued)

Proposal for Archaeological Site CA-SHA-1410/H (P-45-004110), Fountain Slide Repair Project (EA 02-0E8911, SR 299, Shasta County, California and Data Recovery Report.

Blackrock Four-Lane Phase III Data Recovery, Native American Homestead, Inyo County, CA. ***Principal Investigator.*** The California Department of Transportation, in conjunction with the Federal Highway Administration (FHWA) proposes to widen a segment of U.S. Highway 395 in northern Inyo County, California. Dr. Allen acted as principal investigator for the investigation of site CA-INY-5275/H, an historic Paiute homestead, also known as the Olds site. This is an important site, as it represents the historic component of Paiute occupation that spans the continuum from prehistoric to ethnographic to historic time. The Olds family is documented at this site from the 1870s to the 1930s. Research topics include cultural adaptation, economic assimilation and marginalization, and documentation of changes in native technology and social structure.

National Register Evaluation of USFS Sites. El Dorado National Forest, CA. ***Co-Principal Investigator.*** The Eldorado National Forest (ENF) contracted for professional services to conduct historical archaeological investigations to evaluate the eligibility of five historic sites associated with the early history of the Hwy 50 transportation corridor, with regard to the National Register. The ENF requested a research design that provided a framework for evaluating similar historic sites within the South Fork American River Canyon. Such evaluation contexts advance the ENF's responsibilities under NHPA Section 110 to establish a program to locate, inventory, and nominate to the National Register.

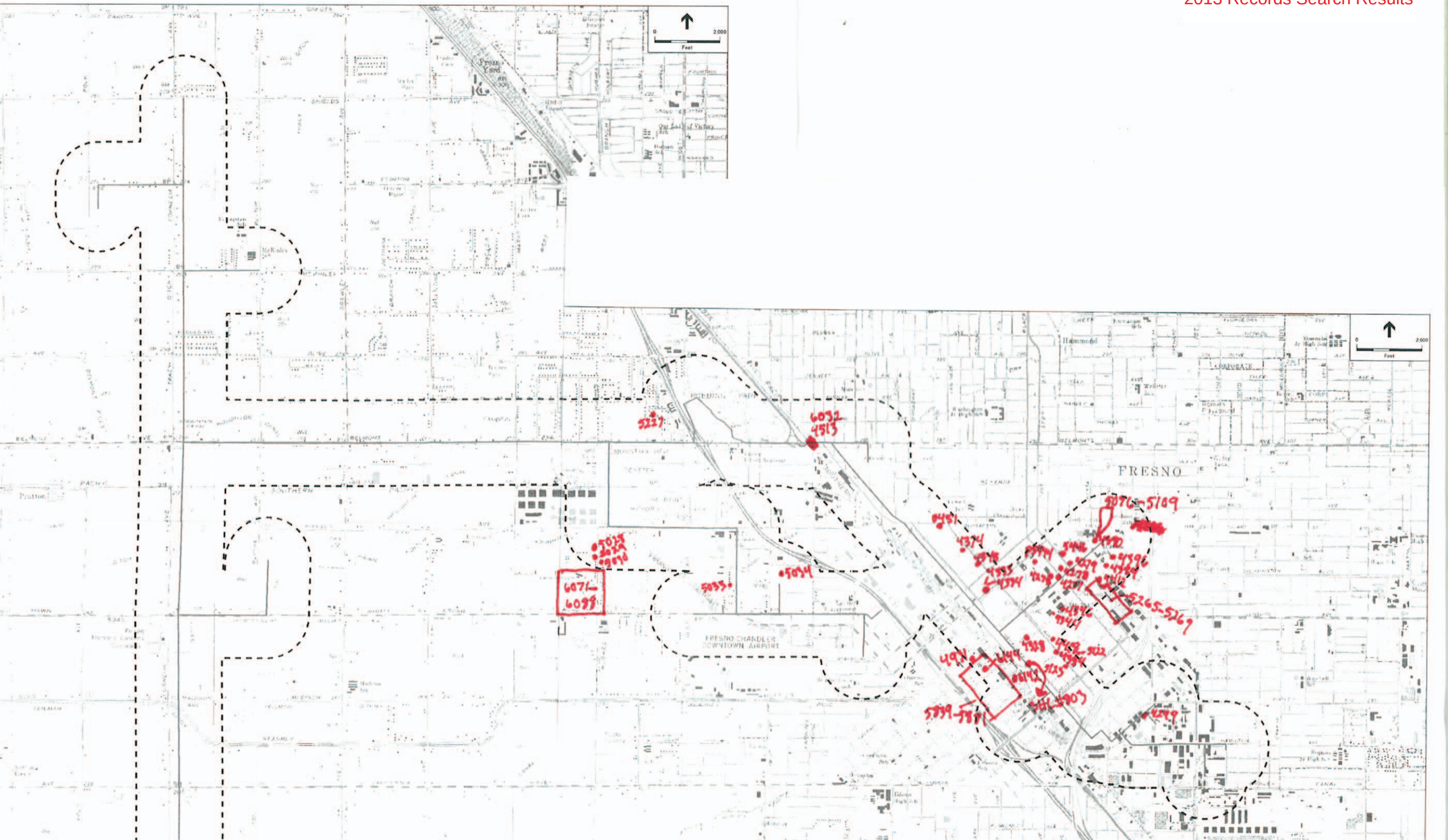
Route 87 Expansion High-Occupancy Vehicle Lane Project, California Department of Transportation, District 4, and Valley Transportation, San Jose, CA. ***Principal Investigator.*** Dr. Allen conducted research and planning for the expansion of Route 87, San Jose. She authored the summary report, Review Discovery Plan State Route 87 High-Occupancy Vehicle Lane Project, City of San Jose, Santa Clara County, California.

Appendix B

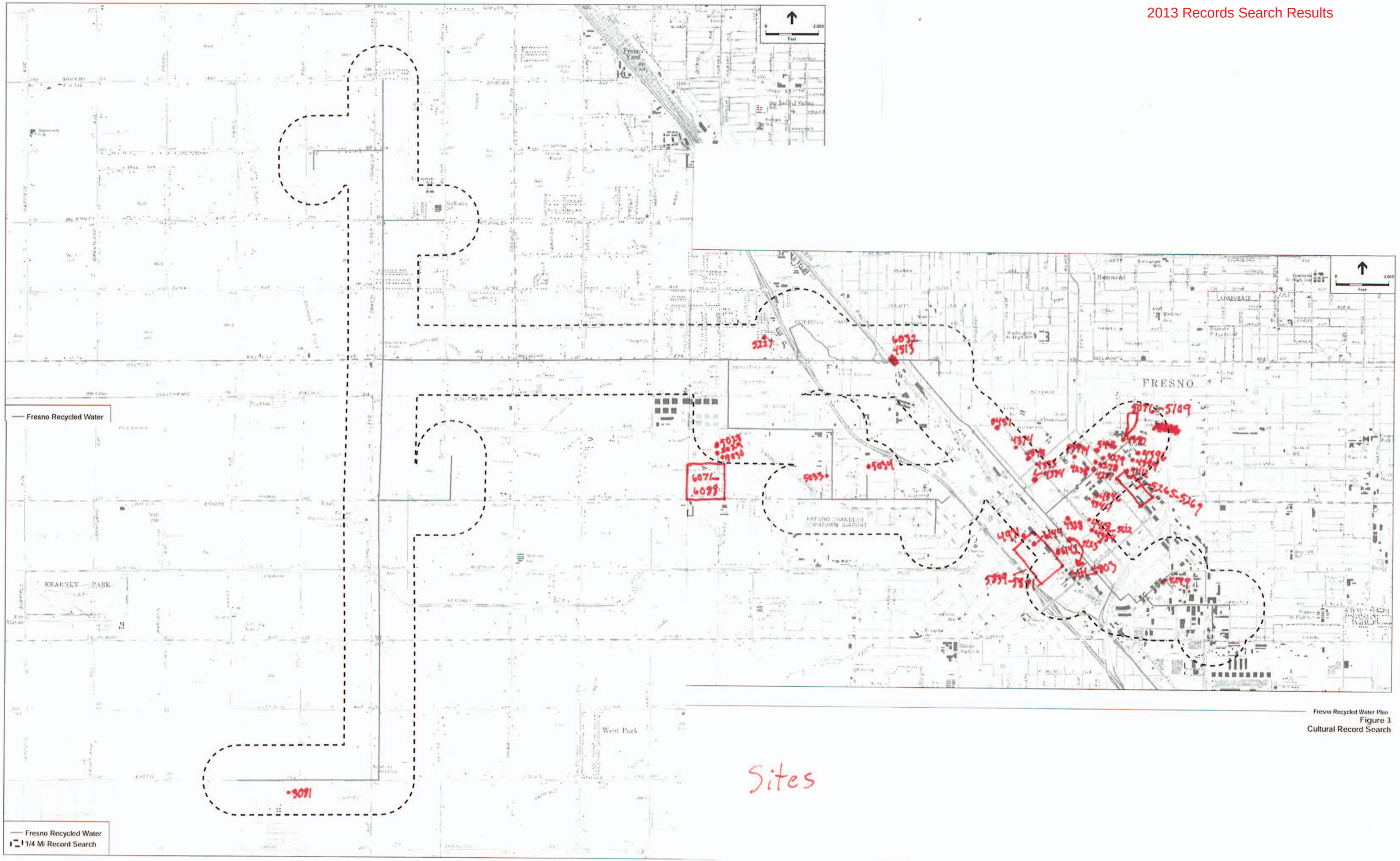
Confidential Records Search Site Location Maps

ESA

2013 Records Search Results



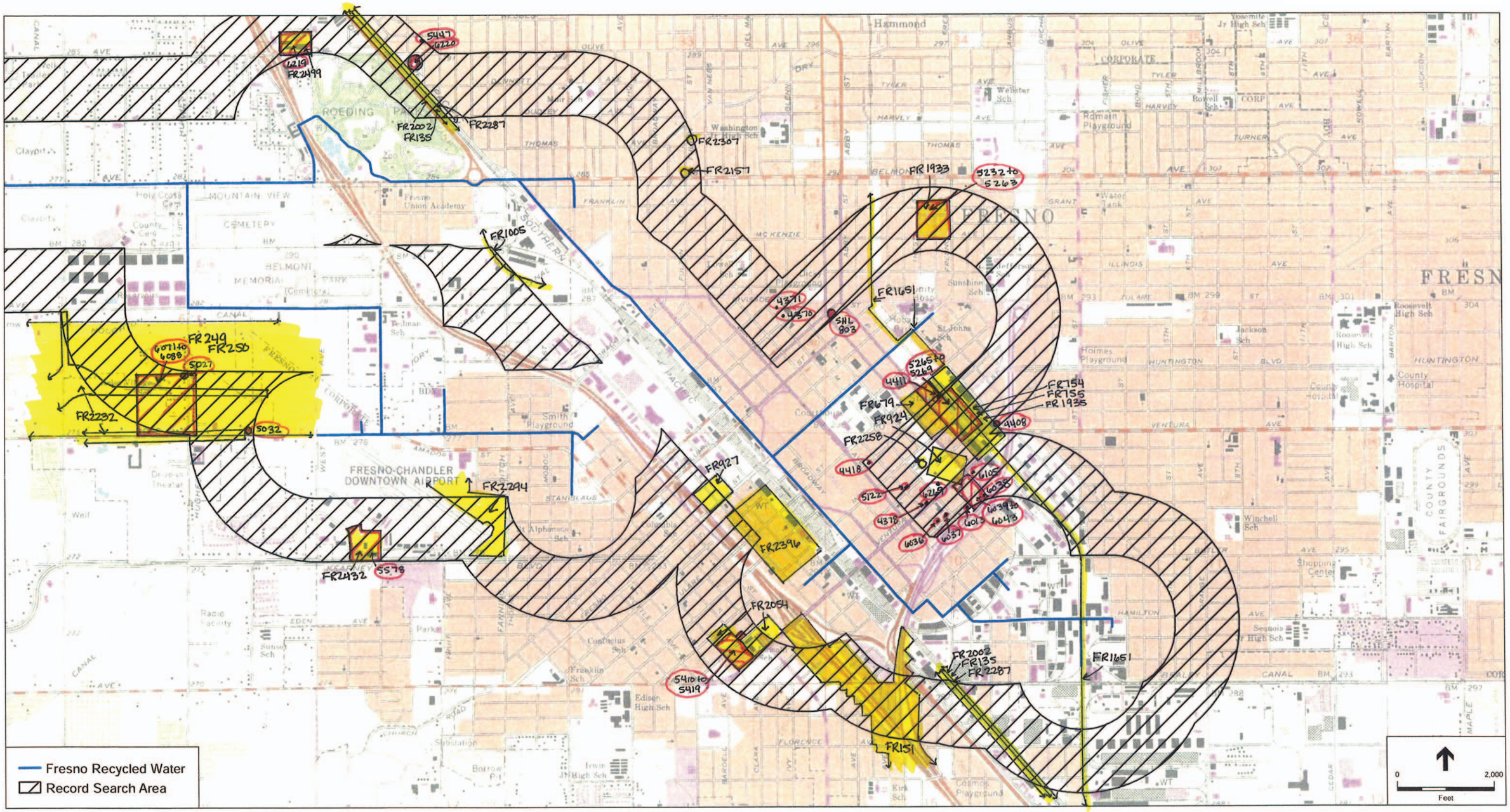
2013 Records Search Results



TOPOQUAD: Kearney Park, Fresno South

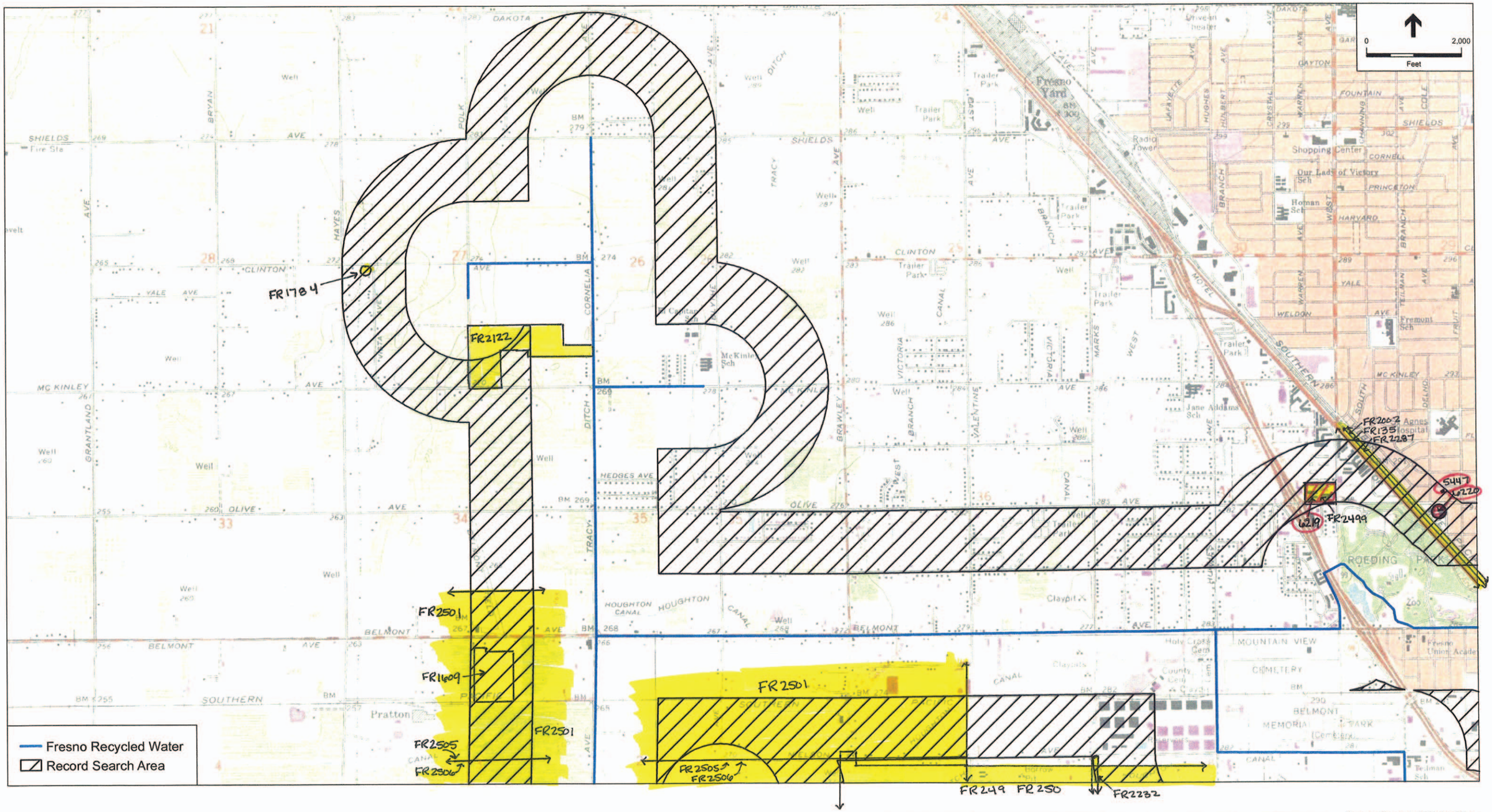
Fresno Recycled Water Plan
Figure 2

Fresno Recycled Water Plan
Figure 3
Cultural Record Search



TOPOQUAD: Fresno, North, Fresno South

Fresno Recycled Water Plan
Figure 3
Cultural Record Search

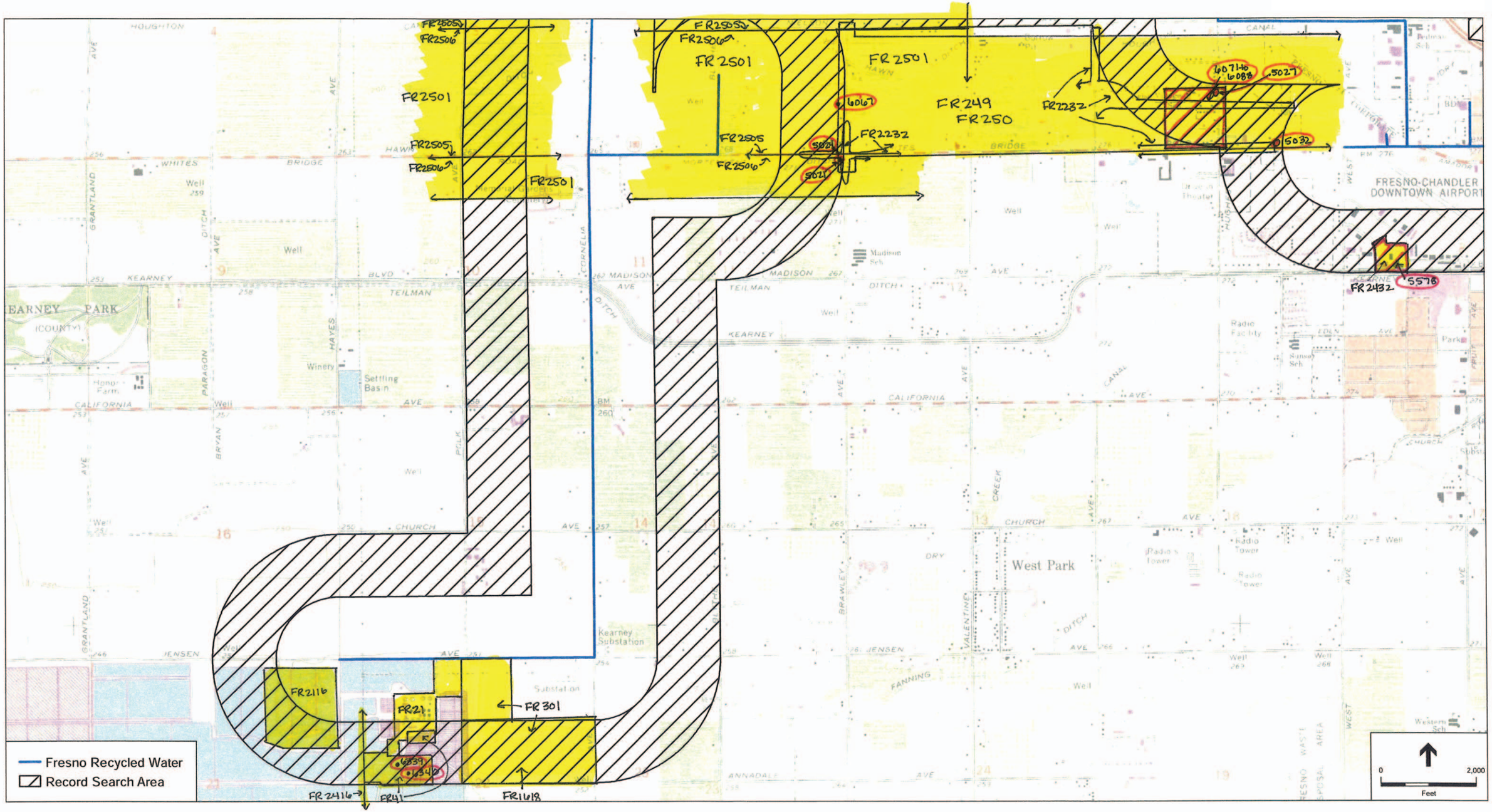


TOPOQUAD: Herdon, Fresno North, Kearney Park, Fresno South

Fresno Recycled Water Plan

Figure 1

Cultural Record Search



TOPOQUAD: Kearney Park, Fresno South

Fresno Recycled Water Plan
Figure 2
Cultural Record Search

Appendix C
Native American Correspondence

ESA Community Development

2600 Capitol Ave
Suite 200
Sacramento, CA 95816
916.564.4500 phone
916.564.4501 fax

www.esassoc.com

February 24, 2010

Dave Singleton
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

SUBJECT: Request for Search of Sacred Lands Files and Native American Contact List

Dear Mr. Singleton:

ESA is conducting environmental studies for the Program EIR for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Lanes Bridge, Friant, Herndon, Fresno North, Clovis, Kearney Park, Fresno South, Round Table, and Malaga USGS 7.5' Quads; T 12S, 13S, 14S, and 15S, R 19E, 20E, 21E, and 22E (See attached map). The PEIR would provide baseline data for future project level recycled water development within the City; however no specific projects are being evaluated at this time.

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.

Thank you for your time and cooperation regarding this matter. Please contact me at 916-564-4500 if you have any questions.

Sincerely,

Katherine Anderson
Cultural Resource Associate

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

March 1, 2010

Ms. Katherine Anderson
Environmental Science Associates (ESA)
2600 Capitol Avenue, Suite 200
Sacramento, CA 95816

Sent by FAX to: 916-564-4501
No. of Pages: 4

Re: Request for a Sacred Lands File Search and Native American Contacts List **for a Proposed "Fresno Recycled Water Plan 209405 Project"** located in: Fresno County, California

Dear Ms. Anderson:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources (c.f. CA Public Resources Code §21070; also c.f. *Environmental Protection Information Center v. Johnson (1985) 170 Cal App. 3rd 604*), was able to perform a record search of its Sacred Lands File (SLF) for the affected project area (APE) requested. The California Environmental Quality Act (CEQA; CA Public Resources Code Section 21000 – 21177)) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the 2007 CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." The NAHC SLF search **did not indicate** the presence of Native American cultural resources within one-half - mile radius of the proposed project site (APE) in all the USGS Quadrangles submitted, with the exception of the Friant and Herndon USGS Quadrangles. .

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes and interested Native American individuals that the NAHC recommends as 'consulting parties,' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We recommend that you contact persons on the attached list of Native American contacts. In particular, we recommend consultation with Jim Redmoon of the Dumna Tribal Government who may have knowledge of the Native American cultural resources that have been identified in the NAHC SLF search. Furthermore we suggest that you contact the California Historic Resources Information System (CHRIS) at the Office of Historic Preservation Coordinator's office (at (916) 653-7278, for referral to the nearest Information Center of which there are 10.

Consultation with tribes and interested Native American consulting parties, on the NAHC list ,should be conducted in compliance with the requirements of federal NEPA (42 U.S.C. 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 [f]*et seq),* 36 CFR Part 800.3 (f) (2), the President's Council on Environmental Quality (CSQ; 42 U.S.C. 4371 *et seq.*) and NAGPRA (25 U.S.C. 3001-3013), as appropriate. . The 1992 *Secretary of the Interior's Standards for the*

Treatment of Historic Properties were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including *cultural landscapes*.

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code §5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code §6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance' may also be protected the under Section 304 of the NHPA or at the Secretary of the Interior' discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibly threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contacts List (NOTE: we further recommend that other forms of 'proof of mailing or proof of contact be utilized instead of 'Return Receipt Requested' Certified or Registered Mail.) Further, we suggest a follow-up telephone call to the contacts if the replies are not received or need clarification.

Native American Contacts
Fresno County
March 1, 2010

Big Sandy Rancheria of Mono Indians
Liz Hutchins Kipp, Chairperson
P.O. Box 337 / 37302 Western Mono
Auberry , CA 93602
cl@bigsandyrancheria.com
(559) 855-4003
(559) 855-4129 Fax

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 Yokuts
Friant , CA 93626-0177
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road Mono
Clovis , CA 93619
eagleye@cuip.net
(559) 299-3729 Home

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Avenue Foothill Yokuts
Clovis , CA 93612-2211 Choinumni
559-324-9908

Dumna Wo-Wah Tribal Goverment
Keith F. Turner, Tribal Contact
P.O. Box 306 Dumna/Foothill
Auberry , CA 93602 Mono
(559) 855-3128 Home
(559) 696-0191 (Cell)

Dunlap Band of Mono Indians
Mandy Marine, Board Chairperson
Box 44 Mono
Dunlap , CA 93624
mandy@dunlapmono.org
559-338-2545

Sierra Nevada Native American Coalition
Lawrence Bill, Interim Chairperson
P.O. 125 Mono
Dunlap , CA 93621 Foothill Yokuts
(559) 338-2354

Dumna Tribal Government
Jim Redmoon - Cultural Resources Representative
724 W. Fountain Dumna/Foothill
Fresno , CA 93705 Choinumni
559-243--9926

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. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106, and federal NAGPRA.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Fresno Recycled Water Plan Project 209405; located in various locations in Fresno County, California for which Sacred Lands File searches and Native American Contacts lists were requested.

Native American Contacts
Fresno County
March 1, 2010

Chowchilla Tribe of Yokuts
Jerry Brown
10553 N. Rice Road North Valley Yokuts
Fresno , CA 93720
559-434-3160

Cold Springs Rancheria of Mono Indians
Carol Bill - Tribal Administrator
PO Box 209 Mono
Tollhouse , CA 93667
coldsprgstribe@netpt
(559) 855-5043

(559) 855-4445 - FAX

The Choinumni Tribe of Yokuts
Rosemary Smith, Chairperson
1505 Barstow Choinumni
Clovis , CA 96311 Foothill YoKut
monoclovis@yahoo.com
559-862-5757

Traditional Choinumni Tribe
David Alvarez, Chairperson
391 Peach Avenue, #121 Choinumni
Clovis , CA 93612
(559) 324-8764
davealvarez@sbcglobal.net

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. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106, and federal NAGPRA.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Fresno Recycled Water Plan Project 209405; located in various locations in Fresno County, California for which Sacred Lands File searches and Native American Contacts lists were requested.

2600 Capitol Ave
Suite 200
Sacramento, CA 95816
916.564.4500 phone
916.564.4501 fax

www.esassoc.com

March 3, 2010

Example 2010 letter

Big Sandy Rancheria of Mono Indians
Liz Hutchins Kipp, Chairperson
PO Box 337/37302
Auberry, CA 93602

Subject: City of Fresno Recycled Water Master Plan PEIR

Dear Chairperson Kipp,

ESA is conducting environmental studies for the Program EIR for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Lanes Bridge, Friant, Herndon, Fresno North, Clovis, Kearney Park, Fresno South, Round Table, and Malaga USGS 7.5' Quads; T 12S, 13S, 14S, and 15S, R 19E, 20E, 21E, and 22E (See attached map). The PEIR would provide baseline data for future project level recycled water development within the City, however no specific projects are being evaluated at this time.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Sincerely,

Katherine Anderson
Cultural Resources Associate

Attachments

ESA

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Sacramento, CA 95816
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916.564.4501 fax

www.esassoc.com

telephone notes

project	Fresno Recycled Water PEIR	project no.	209405
date	March 15, 2010	time	1:00 pm
present	Katherine Anderson		
route to			
contact	Jim Redmoon - Dumna Tribal Government		
title	Cultural Resources Representative		
agency			
phone	559 824 0265		
subject	Fresno Recycled Water NAHC consultation		

action required

Returning call from Mr. Redmoon (3/10/10). Left message on machine requesting he call back.

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Sacramento, CA 95816
916.564.4500 phone
916.564.4501 fax

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November 14, 2013

Example 2013 letter

Big Sandy Rancheria of Mono Indians
Liz Hutchins Kipp, Chairperson
PO Box 337/37302
Auberry, CA 93602

Subject: City of Fresno Recycled Water Distribution System Project

Dear Chairperson Kipp,

ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Sincerely,

Katherine Anderson
Cultural Resources Associate

Attachments

Kathy Anderson

From: Kathy Anderson
Sent: Wednesday, November 05, 2014 1:17 PM
To: 'mandy_marine@hotmail.com'
Subject: City of Fresno Recycled Water Distribution System Project
Attachments: Fresno Recycled Water Plan RS.pdf

Dear Chairperson Marine,

This email is a follow up to the letter previously sent on November 14, 2013. ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Katherine Anderson

Katherine Anderson, MA
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Sacramento, CA 95816
916.564.4500 main | 916.564.4501 fax
kanderson@esassoc.com | www.esassoc.com
Follow us on Facebook | Twitter | LinkedIn

Kathy Anderson

From: Kathy Anderson
Sent: Wednesday, November 05, 2014 1:14 PM
To: 'ledgerrobert@ymail.com'
Cc: 'ledger17bonnie@yahoo.com'; 'ruem2007@yahoo.com'
Subject: City of Fresno Recycled Water Distribution System Project
Attachments: Fresno Recycled Water Plan RS.pdf

Dear Chairperson Ledger, et al.,

This email is a follow up to the letter previously sent on November 14, 2013. ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Katherine Anderson

Katherine Anderson, MA
Senior Historian
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Sacramento, CA 95816
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kanderson@esassoc.com | www.esassoc.com
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Kathy Anderson

From: Kathy Anderson
Sent: Wednesday, November 05, 2014 1:03 PM
To: 'lkipp@bsrnation.com'
Subject: City of Fresno Recycled Water Distribution System Project
Attachments: Fresno Recycled Water Plan RS.pdf

Dear Chairperson Kipp,

This email is a follow up to the letter previously sent on November 11, 2013. ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Katherine Anderson, MA
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kanderson@esassoc.com | www.esassoc.com
Follow us on Facebook | Twitter | LinkedIn

Kathy Anderson

From: Kathy Anderson
Sent: Wednesday, November 05, 2014 1:04 PM
To: 'eagleye@cuip.net'
Subject: City of Fresno Recycled Water Distribution System Project
Attachments: Fresno Recycled Water Plan RS.pdf

Dear Chairperson Goode,

This email is a follow up to the letter previously sent on November 14, 2013. ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Katherine Anderson

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kanderson@esassoc.com | www.esassoc.com
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Kathy Anderson

From: Kathy Anderson
Sent: Wednesday, November 05, 2014 1:26 PM
To: 'coldsprgstribe@netptc.net'
Subject: City of Fresno Recycled Water Distribution System Project
Attachments: Fresno Recycled Water Plan RS.pdf

Dear Ms. Bill,

This email is a follow up to the letter previously sent on November 14, 2013. ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Katherine Anderson

Katherine Anderson, MA
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kanderson@esassoc.com | www.esassoc.com
Follow us on Facebook | Twitter | LinkedIn

Kathy Anderson

From: Kathy Anderson
Sent: Wednesday, November 05, 2014 1:27 PM
To: 'davealvarez@sbcglobal.net'
Subject: City of Fresno Recycled Water Distribution System Project
Attachments: Fresno Recycled Water Plan RS.pdf

Dear Chairperson Alvarez,

This email is a follow up to the letter previously sent on November 14, 2013. ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Katherine Anderson

Katherine Anderson, MA
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November 5, 2014

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
PO Box 410
Friant, CA 93626-0177

Subject: City of Fresno Recycled Water Distribution System Project

Dear Mr. Pennell,

This fax is intended as a follow up to the letter previously sent on November 11, 2013. ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.

In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your time and cooperation regarding this matter. If you have any questions, please do not hesitate to contact me.

Sincerely,

Katherine Anderson
Cultural Resources Associate

Attachments

ESA

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Suite 200
Sacramento, CA 95816
916.564.4500 phone
916.564.4501 fax

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telephone notes

project	Fresno Recycled Water Facility Project	project no.	130412
date	November 5, 2014	time	1:30pm
present	Katherine Anderson, ESA		
route to	Robert Eckert, ESA project manager		
contact	Lawrence Bill		
title	Interim chairperson		
agency	Sierra Nevada Native American Coalition		
phone			
subject	Fresno Recycled Water NAHC coordination		
action required	none		

Ms. Anderson attempted a follow up phone call to the Sierra Nevada Native American Coalitionregarding the proposed recycled water facility project. Spoke with Mr Bill, who had no comments

ESA

2600 Capitol Avenue
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Sacramento, CA 95816
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916.564.4501 fax

www.esassoc.com

telephone notes

project	Fresno Recycled Water Facility Project	project no.	130412
date	November 5, 2014	time	1:30pm
present	Katherine Anderson, ESA		
route to	Robert Eckert, ESA project manager		
contact	Jerry Brown		
title	chairperson		
agency	Chowchilla Tribe of Yokuts		
phone			
subject	Fresno Recycled Water NAHC coordination		
action required	none		

Ms. Anderson attempted a follow up phone call to the Chowchilla Tribe of Yokuts regarding the proposed recycled water facility project. No answer, and voicemail box was full.

ESA

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916.564.4500 phone
916.564.4501 fax

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telephone notes

project	Fresno Recycled Water Facility Project	project no.	130412
date	November 5, 2014	time	1:30pm
present	Katherine Anderson, ESA		
route to	Robert Eckert, ESA project manager		
contact	John Davis		
title	Chairperson		
agency	Kings River Choinumni Farm Tribe		
phone	559.324.9908		
subject	Fresno Recycled Water NAHC coordination		
action required	none		

Ms. Anderson attempted a follow up phone call to the Kings River Choinumni Farm Tribe regarding the proposed recycled water facility project. Number no longer in service.

Kathy Anderson

From: David Alvarez <davealvarez@sbcglobal.net>
Sent: Monday, November 17, 2014 11:14 AM
To: Kathy Anderson
Subject: Re: City of Fresno Recycled Water Distribution System Project

Dear Kathy Anderson,
I have reviewed the documents you sent regarding the City of Fresno Recycled Water Master Plan. It looks like a very large project. At this time, I don't see an issue with cultural resources for the proposed project site. In the event there is a discovery of any type of cultural resources, I would ask that all entities are notified promptly to handle the find. Should you have any question regarding this email, please don't hesitate to call or email me.

Best Regards,

David Alvarez, Tribal Chairman
Traditional Choinumni Tribe
(East of the Kings River)
559.323.6231
davealvarez@sbcglobal.net

On Nov 5, 2014, at 1:27 PM, Kathy Anderson <KAnderson@esassoc.com> wrote:

> Dear Chairperson Alvarez,
>
> This email is a follow up to the letter previously sent on November 14, 2013. ESA is conducting environmental studies for the City of Fresno Recycled Water Master Plan, Fresno County, California. The project is located on the Kearney Park, Herndon, Fresno North and Fresno South USGS 7.5' Quads; T 13S and 14S, R 19E and 20E (See attached map). The City proposes to construct approximately 13 miles of recycled water transmission pipelines within existing roadways located in the western portion of the City and its Sphere of Influence.
>
> In an effort to address any potential impact to archaeological or ethnographic resources, we are seeking comments from Native American representatives; your name was supplied to us by the Native American Heritage Commission as a contact for this area. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Appendix D
DPR Forms for Houghton Canal

ESA

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

Page 1 **of** 2 ***Resource Name or #:** Houghton Canal

P1. Other Identifier: Houghton Canal

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County** Fresno

and

***b. USGS 7.5' Quad** Herndon and Fresno North, Calif. **Date** 1982 **T** 13S; **R** 19E; ¼ **of** ¼ **of Sec** 35; Mt. Diablo **B.M.**

c. Address W Belmont Ave and N Cornelia Ave City Fresno Zip 93722

d. UTM: Zone 10; mE/ mN

e. Other Locational Data:

***P3a. Description:** The Houghton Canal is an earthen and concrete lined canal located west of the City of Fresno. Within the project area (Belmont Avenue), the canal consists of a modern concrete lined canal culvert crossing underneath Belmont Avenue in two locations. Just outside the project area, the canal is earthen lined with concrete and cobble rip rap, measuring approximately 25 feet across at the top and 8 feet across as the bottom of the canal.

The Houghton Canal is one of the large laterals of the Fresno Irrigation District. The Houghton Canal appears on maps as early as 1891 as an unnamed canal or ditch (Thompson, 1891, see Figure 2 below), although the alignment of the canal has been considerably altered throughout its long history. The 1917 legal description of the Houghton Canal describes it as:

> *Houghton Canal. Beginning at a point in the west bank of Dry Creek Canal near the northeast corner of the northwest corner of the southeast quadrant of Section 5, T14S, R20E. MDB&M, and running thence in a general westerly direction 15.74 miles to the center of section 2, T14S, R17E, MDB&M. (CPUC, 1917)*

***P3b. Resource Attributes:** HP20. Canal

***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: View of , looking (Photo Acc. #)

***P6. Date Constructed/Age and Sources: ca1891** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Fresno Irrigation District
2907 S Maple Ave
Fresno, CA 93725

***P8. Recorded by:**
Katherine Anderson
ESA
2600 Capitol Ave, Ste 200
Sacramento, California 95816

***P9. Date Recorded:**
October 24, 2013

***P10. Survey Type:**
Intensive surface survey

***P11. Report Citation:** ESA, 2013. Recycled Water Distribution System Project Cultural Resources Study. Prepared for the City of Fresno. November, 2013.

***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

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code 6y**

***Resource Name or #:** Houghton Canal

B1. Historic Name: Houghton Canal
B2. Common Name: Houghton Canal
B3. Original Use: irrigation canal
B4. Present Use: municipal water canal

***B5.Architectural Style:** vernacular

***B6.Construction History:**
Ca 1891, appears unnamed on historic maps.

***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

Archival review of materials online, at the Fresno Special Collections Research Center, and Fresno Public Library San Joaquin Valley Heritage & Genealogy Center provided little additional information on the history of the canal.

ESA staff recommends the canal as not eligible for listing in the California Register. Archival research did not indicate any significant association between the canal and known historical events or persons (Criteria 1 and 2). The canal potentially dates to the late nineteenth century, and is associated with the development of agriculture and the colony system in Fresno, but not to a significant extent than other canals, such as the Centerville, Gould, or Enterprise Canals, more effectively demonstrate (JRP & Caltrans, 2000). The canal does not appear to embody the distinctive characteristics of a type, period, or method of construction and possesses no distinguishing design or artistic values (Criterion 3). The canal does not appear to have the potential to yield information important in history (Criterion 4). Finally, realignment throughout its history, as well as modern construction of the culvert and crossings over Belmont Avenue has resulted in the alteration of the canal, impacting its physical integrity. As such, ESA recommends the canal ineligible for listing in the California Register.

B11. Additional Resource Attributes:

***B12. References:** CPUC, 1917. Decisions of the Railroad Commission of the State of California. Vol XII, December 1, 1916 to March 31, 1917.

JRP and Caltrans, 2000. Water Conveyance Systems in California Historic Context Development and Evaluation Procedures. California Department of Transportation. December, 2000.

Thompson, Thomas, 1891. Official historical atlas map of Fresno County. Office of the Board of Supervisors of Fresno County, California Compiled, drawn and published from personal examinations and surveys by Thos. H. Thompson. Tulare, California.

B13. Remarks:

***B14. Evaluator:** Katherine Anderson | ESA

***Date of Evaluation:** 11/14/13

(This space reserved for official comments)

Appendix E
CNDDB Species List

ESA

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Herndon (3611978) or Fresno North (3611977) or Fresno South (3611967) or Kearney Park (3611968) or Biola (3612071) or Kerman (3612061) or Helm (3612051) or Raisin (3611958) or Caruthers (3611957) or Conejo (3611956) or Malaga (3611966) or Clovis (3611976) or Madera (3612081) or Gregg (3611988) or Lanes Bridge (3611987) or Friant (3611986))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S2S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Castilleja campestris var. succulenta succulent owl's-clover	PDSCR0D3Z1	Threatened	Endangered	G4?T2	S2	1B.2
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Chloropyron palmatum palmate-bracted salty bird's-beak	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Proposed Threatened	Endangered	G5T3Q	S1	
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G3	S3	1B.2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Dipodomys nitratoides exilis Fresno kangaroo rat	AMAFD03151	Endangered	Endangered	G3T1	S1	
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T3Q	S3	WL
Eriastrum hooveri Hoover's eriastrum	PDPLM03070	Delisted	None	G3	S3	4.2
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S4	SSC
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	FP
Great Valley Mixed Riparian Forest Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4?	
Leptosiphon serrulatus Madera leptosiphon	PDPLM09130	None	None	G1?	S1?	1B.2
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lytta moesta moestan blister beetle	IICOL4C020	None	None	G2	S2	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010	None	None	G1G3	S1S3	
Mylopharodon conocephalus hardhead	AFCJB25010	None	None	G3	S3	SSC
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Orcuttia inaequalis San Joaquin Valley Orcutt grass	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Orcuttia pilosa hairy Orcutt grass	PMPOA4G040	Endangered	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Perognathus inornatus	AMAFD01060	None	None	G2G3	S2S3	
San Joaquin Pocket Mouse						
Pseudobahia bahiifolia	PDAST7P010	Endangered	Endangered	G2	S2	1B.1
Hartweg's golden sunburst						
Sagittaria sanfordii	PMALI040Q0	None	None	G3	S3	1B.2
Sanford's arrowhead						
Spea hammondii	AAABF02020	None	None	G3	S3	SSC
western spadefoot						
Sycamore Alluvial Woodland	CTT62100CA	None	None	G1	S1.1	
Sycamore Alluvial Woodland						
Taxidea taxus	AMAJF04010	None	None	G5	S3	SSC
American badger						
Thamnophis gigas	ARADB36150	Threatened	Threatened	G2	S2	
giant garter snake						
Tropidocarpum capparideum	PDBRA2R010	None	None	G1	S1	1B.1
caper-fruited tropidocarpum						
Tuctoria greenei	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
Greene's tuctoria						
Vireo bellii pusillus	ABPBW01114	Endangered	Endangered	G5T2	S2	
least Bell's vireo						
Vulpes macrotis mutica	AMAJA03041	Endangered	Threatened	G4T2	S2	
San Joaquin kit fox						

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